WALDEN ENVIRONMENTAL ENGINEERING

Sent via email to joseph.jones@dec.ny.gov

August 5, 2016
IMPL0115.4

Mr. Joseph Jones
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A
625 Broadway, 12th Floor
Albany, New York 12233-7015

Re: Soil Vapor Intrusion Investigation Report
Former Imperial Cleaners Site (VCP #V-00244-1)
218 Lakeville Road, Lake Success, NY

Dear Mr. Jones:

Walden Environmental Engineering, PLLC (Walden) is submitting the attached *Soil Vapor Intrusion Investigation Summary Report* for the above referenced site on behalf of the property owner, 218 Lakeville Acquistion LLC. This report summarizes the results of the February 2016 SVI investigation completed in accordance with the NYSDEC approved *Soil Vapor Intrusion Investigation Work Plan* (Work Plan; Walden, December 2015). The summary report presents the SVI investigation sampling data and recommendations based on the results.

Please call Nora Brew or me if you have any questions.

Very truly yours,
Walden Associates

Joseph M. Heaney, III P.E.
Principal

Nora M. Brew, P.E.
Project Manager

cc: R. Schaufeld, Esq.

Z:\IMPL0115 (Imperial Cleaners)\IMPL0115.4 - SVI Investigation\SVI Summary Report\FINAL REPORT\Transmittal Letter 8.5.2016.doc

Soil Vapor Intrusion Investigation
Summary Report

at

Former Imperial Cleaners Site
218 Lakeville Road
Lake Success, New York 11042

NYSDEC VCP Site #V-00244-1

August 2016

Prepared for:

Mr. Joseph Jones
Project Manager
NYSDEC
Remedial Bureau A, 11th Floor
625 Broadway
Albany, New York 12233

Walden Environmental Engineering
16 Spring Street
Oyster Bay, NY 11771
Phone: (516) 624-7200
Fax: (516) 624-3219
www.Walden-Associates.com

Walden Environmental Engineering

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

Walden Environmental Engineering, PLLC (Walden) has prepared this report to summarize the results of the February 2016 soil vapor intrusion (SVI) investigation conducted for the Former Imperial Cleaners site located at 218 Lakeville Road, Lake Success, New York (the "Site"). The Site is currently managed under the New York State Voluntary Cleanup Program (VCP) as VCP #V-00244-1 subject to New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Agreement #D1-0001-01-03. This agreement was amended on July 28, 2015 to reflect a change in property ownership, establishing 218 Lakeville Acquisition LLC as the Site Owner and remedial party.

The SVI investigation was conducted to address the potential for vapor intrusion from contaminated soil vapor and potential impacts on indoor air quality at the Site and neighboring off-site properties. The SVI investigation was completed in accordance with the NYSDEC approved *Soil Vapor Intrusion Investigation Work Plan* (Work Plan; Walden, December 2015) which was developed in accordance with the guidelines set forth in NYSDEC *DER-13: Strategy for Evaluating Soil Vapor Intrusion at Remedial Sites in New York* (issued October 18, 2006) and *NYSDOH: Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (dated October 2006). The field work included the collection of sub-slab vapor, indoor air, and outdoor air samples.

A brief site description and the objectives of the SVI investigation are presented below. Section 2 describes the SVI investigation field work conducted at the Site and neighboring properties. Section 3 summarizes the SVI investigation sampling results. Section 4 presents conclusions and recommendations based on the SVI investigation results.

1.1 Site History and Previous Investigations/Remediation

The Site location is illustrated on Figure 1. The Site is a commercial center with a one-story building occupying approximately 4,250 square feet, with one active tenant (Tobacco Plaza, Ltd.) and three vacant spaces as shown on Figure 2. The basement of the on-site building has concrete block walls and a poured concrete floor slab. Note that there is a perched water table underlying the site at approximately 30 feet below grade, while the water table is located approximately 150 feet below land surface.

A release of tetrachloroethylene (PCE) at the Site was first noted in 1995. The PCE contamination was suspected to originate from floor drains within the space occupied by a dry cleaner (Imperial Cleaners) at that time and from leaching pools and drywells around the property. The site investigation and remediation work described below was

conducted by the previous owners of the Site as required by NYSDEC and NYSDOH under the VCP.

A site investigation was conducted to identify source areas and determine the extent of contaminated soil and groundwater at the Site. Contaminated sediments were removed from the source areas (dry wells, an interior floor drain and leaching pools) to the extent possible without undermining the structures. Post-excavation soil sampling results indicated that volatile organic compounds (VOCs) remained in the subsurface following the source area removal actions. A soil vapor extraction (SVE) system was installed to remove VOC vapors remaining in the soil and improve soil and groundwater quality. The SVE system began operating in 2001(refer to Appendix A for details on the SVE system). A soil, soil gas, groundwater and indoor air monitoring program was implemented to track the reductions in VOC concentrations achieved by operation of the SVE system. The SVE system was shut down several years ago when on-site soil sampling results indicated that the SVE system had successfully reduced soil contaminant concentrations to below the NYSDEC TAGM 4046 Recommended Cleanup Objectives.

1.2 SVI Sampling Objectives

Representatives from NYSDEC, 218 Lakeville Acquisition LLC (the new property owner) and Walden met on-site on September 17, 2015 to evaluate Site conditions and discuss previous sampling investigations, potential redevelopment of the Site and the work required to achieve VCP site closure. Based on this meeting and subsequent discussions, the Work Plan was developed detailing the additional on-site and off-site sampling to be conducted to evaluate potential indoor air quality impacts related to SVI and support development of appropriate site closure/management recommendations for NYSDEC and NYSDOH review and approval.

The SVI sampling was conducted during the 2015-2016 heating season in accordance with the NYSDEC-approved Work Plan as discussed in Section 2.

2 SVI INVESTIGATION FIELD WORK

The SVI sub-slab sampling point installation was conducted on February 16-17, 2016. Sub-slab vapor, indoor air and outdoor air samples were collected over a 24-hour sampling period from February 17-18, 2016. The field work and sampling activities are described below.

2.1 Interior Inspection

Pre-sampling interior inspections were performed to identify potential vapor intrusion pathways and to determine appropriate sub-slab and indoor air sampling locations. The Site and off-site properties were inspected to evaluate the physical layout and to identify conditions or materials stored and/or used that may affect or interfere with the sampling or interpretation of the sampling results. Consideration was given to factors such as access for installation/sampling purposes, interior uses at the Site, foundation/floor slab installation and conditions, heating/ventilation/mechanical system operation, and utility layout/breaches.

The indoor air quality questionnaire and building inventory sheet provided in the NYSDOH SVI guidance was completed prior to sampling. Copies of the completed questionnaire for the on-site building and off-site properties are provided in Appendix B of this report.

To reduce the potential for interference and dilution effects of samples, the Site tenants and off-site property owners were notified in advance of sampling to ensure that the occupants avoided the following activities within 24 hours prior to sampling wherever possible (per NYSDOH *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, October 2006, p. 33):

- Opening any windows, fireplace dampers, openings or vents;
- Operating ventilation fans unless special arrangements are made;
- Smoking in the building;
- Painting;
- Using a wood stove, fireplace or other auxiliary heating equipment (e.g., kerosene heater);
- Operating or storing automobile in an attached garage;
- Allowing containers of gasoline or oil to remain within the house or garage area, except for fuel oil tanks;
- Cleaning, waxing or polishing furniture, floors or other woodwork with petroleum or oil-based products;

- Using air fresheners, scented candles or odor eliminators;
- Engaging in any hobbies that use materials containing volatile chemicals;
- Using cosmetics including hairspray, nail polish, nail polish removers, perfume/cologne, etc.;
- Lawn mowing, paving with asphalt, or snow blowing;
- Applying pesticides;
- Using building repair or maintenance products, such as caulk or roofing tar; and
- Bringing freshly dry-cleaned clothing or furnishings into the building.

2.2 Sampling Locations

The SVI investigation samples were collected from the general locations defined in the NYSDEC-approved work plan. The sampling locations were selected on February 11, 2016 following an inspection of each space and cleared based on a private utility mark-out, physical access and tenant/owner approval. Refer to Figure 2 for the sampling locations.

Sub-slab vapor sampling points were placed in locations with a minimal potential for ambient air infiltration from floor penetrations such as cracks, floor drains, utility perforations, sumps, etc. All penetrations observed were sealed prior to sample collection.

2.2.1 On-site Locations

Sub-slab vapor and indoor air samples were collected in pairs (at each sub-slab sampling location, a corresponding indoor air sample was collected concurrently) from four locations in the basement of the on-site building at 218 Lakeville Road as follows:

- Beneath the former dry cleaners space (SS-1 and IA-1)
- Beneath Tobacco Plaza (in the unfinished area on the west side of the space) (SS-2 and IA-2)
- Two locations beneath the former delicatessen space (this basement area is divided into two sections; one sampling location in each section) (SS-3 and IA-3; SS-4 and IA-4)

A duplicate sub-slab vapor sample (SS-9) was collected from one of the on-site basement sampling locations. Similarly, a duplicate indoor air sample (IA-9) was also collected from an on-site basement location.

Two outdoor air samples (AA-1 and AA-2) and one duplicate (AA-3) were collected outside the on-site building concurrently with the sub-slab and indoor air samples to obtain samples representative of ambient (background) conditions at the site. The final

outdoor air sampling locations were selected in the field and sited upwind (AA-1) and downwind (AA-2 and duplicate AA-3) of the on-site sampling locations (dependent upon the wind direction observed at the time of sampling).

2.2.2 Off-site Locations

The off-site sampling was conducted at the same time as the on-site sampling to achieve contemporaneous analytical results. Pairs of sub-slab vapor and indoor air samples were collected per the Work Plan in the lowest level of three off-site properties as follows:

- 2 University Place (SS-5 and IA-5)
- 4 University Place (SS-6 and IA-6)
- 220 Lakeville Road (SS-7 and IA-7)

The owner of 216 Lakeville Road ("De-Liceful" rear cottage) would not allow a sub-slab vapor sampling probe to be installed inside this building because there was no way to avoid damaging the floors by installing a sub-slab vapor sampling probe as specified in the approved Work Plan. Walden contacted NYSDEC and NYSDOH on February 11, 2016 regarding this issue and the State approved the following modification to the sampling locations at this off-site property:

- A surrogate soil vapor sample (SS-8) was collected outside the 216 Lakeville Road cottage in the asphalt paved area on the west side of the building. A hole was drilled through the pavement adjacent to the cottage and a sampling probe was installed to collect a vapor sample from the soil below using the same setup specified in the Work Plan for indoor sub-slab vapor sample collection.

- The indoor air sample (IA-8) was collected inside the 216 Lakeville Road cottage from a location near the outdoor surrogate soil vapor sampling location.

