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March 3, 2009

BY FEDERAL EXPRESS OVERNIGHT

Mr. John Miller
Environmental Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, New York 12233-7017

Subject: **Soil Vapor Intrusion Investigation Report**
Pemart Avenue former MGP Site (NYSDEC Site No. V00566)
Peekskill, New York
Voluntary Clean-up Agreement – Index No. D2-0003-02-08

Dear Mr. Miller:

Enclosed for the Department's review and approval are two hard copies and one electronic copy on CD of the Soil Vapor Intrusion Investigation Report for the Pemart Avenue Works former MGP.

Please contact me directly should you have any questions regarding this submittal.

Very truly yours,

Neil O'Halloran
Project Manager,
MGP Remediation Group
Environment, Health and Safety Department

Enc.

cc: F. Navratil, NYSDOH
M. Ryan, NYSDEC (w/o Enc.)
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Project Files

Prepared for:
Consolidated Edison Company of New York, Inc.
Astoria, New York

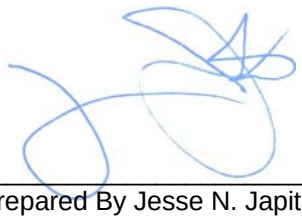
Indoor Air and Soil Gas Investigation

AECOM, Inc.
March 3, 2009
Document No.: 01869-169-0700

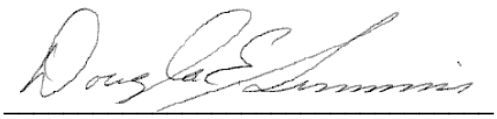
AECOM

Prepared for:
Consolidated Edison Company of New York, Inc.
Astoria, New York

Indoor Air and Soil Gas Investigation



Prepared By Jesse N. Japitana



Reviewed By Doug Simmons

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Contents

List of Appendices

List of Tables

List of Figures

1.0 Introduction

This report presents a summary of field observations and analytical results from the Indoor Air and Soil Gas Investigation at the Pemart Avenue Former Manufactured Gas Plant (MGP) (the Site) located in Peekskill, New York. This investigation was performed on June 26, 2008 by AECOM (formerly ENSR) at the request of Consolidated Edison Company of New York, Inc. (Con Edison) as part of the ongoing investigation of the Site.

1.1 Project background

Results of the Remedial Investigation (RI) showed that subsurface soil and groundwater are impacted by MGP-related residues (e.g., coal tar), petroleum and solvents beneath the Site. Impacts from one or more of these source materials were detected in the areas of the former gas works building (190 North Water Street) and an off-site building (400 Main Street) located adjacent to the former gas holders (i.e., the east side of North Water Street). The former gas works building is currently used by two separate commercial businesses. The northern two-thirds of the building are used as a custom wood-working shop and the southern one-third of the building houses a commercial laboratory that specializes in the analysis of asbestos containing materials. The ground floor of the building at 400 Main Street is vacant and the second floor is used for residential and commercial purposes.

1.2 Project objectives

In response to the RI findings, AECOM, on behalf of Con Edison, prepared and submitted the Air Sampling Work Plan for the Pemart Avenue Former MGP, Peekskill, New York (Work Plan) dated March 31, 2008. The Work Plan was developed in accordance with the New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York (Bureau of Environmental Exposure Investigation (October 2006). The Work Plan was approved by New York State Department of Environmental Conservation (NYSDEC) in a letter dated June 16, 2008.

The scope of work outlined in the Work Plan was developed to address the following objectives:

- Determine if volatile organic compounds (VOCs) associated with the previously detected soil and groundwater impacts related to operations of the former MGP are present in soil gas beneath the concrete building foundation slabs.
- If present, then evaluate the potential for the VOCs detected in the soil gas to migrate into and adversely influence indoor air quality in the on-site and adjacent off-site buildings.
- Evaluate the occurrence and extent of VOCs in soil gas related to subsurface soil and groundwater impacts that were identified during the RI.

2.0 Investigation scope of work

The air and soil gas samples were collected and analyzed in accordance with the methods and procedures outlined in the Work Plan. A description of each component of the sampling and analytical program is provided below.

In brief, the air and soil gas samples were collected in stainless steel Summa canisters equipped with calibrated flow control valves. The canisters were prepared by evacuating them to create an internal negative pressure or vacuum, and the flow valves were calibrated to allow air to be drawn into the canister and collected over a period of approximately two hours. Columbia Analytical Services (CAS) in Simi Valley, California prepared the Summa canisters, provided calibrated flow meters, and performed the air and soil gas analyses. All air and soil gas samples were analyzed for VOCs using the United States Environmental Protection Agency (USEPA) Method TO-15 modified to included additional analytes that are considered to be indicative of coal tar.

2.1 Sample location selection and utility clearance

The sampling locations were selected as described in the Work Plan. Prior to selecting specific sampling locations for the soil gas samples, a survey was conducted to identify and locate sub-slab utilities (e.g., electrical lines, water pipes, gas lines, sewer lines, etc.) in the areas of proposed sampling. The underground utility clearance process included a Code 753 mark out, review of available as-built utility maps and drawings, and the review of utility mark-outs previously conducted during the RI. The specific sampling locations were selected so as to avoid encountering and potentially damaging any subsurface utilities during installation of the soil gas sampling points. A total of nine (9) soil gas samples, three (3) indoor air and two (2) ambient (outdoor) air samples were collected. The three indoor air samples were co-located with soil gas sampling points in the buildings to obtain 'paired' indoor air and soil gas samples. The specific sampling locations are shown on Figure 1.

2.2 Product inventory and building inspection

A survey and inventory of products/materials used and/or stored in each of the buildings was completed prior to sampling, as recommended in the NYSDOH Guidance Document (NYSDOH, 2006). The results of the surveys/inventories were documented on NYSDOH Indoor Air Quality Questionnaire and Building Inventory Forms. The completed forms are provided in Attachment A.

2.3 Indoor air sampling

Three indoor air samples were collected. Each Summa canister was placed so that the inlet port of the attached flow regulator was at chair height, or approximately three feet above the floor, to mimic the breathing zone of a child. Prior to sample collection, the indoor air in the vicinity of each sample location was screened for total VOCs using an organic vapor meter equipped with a photoionization detector (PID). The PID results are included in Table 1 and the field sampling records are included in Attachment B.

2.4 Soil gas sampling point installation

Prior to installing the soil gas sampling points, an electric hammer drill was used to create a small (1/2 inch) diameter hole. For locations inside the buildings, the drill was advanced to a depth of approximately three inches below the bottom of the concrete foundation slab. For locations outside the buildings, the process was the same except the hole was advanced deeper to a target depth of approximately one foot above the water table (or approximately 1.2 feet to 3.3 feet below ground surface). An expendable stainless steel mesh soil gas sampling point attached to Teflon^{tm} sampling tubing was installed in the drilled hole so that a portion of the

sample tube extended approximately two feet above the top of the concrete slab or ground surface. The annulus (space between the drill hole and the sampling tubing) was sealed using hydrated granular bentonite to isolate the soil gas from ambient air or the air inside the building.

2.5 Collection of soil gas samples

After installation of the sampling point, a PID was attached to the Teflon^{tm} sampling tube to perform an initial screening of the soil gas for total VOCs. A total of five sample tube volumes were then purged using a low-flow air sampling pump. Following purging, the PID was reattached to the Teflon^{tm} sample tube to perform a final post-purge screening of the soil gas for total VOCs.

Subsequent to purging the sample tube, a 6-liter Summa canister equipped with a laboratory-calibrated flow regulator was connected to the sample tubing. The valves of all flow regulators were then opened within a period of approximately 15 minutes to initiate collection of soil gas and the initial canister pressures indicated on the flow regulator gauges were recorded. The Summa canister pressures shown on the flow regulator pressure gauges were periodically monitored to verify that there were no leaks. Samples were collected over a two-hour period. Prior to closing the valves and terminating the sample collection, the final canister pressures were recorded.

At one sample location a duplicate soil gas sample was collected for quality control purposes.

As recommended in the NYSDOH Guidance Document (NYSDOH, 2006), helium leak-testing was performed prior to sampling at the two soil vapor points collected in unpaved areas (i.e., where impervious ground cover, such as asphalt or concrete were not present). The helium testing process is described below.

2.6 Helium tracer testing

Helium testing was performed at soil gas sampling locations where the ground surface was not covered with an impermeable surface, such as asphalt or concrete. This testing was facilitated using an inverted plastic bucket with two sealed ports; one inlet port and one outlet port. The Teflon^{tm} sample tube from the sub-grade soil gas sampling point was connecting to the sealed outlet port inside the plastic pail and then the pail was inverted and placed over the sample location. A seal was then created between the rim of the pail and the ground using hydrated bentonite. A canister of helium tracer gas was then connected to the sealed inlet port on the pail. The field helium analyzer was then connected to the external portion of the outlet port that was connected to the soil gas sampling tubing (i.e., inside the pail) to measure the initial helium concentration in the sub-grade soil gas sample point. The valve on the helium tracer canister was then opened to charge the atmosphere inside of the bucket with helium. The helium analyzer and tracer gas cylinder were disconnected, and the inlet port to the flow regulator/valve on the Summa canister was then connected to the Teflon^{tm} tube from the soil gas sampling tube in preparation for collection of soil gas, as described above.

2.7 Ambient air samples

Two outdoor (ambient) air samples were collected, one upwind and one downwind of the Site. The ambient air samples were collected concurrently with the indoor air and soil gas samples. The samples were collected in the same manner as the indoor air samples, as outlined above.

2.8 Field screening

Air and soil gas was screened in the field for the presence of VOCs using a PID.

2.9 Meteorological measurements

Reports of meteorological data for the area were obtained for June 26, 2008 from the National Climatic Data Center (NCDC) affiliated with the National Oceanic and Atmospheric Administration (NOAA). This quality controlled local climatological data was obtained electronically at www.ncdc.noaa.gov for a meteorological station at Stewart International Airport in Newburgh, New York which is located approximately 24 miles northwest of the Site. Hourly measurements of temperature, barometric pressure, wind speed and direction, dew point and relative humidity were reported and are summarized in Table 2.

Table 1
Soil Gas and Indoor Air Sample Summary
Air and Soil Gas Samples Collected on June 26, 2008
Pemart Ave Former MGP, Peekskill, NY

Sample Number	Canister Number	Location	Depth of Sample Probe (inches below surface grade)	Date	Sample Duration				Canister Pressure (mmHg)		PID Screening Range (ppm)		Background Air PID Screening Range (ppm)	
					Start	Stop	Hrs:Mins.		Initial	Final	Pre	Post	Time	Bkd.
SSV01	SC00969	Indoor - lower level - wood-working shop on floor behind table saw at the center of southern wall of room	9	6/26/2008	18:00	20:33	2:33		30	4	0.8	1.5	17:40	0-1.2
IA01	AC00996	Indoor - lower level - wood-working shop on table adjacent to tablesaw along southern wall of room	NA	6/26/2008	18:00	20:34	2:34		30	1	NA	NA	17:40	0-1.2
SSV02	SC00326	Indoor - lower level - NE corner of lab office space under side table	6.5	6/26/2008	17:58	20:08	2:10	*	20	0	1.2	1.2	17:38	0-1.6
IA02	AC00285	Indoor - lower level - center of lab office at table height behind couch	NA	6/26/2008	17:59	20:28	2:29		28	1	NA	NA	17:38	0-1.6
SSV03	SC00294	Indoor - lower level - western garage floor center	10	6/26/2008	18:05	20:22	2:17		30	3	0.5	0.5	17:30	0-0.8
IA03	AC01122	Indoor - lower level - western garage on top of mini fridge on northern wall	NA	6/26/2008	18:05	20:22	2:17		28	2.5	NA	NA	17:30	0-0.8
OD-01U	AC00958	Outdoor - chair height- outside western garage of 400 Main Street	NA	6/26/2008	18:03	20:16	2:13		26.5	2	NA	NA	17:20	0
OD-02D	AC01170	Outdoor - chair height- outside NW corner of 190 North Water Street	NA	6/26/2008	17:55	20:30	2:35		30	4	NA	NA	17:25	0
SV01	SC00173	Outdoor - rock landscape area along former electric generating plant on west-side of N. Water Street	15	6/26/2008	17:50	20:42	2:52	*	29	0	4.8	2.2	17:45	0
SV01 (Duplicate)	SC00658	Outdoor - rock landscape area along former electric generating plant on west-side of N. Water Street	15	6/26/2008	17:50	20:43	2:53		30	1	4.8	2.2	NR	NR
SV02	SC01025	Outdoor - parking garage in taxi cab lot along former coal conveyor area	15.5	6/26/2008	17:02	20:50	3:48	*	26.5	0	6.2	7.2	17:50	0-1.5
SV03	SC00863	Outdoor - NW corner of 190 North Water Street	15	6/26/2008	17:56	20:31	2:35	*	29	0	0.7	0.9	17:54	0
SV04	SC1020	Outdoor - in grass area on east side of North Water Street west of former gas holder	40	6/26/2008	18:01	20:05	2:04		30	4	5.4	1.4	18:00	0
SV05	SC00473	Outdoor - asphalt paved parking lot at intersection of North Water Street and Main Street near former coal pile area	21	6/26/2008	18:07	20:13	2:06		29.5	5	NR	NR	18:05	0-0.5

Notes:
* = Indicates time of sampling stopped; however, sample canister may have drawn sample faster than 2-hour regulator based on field observations.
- Pre and Post PID screening conducted through Teflon™ tubing with the drill rod sealed with bentonite at both the concrete and the top of the rod.
- Background PID screening conducted of indoor or ambient air at each soil gas sample location.
- NA = Not Applicable
- NR = Not Recorded

Table 2
Meteological Data
Stewart International Airport
Newburgh, New York

Hourly Observations
Month/Year: 06/2008
Station Location: STEWART INTERNATIONAL AIRPORT (14714)
Latitude: 41.504
Longitude: -74.105
Elev: 0 feet above sea level

Date	Time	Visibility	DewPoint	RelativeHumidity	WindSpeed	WindDirection	StationPressure	Comments
Year_Month_Day	Military Time	Miles	Degrees Fahrenheit	%	Miles per hour	Degrees	Inches Hg	
2008_06_26	45	15	57	73	0	0	29.48	
2008_06_26	145	15	59	78	0	0	29.47	
2008_06_26	245	15	59	78	0	0	29.46	
2008_06_26	350	15	59	73	0	0	29.45	
2008_06_26	440	15	59	78	0	0	29.45	
2008_06_26	545	15	61	84	0	0	29.46	
2008_06_26	645	15	63	84	0	0	29.46	
2008_06_26	745	15	61	73	0	0	29.45	
2008_06_26	845	10	63	73	5	240	29.43	
2008_06_26	945	10	63	73	7	240	29.41	
2008_06_26	1045	7	66	79	6	VR	29.38	
2008_06_26	1145	7	66	79	5	230	29.35	
2008_06_26	1245	7	66	74	8	260	29.34	
2008_06_26	1345	7	66	69	15	250	29.33	
2008_06_26	1445	6	66	69	9	260	29.31	
2008_06_26	1645	8	66	69	11	260	29.29	Air Sampling 1700 to 2100
2008_06_26	1750	10	68	69	7	310	29.31	Air Sampling 1700 to 2100
2008_06_26	1845	10	66	69	7	310	29.31	Air Sampling 1700 to 2100
2008_06_26	1950	10	68	87	0	0	29.31	Air Sampling 1700 to 2100
2008_06_26	2050	10	66	87	0	0	29.33	Air Sampling 1700 to 2100
2008_06_26	2155	10	66	87	0	0	29.33	
2008_06_26	2245	10	66	87	0	0	29.33	
2008_06_26	2348	10	66	87	0	0	29.33	
	Statistics							
	MAX	**15**	**68**	**87**	**15**	**310**	**29.48**	
	MIN	**6**	**57**	**69**	**0**	**0**	**29.29**	
	AVG	**10.957**	**63.739**	**77.348**	**3.478**	**107.273**	**29.381**	