2.3 Sub-slab Sampling Probe Installation

Permanent recessed sub-slab vapor sampling probes were installed in accordance with NYSDOH SVI guidance and as described in the Work Plan. At each location, a small diameter hole (approximately one inch) was drilled through the concrete floor slab and into sub-slab material approximately two (2) inches below the bottom of the floor slab. Concrete and soil cuttings were removed from the hole. A stainless steel sampling probe was installed to no greater than two (2) inches into the sub-slab material. The top of the probe was finished with a recessed brass plug and the implant was sealed with cement. For sampling purposes, a threaded fitting connected to Teflon-lined tubing were inserted

into the sampling port for connection to a Summa® canister. The sub-slab sampling probes in the on-site building (SS-1, SS-2, SS-3, SS-4 and SS-9) and the surrogate soil vapor probe outside the 216 Lakeville Road cottage (SS-8) were finished at the surface with 4-inch steel manhole covers. The sub-slab probes in the other three off-site properties (SS-5, SS-6 and SS-7) were finished with brass fittings and sealed to the surface with hydraulic cement.

2.3.1 Tracer Gas Monitoring

Walden performed tracer gas monitoring per the NYSDOH SVI guidance to verify the integrity of the sub-slab vapor probe seals prior to sample collection. Plastic sheeting was placed around the sampling probes and sealed around the edges to create an adequate surface seal to prevent outdoor air infiltration. Helium tracer gas was introduced under the plastic sheeting through a small opening to enrich the atmosphere in the immediate vicinity of the sampling probes with the tracer gas. A portable helium monitoring device, MGD-2002 Helium Leak Detector, was used to analyze a soil vapor sample for the helium tracer gas to confirm the integrity of the probe seals before vapor samples were collected in 6-liter Summa® canisters.

2.4 Sample Collection

Sub-slab vapor, indoor air and outdoor air samples were collected over a 24 hour period in laboratory provided and individually certified clean 6-liter Summa® canisters with regulators as described in the Work Plan. The Summa® canisters were placed adjacent to each sub-slab sampling port and at each indoor and outdoor air sampling location. Where sub-slab vapor samples were collected, tee fittings were used to connect the Summa® canister tubing to the sampling port tubing, with the third leg of the tee connected to a purge pump. In addition, the ground surface was sealed in advance to prevent ambient air infiltration during purging and collection of sub-slab vapor samples. The weather conditions were noted at the time of sampling (wind speed and direction, precipitation, outdoor temperature, barometric pressure, etc.).

At each sub-slab sampling location, a corresponding indoor air sample was also collected. The indoor air samples were collected at approximately the same sampling locations as the sub-slab sampling locations and at a height of approximately three (3) feet above the floor to represent breathing zones, per NYSDOH Guidance. Similarly, the upwind and downwind outdoor air samples were collected at a height of approximately three (3) to five (5) feet above the ground.

Prior to and immediately after sampling at each point, a pressure gauge was used to check each Summa® canister for vacuum, and the vacuum pressure was recorded. A regulator was used to keep flow rates during purging and sampling during the 24-hour sampling period below 0.2 liters per minute as specified by the NYSDOH SVI guidance.

After the sampling was completed, the Summa® canisters were labeled with the site name, the Walden job number, sample location and identification, date, time, sampler's initials, and the parameter(s) for analysis. The samples were transported to the laboratory in such a manner as to avoid container damage during transportation and to minimize the possibility of cross-contamination. The samples were delivered via courier under the appropriate Chain-of-Custody protocol.

2.5 Sample Analysis and Reporting

The Summa® canisters were submitted to Phoenix Environmental Laboratories, Inc. of Manchester, CT, a NYSDOH ELAP certified laboratory, for analysis. The soil vapor and air samples were analyzed for VOCs in accordance with USEPA Method TO-15 with the analytical detection limits set forth in the NYSDOH guidance document. All sample data packages submitted by the analytical laboratory were reported in conformance with the NYSDEC ASP Superfund-CLP, Category B deliverable requirements applicable to the method utilized.

3 EVALUATION OF SVI INVESTIGATION SAMPLING RESULTS

Walden reviewed the SVI results in accordance with the NYSDOH SVI Guidance. This guidance document lists the air guideline values (AGVs) that NYSDOH has established for methylene chloride, trichloroethylene (TCE) and PCE. (Although AGVs have also been developed for PCBs and dioxin, these compounds are not contaminants of concern at the Site and were not included in the laboratory analyses conducted for this project.) AGVs only apply to concentrations of these VOCs in indoor and outdoor air.

The State of New York does not have any standards, criteria or guidance values for concentrations of volatile chemicals in subsurface vapors, so the sub-slab vapor concentrations cannot be compared to any regulatory threshold values. However, the sub-slab vapor concentrations factor into the decision matrices contained in the NYSDOH SVI guidance. The SVI decision matrices consider the concentrations of PCE, TCE, carbon tetrachloride, 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride detected in indoor air samples and sub-slab vapor samples collected concurrently at the same location. The matrices recommend actions intended to address soil vapor intrusion exposures based on the relationship between the sub-slab vapor and corresponding indoor air concentrations at a given sampling location.

For analytes that do not have AGVs and are not considered in the NYSDOH SVI decision matrices, the NYSDOH SVI guidance Appendix C (*Volatile Organic Chemicals in Air – Summary of Background Databases*) was referenced for typical background concentrations of these compounds published in USEPA's 2001 Building Assessment and Survey Evaluation (BASE) database. When developing BASE, USEPA collected indoor and outdoor air samples at randomly selected office and commercial buildings using Summa® canisters.

The analytical data from the February 2016 SVI investigation are summarized in Table 1. Table 2 summarizes the SVI data decision matrix comparison and notes the actions recommended based on the decision matrices contained in the NYSDOH SVI guidance document. A copy of the laboratory analytical report is attached as Appendix C. A Data Usability Summary Report (DUSR), which was completed in accordance with DER-10, is provided in Appendix D.

3.1 Summary of Results

3.1.1 General Discussion of Results

Most of the VOCs detected in the sub-slab samples, soil vapor samples, indoor air samples, and outdoor air samples are not considered by the NYSDOH decision matrices and do not have NYSDOH AGVs. These compounds have a number of commercial uses

in consumer products, building materials, or furnishings. The majority of the detected concentrations of these compounds fall within or near the range of background concentrations listed in the USEPA BASE database as noted in Table 1. These analytes were also detected at various concentrations in both the outdoor upwind (AA-1) and downwind (AA-2 and duplicate AA-3) air samples. Because there are no health based standards or decision criteria for these VOCs, they are not evaluated further in this report.

3.1.2 NYSDOH Decision Matrix Evaluation

The results discussed below are limited to the compounds included in the NYSDOH SVI decision matrices. Refer to Table 2 for the NYSDOH decision matrix comparison.

Carbon Tetrachloride

- No AGV established for this compound
- Carbon tetrachloride was detected at low concentrations (less than 0.60 $\mu g/m^3$) in each of the indoor air samples and one of the vapor samples (the surrogate sub-slab sample, SS-8 at 216 Lakeville Road). This compound was also detected at similar concentrations in the upwind and downwind ambient air samples, so the carbon tetrachloride reported for the indoor air samples can be considered representative of background conditions.
- All reported concentrations of this compound were the low end of the typical ranges listed in the BASE database for indoor and outdoor air.
- Based on the carbon tetrachloride concentrations reported for the sub-slab vapor and indoor air samples collected at all locations, NYSDOH Decision Matrix 1 recommends *"Take reasonable and practical actions to identify source and reduce exposures."*

1,1,1-Trichloroethane

- No AGV established for this compound
- 1,1,1-TCA was only detected in the surrogate soil vapor sample (SS-8) collected outside the cottage at 216 Lakeville Road, at a concentration at the low end of the typical range listed in the BASE database for indoor air.
- None of the other sub-slab vapor, indoor air or outdoor air samples contained detectable concentrations of 1,1,1-TCA.
- Based on the 1,1,1-TCA concentrations reported for sub-slab vapor and indoor air samples collected at all locations, NYSDOH Decision Matrix 2 recommends *"No further action."*

Trichloroethene

- None of the indoor air samples contained TCE concentrations above the 2 $\mu g/m^3$ AGV for this compound. Note that NYSDOH lowered the AGV for TCE in August 2015 from 5 $\mu g/m^3$ to 2 $\mu g/m^3$ and developed a recommended immediate action level of 20 $\mu g/m^3$ for this compound.
- TCE was not detected in the outdoor ambient air samples.
- Based on the TCE concentrations reported for sub-slab vapor and indoor air samples, NYSDOH Decision Matrix 1 recommends the following:
  - At 216 Lakeville Road and 220 Lakeville Road: *"No further action"*
  - At 2 University Place and the former dry cleaners space at 218 Lakeville Road: *"Monitor"*
  - At the 218 Lakeville Road tobacco shop: *"Monitor/Mitigate"*
  - At 4 University Place and the former deli at 218 Lakeville Road: *"Mitigate"*

Tetrachloroethene

- Note that NYSDOH lowered the AGV for PCE in September 2013 from 100 $\mu g/m^3$ to 30 $\mu g/m^3$. The recommended immediate action level for PCE was also lowered from 1,000 $\mu g/m^3$ to 300 $\mu g/m^3$ at this time.
- None of the indoor air samples contained PCE concentrations above the 300 $\mu g/m^3$ recommended immediate action level for this compound. The PCE concentration reported for the indoor air sample collected at 4 University Place (IA-6) was slightly above the AGV for this compound (36 $\mu g/m^3$ PCE detected in IA-6 vs. 30 $\mu g/m^3$ AGV).
- Minimal concentrations of PCE (less than 0.5 $\mu g/m^3$) were detected in the outdoor ambient air samples.
- Based on the PCE concentrations reported for sub-slab vapor and indoor air samples, NYSDOH Decision Matrix 2 recommends the following:
  - At 216 Lakeville Road: *"No further action"*
  - At 220 Lakeville Road: *"Monitor"*
  - At 2 University Place, 4 University Place and all sampling locations at 218 Lakeville Road: *"Mitigate"*

1,1-Dichloroethene

- No AGV established for this compound
- 1,1-DCE was not detected in any of the sub-slab vapor, indoor air or outdoor air samples, therefore NYSDOH Decision Matrix 2 recommends *"No further action"* with respect to this compound.

Cis-1,2-Dichloroethene

- No AGV established for this compound
- Cis-1,2-DCE was not detected in any of the indoor air or outdoor air samples.
- This compound was detected in sub-slab vapor samples collected at 218 Lakeville Road and 4 University Place.
- Based on the cis-1,2-DCE concentrations reported for sub-slab vapor and indoor air samples collected at all locations, NYSDOH Decision Matrix 2 recommends the following:
    - At 2 University Place, 216 Lakeville Road, 220 Lakeville Road and the former dry cleaners space and tobacco shop at 218 Lakeville Road: *"No further action"*
    - At 4 University Place and the former deli at 218 Lakeville Road: *"Monitor"*

Vinyl Chloride

- No AGV established for this compound
- Vinyl chloride was not detected in any of the sub-slab vapor, indoor air or outdoor air samples, therefore NYSDOH Decision Matrix 1 recommends *"No further action"* with respect to this compound.

3.2 Data Usability Summary Report (DUSR)

A Data Usability Summary Report (DUSR) completed in accordance with DER-10 is provided in Appendix D.