Notes:
Stewart International Airport is approximately 24 miles Northwest of site
Souce: www.ncdc.noaa.gov

400 MAIN STREET

APPROXIMATE EXTENT OF IMPACT

190 NORTH WATER STREET (SOUTH)

190 NORTH WATER STREET (NORTH)

NORTH WATER STREET

SSV03
IA03
OD-01U
SV05
SV04
SSV02
IA02
IA01
SSV01
SV02
OD-02D
SV03
SV01

2 LIFT GAS HOLDER 100,000 CF (1900)
HORTONSPHERE (1947)
PULSATION TANK (1954)
1 LIFT GAS HOLDER 30,000 CF
GAS HOLDER 200,000 CF TANK DIA. 75'
FUEL OIL TANK 25,000 GAL.
BARRY HOUSE (1911)
BOILER HOUSE
GENERATING HOUSE
STORAGE
PURIFYING HOUSE
COAL PILE AREA IN 1950
COAL SHED
ELECTRIC GENERATING PLANT
FUEL OIL TANK
TRANSFORMERS
CONC
ROCK LEDGE
ROCKS
STOCKPILE
COAL CONVEYOR
SMALL SUBMERGED BARGE
LARGE SUBMERGED BARGE
RUINS
CHANNEL

HUDSON RIVER
FLOW

LEGEND

IA01 ⊗	INDOOR AIR SAMPLING LOCATION
SSV01 ●	SUBSLAB VAPOR SAMPLING LOCATION
SV01 ■	SOIL VAPOR SAMPLING LOCATION
OD-01U ▲	OUTDOOR AMBIENT AIR SAMPLING LOCATION
	BOUNDARY OF FORMER PEMART AVE MGP
	BOUNDARY OF FORMER ELECTRIC GENERATING PLANT
	FORMER STRUCTURES
	SURFACE TOPOGRAPHY

30 0 30 60
SCALE IN FEET

FILENAME: 01869-169-018.DWG

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
	K.P.B.	S.O.	D.S.

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SOIL VAPOR, AMBIENT AND INDOOR AIR SAMPLING LOCATIONS
PEMART AVENUE FORMER MGP
PEEKSKILL, NEW YORK

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	2/09	01869-169-0700

DRAWING NUMBER:
1

SHEET NUMBER:
1

3.0 Assessment of potential vapor intrusion

The findings of this sampling and analytical program, including field measurements, product inventories and analytical data obtained, were reviewed in efforts to evaluate the potential for soil vapor intrusion. These data and information are discussed below by address and, where appropriate, by building area.

All analytical data presented herein were validated using USEPA Region 2 data validation Standard Operating Procedures (SOPs) as guidance. The validation process as it was applied to the analytical data for samples collected as part of the soil vapor intrusion investigation described herein is documented in a Data Usability Summary Report (DUSR) that has been prepared in accordance with the NYSDEC Guidance for Development of Data Usability Summary Reports (NYSDEC 2001). Where necessary, the Region 2 SOPs were modified to incorporate project-specific or method-specific criteria. Data qualifiers were applied consistent with the Region 2 Guidance. The DUSR is provided as Attachment C.

In general, based on the results of the data validation as presented in the DUSR, it is concluded that the data are valid as reported and may be used for the purpose of assessing the potential for soil vapor intrusion. Selected data points were qualified as estimated (J) based on certain quality control non-conformances, as described in the DUSR.

Finally, the validated ambient and indoor air analytical data were compared to the 75th and or 90th percentiles of indoor air background values published in the NYSDOH "Study of VOCs in Air of Fuel Heated Homes in New York State, 1997-2003", revised November 16, 2004.

3.1 Summary of field measurements

The following sections summarize the field measurements obtained during the Indoor Air and Soil Gas Investigation.

3.1.1 Indoor and ambient air

Total VOCs concentrations in air inside the buildings (indoor air), measured in the field (see Table 3) using the PID, and were generally similar to those in ambient (outdoor) air.

3.1.2 Meteorological measurements

Meteorological measurements recorded for the area (meteorological station at Stewart International Airport in Newburgh, New York) by the NCDC for June 26, 2008, report that outdoor temperatures fluctuated between 57 and 68 degrees Fahrenheit throughout the day. Temperature during the time of sampling was stable at approximately 66 degrees Fahrenheit. Barometric pressure was stable over the sampling period at approximately 29.381 inches of mercury (inches Hg), which is below the typical average sea level barometric pressure and indicative of the potential for a storm or precipitation. Wind speed varied from 0 to 15 miles per hour (mph) from the West; however, wind speeds of 0 to 7 mph were observed at the time of sampling. In summary, the meteorological conditions in the vicinity of the site were relatively stable and consistent for this region of the Hudson Valley throughout the sampling period.

3.2 Ambient air

Seventeen VOCs were detected in ambient air; seven are not considered to be related to MGP residuals; ten are considered to be possibly related to MGP residuals, but are also key components of other commonly used non-MGP products and residuals, such as petroleum.

The analytical results of the upwind and downwind ambient air samples were generally similar, with exception of 1,2,4-trimethylbenzene, which was detected at the upwind sample location but not at the downwind location.

All 17 of the VOCs detected in ambient air were also detected in either soil gas and or indoor air, with 16 of these detected in both. One of the 17 VOCs, (1,1,2-Trichlorotrifluoroethane [Freon 113]), was detected in soil gas only and not in any of the indoor air samples. The ambient air concentrations of 14 of the 16 compounds were lower than their corresponding concentrations in indoor air, in most cases, by an order of magnitude or more. The remaining two compounds detected, dichlorodifluoromethane (Freon 12) and ethanol, were detected in ambient air at the same or higher concentrations as compared to the corresponding concentrations detected in the indoor air sample for these compounds. Accordingly, it is concluded that ambient air is likely contributing to the air quality in the buildings and is the primary source of VOC detected in indoor air samples.

3.3 190 North Water Street (north)

One set of paired indoor air and soil gas samples were collected in the north area of the building at 190 North Water St., which is occupied by the custom wood-working business. These samples were designated IA01 and SSV01, respectively. The concrete slab in this area of the building was approximately 4-inches thick, as measured during the first attempt to install the soil gas sampling point. It is noted that during previous site investigation work in this area of the building and during the successful installation of the soil gas sampling point the concrete foundation slab was measured to be 7-inches thick. On subsequent inspection, the area where soil gas sample point SSV01 was installed appeared to be an area that had been historically patched. This area of the floor, as well as the rest of the exposed floor area in the wood-worker's shop, was sealed with paint and or varnish. During the building inspection, no significant cracks or breaches in the concrete walls and or floors of the first floor areas for 190 North Water Street were observed.

3.3.1 Pre-sampling inventory

During the pre-sampling inventory wood stain, paint, mineral spirits, glues, contact cement, a motorcycle (with gasoline-filled fuel tank), and engine motor oil were observed and documented. These stored materials contained 1,2,4-trimethylbenzene, benzene, hexane, toluene, xylenes, acetone and or other VOCs. It is also noted that the building is heated by a fuel-oil fired boiler, which is located in the northwest corner of the northern portion of the building at 190 North Water Street.

3.3.2 Field screening measurements

Low concentrations of total VOCs were detected during screening in indoor air using a PID. Concentrations ranged from not detected to 1.2 ppm. The concentration of total VOCs measured during purging of the soil gas point SSV01 prior to sampling showed that the initial and final concentrations were 0.8 ppm and 1.5 ppm, respectively. The field measurements are summarized in Table 1.

3.3.3 Analytical results

Three non-MGP VOCs were detected in indoor air sample IA01. These VOCs and their concentrations were acetone (19,000 micrograms per cubic meter [µg/m^3]), chloroform (120 µg/m^3) and 2-propanol (170 µg/m^3). It is noted that the detection levels for most of the target compounds were elevated for this sample as a result of the very high acetone concentration. However, further review of the chromatograms by the laboratory shows only one other quantifiable peak. The laboratory has identified this peak as toluene and because the peak was below the method reporting limit (MRL), the concentration was not reported. The laboratory estimated the concentration of toluene to be 49 µg/m^3. This concentration is above its 75th percentile but below it 90th percentile for NYSDOH background air.. The lack of other peaks verifies that no other VOCs were detected or present at significant concentrations.

Sixteen VOCs, which included nine potential MGP-related and seven that are not MGP-related, were detected in soil gas sample SSV01. The VOCs, benzene, toluene, ethylbenzene, and xylenes, collectively referred to as BTEX, exhibited the highest concentrations of the potentially MGP-related compounds. The highest concentration of non-MGP VOCs in soil gas were acetone (1,500 µg/m^3), 1,1,1-trichloroethane (180 µg/m^3) and chloroform (430 µg/m^3).

3.3.4 Assessment for soil vapor intrusion potential - 190 North Water Street (north)

With the exception of toluene, possible MGP-related VOCs that were detected in soil gas were not present in the corresponding indoor air sample. Conversely, with the exception of chloroform, the concentrations of the non-MGP VOCs were higher in indoor air than in soil gas. Based on these apparent trends, it is concluded that VOCs detected in soil gas are not migrating into the northern portion of 190 North Water Street. Furthermore, the apparent indoor air quality there is primarily a function of the materials used and or stored in the building and ambient air that enters the building when doors to the outside are opened.

3.4 190 North Water Street (south)

One set of paired indoor air and soil gas samples were collected in the southern portion of the building, which is used as a commercial asbestos laboratory. These samples were designated IA02 and SSV02, respectively. The concrete slab in this area of the building was 4.5-inches thick, as measured during installation of the soil gas sampling point. During the building inspection, no significant cracks or breaches in the concrete walls and or floors of the first floor areas were observed in this portion of the building at 190 North Water Street.

3.4.1 Pre-sampling inventory

During the pre-sampling inventory paint, furniture polish, air freshener aerosol spray, disinfectant aerosol spray and ice melt pellets. According to their labels these products and materials contained 1,2.4-trimethylbenzene, ethylbenzene, toluene, xylenes, 2-butanone (MEK), acetone, ethanol, and other VOCs.

3.4.2 Field screening measurements

Low concentrations of total VOCs were detected during screening in indoor air using a PID. Concentrations ranged from not detected to 1.6 ppm. The concentration of total VOCs measured during purging of the soil gas point SSV02 prior to sampling showed that the initial and final concentrations were both 1.2 ppm. The field measurements are summarized in Table 1.

3.4.3 Analytical results

A total of 19 VOCs were detected in indoor air sample IA02. Six were detected below their respective 75th percentile of the NYSDOH Background Indoor Air Concentrations. Five of the VOCs detected exceeded their respective 75th percentile Background Indoor Air Concentrations. These included 1,3,5-trimethylbenzene, benzene, heptane, hexane and 2,2,4-trimethylpentane. Eight additional compounds exceeded their respective 90th percentiles. These included six possible MGP-related compounds 1,2,4-trimethylbenzene, ethylbenzene, toluene, m,p-xylenes and o-xylene. The three non-MGP compounds were 2-butanone (17 µg/m^3), acetone (1,300 µg/m^3) and chloroform (13 µg/m^3). Therefore, a total of 13 compounds were detected in indoor air at concentrations above their respective 75th percentile of the NYSDOH background concentrations. Significant evidence of petroleum impacts were detected at the groundwater table beneath much of the Site during the RI, in addition to MGP residue.

Six VOCs were detected in soil gas. The only potential MGP-related VOC detected in soil gas sample SSV02 was toluene at a concentration of 42 µg/m^3, which was below its concentration of 72 µg/m^3 in corresponding indoor air sample IA02. The five non-MGP VOCs included 1,1,1-trichloroethane (89 µg/m^3), chloroform (67 µg/m^3), 2-propanol (42 µg/m^3), tetrachloroethene (110 µg/m^3) and trichloroethene (5,800 µg/m^3).

3.4.4 Assessment for soil vapor intrusion potential - 190 North Water Street (south)

Based on the general absence and/or low concentrations of VOCs in soil gas beneath the competent concrete foundation slab coupled with the detection of 19 VOCs in indoor air in the southern portion of 190 North Water St., it is concluded that the potential for migration of VOCs from the soil gas into the southern portion of this building is low.

With the exception of chloroform, all of the compounds detected in indoor air sample IA02 were also detected in one or both of the ambient air samples OD-01U and OD-02D. This suggests that VOCs in air outside the building at 190 North Water St. are likely contributing to the overall air quality inside this building.

3.5 400 Main Street

One set of paired indoor air and soil gas samples were collected in the building at 400 Main Street, the bottom floor of which was vacant. These samples were designated IA03 and SSV03, respectively. The concrete slab in this area of the building is 8-inches thick, as measured during installation of the soil gas sampling point. During the building inspection, no significant cracks or breaches in the concrete walls and or floor were observed in the first floor areas.

3.5.1 Pre-sampling inventory

During the pre-sampling inventory, carpet detergent, car cleaning products, fire extinguishers; containing hydrocarbons and other VOCs were observed. It is also noted that the building is located at the intersection with North Water Street, which receives significant traffic by commercial trucks (e.g., delivery, construction, landscaping trucks, etc.) and passenger vehicles, including numerous taxis.

3.5.2 Field screening measurements

Low concentrations of total VOCs were detected during screening of indoor air using a PID. Concentrations ranged from not detected to 0.8 ppm. The concentration of total VOCs measured during purging of the soil gas point SSV03 prior to sampling showed that the initial and final concentrations were both 0.5 ppm. The field measurements are summarized in Table 1.

3.5.3 Analytical results

A total of 21 VOCs were detected in indoor air sample IA03. Of the 21 VOCs detected in this indoor air sample, 11 are not MGP-related. Of the ten possible MGP-related, only m/p-xylenes exceeded its 75th percentile of the NYSDOH Background Indoor Air Concentration, with a concentration of 4.7 µg/m^3. One non-MGP VOC (1,1,1-Trichloroethane) was detected in indoor air at a concentration that exceeded its 75th percentile of NYSDOH background Indoor air concentration.