4 CONCLUSIONS & RECOMMENDATIONS

4.1 Conclusions

The SVI sampling results confirm that indoor air quality is acceptable within the basement of 218 Lakeville Road and the lowest levels of the neighboring off-site properties located at 216 Lakeville Road, 220 Lakeville Road, 2 University Place based on the AGVs established by NYSDOH as described in Section 3. While the PCE concentration detected in the indoor air sample (IA-6) at 4 University Place exceeded the lower AGV established in September 2013 (36 $\mu g/m^3$ PCE detected in IA-6 vs. 30 $\mu g/m^3$ AGV), this result is one order of magnitude below NYSDOH's 300 $\mu g/m^3$ recommended immediate action level for PCE. Although VOCs were detected in the sub-slab samples beneath the buildings, the occupants of these properties have not been exposed to health risks associated with vapors in the underlying soil.

The sub-slab sampling results revealed that vapors (mainly PCE and breakdown products TCE and cis-1,2-DCE) attributable to the historic release of VOCs at the Former Imperial Cleaners Site remain in the subsurface. While the SVE remedial system at 218 Lakeville Road removed VOCs and reduced concentrations to levels acceptable to NYSDEC and NYSDOH, the current SVI sampling results show that VOC concentrations have rebounded since the SVE system was shut down. This rebound is likely due to the low permeability clay layer and perched water table located approximately 30 feet below grade in this area, creating subsurface conditions which have trapped VOC vapors in the tight pore spaces and possibly on top of the perched water.

Based on a comparison of the target compound concentrations reported for the sub-slab and indoor air samples to the concentration ranges compared in the NYSDOH decision matrices, mitigation is recommended for 218 Lakeville Road, 2 University Place and 4 University Place to address potential soil vapor intrusion impacts and prevent exposure to VOCs in indoor air. The decision matrix comparison indicates that monitoring is recommended to ensure that residual VOCs do not impact indoor air at 220 Lakeville Road; no action is required at 216 Lakeville Road.

4.2 Recommendations

The following actions are recommended based on the SVI investigation results:

- Install sub-slab depressurization (SSD) systems at 218 Lakeville Road, 2 University Place and 4 University Place to prevent VOC vapor migration into the buildings.

- The SSD system design will specify fans and piping required to draw vapors from beneath the building slabs at each property to create an adequate vacuum to control the sub-slab VOC vapors and prevent vapors from entering the buildings to avoid indoor air quality impacts.
- SSD systems will be designed and installed to minimize construction/operating impacts on off-site properties to the extent possible.

- A full round of SVI sampling will be conducted during the Winter 2016-2017 heating season (November 15, 2016 through March 31, 2017) following the same procedures implemented for the February 2016 sampling. All locations sampled in February 2016 will be re-sampled to evaluate sub-slab and indoor air quality. The sampling results will be compared to determine the reductions in subsurface VOC vapor concentrations achieved by the SSD systems and to demonstrate the effectiveness of these systems. If supported by the monitoring data, the SSD systems will continue operating to prevent soil vapor intrusion.

Design plans/specifications and an operation/monitoring plan for the SSD systems will be developed and submitted to NYSDEC and NYSDOH under separate cover for review and approval if the State concurs with this recommendation.

TABLES

FORMER IMPERIAL CLEANERS SITE
218 LAKEVILLE ROAD
LAKE SUCCESS, NY

VCP SITE #V-00244-1

TABLE 1
SUMMARY OF SVI INVESTIGATION SAMPLING RESULTS

					218 Lakeville Road (Former Dry Cleaners Space)						218 Lakeville Road (Tobacco Shop)			
					Indoor Air Concentration (µg/m3)				Sub-slab Vapor Concentration (µg/m3)		Indoor Air Concentration (µg/m3)		Sub-slab Vapor Concentration (µg/m3)	
Analyte	CAS #	NYSDOH Air Guideline Value (µg/m3)	USEPA BASE Indoor Air 90th Percentile Conc (µg/m3)	USEPA BASE Outdoor Air 90th Percentile Conc (µg/m3)	IA-1	Q	IA-9 (Duplicate)	Q	SS-1	Q	IA-2	Q	SS-2	Q
1,1,1,2-Tetrachloroethane	630-20-6				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,1,1-Trichloroethane	71-55-6		20.6	2.6	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
1,1,2,2-Tetrachloroethane	79-34-5				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,1,2-Trichloroethane	79-00-5		<1.5	<1.6	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
1,1-Dichloroethane	75-34-3		<0.7	<0.6	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,1-Dichloroethene	75-35-4		<1.4	<1.4	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,2,4-Trichlorobenzene	120-82-1		<6.8	<6.4	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,2,4-Trimethylbenzene	95-63-6		9.5	5.8	< 1.00	U	< 1.00	U	13.1		< 1.00	U	17.7	
1,2-Dibromoethane(EDB)	106-93-4		<1.5	<1.6	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
1,2-Dichlorobenzene	95-50-1		<1.2	<1.2	< 1.00	U	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U
1,2-Dichloroethane	107-06-2		<0.9	<0.8	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,2-Dichloropropane	78-87-5		<1.6	<1.6	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,2-Dichlorotetrafluoroethane	76-14-2				< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,3,5-Trimethylbenzene	108-67-8		3.7	2.7	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,3-Butadiene	106-99-0		<3.0	<3.4	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,3-Dichlorobenzene	541-73-1		<2.4	<2.2	< 1.00	U	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U
1,4-Dichlorobenzene	106-46-7		5.5	1.2	< 1.00	U	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U
1,4-Dioxane	123-91-1				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
2-Hexanone(MBK)	591-78-6				< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
4-Ethyltoluene	622-96-8		3.6	3	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
4-Isopropyltoluene	99-87-6				< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
4-Methyl-2-pentanone(MIBK)	108-10-1		6	1.9	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Acetone	67-64-1		98.9	43.7	6.65	S	5.6	S	70.3	S	7.24	S	24.9	S
Acrylonitrile	107-13-1				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Benzene	71-43-2		9.4	6.6	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Benzyl chloride	100-44-7		<6.8	<6.4	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Bromodichloromethane	75-27-4				< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Bromoform	75-25-2				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Bromomethane	74-83-9		<1.7	<1.6	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Carbon Disulfide	75-15-0		4.2	3.7	< 1.00	U	< 1.00	U	12.6		< 1.00	U	< 9.99	U
Carbon Tetrachloride	56-23-5		<1.3	0.7	0.5		0.58		< 2.50	U	0.5		< 2.50	U
Chlorobenzene	108-90-7		<0.9	<0.8	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Chloroethane	75-00-3		<1.1	<1.2	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Chloroform	67-66-3		1.1	0.6	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	46.3	
Chloromethane	74-87-3		3.7	3.7	1.21		1.43		< 10.0	U	1.41		< 10.0	U
Cis-1,2-Dichloroethene	156-59-2		<1.9	<1.8	< 1.00	U	< 1.00	U	396		< 1.00	U	244	
cis-1,3-Dichloropropene	10061-01-5		<2.3	<2.2	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Cyclohexane	110-82-7				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Dibromochloromethane	124-48-1				< 1.00	U	< 1.00	U	< 9.96	U	< 1.00	U	< 9.96	U
Dichlorodifluoromethane	75-71-8		16.5	8.1	2.36		2.62		< 9.98	U	2.59		< 9.98	U
Ethanol	64-17-5		210	57	69.1		81.5	E	21.5	S	25.4		< 10.0	U
Ethyl acetate	141-78-6		5.4	1.5	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Ethylbenzene	100-41-4		5.7	3.5	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Heptane	142-82-5				< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Hexachlorobutadiene	87-68-3		<6.8	<6.4	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Hexane	110-54-3				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Isopropylalcohol	67-63-0				1.22	S	1.41	S	< 10.0	U	1.96	S	< 10.0	U
Isopropylbenzene	98-82-8				< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
m,p-Xylene	179601-23-1		22.2	12.8	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	14.7	
Methyl Ethyl Ketone	78-93-3		12	11.3	< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Methyl tert-butyl ether(MTBE)	1634-04-4		11.5	6.2	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Methylene Chloride	75-09-2	60	10	6.1	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
n-Butylbenzene	104-51-8				< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
o-Xylene	95-47-6		7.9	4.6	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Propylene	115-07-1				1.01		< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
sec-Butylbenzene	135-98-8				< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	14.9	
Styrene	100-42-5		1.9	1.3	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Tetrachloroethene	127-18-4	30	15.9	6.5	5.65		5.98		5,090		4.64		18,600	
Tetrahydrofuran	109-99-9				< 1.00	U	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Toluene	108-88-3		43	33.7	1.05		1.07		< 10.0	U	1.12		12	
Trans-1,2-Dichloroethene	156-60-5				< 1.00	U	< 1.00	U	15.6		< 1.00	U	13.8	
trans-1,3-Dichloropropene	10061-02-6		<1.3	<1.4	< 1.00	U	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Trichloroethene	79-01-6	2	4.2	1.3	< 0.25	U	< 0.25	U	168		0.28		191	
Trichlorofluoromethane	75-69-4		18.1	4.3	1.33		1.35		< 9.99	U	1.29		< 9.99	U
Trichlorotrifluoroethane	76-13-1		3.5	1.6	< 1.00	U	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Vinyl Chloride	75-01-4		<1.9	<1.8	< 0.25	U	< 0.25	U	< 2.50	U	< 0.25	U	< 2.50	U

Highlighted analytes are included in the NYSDOH Decision Matrices

Qualifiers

U - The compound was anlayzed for but not detected at or above the MDL. The number immediately preceding the "U" represents the PQL reporting level corrected for percent solids, weight and/or volume calculations, and dilution factors.

S - This compound is a solvent that is used in the laboratory. Laboratory contamination is suspected if concentration is less than five times the reporting level.

E - The reported value is estimated because the concentration exceeded the calibration range.