Nineteen of the 21 VOCs were detected at concentrations below their respective 75th percentile of the NYSDOH Background Indoor Air Concentrations. The two VOCs that exceed their respective 75th percentiles were m/p-xylenes (at a concentration of 4.7 µg/m^3) and 1,1,1-trichloroethane (at a concentration of 2.2 µg/m^3). It is noted that m/p-xylene was detected in indoor air sample IA-03 at a similar concentration as that in the ambient air sample OD-01U located on the sidewalk outside this building.

A total of 32 VOCs were detected in the associated soil gas sample SSV03. Seventeen of these are possibly related to MGP residues. However, with the exception of ethylbenzene, toluene, m/p-xylenes and o-xylene, the concentrations were relatively low (i.e., 10 µg/m^3 or less). The VOCs with the highest concentrations in the soil gas sample were 1,1,1-trichloroethane (32 µg/m^3), chloroform (640 µg/m^3) and ethanol (350 µg/m^3), which are all non-MGP related compounds. Despite the relatively high concentrations of these non-MGP VOCs in soil gas, their concentrations in associated indoor air sample IA03 were either not detected in the

corresponding indoor air sample (chloroform), detected well below their 75th percentile (ethanol - 17 µg/m^3) or above 75th percentile of Background Indoor Air, but below the 90th percentile of Background Indoor Air (1,1,1-trichloroethane – 2.2 µg/m^3).

3.5.4 Assessment for soil vapor intrusion potential - 400 Main Street

The majority of potential MGP-related VOCs in soil gas were detected at low to moderate concentrations. The concentrations of these VOCs in the associated indoor air sample were relatively low. As shown in Table 3, the majority of the MGP-related VOCs detected in indoor air at 400 Main Street, were also detected at the same or similar concentrations in the nearest ambient air sample (OD-01U). It is noted that the non-MGP VOCs that were detected at high concentrations in the soil gas (e.g., ethanol, chloroform, 1,1,1-dichloroethane) were either not detected or detected at very low concentrations in the associated indoor air sample. Consistent with these findings, it is concluded that there is a low potential for VOCs in soil gas to migrate into the 400 Main St. building and that the most significant influence to indoor air quality in this building appears to be ambient outdoor air.

3.6 Comparison of volatile organic compounds in indoor air to OSHA permissible exposure limits

The concentrations of the 13 VOCs (10 MGP-related and 3 non-MGP) detected in indoor air above the NYSDOH 75th percentile were also compared to worker guidance values (the lowest of the Occupational Safety and Health Administration – Permissible Exposure Limit (OSHA-PEL), National Institute of Occupational Safety and Health – Recommended Exposure Limit (NIOSH-REL), or American Conference of Governmental Industrial Hygienists – Threshold Limit Value (ACGIH-TLV)). The purpose of this comparison was to identify if any of the VOCs detected above the NYSDOH 75th percentile are present at concentrations that could be of concern and that might require some immediate action. The concentrations of all 13 VOCs were several orders of magnitude lower than their respective worker guidance values.

Table 3
Summary of Analytical Data for Volatile Organic Compounds
Air and Soil Gas Samples
June 29, 2008 Pemart Ave. Works Former MGP, Peekskill, NY

Compound	CAS number	NYSDOH Background Indoor Air Concentrations [a] 75th Percentile (ug/m3)	NYSDOH Background Indoor Air Concentrations [a] 90th Percentile (ug/m3)	Sample Name	IA01	SSV01	IA02	SSV02	IA03	SSV03	SV01	SV01 (DUP)	SV02	SV03	SV04	SV05	OD-01U	OD-02D
				Sample Location	190 North Water Street (North)		190 North Water Street (South)		400 Main Street		Landscaped Area (200 N. Water Street)		Taxi Parking Lot	Outside Northwest Corner of Building (190 N. Water St.)	Landscaped Area (North Water St. - East Side)	Municipal Parking Lot	Upwind	Downwind
				Sample Type	Indoor Air	Sub Slab Soil Gas	Indoor Air	Sub Slab Soil Gas	Indoor Air	Sub Slab Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Ambient Air	
				Sample Date	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008	6/26/2008
Possibly MGP Related[1]																		
1,2,4-Trimethylbenzene	95-63-6	4.3	9.5		100 U	**9.5**	**11**	33 U	**1.2**	**7.6**	6.2 U	**11**	620 U	620 U	**8.5**	7.1 U	**1.2**	0.65 U
1,3,5-Trimethylbenzene	108-67-8	1.7	3.6		100 U	8.5 U	**2.7**	33 U	0.70 U	**2.1**	6.2 U	6.2 U	620 U	620 U	**2.8**	7.1 U	0.69 U	0.65 U
2,3-Dimethylpentane[3]	565-59-3	2.2	7.5		NF	NF	NF	NF	NF	NF	NF	NF	NF	**30000 NJ**	NF	NF	NF	NF
2-Hexanone	591-78-6	NA	NA		100 U	8.5 U	1.6 U	33 U	0.70 U	**2.1**	6.2 U	6.2 U	620 U	620 U	2.0 U	**13**	0.69 U	0.65 U
2-Methylpentane[3]	107-83-5	NA	NA		NF	NF	**10 NJ**	NF	NF	**6 NJ**	NF	NF	NF	**10000 NJ**	**20 NJ**	**200 NJ**	NF	NF
4-Ethyltoluene	622-96-8	NA	NA		100 U	8.5 U	**3.7**	33 U	0.70 U	**3.4**	6.2 U	6.2 U	620 U	620 U	**3.9**	7.1 U	0.69 U	0.65 U
4-Methyl-2-pentanone	108-10-1	0.86	2.2		100 U	8.5 U	1.6 U	33 U	0.70 U	**2.2**	6.2 U	6.2 U	620 U	620 U	**2.3**	7.1 U	0.69 U	0.65 U
Benzene	71-43-2	5.9	15		100 U	**47**	**8.8**	33 U	**2.2**	**6.1**	**7.8 J**	**23 J**	620 U	**830**	**76**	**34**	**1.0**	**0.75**
Carbon disulfide	75-15-0	NA	NA		100 U	**110**	1.6 U	33 U	0.70 U	**7.6**	6.2 U	**8.6**	620 U	620 U	**5.8**	**10**	0.69 U	0.65 U
Cyclohexane	110-82-7	2.6	8.1		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	**16000**	2.0 U	7.1 U	0.69 U	0.65 U
Ethylbenzene	100-41-4	2.8	7.3		100 U	**510**	**9.8**	33 U	**1.2**	**21**	**41 J**	**150 J**	620 U	620 U	**130**	**57**	**1.2**	**0.76**
Heptane	142-82-5	7.6	19		100 U	**28**	**7.7**	33 U	**1.3**	**8.1**	**7.5 J**	**23 J**	620 U	620 U	**17**	**81**	**0.85**	**0.79**
Hexane	110-54-3	6	18		100 U	**20**	**15**	33 U	**2.6**	**10**	**9.0**	**22**	620 U	**14000**	**31**	**250**	**1.6**	**1.2**
2,2,4-Trimethylpentane	540-84-1	2.1	6.5		100 U	8.5 U	**4.5**	33 U	**0.93**	**3.1**	6.2 U	**11**	620 U	**170000**	**4.8**	7.1 U	**0.93**	**0.69**
Indene[3]	95-13-6	NA	NA		NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
Indan[3]	496-11-7	NA	NA		NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
Isopentane[3]	78-784	NA	NA		NF	NF	NF	NF	**5 NJ**	NF	NF	NF	NF	**5000 NJ**	NF	**400 NJ**	NF	NF
Naphthalene	91-20-3	NA	NA		100 U	8.5 U	**2.7**	33 U	0.70 U	**1.7**	6.2 U	6.2 U	620 U	620 U	**3.1**	**9.1**	0.69 U	**1.5**
Styrene	100-42-5	0.64	1.3		100 U	8.5 U	1.6 U	33 U	0.70 U	**1.3**	6.2 U	6.2 U	620 U	620 U	**2.8**	7.1 U	0.69 U	0.65 U
Thiophene[3]	110-02-1	NA	NA		NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
Toluene	108-88-3	24.8	58		100 U	**1300**	**72**	**42**	**7.8**	**75**	**110 J**	**370 J**	**1100**	**870**	**330**	**150**	**5.7**	**4.8**
m/p-Xylenes	136777-61-2	4.6	12		210 U	**1600**	**42**	66 U	**4.7**	**88**	**130 J**	**490 J**	1200 U	1200 U	**400**	**230**	**4.4**	**2.8**
o-Xylene	95-47-6	3.1	7.6		100 U	**400**	**13**	33 U	**1.5**	**22**	**33 J**	**120 J**	620 U	620 U	**100**	**51**	**1.6**	**1.1**
Not MGP Related[2]																		
1,1,1-Trichloroethane	71-55-6	1.1	3.1		100 U	**180**	1.6 U	**89**	**2.2**	**320**	**14 J**	**55 J**	**990**	620 U	**350**	**300**	0.69 U	0.65 U
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,1,2-Trichloroethane	79-00-5	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,1-Dichloroethane	75-34-3	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	**11**	7.1 U	0.69 U	0.65 U
1,1-Dichloroethene	75-35-4	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	**4.9**	6.2 U	6.2 U	620 U	620 U	**3.6**	7.1 U	0.69 U	0.65 U
1,2,4-Trichlorobenzene	120-82-1	<0.25	3.4		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,2-Dibromoethane (EDB)	106-93-4	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,2-Dichlorobenzene	95-50-1	<0.25	0.72		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,2-Dichloroethane	107-06-2	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,2-Dichloropropane	78-87-5	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,3-Butadiene	106-99-0	NA	NA		100 U	8.5 U	1.6 U	33 U	**1.0**	1.2 U	6.2 U	6.2 U	620 U	620 U	**2.1**	7.1 U	0.69 U	0.65 U
1,3-Dichlorobenzene	541-73-1	<0.25	0.6		100 U	8.5 U	1.6 U	33 U	0.70 U	**16**	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,4-Dichlorobenzene	106-46-7	0.54	1.3		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
1,4-Dioxane	123-91-1	NA	NA		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
2-Butanone (MEK)	78-93-3	7.3	16		100 U	**37**	**17**	33 U	**2.1**	**12**	**8.7**	**16**	620 U	620 U	**15**	**36**	**2.0**	**2.0**
Acetone	67-64-1	52	110		**19000**	**1500**	**1300**	330 U	**12 J**	**79**	**270 J**	**570 J**	6200 U	6200 U	**660**	**360 J**	**14 J**	**19**
Benzyl chloride	100-44-7	NA	NA		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Bromodichloromethane	75-27-4	NA	NA		100 U	**46**	1.6 U	33 U	0.70 U	**51**	6.2 U	**13**	620 U	620 U	2.0 U	**90**	0.69 U	0.65 U
Bromoform	75-25-2	NA	NA		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Bromomethane	74-83-9	<0.25	0.6		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Carbon tetrachloride	56-23-5	0.59	0.81		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Chlorobenzene	108-90-7	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Chloroethane	75-00-3	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Chloroform	67-66-3	0.54	1.4		**120**	**430**	**13**	**67**	0.70 U	**640**	**60 J**	**230 J**	**1000**	620 U	**5.8**	**2200**	0.69 U	0.65 U
Chloromethane	74-87-3	1.8	3.3		100 U	8.5 U	1.6 U	33 U	**0.73**	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
cis-1,2-Dichloroethene	156-59-2	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	**140 J**	**540 J**	**5300**	620 U	2.0 U	7.1 U	0.69 U	0.65 U
cis-1,3-Dichloropropene	10061-01-5	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Dibromochloromethane	124-48-1	NA	NA		100 U	8.5 U	1.6 U	33 U	0.70 U	**3.2**	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Ethanol	64-17-5	540	1400		1000 U	85 U	**89**	330 U	**17**	**350**	**120 J**	**340 J**	6200 U	6200 U	**260**	**190**	**32**	**21**
Trichlorofluoromethane (Freon 11)	75-69-4	5.4	17		100 U	8.5 U	1.6 U	33 U	**1.8**	**1.8**	6.2 U	6.2 U	620 U	620 U	**2.1**	7.1 U	**1.5**	**1.3**
1,1,2-Trichlorotrifluoroethane (Freon 113)	76-13-1	1.1	1.8		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	**880**	620 U	2.0 U	7.1 U	**0.69**	0.65 U
1,2-Dichlorotetrafluoroethane	76-14-2	<0.25	0.52		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Dichlorodifluoromethane (Freon 12)	75-71-8	4.1	15		100 U	8.5 U	**2.6**	33 U	**2.5**	**2.6**	6.2 U	6.2 U	620 U	620 U	3.0	7.1 U	**2.7**	**2.3**
Hexachlorobutadiene	87-68-3	<0.25	4.6		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Methyl tert-Butyl Ether	1634-04-4	5.6	27		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	**7600**	2.0 U	7.1 U	0.69 U	0.65 U
Methylene chloride (dichloromethane)	75-09-2	6.6	22		100 U	8.5 U	1.6 U	33 U	0.70 U	**6.6**	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
2-Propanol	67-63-0	NA	NA		**170**	**13**	**26**	**42**	**2.5**	**36**	**8.0**	**21**	620 U	620 U	**18**	**24**	**1.6**	**1.1**
Propene	115-07-1	NA	NA		100 U	8.5 U	1.6 U	33 U	**8.4 J**	1.2 U	6.2 UJ	**40 J**	620 U	620 U	2.0 U	**210**	0.69 U	0.65 U
Tetrachloroethene	127-18-4	1.1	2.9		100 U	**31**	1.6 U	**110**	**0.97**	**7.3**	6.2 U	6.2 U	**1000**	620 U	**2.8**	**86**	0.69 U	0.65 U
Tetrahydrofuran	109-99-9	0.35	3.3		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
trans-1,2-Dichloroethene	156-60-5	NA	NA		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	**20**	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
Trichloroethene	79-01-6	<0.25	0.48		100 U	8.5 U	1.6 U	**5800**	0.70 U	**7.8**	**750 J**	**2600 J**	**170000**	**4700**	**2.6**	**29**	0.69 U	0.65 U
Vinyl acetate	108-05-4	NA	NA		1000 U	85 U	16 U	330 U	7.0 U	12 U	62 U	62 U	6200 U	6200 U	20 U	71 U	6.9 U	6.5 U
Vinyl chloride	75-01-4	<0.25	<0.25		100 U	8.5 U	1.6 U	33 U	0.70 U	1.2 U	6.2 U	6.2 U	620 U	620 U	2.0 U	7.1 U	0.69 U	0.65 U
				TOTAL BTEX														

Notes:

All concentrations in units of Micrograms per cubic meter (ug/m3)

1 - These compounds may be related to either MGP sources or non-MGP sources, or both. MGP sources include MGP tars and petroleum feedstocks used in MGP processes, such as the carbureted water gas process. Non-MGP sources include cleaning products, floor wash and polish, vehicle exhaust, construction materials, and cigarette smoke.