FORMER IMPERIAL CLEANERS SITE
218 LAKEVILLE ROAD
LAKE SUCCESS, NY

VCP SITE #V-00244-1

TABLE 1
SUMMARY OF SVI INVESTIGATION SAMPLING RESULTS

					218 Lakeville Road (Deli South)				218 Lakeville Road (Deli North)					
Analyte	CAS #	NYSDOH Air Guideline Value (µg/m3)	USEPA BASE Indoor Air 90th Percentile Conc (µg/m3)	USEPA BASE Outdoor Air 90th Percentile Conc (µg/m3)	Indoor Air Concentration (µg/m3)		Sub-slab Vapor Concentration (µg/m3)		Indoor Air Concentration (µg/m3)		Sub-slab Vapor Concentration (µg/m3)			
					IA-3	Q	SS-3	Q	IA-4	Q	SS-4	Q	SS-9 (Duplicate)	Q
1,1,1,2-Tetrachloroethane	630-20-6				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
1,1,1-Trichloroethane	71-55-6		20.6	2.6	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
1,1,2,2-Tetrachloroethane	79-34-5				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
1,1,2-Trichloroethane	79-00-5		<1.5	<1.6	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
1,1-Dichloroethane	75-34-3		<0.7	<0.6	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
1,1-Dichloroethene	75-35-4		<1.4	<1.4	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
1,2,4-Trichlorobenzene	120-82-1		<6.8	<6.4	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
1,2,4-Trimethylbenzene	95-63-6		9.5	5.8	< 1.00	U	< 10.0	U	< 1.00	U	21.1		19.2	
1,2-Dibromoethane(EDB)	106-93-4		<1.5	<1.6	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
1,2-Dichlorobenzene	95-50-1		<1.2	<1.2	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U	< 9.97	U
1,2-Dichloroethane	107-06-2		<0.9	<0.8	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
1,2-Dichloropropane	78-87-5		<1.6	<1.6	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
1,2-Dichlorotetrafluoroethane	76-14-2				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
1,3,5-Trimethylbenzene	108-67-8		3.7	2.7	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
1,3-Butadiene	106-99-0		<3.0	<3.4	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
1,3-Dichlorobenzene	541-73-1		<2.4	<2.2	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U	< 9.97	U
1,4-Dichlorobenzene	106-46-7		5.5	1.2	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U	< 9.97	U
1,4-Dioxane	123-91-1				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
2-Hexanone(MBK)	591-78-6				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
4-Ethyltoluene	622-96-8		3.6	3	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
4-Isopropyltoluene	99-87-6				< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
4-Methyl-2-pentanone(MIBK)	108-10-1		6	1.9	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
Acetone	67-64-1		98.9	43.7	4.06	S	26.1	S	4.75	S	39.4	S	38	S
Acrylonitrile	107-13-1				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Benzene	71-43-2		9.4	6.6	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
Benzyl chloride	100-44-7		<6.8	<6.4	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
Bromodichloromethane	75-27-4				< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
Bromoform	75-25-2				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Bromomethane	74-83-9		<1.7	<1.6	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Carbon Disulfide	75-15-0		4.2	3.7	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
Carbon Tetrachloride	56-23-5		<1.3	0.7	0.51		< 2.50	U	0.49		< 2.50	U	< 2.50	U
Chlorobenzene	108-90-7		<0.9	<0.8	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
Chloroethane	75-00-3		<1.1	<1.2	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Chloroform	67-66-3		1.1	0.6	< 1.00	U	< 10.0	U	< 1.00	U	11.8		12.3	
Chloromethane	74-87-3		3.7	3.7	1.51		< 10.0	U	1.28		< 10.0	U	< 10.0	U
Cis-1,2-Dichloroethene	156-59-2		<1.9	<1.8	< 1.00	U	282		< 1.00	U	630		654	
cis-1,3-Dichloropropene	10061-01-5		<2.3	<2.2	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
Cyclohexane	110-82-7				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Dibromochloromethane	124-48-1				< 1.00	U	< 9.96	U	< 1.00	U	< 9.96	U	< 9.96	U
Dichlorodifluoromethane	75-71-8		16.5	8.1	2.68		14.8		2.47		< 9.98	U	< 9.98	U
Ethanol	64-17-5		210	57	9.23	S	< 10.0	U	5.44	S	< 10.0	U	11.8	S
Ethyl acetate	141-78-6		5.4	1.5	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Ethylbenzene	100-41-4		5.7	3.5	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
Heptane	142-82-5				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
Hexachlorobutadiene	87-68-3		<6.8	<6.4	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Hexane	110-54-3				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Isopropylalcohol	67-63-0				1.8	S	< 10.0	U	1.27	S	< 10.0	U	< 10.0	U
Isopropylbenzene	98-82-8				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
m,p-Xylene	179601-23-1		22.2	12.8	< 1.00	U	< 9.98	U	< 1.00	U	15.6		16	
Methyl Ethyl Ketone	78-93-3		12	11.3	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
Methyl tert-butyl ether(MTBE)	1634-04-4		11.5	6.2	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Methylene Chloride	75-09-2	60	10	6.1	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
n-Butylbenzene	104-51-8				< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
o-Xylene	95-47-6		7.9	4.6	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
Propylene	115-07-1				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
sec-Butylbenzene	135-98-8				< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	16.1	
Styrene	100-42-5		1.9	1.3	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Tetrachloroethene	127-18-4	30	15.9	6.5	1.92		2,760		1.58		3,630		3,550	
Tetrahydrofuran	109-99-9				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U	< 9.99	U
Toluene	108-88-3		43	33.7	< 1.00	U	< 10.0	U	< 1.00	U	13.3		14.5	
Trans-1,2-Dichloroethene	156-60-5				< 1.00	U	24.8		< 1.00	U	34.9		36.2	
trans-1,3-Dichloropropene	10061-02-6		<1.3	<1.4	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U	< 9.98	U
Trichloroethene	79-01-6	2	4.2	1.3	0.27		459		< 0.25	U	564		607	
Trichlorofluoromethane	75-69-4		18.1	4.3	1.39		< 9.99	U	1.25		< 9.99	U	< 9.99	U
Trichlorotrifluoroethane	76-13-1		3.5	1.6	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U	< 10.0	U
Vinyl Chloride	75-01-4		<1.9	<1.8	< 0.25	U	< 2.50	U	< 0.25	U	< 2.50	U	< 2.50	U

Highlighted analytes are included in the NYSDOH Decision Matrices

Qualifiers

U - The compound was anlayzed for but not detected at or above the MDL. The number immediately preceding the "U" represents the PQL reporting level corrected for percent solids, weight and/or volume calculations, and dilution factors.

S - This compound is a solvent that is used in the laboratory. Laboratory contamination is suspected if concentration is less than five times the reporting level.

E - The reported value is estimated because the concentration exceeded the calibration range.

FORMER IMPERIAL CLEANERS SITE
218 LAKEVILLE ROAD
LAKE SUCCESS, NY

VCP SITE #V-00244-1

TABLE 1
SUMMARY OF SVI INVESTIGATION SAMPLING RESULTS

					2 University Place				4 University Place			
Analyte	CAS #	NYSDOH Air Guideline Value (µg/m3)	USEPA BASE Indoor Air 90th Percentile Conc (µg/m3)	USEPA BASE Outdoor Air 90th Percentile Conc (µg/m3)	Indoor Air Concentration (µg/m3)		Sub-slab Vapor Concentration (µg/m3)		Indoor Air Concentration (µg/m3)		Sub-slab Vapor Concentration (µg/m3)	
					IA-5	Q	SS-5	Q	IA-6	Q	SS-6	Q
1,1,1,2-Tetrachloroethane	630-20-6				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,1,1-Trichloroethane	71-55-6		20.6	2.6	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
1,1,2,2-Tetrachloroethane	79-34-5				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,1,2-Trichloroethane	79-00-5		<1.5	<1.6	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
1,1-Dichloroethane	75-34-3		<0.7	<0.6	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,1-Dichloroethene	75-35-4		<1.4	<1.4	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,2,4-Trichlorobenzene	120-82-1		<6.8	<6.4	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,2,4-Trimethylbenzene	95-63-6		9.5	5.8	< 1.00	U	76.6		< 1.00	U	53.6	
1,2-Dibromoethane(EDB)	106-93-4		<1.5	<1.6	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
1,2-Dichlorobenzene	95-50-1		<1.2	<1.2	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U
1,2-Dichloroethane	107-06-2		<0.9	<0.8	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,2-Dichloropropane	78-87-5		<1.6	<1.6	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
1,2-Dichlorotetrafluoroethane	76-14-2				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,3,5-Trimethylbenzene	108-67-8		3.7	2.7	< 1.00	U	22.7		< 1.00	U	13.8	
1,3-Butadiene	106-99-0		<3.0	<3.4	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
1,3-Dichlorobenzene	541-73-1		<2.4	<2.2	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U
1,4-Dichlorobenzene	106-46-7		5.5	1.2	< 1.00	U	< 9.97	U	< 1.00	U	< 9.97	U
1,4-Dioxane	123-91-1				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
2-Hexanone(MBK)	591-78-6				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
4-Ethyltoluene	622-96-8		3.6	3	< 1.00	U	12.7		< 1.00	U	< 10.0	U
4-Isopropyltoluene	99-87-6				< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
4-Methyl-2-pentanone(MIBK)	108-10-1		6	1.9	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Acetone	67-64-1		98.9	43.7	14.9		82.6	S	48.2		37.3	S
Acrylonitrile	107-13-1				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Benzene	71-43-2		9.4	6.6	1.56		< 9.99	U	< 1.00	U	< 9.99	U
Benzyl chloride	100-44-7		<6.8	<6.4	< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Bromodichloromethane	75-27-4				< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Bromoform	75-25-2				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Bromomethane	74-83-9		<1.7	<1.6	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Carbon Disulfide	75-15-0		4.2	3.7	< 1.00	U	13.9		< 1.00	U	< 9.99	U
Carbon Tetrachloride	56-23-5		<1.3	0.7	0.57		< 2.50	U	0.55		< 2.50	U
Chlorobenzene	108-90-7		<0.9	<0.8	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Chloroethane	75-00-3		<1.1	<1.2	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Chloroform	67-66-3		1.1	0.6	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Chloromethane	74-87-3		3.7	3.7	2.17		< 10.0	U	1.5		< 10.0	U
Cis-1,2-Dichloroethene	156-59-2		<1.9	<1.8	< 1.00	U	< 9.99	U	< 1.00	U	134	
cis-1,3-Dichloropropene	10061-01-5		<2.3	<2.2	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Cyclohexane	110-82-7				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Dibromochloromethane	124-48-1				< 1.00	U	< 9.96	U	< 1.00	U	< 9.96	U
Dichlorodifluoromethane	75-71-8		16.5	8.1	2.71		< 9.98	U	2.61		< 9.98	U
Ethanol	64-17-5		210	57	23.2		23.5	S	57.6		13.6	S
Ethyl acetate	141-78-6		5.4	1.5	1.06		< 10.0	U	< 1.00	U	< 10.0	U
Ethylbenzene	100-41-4		5.7	3.5	1.05		14.5		< 1.00	U	< 9.98	U
Heptane	142-82-5				1.45		13		< 1.00	U	< 9.99	U
Hexachlorobutadiene	87-68-3		<6.8	<6.4	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Hexane	110-54-3				2.03	S	11.1	S	< 1.00	U	< 10.0	U
Isopropylalcohol	67-63-0				1.64	S	< 10.0	U	6.19	S	< 10.0	U
Isopropylbenzene	98-82-8				< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
m,p-Xylene	179601-23-1		22.2	12.8	4.13		57.7		2.2		35.7	
Methyl Ethyl Ketone	78-93-3		12	11.3	1.81		< 9.99	U	1.29		< 9.99	U
Methyl tert-butyl ether(MTBE)	1634-04-4		11.5	6.2	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Methylene Chloride	75-09-2	60	10	6.1	2.35	S	< 10.0	U	< 1.00	U	< 10.0	U
n-Butylbenzene	104-51-8				< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
o-Xylene	95-47-6		7.9	4.6	1.29		28.3		< 1.00	U	17.3	
Propylene	115-07-1				< 1.00	U	28.6		< 1.00	U	< 9.99	U
sec-Butylbenzene	135-98-8				< 1.00	U	64.7		< 1.00	U	44.9	
Styrene	100-42-5		1.9	1.3	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Tetrachloroethene	127-18-4	30	15.9	6.5	1.82		3,590		36.2		20,100	
Tetrahydrofuran	109-99-9				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
Toluene	108-88-3		43	33.7	9.83		31.4		3.17		20.4	
Trans-1,2-Dichloroethene	156-60-5				< 1.00	U	< 9.99	U	< 1.00	U	< 9.99	U
trans-1,3-Dichloropropene	10061-02-6		<1.3	<1.4	< 1.00	U	< 9.98	U	< 1.00	U	< 9.98	U
Trichloroethene	79-01-6	2	4.2	1.3	1.01		47		0.6		655	
Trichlorofluoromethane	75-69-4		18.1	4.3	1.35		< 9.99	U	1.33		< 9.99	U
Trichlorotrifluoroethane	76-13-1		3.5	1.6	< 1.00	U	< 10.0	U	< 1.00	U	< 10.0	U
Vinyl Chloride	75-01-4		<1.9	<1.8	< 0.25	U	< 2.50	U	< 0.25	U	< 2.50	U

Highlighted analytes are included in the NYSDOH Decision Matrices

Qualifiers

U - The compound was anlayzed for but not detected at or above the MDL. The number immediately preceding the "U" represents the PQL reporting level corrected for percent solids, weight and/or volume calculations, and dilution factors.

S - This compound is a solvent that is used in the laboratory. Laboratory contamination is suspected if concentration is less than five times the reporting level.

E - The reported value is estimated because the concentration exceeded the calibration range.

FORMER IMPERIAL CLEANERS SITE
218 LAKEVILLE ROAD
LAKE SUCCESS, NY

VCP SITE #V-00244-1

TABLE 1
SUMMARY OF SVI INVESTIGATION SAMPLING RESULTS

					220 Lakeville Road				216 Lakeville Road (Cottage)			
Analyte	CAS #	NYSDOH Air Guideline Value (µg/m3)	USEPA BASE Indoor Air 90th Percentile Conc (µg/m3)	USEPA BASE Outdoor Air 90th Percentile Conc (µg/m3)	Indoor Air Concentration (µg/m3)		Sub-slab Vapor Concentration (µg/m3)		Indoor Air Concentration (µg/m3)		Sub-slab Vapor Concentration (µg/m3)	
					IA-7	Q	SS-7	Q	IA-8	Q	SS-8	Q
1,1,1,2-Tetrachloroethane	630-20-6				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,1,1-Trichloroethane	71-55-6		20.6	2.6	< 1.00	U	< 1.00	U	< 1.00	U	8.34	
1,1,2,2-Tetrachloroethane	79-34-5				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,1,2-Trichloroethane	79-00-5		<1.5	<1.6	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,1-Dichloroethane	75-34-3		<0.7	<0.6	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,1-Dichloroethene	75-35-4		<1.4	<1.4	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,2,4-Trichlorobenzene	120-82-1		<6.8	<6.4	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,2,4-Trimethylbenzene	95-63-6		9.5	5.8	< 1.00	U	20.6		< 1.00	U	14.1	
1,2-Dibromoethane(EDB)	106-93-4		<1.5	<1.6	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichlorobenzene	95-50-1		<1.2	<1.2	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichloroethane	107-06-2		<0.9	<0.8	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichloropropane	78-87-5		<1.6	<1.6	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichlorotetrafluoroethane	76-14-2				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,3,5-Trimethylbenzene	108-67-8		3.7	2.7	< 1.00	U	5.4		< 1.00	U	4.05	
1,3-Butadiene	106-99-0		<3.0	<3.4	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,3-Dichlorobenzene	541-73-1		<2.4	<2.2	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,4-Dichlorobenzene	106-46-7		5.5	1.2	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
1,4-Dioxane	123-91-1				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
2-Hexanone(MBK)	591-78-6				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
4-Ethyltoluene	622-96-8		3.6	3	< 1.00	U	3.23		< 1.00	U	2.37	
4-Isopropyltoluene	99-87-6				< 1.00	U	1.65		< 1.00	U	1.01	
4-Methyl-2-pentanone(MIBK)	108-10-1		6	1.9	< 1.00	U	< 1.00	U	< 1.00	U	1.05	
Acetone	67-64-1		98.9	43.7	6.62	S	143		69.6		98.8	
Acrylonitrile	107-13-1				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Benzene	71-43-2		9.4	6.6	< 1.00	U	1.1		< 1.00	U	4.95	
Benzyl chloride	100-44-7		<6.8	<6.4	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Bromodichloromethane	75-27-4				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Bromoform	75-25-2				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Bromomethane	74-83-9		<1.7	<1.6	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Carbon Disulfide	75-15-0		4.2	3.7	< 1.00	U	29.6		< 1.00	U	5.1	
Carbon Tetrachloride	56-23-5		<1.3	0.7	0.58		< 0.25	U	0.46		0.46	
Chlorobenzene	108-90-7		<0.9	<0.8	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Chloroethane	75-00-3		<1.1	<1.2	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Chloroform	67-66-3		1.1	0.6	< 1.00	U	4.62		< 1.00	U	< 1.00	U
Chloromethane	74-87-3		3.7	3.7	1.19		< 1.00	U	1.22		1.57	
Cis-1,2-Dichloroethene	156-59-2		<1.9	<1.8	< 1.00	U	3.8		< 1.00	U	< 1.00	U
cis-1,3-Dichloropropene	10061-01-5		<2.3	<2.2	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Cyclohexane	110-82-7				< 1.00	U	1.42		< 1.00	U	< 1.00	U
Dibromochloromethane	124-48-1				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Dichlorodifluoromethane	75-71-8		16.5	8.1	2.81		2.96		2.49		2.92	
Ethanol	64-17-5		210	57	6.76	S	14.9		130	E	29.2	
Ethyl acetate	141-78-6		5.4	1.5	< 1.00	U	< 1.00	U	1.47		< 1.00	U
Ethylbenzene	100-41-4		5.7	3.5	< 1.00	U	3.54		< 1.00	U	3.94	
Heptane	142-82-5				< 1.00	U	3.43		< 1.00	U	6.59	
Hexachlorobutadiene	87-68-3		<6.8	<6.4	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Hexane	110-54-3				< 1.00	U	7.12	S	< 1.00	U	9.09	S
Isopropylalcohol	67-63-0				1.15	S	1.8	S	35.4		2.85	S
Isopropylbenzene	98-82-8				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
m,p-Xylene	179601-23-1		22.2	12.8	< 1.00	U	14.3		< 1.00	U	14.1	
Methyl Ethyl Ketone	78-93-3		12	11.3	< 1.00	U	6.69		< 1.00	U	9.84	
Methyl tert-butyl ether(MTBE)	1634-04-4		11.5	6.2	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Methylene Chloride	75-09-2	60	10	6.1	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
n-Butylbenzene	104-51-8				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
o-Xylene	95-47-6		7.9	4.6	< 1.00	U	6.94		< 1.00	U	6.77	
Propylene	115-07-1				< 1.00	U	< 1.00	U	< 1.00	U	22.2	
sec-Butylbenzene	135-98-8				< 1.00	U	< 1.00	U	< 1.00	U	11.8	
Styrene	100-42-5		1.9	1.3	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Tetrachloroethene	127-18-4	30	15.9	6.5	0.67		854		0.79		3.2	
Tetrahydrofuran	109-99-9				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Toluene	108-88-3		43	33.7	1.71		9.45		2.05		14.6	
Trans-1,2-Dichloroethene	156-60-5				< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
trans-1,3-Dichloropropene	10061-02-6		<1.3	<1.4	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Trichloroethene	79-01-6	2	4.2	1.3	< 0.25	U	14.1		< 0.25	U	0.39	
Trichlorofluoromethane	75-69-4		18.1	4.3	1.47		1.52		1.33		1.77	
Trichlorotrifluoroethane	76-13-1		3.5	1.6	< 1.00	U	< 1.00	U	< 1.00	U	< 1.00	U
Vinyl Chloride	75-01-4		<1.9	<1.8	< 0.25	U	< 0.25	U	< 0.25	U	< 0.25	U

Highlighted analytes are included in the NYSDOH Decision Matrices

Qualifiers

U - The compound was anlayzed for but not detected at or above the MDL. The number immediately preceding the "U" represents the PQL reporting level corrected for percent solids, weight and/or volume calculations, and dilution factors.

S - This compound is a solvent that is used in the laboratory. Laboratory contamination is suspected if concentration is less than five times the reporting level.

E - The reported value is estimated because the concentration exceeded the calibration range.