2 - These compounds may be related to either MGP sources or non-MGP sources, or both. MGP sources include MGP tars and petroleum feedstocks used in MGP processes, such as the carburetted water gas process. Non-MGP sources include cleaning products, floor wash and polish, vehicle exhaust, construction materials, and cigarette smoke.

3 - These compounds were not included in the laboratory's routine target compound list. However, the laboratory searched for them as tentatively identified compounds (TICs) and reported estimated concentrations when identification criteria were met.

CEH - Center for Environmental Health.
J - Compound detected at estimated concentration
U - Compound was not detected at or above the concentration given.
NF - Compound not found when searched as TIC
NA - Not available. No data available for background concentrations of these compounds.
NJ - Result reported is presumptively present at an estimated concentration.
NYSDOH - New York State Department of Health.
a - NYSDOH, 2006. Final NYSDOH CEH Soil Vapor Intrusion Guidance. Appendix C. Table C1. Indoor Air 75th and 90th values. October, 2006.
Bold - Compound was detected at concentration shown.
Compound was detected at a concentration that exceeded its **75th Percentile** NYSDOH Background Air Concentration.
Compound was detected at a concentration that exceeded its **90th Percentile** NYSDOH Background Air Concentration.

4.0 Distribution of volatile organic compounds in soil gas

Soil gas samples were collected from a total of eight locations, which included the three collected below the building foundations described above (i.e., SSV01, SSV02 and SSV03) and five additional locations (i.e., SV01, SV02, SVO3, SV04 and SV05) in various areas of the site and surrounding properties. The soil gas sample points for two of the five, namely SV01 and SV04, were installed in landscaped areas where impervious ground cover, such as asphalt and or concrete paving, was not present and three were installed in areas covered with asphalt and or concrete paving (i.e., SV02, SV03 and SV05).

4.1 Field and analytical data

Total VOCs measured using a PID during purging of the soil gas points indicated a small variance of concentrations that ranged from 0.9 ppm at soil gas point SV03 to 9.1 ppm at soil gas point SV05. In general the concentrations of total VOCs based on field measurements did not correspond to those detected in the analytical samples. The field measurements for total VOCs are summarized in Table 1.

A total of 42 VOCs were detected in one or more soil gas samples. Of these, 20 were possible MGP-related compounds and 22 were non-MGP related. It is noted that, with the exception of VOCs detected in soil gas sample SV03, the VOCs in soil gas were moderate to high and the nature of the compounds were generally consistent with those expected where coal tar and or petroleum-related impacts are present in the subsurface. The highest concentrations of MGP-related VOCs in soil gas were detected in sample SSV01, which was collected within the central portion of MGP-impacted area of the Site. The highest concentrations of non-MGP VOCs were detected in soil gas sample SV02, which was located in the parking lot north of 190 North Water St. This parking lot was previously used as part of a commercial custom stone cutting operation and is currently used as a taxi storage and maintenance yard.

Soil vapor sample SV03 was collected outside the northwest corner of the building at 190 North Water Street and VOCs were detected in this sample. The VOCs detected here were predominantly petroleum-related and consisted primarily of substituted pentanes and hexanes at very high concentrations. Specific pentanes and their concentrations included isopentane (5,000 µg/m3), 2-methylpentane (10,000 µg/m3), 2,3-dimethylpentane (30,000 µg/m3) and 2,2,4-trimethylpentane (170,000 µg/m3). Hexane was detected a concentration of (14,000 µg/m3) and cyclohexane was present at a concentration of (16,000 µg/m3). Although these compounds can also be associated with coal tars, their predominance in this sample and the general absence of the more common MGP-related compounds, such as naphthalene, BTEX, etc. suggest that the source of these VOCs is petroleum and not coal tar. This soil vapor sample point was located in the vicinity of the large (estimated at 10,000 gallons) above ground storage tank that is used to store fuel oil for heating and hot water in the 190 North Water Street building. The pipe that delivers the fuel oil to the boiler, which is located inside the northwest corner of this building, is in the vicinity of soil vapor sampling point SV03.

The non-MGP VOCs detected in soil gas consisted primarily of chlorinated alkenes and aromatic compounds. Specifically, 15 of the 22 non-MGP compounds detected were chlorinated VOCs (CVOCs). The highest concentration of CVOCs, 170,000 µg/m^3 was detected for trichloroethene in soil gas sample SV02. Chlorinated compounds are not related to MGP residues and a source(s) for these CVOCs at the site is not known. The remaining seven non-MGP VOCs consisted of alcohols (ethanol and 2-propanol), ketones (acetone and 2-butanone), propene, 1,3-butadiene and methyl tert-butyl ether (MTBE), which is a gasoline additive.

5.0 Summary of findings

This section presents a summary of findings from the Indoor Air and Soil Gas Investigation.

5.1 Indoor air

The analytical results of the indoor air samples may be summarized as follows:

- A total of nineteen VOCs were detected in indoor air samples. Of these ten were possible MGP-related and nine were non-MGP VOCs.
- Comparison of the concentrations of the MGP-related VOCs showed that ten were detected at concentrations above their NYSDOH 75th percentile of residential indoor air background concentrations and five of these VOCs also exceeded their NYSDOH 90th percentiles.
- Comparison of the concentrations of the non-MGP-related VOCs showed that three were detected at concentrations above their NYSDOH 75th and 90th percentiles of residential indoor air background concentrations.
- Comparison of the concentrations of 14 VOCs detected in indoor air above the NYSDOH 75th percentile were several orders of magnitude lower than their respective worker guidance values (the lowest of the OSHA-PEL, NIOSH-REL, or ACGIH-TLV).

5.2 Soil gas

The analytical results of the soil gas samples may be summarized as follows:

- A total of forty-two VOCs were detected in soil gas. Of these twenty-two were possible MGP-related and twenty were non-MGP VOCs.
- While many of the VOCs detected in soil gas are possibly related to MGP residuals, they are also components of other commonly used non-MGP products and residuals, such as gasoline and fuel oil.
- The detection limits of three of the soil gas samples (SSV02 – 190 North Water Street, SV02 – 210 North Water Street (Taxi Parking Lot) and SV03 – 200 North Water Street (Outside Northwest Corner of Building) were elevated due to a high concentration of one or more compounds. At two of the locations (SSV02 and SV02), the compound(s) detected at high concentrations were not MGP-related. At the third location (SV03) the compound detected at high concentrations were for compounds that may be related to MGP residuals.
- Twenty-seven of the forty-two compounds detected in soil gas were also detected in indoor air. In order for VOCs in soil gas to potentially influence indoor air quality, they must be present at significantly higher concentrations in the soil gas beneath the concrete foundation slab than those in the corresponding air inside the building. Comparison of all the soil gas data to the indoor air data shows that seventeen compounds were found in higher concentrations in soil gas than in the associated indoor air, and that seven compounds were found at approximately the same or lower concentrations in soil gas than in indoor air. Therefore, the seventeen compounds detected in soil gas at concentrations higher than in the corresponding indoor air sample, could potentially influence indoor air quality.

6.0 Conclusions

Based on review of the indoor air and soil gas analytical data and review of the product inventory and building inspection data, the following conclusions have been reached for each address, or where appropriate, building area.

6.1 190 North Water Street (north portion)

The following conclusions have been reached for the North portion of the 190 North Water Street Property:

- The overall indoor air quality in the northern portion of 190 North Water Street is attributable to the use and or storage of products and or materials during routine current commercial operations and influence from ambient (outside) air here.

- Although several MGP-related VOCs were detected at relatively high concentrations in the soil gas here, the concrete floor slab in this building is at grade and appeared to be competent (i.e., no cracks or breaches) and is acting as a barrier to prevent or substantially minimize the potential for migration of soil gas into the building. Accordingly, the potential for soil vapor intrusion in this area of the building is considered to be low.

- The VOCs concentrations detected in the indoor air samples are well below the lowest of the OSHA-PEL, NIOSH-REL, or ACGIH-TLV.

6.2 190 North Water Street (south portion)

The following conclusions have been reached for the South portion of the 190 North Water Street Property:

- The overall indoor air quality in the northern portion of 190 North Water Street is primarily attributed to the use and/or storage of products and/or materials as part of the routine commercial operations and influence from ambient (outside) air here. In addition, since the painting and varnishing operations in the northern portion of this building are performed in the immediately adjacent room, it is possible that VOCs produced during these operations are migrating into this area of the building and thereby adversely affecting the indoor air quality here.

- Based on the overall absence of MGP-related VOCs in sub-slab soil gas and the absence of CVOCs in indoor air, despite high concentrations in corresponding soil gas, it is concluded that the potential for VOCs in soil gas to migrate into this portion of the building and adversely affect indoor air quality is very low.

- The concrete floor slab in this building is at grade, appeared to be competent (i.e., no cracks or breaches) is relatively thick and is serving as an effective barrier to reduce or eliminate the potential migration of soil gas into this area of the building.

- The VOCs concentrations detected in the indoor air samples are well below the lowest of the OSHA-PEL, NIOSH-REL, or ACGIH-TLV.

6.3 400 Main Street

The following conclusions have been reached for the 400 Main Street Property:

- Indoor air contained low concentrations of possible MGP and non-MGP related VOCs. The overall indoor air quality is generally consistent with the air quality outside the building (i.e., in ambient air). This building is situated at a busy intersection which experiences significant truck and car traffic. It is concluded that the quality of indoor air is primarily attributed to local ambient (outdoor) air (e.g., vehicle exhaust).

- Soil gas beneath 400 Main Street contains low concentrations of MGP-related VOCs and moderate to high relative concentrations of non-MGP VOCs. The non MGP VOCs are related to CVOCs (e.g., trichloroethene, tetrachloroethene, etc.) and non-chlorinated solvents (e.g., acetone).

- Based on the low concentrations of VOCs detected in indoor air and the competent concrete floor slab at grade, it is concluded that the potential for VOCs to migrate into the building and adversely affect indoor air quality here is low or non existent.

- The VOCs concentrations detected in the indoor air samples are well below the lowest of the OSHA-PEL, NIOSH-REL, or ACGIH-TLV.

6.4 Soil gas distribution

The following two conclusions pertain to the soil gas samples:

- Soil gas across much of the Site contains numerous VOCs that originated from multiple source materials. Specifically, the VOCs detected are related to MGP residues (coal tar), petroleum products (e.g., gasoline and fuel oil) and solvents (e.g., acetone and trichloroethene).

- The distribution of the various VOCs appears to be coincident with the MGP-related and non-MGP petroleum impacts that were previously delineated during the RI. The analytical data also verify the occurrence other potential source area for the non-MGP VOCs such as fuel oil storage tank and potential solvent spill areas.

7.0 Recommendations

Based on the analytical results, field screening measurements and observations made during the Indoor Air and Soil Gas Investigation, it is concluded that the potential for VOCs detected in sub-slab soil gas to migrate into the buildings investigated is low. No immediate corrective measures are warranted. However, the need to mitigate or address potential soil gas intrusion will be considered during the remedial selection stage in the management of this former MGP Site.

Attachment A

Indoor Air Quality Questionnaire and Building Inventory Field Forms

OSR – 3

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Jesse Jepitano Date/Time Prepared 6/26/08 – 11AM

Preparer's Affiliation ENSR (Envir. Consultant) Phone No. 978-589-3000

Purpose of Investigation Indoor Air + Sub-Slab Investigation

Dominic A. Perruccio
Laboratory Director

EARTH RESEARCH LABORATORIES, LLC.
Geoscience Consulting & Microscopy Services

190 North Water Street
Peekskill, New York 10566

Telephone: (914) 734 - 2119
Facsimile: (914) 734 - 1598
E-mail: dp@earthresearch.us
Website: www.earthresearch.us

1. OCCUPANT:

Interviewed: (Y) / N

Last Name: Perruccio's First Name: Dominic

Address: 190 N. Water Street

County: Westchester

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location 1 Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ✓)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial)/Multi-use
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) lab - asbestos testing

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? _____

Other characteristics:

Number of floors 1 Building age ~150yr. historical records

Is the building insulated? Y / (N) How air tight? Tight / ~~Average~~ / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	(concrete)	stone	brick
b. Basement type:	full	crawlspace	slab	other _____
c. Basement floor:	(concrete)	dirt	stone	other _____
d. Basement floor:	uncovered	(covered)	covered with carpet/painted/laminant floor tiles	
e. Concrete floor:	unsealed	(sealed)	sealed with paint	
f. Foundation walls:	poured	block	stone	other brick
g. Foundation walls:	unsealed	sealed	sealed with _____	
h. The basement is:	wet	damp	(dry)	moldy
i. The basement is:	(finished)	unfinished	partially finished	
j. Sump present?	Y (N)			
k. Water in sump?	Y / N / (not applicable)			

Basement/Lowest level depth below grade: _____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

utilities from side/overhead

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other hot water cutting unit

The primary type of fuel used is:

Natural Gas	(Fuel Oil)	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in:	Basement	Outdoors	(Main Floor)	Other_____
Air conditioning:	Central Air	(Window units)	Open Windows	None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	None
1st Floor	Office / Lab
2nd Floor	N/A
3rd Floor	↓
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / (N)

b. Does the garage have a separate heating unit? Y / N / (NA)

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / (N) / NA Please specify_____

d. Has the building ever had a fire? Y / (N) When?_____

e. Is a kerosene or unvented gas space heater present? Y / (N) Where?_____

f. Is there a workshop or hobby/craft area? Y / (N) Where & Type?_____

g. Is there smoking in the building? Y / (N) How frequently?_____

h. Have cleaning products been used recently? (Y) / N When & Type? regular office / kitchen cleaning

i. Have cosmetic products been used recently? Y / (N) When & Type?_____

j. Has painting/staining been done in the last 6 months? Y / (N) Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? (Y) / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / (N) If yes, where vented? _____

n. Is there a bathroom exhaust fan? (Y) / N If yes, where vented? _____

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: _____

Do any of the building occupants use solvents at work? (Y) / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? acetone, propanol

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) (No)
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: (Public Water) Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: (Public Sewer) Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

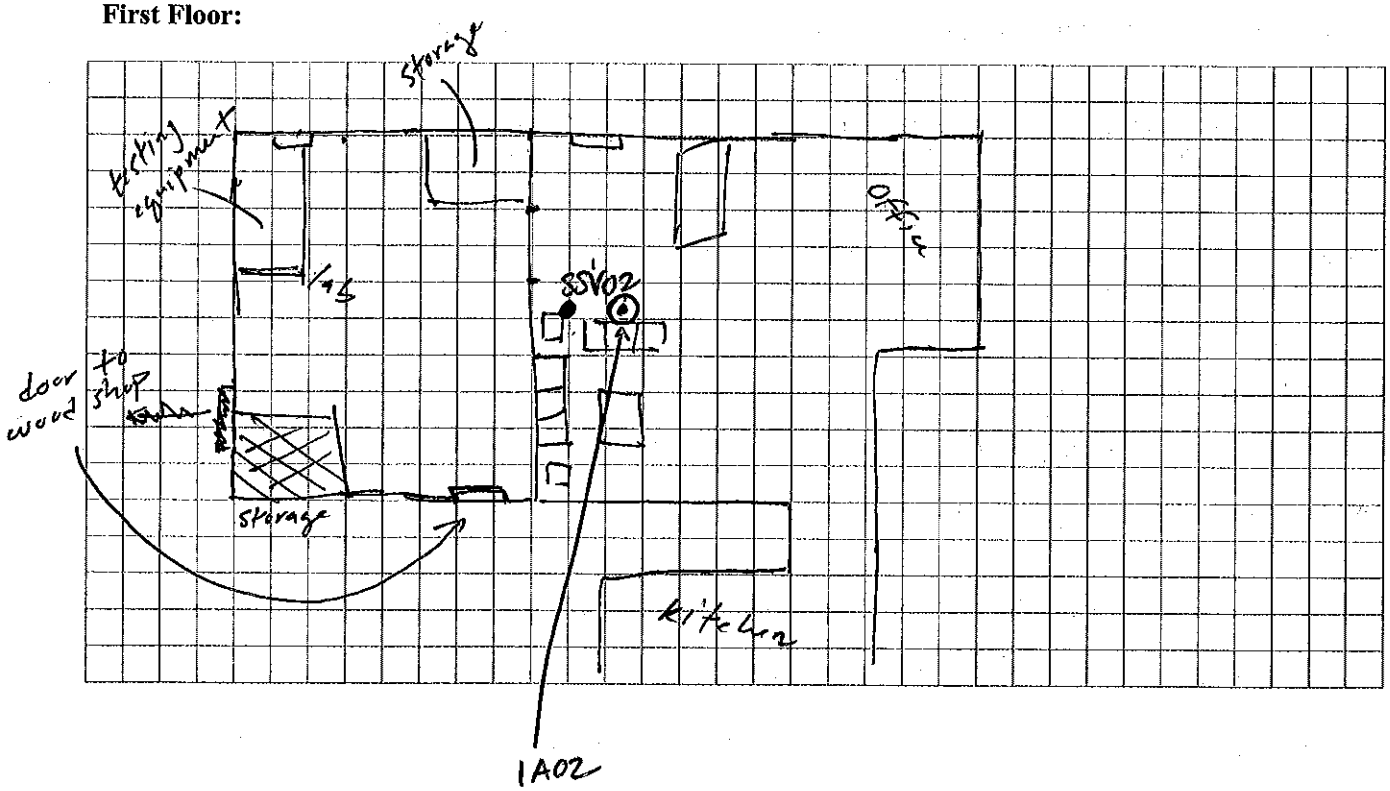
d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement: None

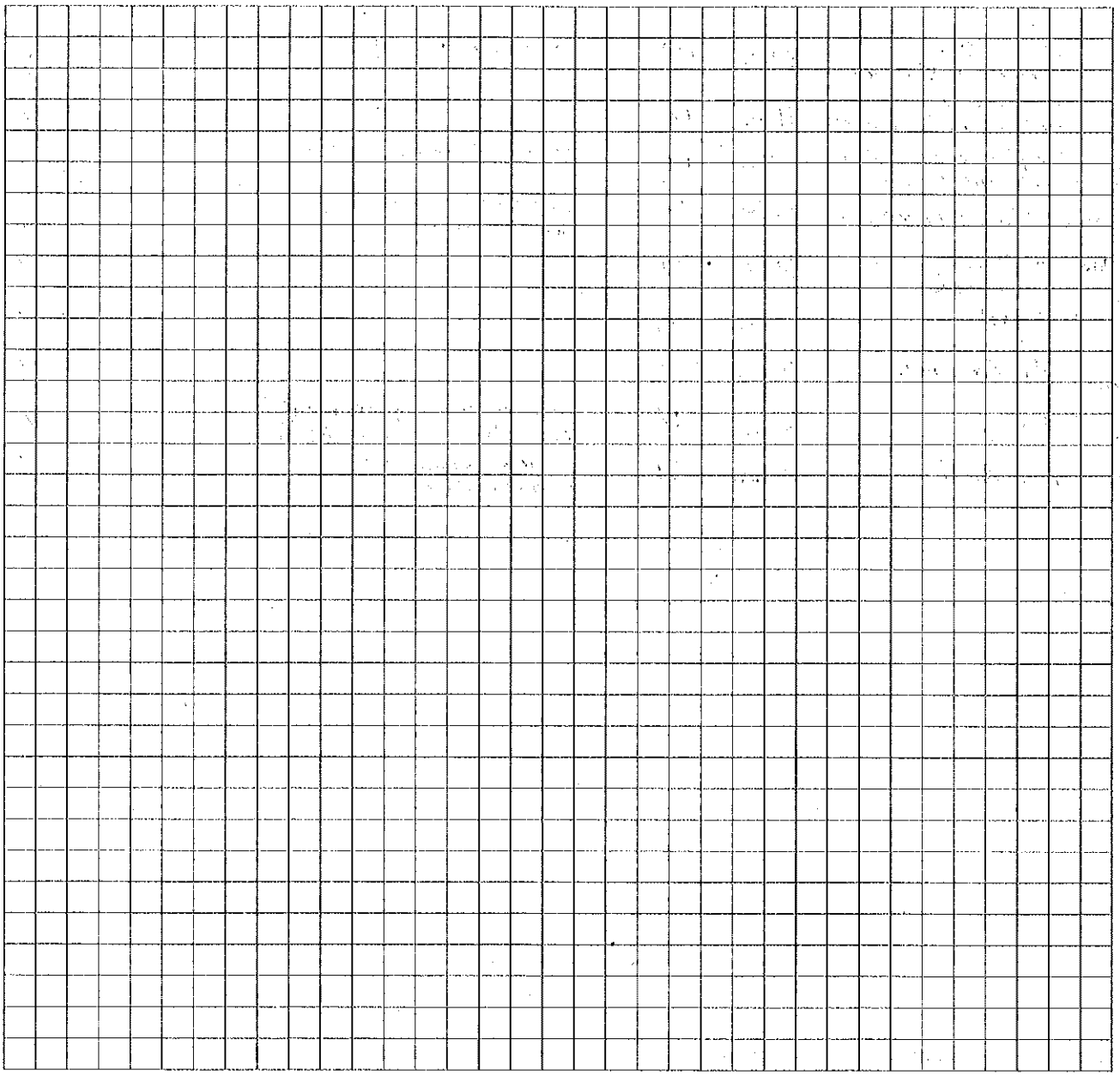
First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
office	Rust Oleum Protective Enamel	32 oz	UO	oil-based enamel		Y
office	Rust Oleum metallic Metal Finish	11 oz.	U			Y
office	Dry Lock fast plug hydraulic cement	3 lbs.	U	portland cement + lime		Y
office/kitchen	Furniture polish	12.5 oz	U	furniture polish w/ lemon oil by Power House		Y
office/kitchen	Wallboard Joint Compound	32 oz	U			Y
office/kitchen	Lysol	19 oz	U			Y
office/kitchen	Air freshener	9.7 oz	U			Y
office/kitchen	Paint	32 oz	U	Interior semi-gloss paint vinyl polymer, titanium dioxide,		Y
office	Ice Melt	12 lbs.	U	styrene acrylic polymer, ethylene glycol		Y

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Lab – testing equipment (asbestos testing)
Office
Office/kitchen

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name J. Jopitana Date/Time Prepared 6/26/08 – 9:30AM

Preparer's Affiliation ENSR (Envir. Consultant) Phone No. 978-589-3000

Purpose of Investigation Indoor Air + sub-slab investigation

1. OCCUPANT:

Interviewed: Y (N)

Last Name: Allen First Name: Tom

Address: 200 N. Water Street

County: Westchester

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location ~~1~~ 2 Age of Occupants 30-40s

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: Goldfarb First Name: Mark

Address: ~~Goldfarb~~ 190 N. Water St.

County: Westchester

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	~~Commercial~~/Multi-use
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) Wood working building

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? _____

Other characteristics:

Number of floors 1 Building age 1880 (verify site hist.)

Is the building insulated? Y / (N) How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	(concrete)	stone	brick
b. Basement type:	full	crawlspace	(slab)	other _____
c. Basement floor:	(concrete)	dirt	stone	other _____
d. Basement floor:	(uncovered)	covered	covered with _____	
e. Concrete floor:	(unsealed)	(sealed)	sealed with paint	
f. Foundation walls:	poured	block	stone	(other) brick
g. Foundation walls:	unsealed	sealed	sealed with _____	
h. The basement is:	wet	damp	(dry)	moldy
i. The basement is:	finished	unfinished	partially finished	
j. Sump present?	Y / (N)			
k. Water in sump?	Y / N / (not applicable)			

No basement, 1st floor on slab.

Basement/Lowest level depth below grade: _____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

utilities from overhead — no utilities from ground.

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	(Other) Hot water ceiling units

The primary type of fuel used is:

(Natural Gas)	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: gas WW-EH

Boiler/furnace located in:	Basement	Outdoors	(Main Floor)	Other _____
Air conditioning:	Central Air	Window units	Open Windows	(None) Doors/windows

Are there air distribution ducts present? Y / (N)

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time (Occasionally) Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	none
1st Floor	wood working shop
2nd Floor	NA
3rd Floor	↓
4th Floor	↓

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / (N)

b. Does the garage have a separate heating unit? Y / N / (NA)

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) (Y) N / NA Please specify motorcycle

d. Has the building ever had a fire? Y / (N) When? _____

e. Is a kerosene or unvented gas space heater present? Y / (N) Where? _____

f. Is there a workshop or hobby/craft area? (Y) N Where & Type? woodwork

g. Is there smoking in the building? Y / (N) How frequently? _____

h. Have cleaning products been used recently? Y / (N) When & Type? _____

i. Have cosmetic products been used recently? Y / (N) When & Type? _____

j. Has painting/staining been done in the last 6 months? (Y) / N Where & When? regularly due to wood work business

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? N/A ~~Y / N~~ If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / (N) If yes, where vented? _____

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? (Y) / N
If yes, please describe: paint + stain odors

Do any of the building occupants use solvents at work? (Y) / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? mineral spirits

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) (Unknown)
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply:	(Public Water)	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	(Public Sewer)	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

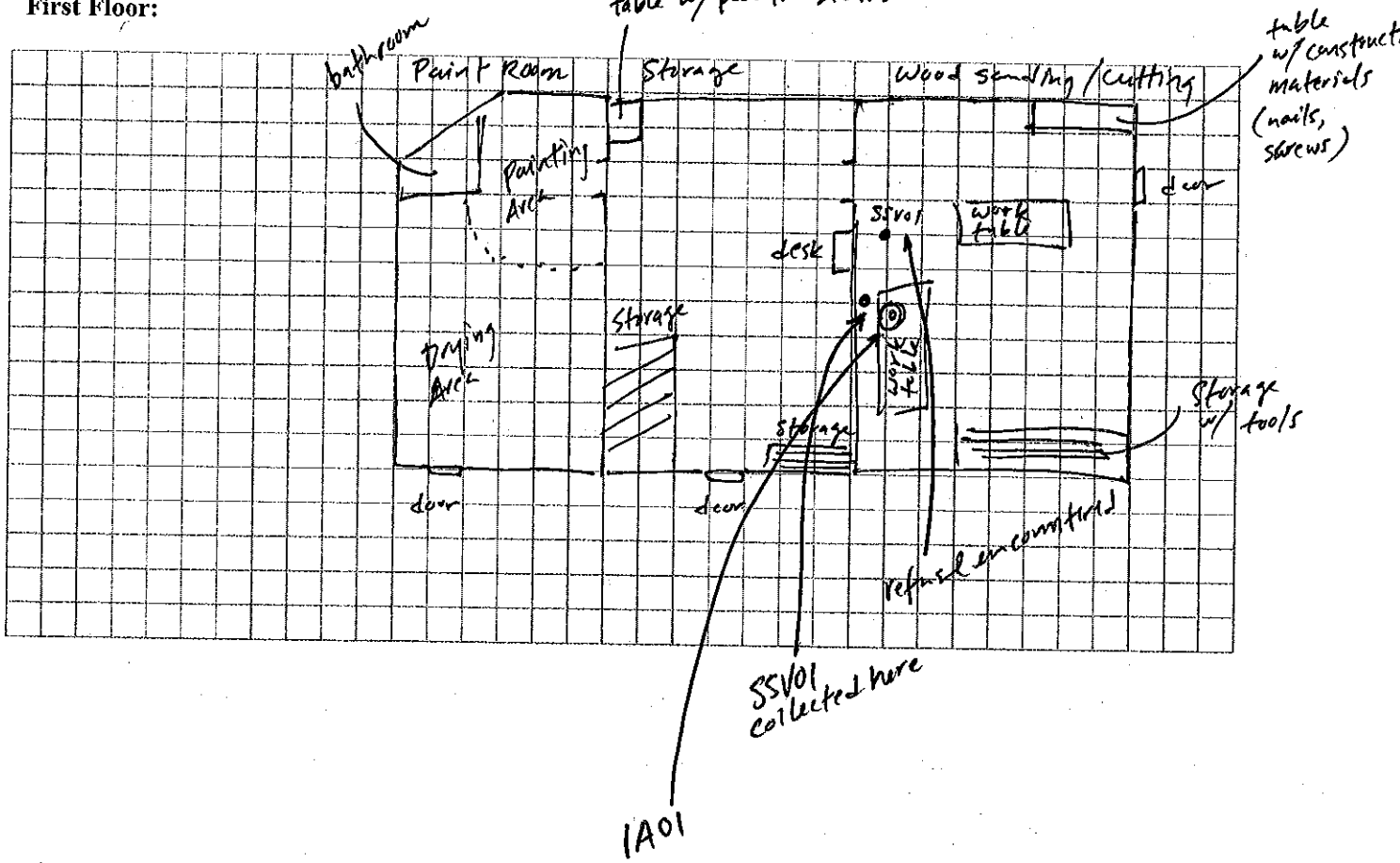
d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement: On Slab — no sub floors.