FORMER IMPERIAL CLEANERS SITE
218 LAKEVILLE ROAD
LAKE SUCCESS, NY

VCP SITE #V-00244-1

TABLE 1
SUMMARY OF SVI INVESTIGATION SAMPLING RESULTS

					Outdoor Ambient Air Samples					
Analyte	CAS #	NYSDOH Air Guideline Value (µg/m3)	USEPA BASE Indoor Air 90th Percentile Conc (µg/m3)	USEPA BASE Outdoor Air 90th Percentile Conc (µg/m3)	Upwind Concentration (µg/m3)		Downwind Concentration (µg/m3)			
					AA-1	Q	AA-2	Q	AA-3 (Duplicate)	Q
1,1,1,2-Tetrachloroethane	630-20-6				< 1.00	U	< 1.00	U	< 1.00	U
1,1,1-Trichloroethane	71-55-6		20.6	2.6	< 1.00	U	< 1.00	U	< 1.00	U
1,1,2,2-Tetrachloroethane	79-34-5				< 1.00	U	< 1.00	U	< 1.00	U
1,1,2-Trichloroethane	79-00-5		<1.5	<1.6	< 1.00	U	< 1.00	U	< 1.00	U
1,1-Dichloroethane	75-34-3		<0.7	<0.6	< 1.00	U	< 1.00	U	< 1.00	U
1,1-Dichloroethene	75-35-4		<1.4	<1.4	< 1.00	U	< 1.00	U	< 1.00	U
1,2,4-Trichlorobenzene	120-82-1		<6.8	<6.4	< 1.00	U	< 1.00	U	< 1.00	U
1,2,4-Trimethylbenzene	95-63-6		9.5	5.8	11.3		12.6		14.3	
1,2-Dibromoethane(EDB)	106-93-4		<1.5	<1.6	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichlorobenzene	95-50-1		<1.2	<1.2	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichloroethane	107-06-2		<0.9	<0.8	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichloropropane	78-87-5		<1.6	<1.6	< 1.00	U	< 1.00	U	< 1.00	U
1,2-Dichlorotetrafluoroethane	76-14-2				< 1.00	U	< 1.00	U	< 1.00	U
1,3,5-Trimethylbenzene	108-67-8		3.7	2.7	4.31		4.32		4.2	
1,3-Butadiene	106-99-0		<3.0	<3.4	< 1.00	U	< 1.00	U	< 1.00	U
1,3-Dichlorobenzene	541-73-1		<2.4	<2.2	< 1.00	U	< 1.00	U	< 1.00	U
1,4-Dichlorobenzene	106-46-7		5.5	1.2	< 1.00	U	< 1.00	U	< 1.00	U
1,4-Dioxane	123-91-1				< 1.00	U	< 1.00	U	< 1.00	U
2-Hexanone(MBK)	591-78-6				< 1.00	U	< 1.00	U	< 1.00	U
4-Ethyltoluene	622-96-8		3.6	3	2.11		2.84		2.6	
4-Isopropyltoluene	99-87-6				1.03		1.08		1.31	
4-Methyl-2-pentanone(MIBK)	108-10-1		6	1.9	< 1.00	U	< 1.00	U	< 1.00	U
Acetone	67-64-1		98.9	43.7	18.8		28		22.1	
Acrylonitrile	107-13-1				< 1.00	U	< 1.00	U	< 1.00	U
Benzene	71-43-2		9.4	6.6	4.12		3.19		2.96	
Benzyl chloride	100-44-7		<6.8	<6.4	< 1.00	U	< 1.00	U	< 1.00	U
Bromodichloromethane	75-27-4				< 1.00	U	< 1.00	U	< 1.00	U
Bromoform	75-25-2				< 1.00	U	< 1.00	U	< 1.00	U
Bromomethane	74-83-9		<1.7	<1.6	< 1.00	U	< 1.00	U	< 1.00	U
Carbon Disulfide	75-15-0		4.2	3.7	< 1.00	U	< 1.00	U	< 1.00	U
Carbon Tetrachloride	56-23-5		<1.3	0.7	0.38		0.41		0.43	
Chlorobenzene	108-90-7		<0.9	<0.8	< 1.00	U	< 1.00	U	< 1.00	U
Chloroethane	75-00-3		<1.1	<1.2	< 1.00	U	< 1.00	U	< 1.00	U
Chloroform	67-66-3		1.1	0.6	< 1.00	U	< 1.00	U	< 1.00	U
Chloromethane	74-87-3		3.7	3.7	1.53		1.63		< 1.00	U
Cis-1,2-Dichloroethene	156-59-2		<1.9	<1.8	< 1.00	U	< 1.00	U	< 1.00	U
cis-1,3-Dichloropropene	10061-01-5		<2.3	<2.2	< 1.00	U	< 1.00	U	< 1.00	U
Cyclohexane	110-82-7				6.47		4.54		3.96	
Dibromochloromethane	124-48-1				< 1.00	U	< 1.00	U	< 1.00	U
Dichlorodifluoromethane	75-71-8		16.5	8.1	2.51		2.45		2.47	
Ethanol	64-17-5		210	57	17.5		13.6		13.8	
Ethyl acetate	141-78-6		5.4	1.5	< 1.00	U	< 1.00	U	< 1.00	U
Ethylbenzene	100-41-4		5.7	3.5	4.73		4.6		4.69	
Heptane	142-82-5				8.27		6.47		5.73	
Hexachlorobutadiene	87-68-3		<6.8	<6.4	< 1.00	U	< 1.00	U	< 1.00	U
Hexane	110-54-3				10.8		7.82	S	6.76	S
Isopropylalcohol	67-63-0				1.67	S	2.44	S	1.28	S
Isopropylbenzene	98-82-8				1.07		1.11		< 1.00	U
m,p-Xylene	179601-23-1		22.2	12.8	15.9		15.3		15.4	
Methyl Ethyl Ketone	78-93-3		12	11.3	1.71		1.09		1.06	
Methyl tert-butyl ether(MTBE)	1634-04-4		11.5	6.2	< 1.00	U	< 1.00	U	< 1.00	U
Methylene Chloride	75-09-2	60	10	6.1	< 1.00	U	< 1.00	U	< 1.00	U
n-Butylbenzene	104-51-8				< 1.00	U	< 1.00	U	< 1.00	U
o-Xylene	95-47-6		7.9	4.6	7.59		7.38		7.33	
Propylene	115-07-1				< 1.00	U	< 1.00	U	< 1.00	U
sec-Butylbenzene	135-98-8				9.49		< 1.00	U	12.1	
Styrene	100-42-5		1.9	1.3	< 1.00	U	< 1.00	U	< 1.00	U
Tetrachloroethene	127-18-4	30	15.9	6.5	0.33		0.47		0.39	
Tetrahydrofuran	109-99-9				< 1.00	U	< 1.00	U	< 1.00	U
Toluene	108-88-3		43	33.7	21.9		18.8		18.3	
Trans-1,2-Dichloroethene	156-60-5				< 1.00	U	< 1.00	U	< 1.00	U
trans-1,3-Dichloropropene	10061-02-6		<1.3	<1.4	< 1.00	U	< 1.00	U	< 1.00	U
Trichloroethene	79-01-6	2	4.2	1.3	< 0.25	U	< 0.25	U	< 0.25	U
Trichlorofluoromethane	75-69-4		18.1	4.3	2.76		2.3		2.17	
Trichlorotrifluoroethane	76-13-1		3.5	1.6	< 1.00	U	< 1.00	U	< 1.00	U
Vinyl Chloride	75-01-4		<1.9	<1.8	< 0.25	U	< 0.25	U	< 0.25	U

Highlighted analytes are included in the NYSDOH Decision Matrices

Qualifiers

U - The compound was anlayzed for but not detected at or above the MDL. The number immediately preceding the "U" represents the PQL reporting level corrected for percent solids, weight and/or volume calculations, and dilution factors.

S - This compound is a solvent that is used in the laboratory. Laboratory contamination is suspected if concentration is less than five times the reporting level.

E - The reported value is estimated because the concentration exceeded the calibration range.

FORMER IMPERIAL CLEANERS SITE
218 LAKEVILLE ROAD
LAKE SUCCESS, NY
VCP SITE #V-00244-1

TABLE 2
SVI INVESTIGATION SAMPLING RESULTS NYSDOH DECISION MATRIX COMPARISON

Location	NYSDEC DECISION MATRIX 1			NYSDEC DECISION MATRIX 2			
	Carbon Tetrachloride µg/m³	**Trichloroethene µg/m³**	**Vinyl Chloride µg/m³**	**1,1-Dichloroethene µg/m³**	**cis-1,2-Dichloroethene µg/m³**	**1,1,1-Trichloroethane µg/m³**	**Tetrachloroethene µg/m³**
218 Lakeville Road							
Former Cleaners							
IA-1/Duplicate IA-9 Result	0.5/0.58	<0.25/<0.25	<0.25/<0.25	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	5.65/5.98
Matrix Range Indoor Air	0.25 to <1	<0.25	<0.25	<3	<3	<3	<3
SS-1 Result	<2.50	168	<2.50	<9.99	396	<9.98	5090
Matrix Range Sub-Slab Vapor	<5	50 to <250	<5	<100	100 to <1000	<100	1,000 and above
Recommended Action	*Take Reasonable/Practical Action*	*Monitor*	*NoFurther Action*	*No Further Action*	*No Further Action*	*No Further Action*	*Mitigate*
Tobacco Shop							
IA-2 Result	0.5	0.28	<0.25	<1.0	<1.0	<1.0	4.64
Matrix Range Indoor Air	0.25 to <1	0.25 to <1	<0.25	<3	<3	<3	3 to <30
SS-2 Result	<2.50	191	<2.50	<9.99	244	<9.98	18600
Matrix Range Sub-Slab Vapor	<5	50 to <250	<5	<100	100 to <1000	<100	1,000 and above
Recommended Action	*Take Reasonable/Practical Action*	*Monitor/Mitigate*	*NoFurther Action*	*No Further Action*	*No Further Action*	*No Further Action*	*Mitigate*
Deli South							
IA-3 Result	0.51	0.27	<0.25	<1.0	<1.0	<1.0	1.92
Matrix Range Indoor Air	0.25 to <1	0.25 to <1	<0.25	<3	<3	<3	<3
SS-3 Result	<2.50	459	<2.50	<9.99	282	<9.98	2760
Matrix Range Sub-Slab Vapor	<5	250 and above	<5	<100	100 to <1000	<100	1,000 and above
Recommended Action	*Take Reasonable/Practical Action*	*Mitigate*	*NoFurther Action*	*No Further Action*	*Monitor*	*No Further Action*	*Mitigate*
Deli North							
IA-4 Result	0.49	<0.25	<0.25	<1.0	<1.0	<1.0	1.58
Matrix Range Indoor Air	0.25 to <1	<0.25	<0.25	<3	<3	<3	<3
SS-4/Duplicate SS-9 Result	<2.50/<2.50	564/607	<2.50/<2.50	<9.99/<9.99	630/654	<9.98/<9.98	3630/3550
Matrix Range Sub-Slab Vapor	<5	250 and above	<5	<100	100 to <1000	<100	1,000 and above
Recommended Action	*Take Reasonable/Practical Action*	*Mitigate*	*NoFurther Action*	*No Further Action*	*Monitor*	*No Further Action*	*Mitigate*
2 University Place							
IA-5 Result	0.57	1.01	<0.25	<1.0	<1.0	<1.0	1.82
Matrix Range Indoor Air	0.25 to <1	1 to <5.0	<0.25	<3	<3	<3	<3
SS-5 Result	<2.50	47	<2.50	<9.99	<9.99	<9.98	3590
Matrix Range Sub-Slab Vapor	<5	5 to <50	<5	<100	<100	<100	1,000 and above
Recommended Action	*Take Reasonable/Practical Action*	*Monitor*	*NoFurther Action*	*No Further Action*	*No Further Action*	*No Further Action*	*Mitigate*
4 University Place							
IA-6 Result	0.55	0.6	<0.25	<1.0	<1.0	<1.0	36.2
Matrix Range Indoor Air	0.25 to <1	0.25 to <1	<0.25	<3	<3	<3	30 to <100
SS-6 Result	<2.50	655	<2.50	<9.99	134	<9.98	20100
Matrix Range Sub-Slab Vapor	<5	250 and above	<5	<100	100 to <1000	<100	1,000 and above
Recommended Action	*Take Reasonable/Practical Action*	*Mitigate*	*NoFurther Action*	*No Further Action*	*Monitor*	*No Further Action*	*Mitigate*
220 Lakeville Road							
IA-7 Result	0.58	<0.25	<0.25	<1.0	<1.0	<1.0	0.67
Matrix Range Indoor Air	0.25 to <1	<0.25	<0.25	<3	<3	<3	<3
SS-7 Result	<2.50	14.1	<0.25	<1.0	3.8	<1.0	854
Matrix Range Sub-Slab Vapor	<5	5 to <50	<5	<100	<100	<100	100 to <1,000
Recommended Action	*Take Reasonable/Practical Action*	*No Further Action*	*NoFurther Action*	*No Further Action*	*No Further Action*	*No Further Action*	*Monitor*
216 Lakeville Road							
IA-8 Result	0.46	<0.25	<0.25	<1.0	<1.0	<1.0	0.79
Matrix Range Indoor Air	0.25 to <1	<0.25	<0.25	<3	<3	<3	<3
SS-8 Result	0.46	0.39	<0.25	<1.0	<1.0	8.34	3.2
Matrix Range Sub-Slab Vapor	<5	<5	<5	<100	<100	<100	<100
Recommended Action	*Take Reasonable/Practical Action*	*No Further Action*	*No Further Action*	*No Further Action*	*No Further Action*	*No Further Action*	*No Further Action*

Decision Matrices in tables referenced from NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York. The recommendations indicated in the decision matrices are described below.