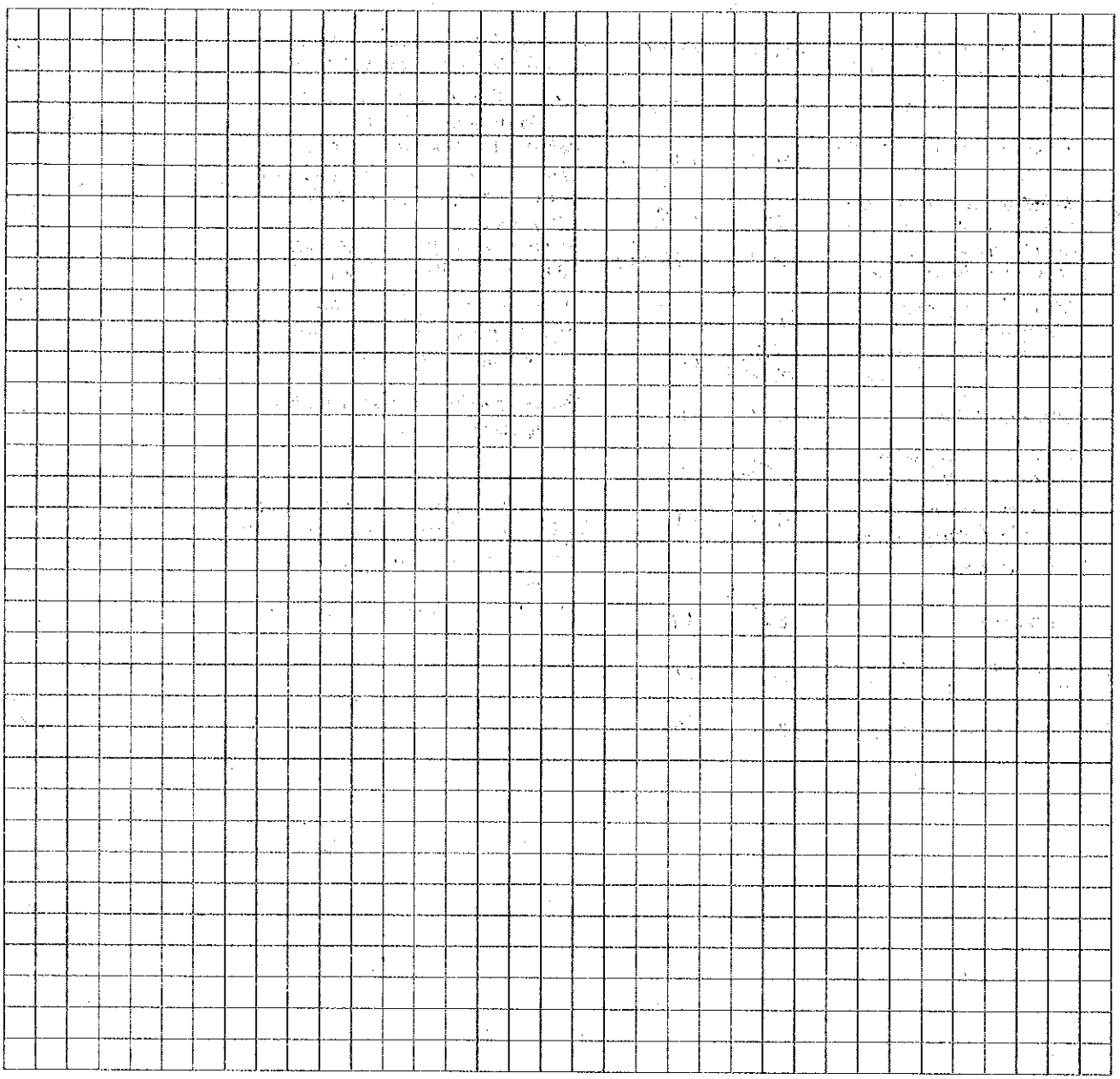
First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
WW-BR	#30 Wood finish stain + polyurethane seal	32oz	UO/U	Mini Wax (water-based wood stain) Look @ Website or contact for MSDS		Y
	↳		→	Mini Wax Co. – Saddle River NJ 800-523-9299	—	—
WW BR	Watco Danish Oil Finish	1pint	UO/U	Watco – Rust-Oleum Co. Vernon Hills, IL – watco.net		Y
WW-BR	~~Zinsser~~ Zinsser Cover stain Primer-sealer	1gal	UO/U	product #03551 – High Hide Oil Base		Y
WW-BR	Pro Finisher – water based polyurethane	1gal	UO/U	www.newparks.com for MSDS (800-225-8543) Zinsser Co.		
WW-BR	Gemini Coatings WB-0230	1gal	UO	2 Butoxethanol / 111-76-2 water-bourne acrylic satin		Y
WW-BR	White satin paint 1/16 oz.	~~1/16 oz.~~	U	latex-acrylic paint		Y
WW-BR	Mineral Spirits	1gal	U	Barr product #GKSP94006 kleanstrip.com		Y
WW-BR	Elmer's Carpenter Wood Filler	3.25oz.	U			
WW-BR	Minwax Glazing Stain (M114-0224)	13oz	U	aliphatic petroleum, alkd resin, isobutane, methanol, xylene, BTEX,		Y
	↳ Cocans		→	silica, 1-2-4 trimethylbenzene, butanol	—	—
WW-BR	WD-40	10oz	U	WD40.com for MSDS		Y
WW-BR	4-stroke motorcycle oil SAE 10W-40 SJ	32oz	U			Y
WW-GH	Contact Cement	32oz	U			✓

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

WW = Wood Working Studio
BR = (former boiler-room)
GH = ~~Greenhouse~~ former generating house

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name JESSE JAPITANA Date/Time Prepared 6/24/08 – 830AM

Preparer's Affiliation ENSR (Envir. Consultant) Phone No. 978-589-3000

Purpose of Investigation Indoor air + sub-slab investigation

1. OCCUPANT:

Interviewed: Y (N)

Last Name: _____ First Name: NONE

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: Miller First Name: Phil

Address: 400 Main St.

County: Westchester

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial/Multi-use)
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) Abandoned

Does it include residences (i.e., multi-use)? Y (N) If yes, how many? _____

Other characteristics:

Number of floors 2 Building age N/A (?)

Is the building insulated? Y (N) How air tight? Tight / Average / (Not Tight)

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

a. Above grade construction:	wood frame	(concrete)	stone	brick
b. Basement type:	full	crawlspace	(slab)	other _____
c. Basement floor:	(concrete)	dirt	stone	other _____
d. Basement floor:	uncovered	covered	covered with partial concrete/partial tile	
e. Concrete floor:	(unsealed)	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other brick
g. Foundation walls:	unsealed	sealed	sealed with _____	
h. The basement is:	wet	damp	(dry)	moldy
i. The basement is:	finished	unfinished	(partially finished)	
j. Sump present?	Y / (N)			
k. Water in sump?	Y / N / (not applicable)			

Basement/Lowest level depth below grade: _____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

sewer injecta pit (?)

6. **HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other Nat. Gas Heat Ceiling unit

The primary type of fuel used is:

(Natural Gas)	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in:	Basement	Outdoors	Main Floor	(Other) _____	SW corner of bldg.
Air conditioning:	Central Air	Window units	Open Windows	(None)	

Are there air distribution ducts present? Y / (N)

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	~~Garage~~ N/A
1st Floor	Garage
2nd Floor	Commercial Space
3rd Floor	NA
4th Floor	NA

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? (Y) N

b. Does the garage have a separate heating unit? (Y) / ~~N~~ / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / (N) / NA
Please specify_____

d. Has the building ever had a fire? Y / (N) When?_____

e. Is a kerosene or unvented gas space heater present? Y / (N) Where?_____

f. Is there a workshop or hobby/craft area? ~~Y~~ / (N) Where & Type?_____

g. Is there smoking in the building? Y / (N) How frequently?_____

h. Have cleaning products been used recently? Y / (N) When & Type?_____

i. Have cosmetic products been used recently? Y / (N) When & Type?_____

j. Has painting/staining been done in the last 6 months? Y / N Where & When? unknown

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? Y / (N) If yes, where vented? N/A

n. Is there a bathroom exhaust fan? Y / (N) If yes, where vented? N/A

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / (N)
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)
Yes, use dry-cleaning infrequently (monthly or less)
Yes, work at a dry-cleaning service

No
(Unknown)

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply:	(Public Water)	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	(Public Sewer)	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

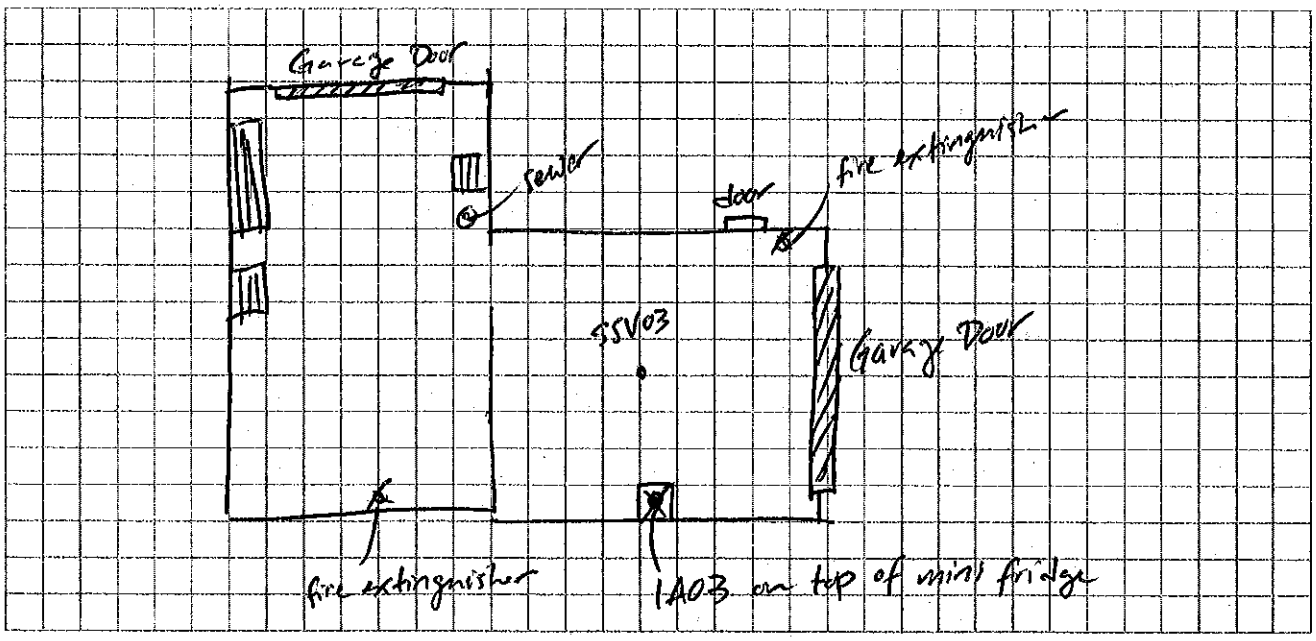
d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement: NONE

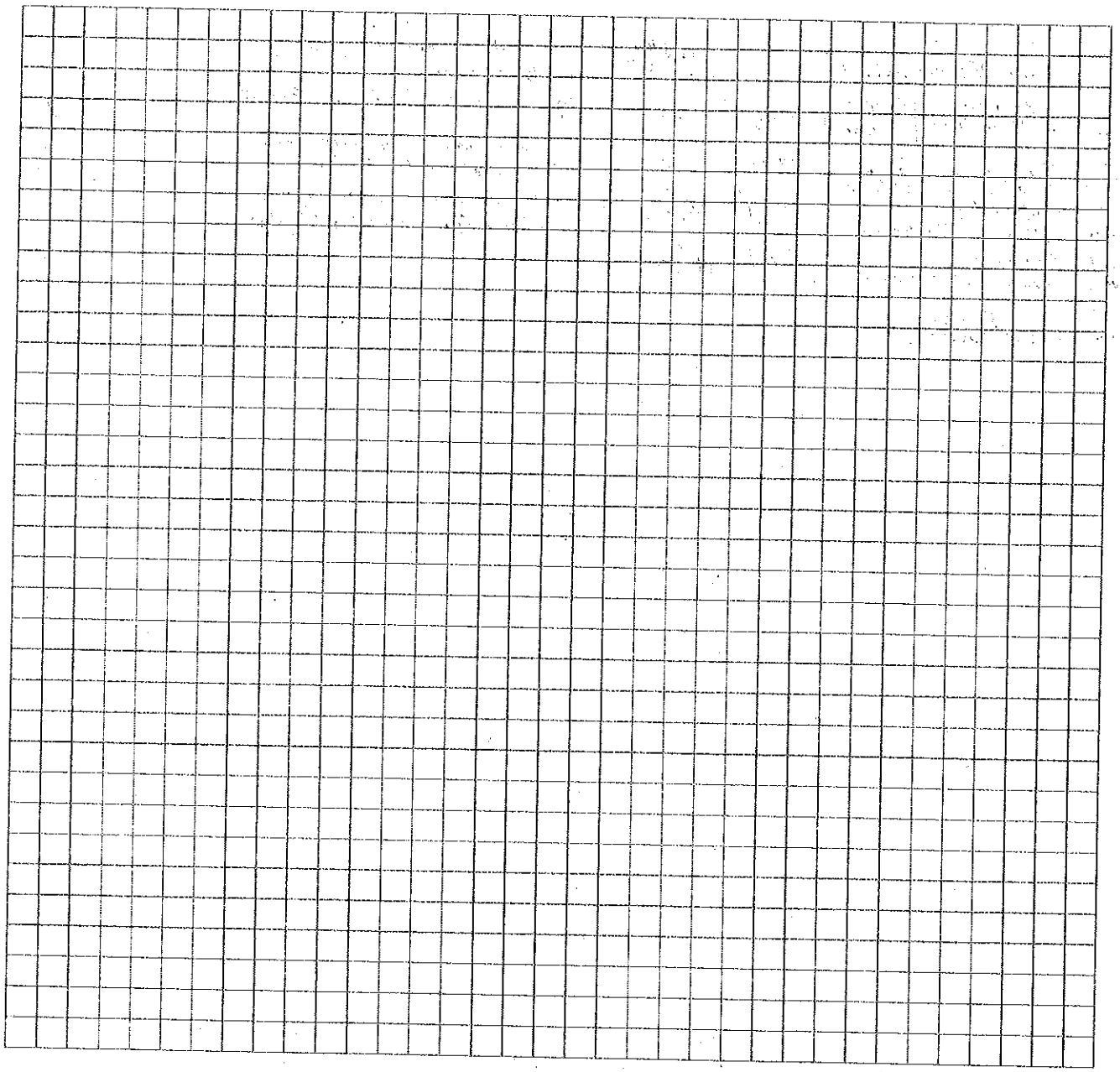
First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
Basement West Room	Fire Extinguisher		Good (Full) UO	Foray dry chemicals, mica, magnesium aluminum		Y
Basement West Room	Hoover Steam Vac / carpet detergent	64 oz.	U	anionic + nonionic surfactant		Y
Basement West Room	Tone L n' Foam Expanding Sealant	12 oz.	U	MDI, monomer, polyurethane resin, propane/isobutane		Y
Basement West Room	Auto Magic Dressing + Protectant	5 gal	U (empty)	synthetic isoparaffinic hydrocarbon, ~~Exp~~ silicone fluid, mineral spirits, dye		Y
Basement West room	Armor All Protectant wipes	17" x 9"	U (empty)			Y
Basement East room	Fire Extinguisher Ansul Sentry					

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Attachment B

Field Sampling Records

ENSR

Location ID: SSV01

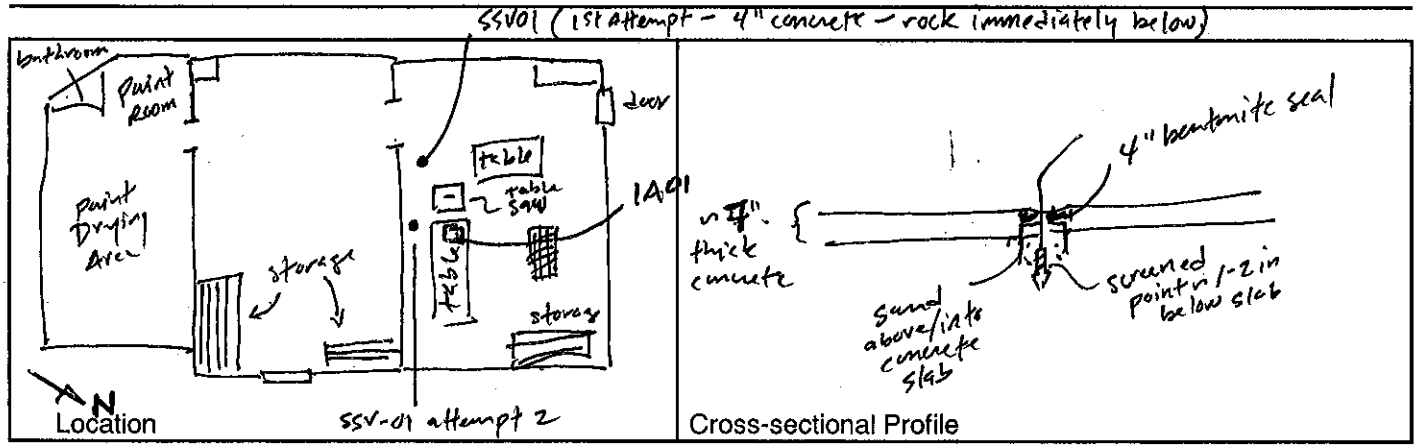
Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01869-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: Overcast 70s

Date: 6/26/08
Time: Start 1800 am/pm
Finish 2033 am/pm
Collector(s): J. Lapitana + B. McCarthy

1. LOCATION SKETCH/DESCRIPTION

Wood working area where sanding, cutting, and assembly of wood furniture



2. SAMPLE COLLECTION

a. Method: Sub-slab vapor sample w/ SUMMA canister (2-hr. regulator)

b. Field Testing Equipment used

Make	Model	Serial Number
PID w/ 10.6 eV lamp	MiniRAE	110-01211
Bosch Hammer Drill — KVA probe system		

Time	PID Reading (ppm)	He Reading
1050 (install)	0.8 ambient	NA
start purge	0.8	↓
end purge	1.5	

Highest PID Reading =

Time	PID Reading	He Reading

3. SAMPLE COLLECTION:

Method: 2-hr flow controlled SUMMA

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SSV01	1	6L SUMMA can	TO-15 Extended list	

Notes:

Signature _____ Date 6/26/08

ENSR

Location ID: SSV02

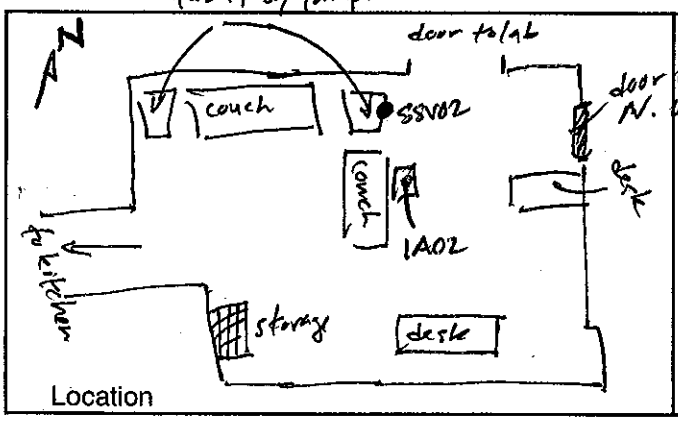
Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01869-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: Overcast 70s

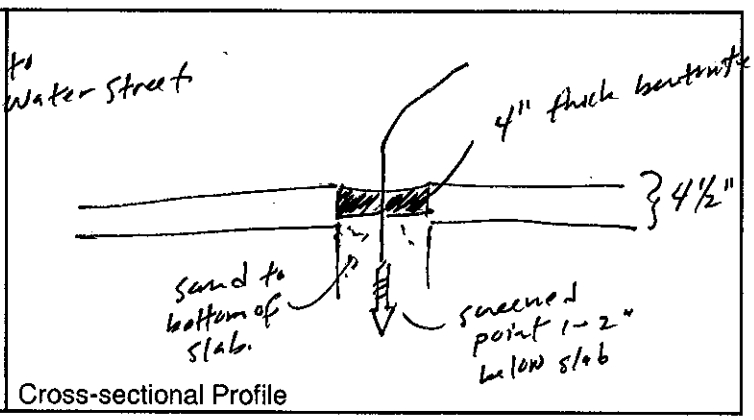
Date: 6/26/08
Time: Start 1758 am/pm
Finish 2008 am/pm
Collector(s): J. Jopitanna + B. McCarthy

1. LOCATION SKETCH/DESCRIPTION

under carpeting under a side table in the office of a laboratory



Location



Cross-sectional Profile

2. SAMPLE COLLECTION

a. Method: sub-slab vapor sampling w/ 6L SUMMA canister (2-hr. regulator)

	Make	Model	Serial Number
b. Field Testing Equipment used	PID w/ 10.6 eV lamp	MiniRAE	
	Bosch Hammer Drill	KIA probe sys.	

Time	PID Reading (ppm)	He Reading
1130 @ start	0-8 ambient	NA
start purge	1.2	↓
end purge	1.2	

Highest PID Reading =

Time	PID Reading	He Reading

3. SAMPLE COLLECTION:

Method: 2-hr flow controlled SUMMA

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SSV02	1	6L SUMMA	TO-15 Extended list	

Notes:

Signature _____ Date 6/26/08

ENSR

Location ID: SSV-03

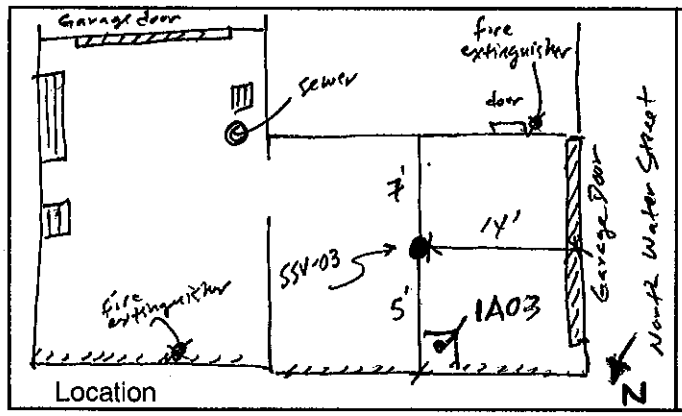
Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01869-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: Overcast 70s°F Rain Expected

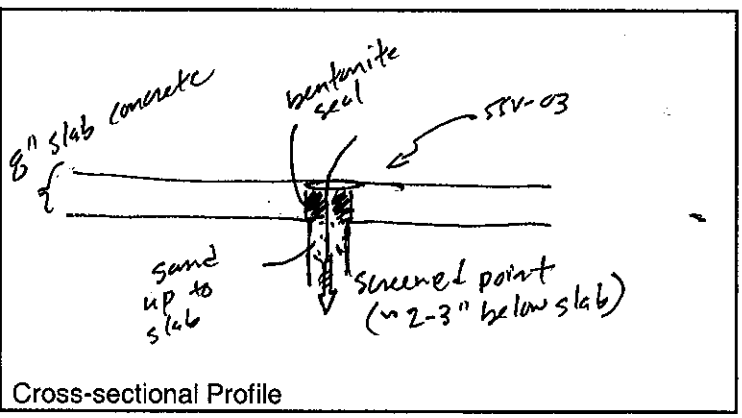
Date: 6/24/08
Time: Start 1805 am/pm
Finish 2022 am/pm
Collector(s): J. Lapiterre + B. McCarthy

1. LOCATION SKETCH/DESCRIPTION

center of garage



Location



Cross-sectional Profile

2. SAMPLE COLLECTION

a. Method: 6L-slab vapor sample w/ 6L SUMMA can (2-hr. regulator)

b. Field Testing Equipment used	Make	Model	Serial Number
	PID w/ 10.6 eV lamp	MiniRAE	110-01211
	Bosch Hammer Drill	KVA probe system	

Time	(ppm) PID Reading	He Reading
0930 @ install	0-0.8 ambient	NA
start purge	0.5	↓
end purge	0.5	

Highest PID Reading =

Time	PID Reading	He Reading

3. SAMPLE COLLECTION: Method: 2-hr flow controlled SUMMA

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SSV03	1	6L SUMMA	TO-15 Extended List	

Notes:

Signature _____ Date _____

ENSR

Location ID: SV01

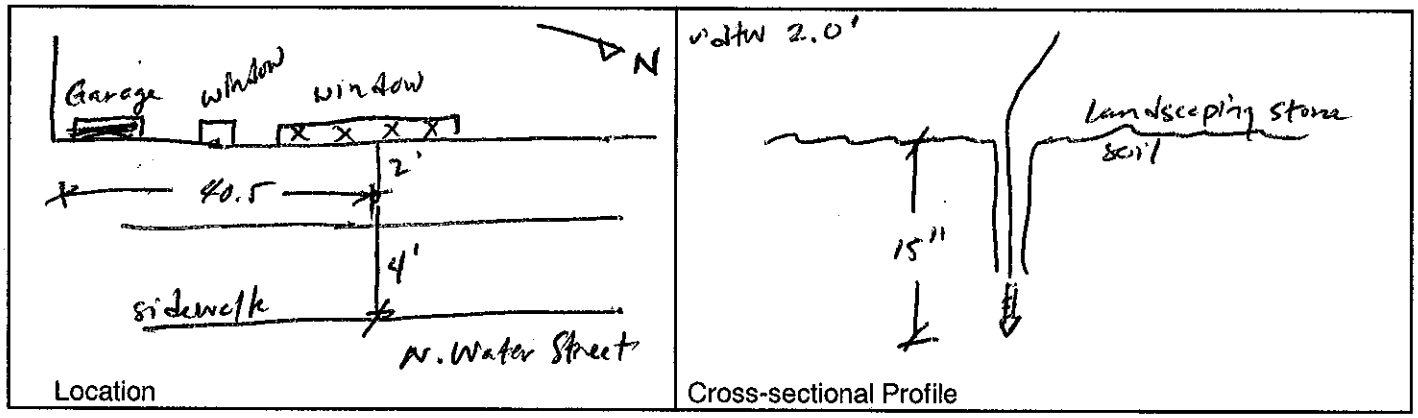
Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01824-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: 70-80°F Humid

Date: 6/26/06
Time: Start 1750 am/pm
Finish 2042 am/pm
Collector(s): J. Jopitana + B. McCarthy

1. LOCATION SKETCH/DESCRIPTION

In landscaped area west of sidewalk ~ 2' away from building wall



2. SAMPLE COLLECTION

a. Method: Soil Vapor sampling w/ 6L SUMMA canister (2-hr. flow regulator)

b. Field Testing Equipment used

Make	Model	Serial Number
MiniRAE PID w/ 10.6eV lamp		110-012111
Dielectric Helium Detector	MGD-2002	041044
Bosch Hammer Drill	KVA probe system	

Time	PID Reading (ppm)	He Reading
install	0.4	NR
start purge	4.6	NR
end purge	2.2	NR

Highest PID Reading =

Time	PID Reading	He Reading

3. SAMPLE COLLECTION: Method: 2-hr flow controlled SUMMA

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SV01	1	6-L SUMMA canister	TO-15 Extended list w/ Helium	
Dup	1	6L SUMMA	TO-15 w/ Helium	

Notes: Helium detector not used. Helium enriched environment created for tracer test.

Signature _____ Date 6/26/06

ENSR

Location ID: SV02

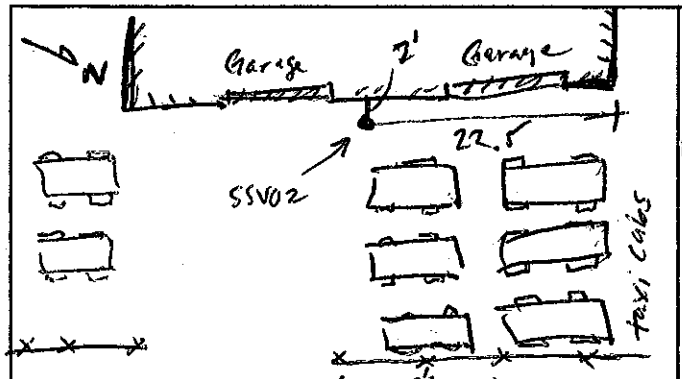
Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01869-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: 70-80s°F Humid

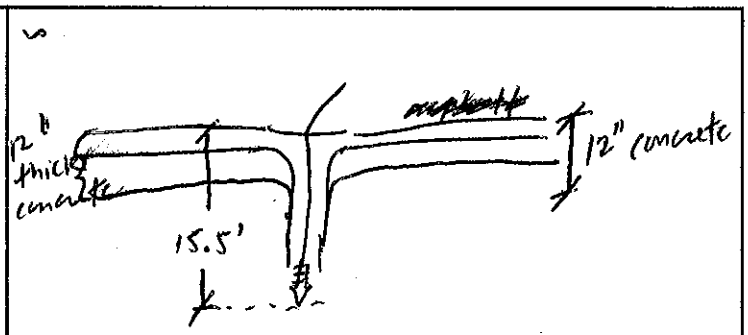
Date: 6/26/08
Time: Start 1752 am/pm
Finish 2050 am/pm
Collector(s): J. Jupiter + B. McCarthy

1. LOCATION SKETCH/DESCRIPTION

Adjacent to vehicle garage in a lot occupied by taxi cabs.