No Further Action: Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

TAKE REASONABLE AND PRACTICAL ACTIONS TO IDENTIFY SOURCE(S) AND REDUCE EXPOSURE: The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposure accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MITIGATE: Take reasonable and practical actions to identify source(s) and reduce exposure: The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile chemical-containing products in places where people do not spend much time, such as a garage or shed). Resampling may also be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR: Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR/MITIGATE: Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building and site specific conditions.

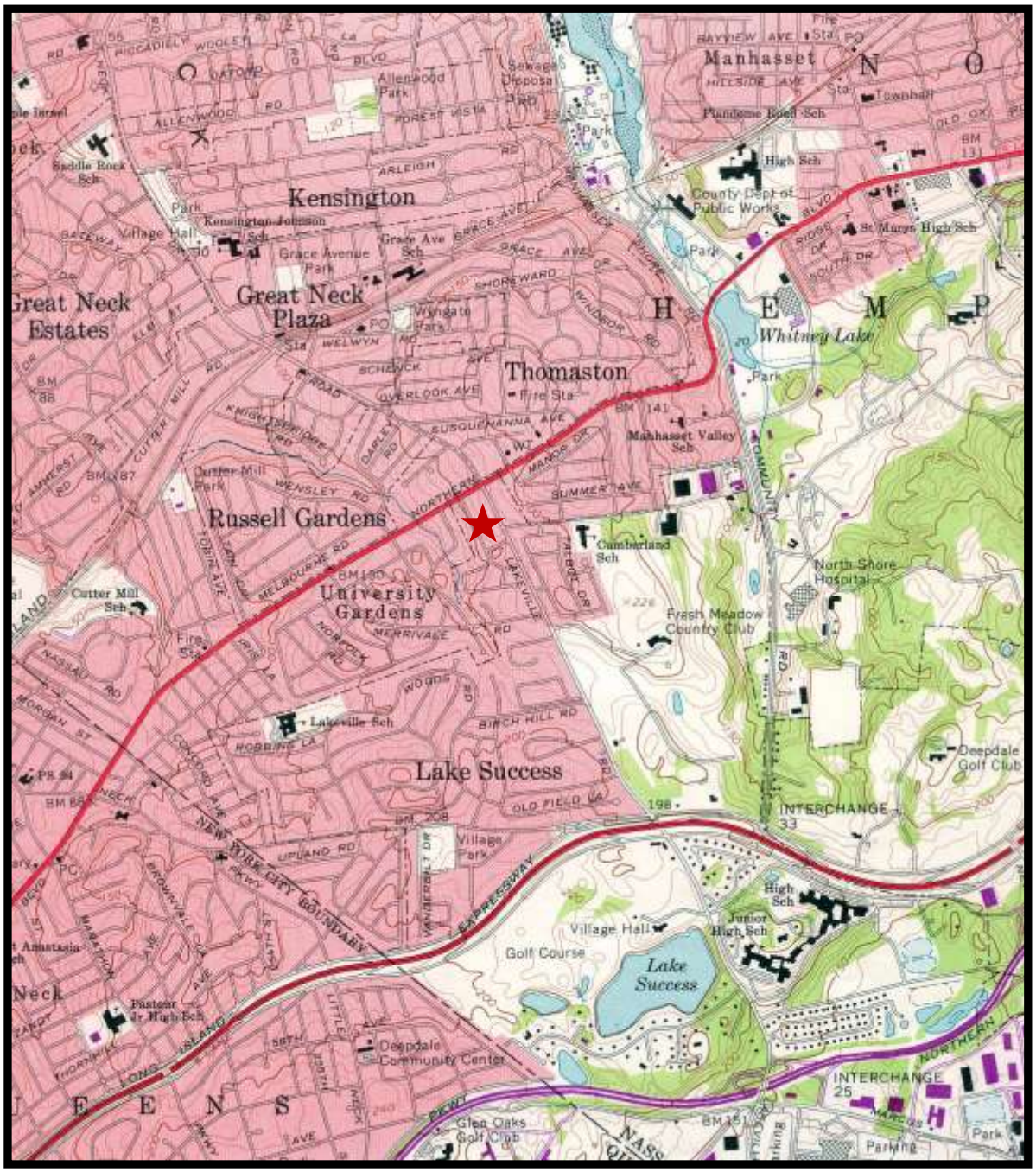
FIGURES

Former Imperial Cleaners Site
(VCP Site #V-00244-1)
218 Lakeville Road
Lake Success, New York

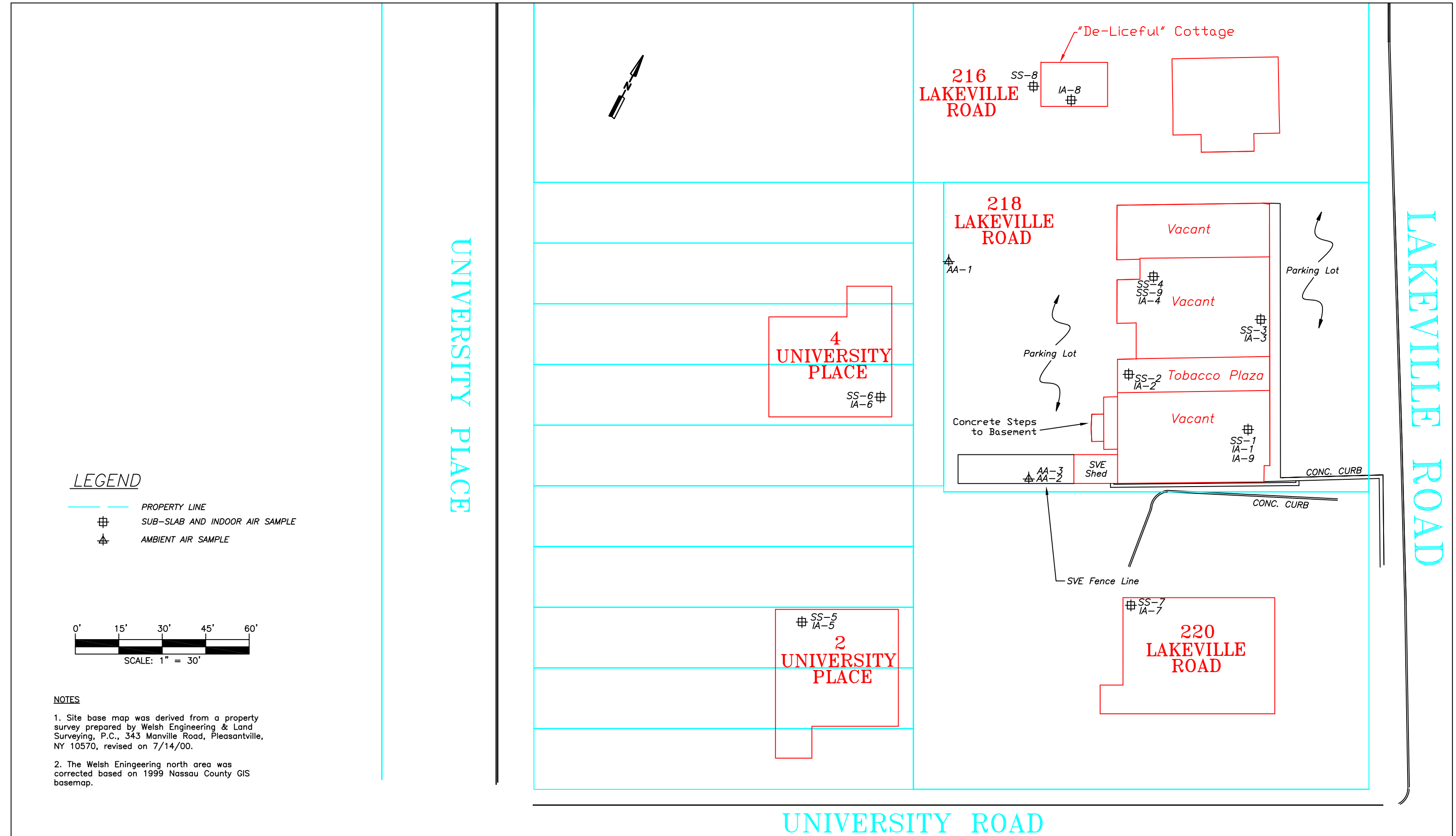
FIGURE 1

SITE LOCATION MAP

N



(USGS QUAD Sea Cliff, New York) (Scale 1:24000)



LEGEND

- PROPERTY LINE
- SUB-SLAB AND INDOOR AIR SAMPLE
- AMBIENT AIR SAMPLE

0' 15' 30' 45' 60'

SCALE: 1" = 30'

NOTES

1. Site base map was derived from a property survey prepared by Welsh Engineering & Land Surveying, P.C., 343 Manville Road, Pleasantville, NY 10570, revised on 7/14/00.

2. The Welsh Eningeering north area was corrected based on 1999 Nassau County GIS basemap.

WALDEN ENVIRONMENTAL ENGINEERING, PLLC
16 Spring Street
Oyster Bay, New York 11771
P: (516) 624-7200 F: (516) 624-3219
www.waldenenvironmental.com
Walden Associates

FOR:
NYSDEC
625 Broadway, 11th Floor,
Albany, New York 12233

DRAWING TITLE:
SITE MAP WITH SAMPLE LOCATIONS
218 LAKEVILLE ROAD,
LAKE SUCCESS, NEW YORK

DRAWING NO: 1

JOB NO: IMPL0115.4

DATE: March 24, 2016

CAD FILE NAME: Z:\IMPL0115 (Imperial Cleaners)\IMPL0115.4 - SVI Investigation\Site Map, Sample Locations, Septic.dwg

APPENDICES

APPENDIX A
Existing Soil Vapor Extraction System Details

218 Lakeville Road Soil Vapor Extraction System

Based on the investigation and remediation activities previously conducted at the 218 Lakeville Road site, it was determined that installation of an SVE system would be required to remove residual PCE remaining in soils at the site. This work was conducted under the VCP program administered by NYSDEC. A SVE pilot test was conducted in May 1998 to determine the SVE well radius of influence for a full-scale SVE system. The SVE system was designed and installed by the previous Site owner's consultants and started up in January 2001. The complete SVE system consists of eight soil vapor extraction wells, as shown on the attached figure and described below.

RW-1, RW-2, RW-3, RW-4 and RW-10 were installed in November - December 2000. RW-1 and RW-2 are located just east of the property line between 4 University Place and the Former Imperial Cleaners site. RW-3 was installed in the vicinity of former dry well DW-1, at the southwest corner of the Former Imperial Cleaners site. RW-1, RW-2 and RW-3 are 25 feet deep and screened 15 to 25 feet below grade. RW-4 (13 feet deep with 10 feet of slotted pipe) is located along the western boundary of 220 Lakeville Road, adjacent to the residence at 2 University Place, and its designed radius of influence covers portions of these two properties. RW-10 (25 feet deep with 10 feet of slotted pipe) was installed along the south side of the residence at 4 University Place, and its designed radius of influence extends to a portion of the property at 2 University Place.

Existing extraction wells B-1, FD-2 and B-3, which were installed at the Site prior to 1998, were connected to the five SVE wells and piping installed in 2000 to complete the SVE remediation system. Soil boring B-1 was converted to a SVE extraction well and is screened from 10 to 25 feet below grade. Floor drain FD-2 was excavated in 1996 and converted to a SVE extraction well screened 4 to 10 feet below the basement floor. Extraction well B-3 is located in the vicinity of LP-2 and is screened 15 to 30 feet below grade.