Location av. water Street



Cross-sectional Profile

2. SAMPLE COLLECTION

a. Method: Soil vapor sampling

b. Field Testing Equipment used

	Make	Model	Serial Number
	PID w/ 10.6eV lamp	MiniRAE	110-01211
	Helium Detector	Dielectric MGD-2002	041044
	Bosch Hammer Drill	KVA probe system	

Time	PID Reading	He Reading
install	9.7	NA
start purge	6.2	↓
end purge	7.2	

Time	PID Reading	He Reading

Highest PID Reading =

3. SAMPLE COLLECTION:

Method: 2-hr flow regulation Summa

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SV02	1	6-L Summa	TO-15 Extended List	

Notes:

Signature _____ Date 6/26/08

ENSR

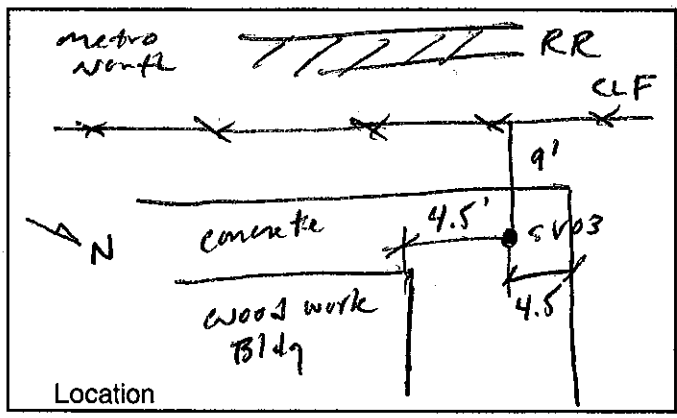
Location ID: SV03

Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01869-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: 70-80s °F Humid

Date: 6/26/06
Time: Start 1756 am/pm
Finish 2031 am/pm
Collector(s): J. Jopitano + B. McCarthy

1. LOCATION SKETCH/DESCRIPTION



Location

Probe advanced 15" BGS

Cross-sectional Profile

2. SAMPLE COLLECTION

a. Method: Soil vapor sample

b. Field Testing Equipment used

	Make	Model	Serial Number
	PID w/ 10.6eV lamp	MiniRAE	110-01211
	Helium Detector	Dielectric MGD-2002	041044
	Bosch Hammer Drill	KVA probe system	

Time	PID Reading (ppm)	He Reading
install	1.3	NA
start purge	0.7	↓
end purge	0.9	

Time	PID Reading	He Reading

Highest PID Reading =

3. SAMPLE COLLECTION:

Method: 2-hr flow controlled SUMMA

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SV03	1	6L SUMMA canister	TO-15 Extended List	

Notes:

Signature _____ Date 6/26/06

ENSR

Location ID: SV04

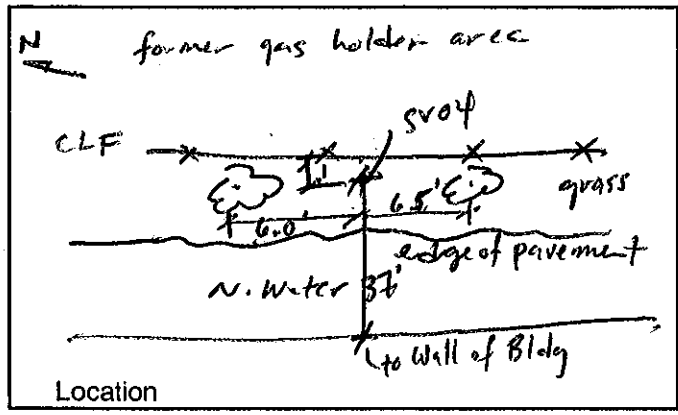
Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01869-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: 70-80°F Humid

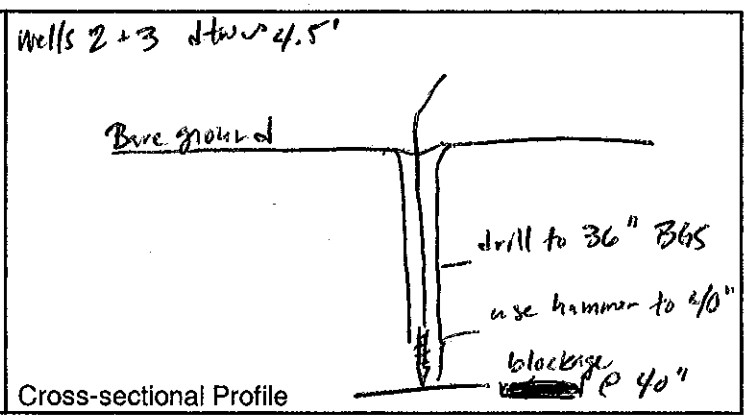
Date: 6/26/08
Time: Start 1801 am/pm
Finish 2005 am/pm
Collector(s): J. Jopitone & B. McCarthy

1. LOCATION SKETCH/DESCRIPTION

In grass/bare ground area btwn. 2 trees ~ 1' west of chain link fence



Location



Cross-sectional Profile

2. SAMPLE COLLECTION

a. Method: Soil vapor sampling

b. Field Testing Equipment used

	Make	Model	Serial Number
	PID w/ 10.6 ev lamp	MiniRAE	110-01211
	Helium Detector	Dielectric MGD-2002	041044
	Bosch Hammer Drill	KVA probe system	

Time	PID Reading (ppm)	He Reading
install	1.0	NR
start purge	5.4	NR
end purge	1.4	NR

Time	PID Reading	He Reading

Highest PID Reading =

3. SAMPLE COLLECTION:

Method: 2-hr flow controlled summa

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SV04	1	6L summa can	TO-15 Extended List w/ helium	

Notes: Setup for helium tracer gas. Field meter presenting suspect data. Influenced perhaps by humidity. Did not record measurements. Sampling performed in helium enriched environment. Will analyze samples for helium

Signature _____ Date 6/26/08

ENSR

Location ID: SV05

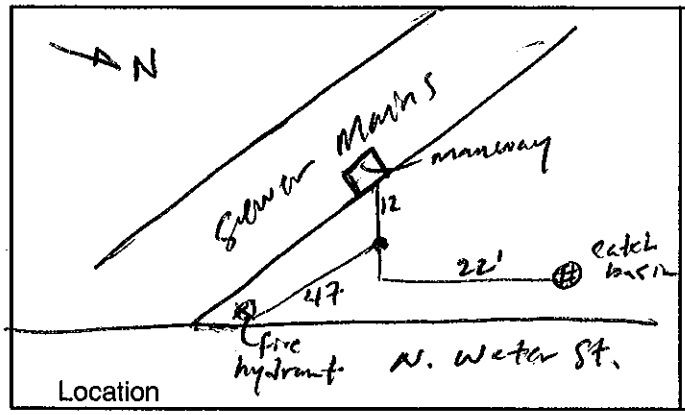
Soil Vapor and Air Sample Collection Record

Client: Consolidated Edison of New York
Project No: 01869-169-0400
Site Location: Pemart Ave, Peekskill, NY
Weather Conds: 70-80°F Humid

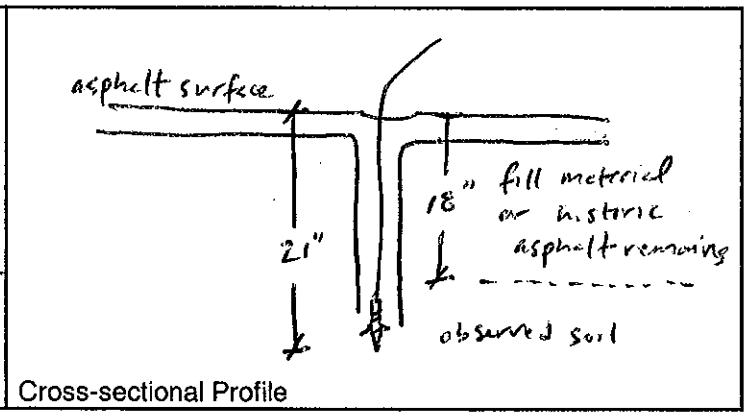
Date: 6/26/08
Time: Start 1807 am/pm
Finish 2013 am/pm
Collector(s): J. Jupitano + B. McCarthy

1. LOCATION SKETCH/DESCRIPTION

Asphalt paved parking lot near 1950 coal pile area. Location just west of force sewer main.



Location



Cross-sectional Profile

2. SAMPLE COLLECTION

a. Method: Soil vapor sampling

b. Field Testing Equipment used

Make	Model	Serial Number
PID w/ 10.6 ev lamp	MiniRAE	110-01211
Bosch Hammer Drill — KVA probe system		

Time	PID Reading	He Reading
install	0.4	NA
start purge	NR	↓
end purge	NR	

Highest PID Reading =

Time	PID Reading	He Reading

3. SAMPLE COLLECTION:

Method: 2-hr flow controlled SUMMA

Sample ID	No. of Containers	Container type	Analysis Req.	Time
SV05	1	6L SUMMA can	TO-15	

Notes:

Signature _____ Date 6/26/08

Attachment C

Data Usability Summary Report

Prepared for:
Consolidated Edison Company of New York
New York, New York

Pemart Avenue Former MGP

Peekskill, New York

Remedial Investigation Report

Data Usability Summary Report

ENSR Corporation
September 2008
Document No.: 01869-169-0700

ENSR | AECOM

Attachment C - Data Usability Summary Report

This Data Usability Summary Report (DUSR) includes a discussion of the usability of the data collected in the month of July, 2008 during the site investigation at the former MGP site located at Pemart Avenue, Peekskill, NY. A total of 14 air samples were collected and analyzed for a project specific list of volatile organic compounds (VOCs) using EPA Method TO-15.

The data were with reference to the *"USEPA Region II Validation Standard Operating Procedure for Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15 (SOP# HW-31, Revision #4),"* October, 2006, and Method TO-15. Laboratory control limits and/or method criteria were used as appropriate as the basis for data review actions. Data qualifiers applied were consistent with the Region 2 guidance and consisted of the following:

Qualifier	Definition
J	Estimated
U	Not detected
UJ	Not detected, estimated
JN	Tentative identification, estimated
R	Rejected

In addition, ENSR applied a "NU" qualifier to identify results for compounds which were searched as tentatively identified compounds (TICs), but were not found.

Elements reviewed in preparing the DUSR were consistent with those specified in the NYSDEC guidance (NYSDEC, 2001).

In general, the data were found to be valid, and may be considered usable for decision making purposes. No data were rejected.

Selected data points were qualified as estimated (J/UJ) due to QC nonconformances. All QC nonconformances are summarized below.

Holding Times

Holding times were met for all analyses. No data were qualified on this basis.

Quality Control

Quality control (QC) elements were reviewed for compliance with acceptance criteria.

Calibrations – Initial and continuing calibrations met acceptance criteria for all analyses. No data were qualified on this basis.

Blanks – Blanks associated with the samples included one trip blank, laboratory method blanks, and canister blanks for those samples collected in individually certified canisters (IA01, IA02, IA03, OD-01U, OD-02D, and Trip Blank). No target compounds were detected in any of these blanks. No data were qualified on the basis of blank contamination.

Surrogates – Surrogate recoveries were acceptable for all analyses. No data were qualified on this basis.

Internal Standards – All internal standards fell within acceptable retention time windows for all analyses and all internal standard recoveries were acceptable. No data were qualified on this basis.

Laboratory Duplicates – Laboratory duplicate analyses were performed at the required frequency and all acceptance criteria were met. No data were qualified on this basis.

Field Duplicates – Samples SV01 and DUP were collected as the field duplicate pair.

The results for detected compounds and their RPDs are tabulated below. The RPDs were not calculable (NC) for propene, carbon disulfide, trans-1,2-dichloroethene, bromodichloromethane, 2,2,4-trimethylpentane, n-butyl acetate, and 1,2,4-trimethylbenzene since these compounds were not detected in sample SV01. With the exception of propene, these compounds were detected in the field duplicate at concentrations that were <5x the sample quantitation limit (SQL); therefore, no data validation actions were taken on this basis. For propene, the concentration was found to be >5x the SQL; therefore, the positive and nondetect propene results in SV01 and DUP were qualified as estimated (J and UJ, respectively). The positive results for ethanol, acetone, cis-1,2-dichloroethene, chloroform, 1,1,1-trichloroethane, benzene, trichloroethene, n-heptane, toluene, n-octane, ethylbenzene, m,p-xylenes, o-xylene, n-nonane, alpha-pinene, and d-limonene in samples SV01 and DUP were qualified as estimated (J) due to the exceeded RPD criterion. Precision was deemed acceptable for the remaining results since the RPD criteria were met.

Compound	SV01 (ppbv)	DUP (ppbv)	RPD
Ethanol	64	180	95
Acetone	110	240	74
2-Propanol	3.3	8.6	89
2-Butanone	2.9	5.6	64
cis-1,2-Dichloroethene	36	140	118
n-Hexane	2.6	6.3	83
Chloroform	12	47	119
1,1,1-trichloroethane	2.5	10	120
Benzene	2.4	7.3	101
Trichloroethene	140	480	110
n-Heptane	1.8	5.5	101
Toluene	30	98	106
n-Octane	14	47	108
Ethylbenzene	9.4	34	113
m,p-Xylenes	31	110	112
o-Xylenes	7.5	29	118
n-Nonane	4.7	18	117
Alpha-pinene	2.2	7.9	113
d-Limonene	4.5	19	123
Propene	6.2 U	23	NC
Carbon disulfide	2.0 U	2.8	NC
trans-1,2-Dichloroethene	1.6 U	5.1	NC
Bromodichloromethane	0.93 U	2.0	NC
2,2,4-Trimethylpentane	1.3 U	2.3	NC
n-Butyl acetate	1.3 U	2.7	NC
1,2,4-Trimethylbenzene	1.3 U	2.2	NC
Criteria: RPD≤ 50; if both the sample and duplicate are >5x the SQL. The RPD criterion is doubled if both the sample and duplicate results are <5x the SQL.			

Laboratory Control Samples – Laboratory control samples (LCSs) were associated with all analyses. The recoveries of the LCSs associated with all analyses met the acceptance criteria in all cases.

Detection Limits and Sample Results

The samples were analyzed at minor dilutions due to the requirement to pressurize the canisters prior to analysis. Sample results and sample quantitation limits were adjusted accordingly. The following additional dilutions were performed due to the reasons listed.

Sample ID	Dilution Factor	Reason for Dilution
SV02	2	Trichloroethene exceeded the calibration range in the undiluted analysis.
SV03	10	Isooctane exceeded the calibration range in the undiluted analysis.
SSV03	5	Ethanol, chloroform, and 1,1,1-trichloroethane exceeded the calibration range in the undiluted analysis.
IA02	4	Acetone exceeded the calibration range in the undiluted analysis.
SV04	3	
SV05	5	Chloroform exceeded the calibration range in the undiluted analysis.
DUP	5	Trichloroethene exceeded the calibration range in the undiluted analysis.

The laboratory noted that there was a non-target compound present in the following samples that interfered with the accurate quantitation of the results listed below. These positive results in these samples were qualified as estimated (J). These results may be biased high as a result of this matrix interference.

IA03: Propene and acetone
OD-01U: Acetone
SV05: Acetone
DUP: Propene

Tentatively Identified Compounds (TICs)

Isopentane, indene, indan, thiophene, 2-methylpentane, 2,3-dimethylpentane, and tetramethylbenzene isomers are compounds that are not included in the laboratory's standard compound list. Therefore, ENSR requested that these additional compounds be analyzed as TICs.

The tentative identification of these compounds was determined by searching each sample for the compound's characteristic spectra. If no chromatographic peak displaying the compound specific spectra existed, then the TIC was reported as not detected. A sample specific reporting limit is not determinable for these nondetected results due to the lack of an associated standard analysis. These sample results were qualified as a nondetected tentative identification (NU). In the case of a positive hit, the laboratory calculated an estimated quantitation based on an assumed response factor of 1.00. These positive results were qualified as an estimated value (J) with a tentative identification (N).

Completeness of Deliverables

The data were reported as NYSDEC ASP Category B deliverables. No significant omissions or deficiencies were noted.

Conclusions

In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified as estimated (J) based on certain QC nonconformances as described in the sections above.