Site closure sampling (soil, soil vapor and indoor air perc badge sampling) was conducted in November 2007 – January 2008 in accordance with a NYSDEC approved work plan. The closure sampling results indicated that residual VOC concentrations met applicable NYSDEC and NYSDOH criteria. Permanent shutdown of the SVE system was recommended based on the 2007-2008 closure sampling results. The SVE system was subsequently shut down. All of the remediation system equipment remains in place at the Site.

LEGEND

- SURVEY CONTROL STATION & BASELINE
- RW–1 — EXISTING SVE EXTRACTION WELL
- B–1 — EXISTING SOIL BORING SVE EXTRACTION WELL
- FD–1 — EXISTING FLOOR DRAIN SVE EXTRACTION WELL
- MW2 — EXISTING MONITORING WELL
- PROPERTY LINE

SCALE

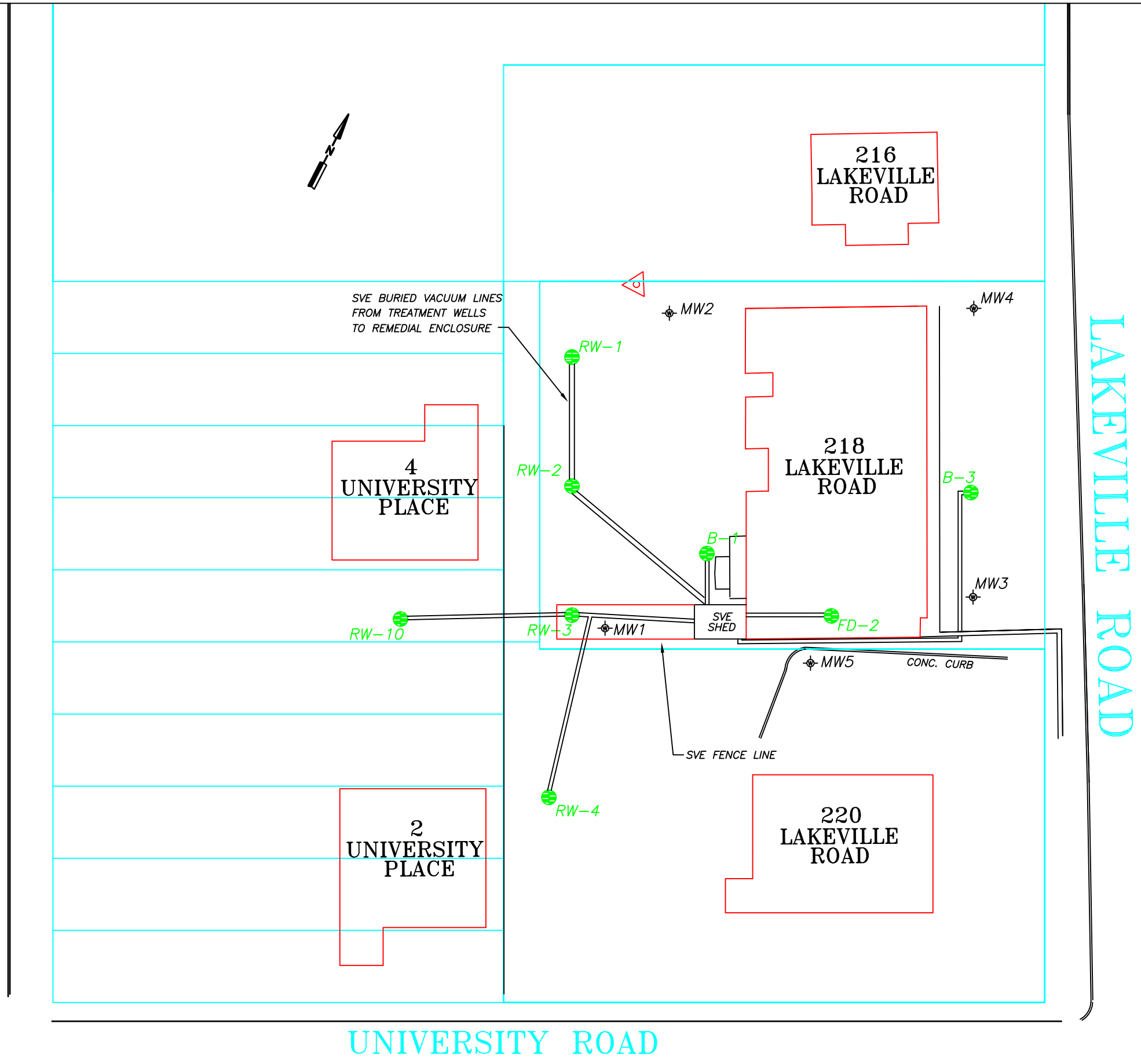
20 10 0 20 FT.

NOTES

1. All extraction wells locations are approximately located based on Anson Environmental's field measurements. No survey was conducted to exactly locate extraction well points.

2. Site base map was derived from a property survey prepared by Welsh Engineering & Land Surveying, P.C., 343 Manville Road, Pleasantville, NY 10570, revised on 7/14/00.

3. The Welsh Eningeering north area was corrected based on 1999 Nassau County GIS basemap.



WALDEN ENVIRONMENTAL ENGINEERING, PLLC
16 Spring Street
Oyster Bay, New York 11771
P: (516) 624-7200 F: (516) 624-3219
www.waldenenvironmental.com
Walden Associates

FOR:
NYSDEC
625 Broadway, 11th Floor,
Albany, New York 12233

DRAWING TITLE:
SVE SYSTEM LAYOUT
218 LAKEVILLE ROAD,
LAKE SUCCESS, NEW YORK

DRAWING NO: 4

JOB NO: SPGL200

DATE: 4-15-08

CAD FILE NAME: Z:\SPGL200 - 218 Lakeville Rd\Site Closure\Closure Report March 2008\Figures.dwg

APPENDIX B
Completed NYSDOH Indoor Air Quality Questionnaire/Building Inventory Sheets

2 University Place

Appendix B
Indoor air quality questionnaire and building inventory

As discussed in Section 2.11, products in buildings should be inventoried every time indoor air is sampled to provide an accurate assessment of the potential contribution of volatile chemicals. In addition, the type of structure, floor layout and physical conditions of the building being studied should be noted to identify (and minimize) conditions that may interfere with the proposed testing.

Toward this end, a blank copy of the NYSDOH Center for Environmental Health's Indoor Air Quality Questionnaire and Building Inventory is provided in this appendix. Also provided is an example that demonstrates how the form should be completed properly.

2 University Place

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 Jessica Bluth Date/Time Prepared 2/17/16

Preparer's Affiliation Walden Environmental Engineering Phone No. (516) 624-7200

Purpose of Investigation Soil Vapor Intrusion Investigation Former Imperial Cleaners Site (VCP Site # V-00244-1)

1. OCCUPANT:

Interviewed: (Y) / N

Last Name: Keeling First Name: Betty

Address: 2 University Place, Great Neck

County: Nassau

Home Phone: (516) 466-3531 Office Phone: _____

Number of Occupants/persons at this location 2 Age of Occupants 45+

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

Interviewed: (Y) / N

Last Name: Keeling First Name: Bill

Address: Same as above

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) _____

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

Other characteristics:

Number of floors 1 + B Building age ~ 1929

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) → except for boiler room	covered with _____	
e. Concrete floor:	(unsealed) → re: exposed floor in boiler room	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
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 – 5 gallon bucket installed by homeowner in boiler room; top of bucket is reportedly sealed to concrete slab floor.			
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)

sump in boiler room (5 gallon bucket, described above) and floor drain just outside doorway to room containing sub-slab vapor sample location; both covered with plastic sheeting during sample collection

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 _____

The primary type of fuel used is:

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

Domestic hot water tank fueled by: natural gas

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	office, spare bedroom
1st Floor	living areas, kitchen
2nd Floor	
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: gas snow-blower, multiple paint cans, 2 propane tanks, 2 portable gas cans

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? _____

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? _____

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: N/A

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:

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
	Pledge Multi-Surface Cleaner	9.7 oz	U	Basement bedroom		
	Leather care foam (M. Benz)	5.07 oz	U	Basement computer room		
	Great Stuff Foam Sealant	16 oz.	U	" "		
	Febreeze	27 fl. oz.	U	" "		
	3M Super 77 Multi-Purpose Adhesive	16.75 oz	U	Basement entry way		
	Resolve Carpet Cleaner Foam	22 oz	UO	" " "		
	Rust-Oleum Protective Enamel	32 fl. oz	U	Basement laundry room		
	Tide (powder)	7.12 lb	U	" " "		
	Behr Interior Satin Enamel	32 oz	U	" " "		
	Lysol Disinfectant Spray	19 oz	U	" " "		
	Xtra Laundry Detergent	2.68 gal	U	" " " (2 containers total)		
	Goof Off Spot Remover	1 fl. oz	U	" " "		
	Pledge Furniture Polish	12.5 oz	U	" " "		
	Quartet Dry-Erase Cleaner	1.68 fl. oz	U	Basement office		
	Quartet Dry-Erase Markers (5)		U	" "		
	Zep Coconut Verbana Air Freshener	7 oz	U	" "		
	Wet Gel Lubricant	3.5 oz	U	Basement bedroom		

* 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.

4 University Place

Appendix B
Indoor air quality questionnaire and building inventory

As discussed in Section 2.11, products in buildings should be inventoried every time indoor air is sampled to provide an accurate assessment of the potential contribution of volatile chemicals. In addition, the type of structure, floor layout and physical conditions of the building being studied should be noted to identify (and minimize) conditions that may interfere with the proposed testing.

Toward this end, a blank copy of the NYSDOH Center for Environmental Health's Indoor Air Quality Questionnaire and Building Inventory is provided in this appendix. Also provided is an example that demonstrates how the form should be completed properly.

4 University Place

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 Jessica Bluth Date/Time Prepared 2/17/2016

Preparer's Affiliation Walden Environmental Engineering Phone No. (516) 624-7200

Purpose of Investigation Soil Vapor Intrusion Investigation
Former Imperial Cleaners Site (VCP Site # V-00244-1)

1. OCCUPANT:

Interviewed: (Y) / N

Last Name: _____ First Name: Aby

Address: 4 University Place, Great Neck NY 11020

County: Nassau

Home Phone: (718) 813-2980 Office Phone: _____

Number of Occupants/persons at this location 2 Age of Occupants 45+

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? N/A

If the property is commercial, type? N/A

Business Type(s) _____

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

Other characteristics:

Number of floors 2+B Building age ~1929

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) → except for laundry room	covered with _____	
e. Concrete floor:	(unsealed) → re: exposed floor in laundry room	sealed	sealed with _____	
f. Foundation walls:	(poured)	block	stone	(other) brick
g. Foundation walls:	unsealed	(sealed) partially	sealed with paint	
h. The basement is:	wet	damp	(dry)	moldy
i. The basement is:	(finished) → except for laundry room	unfinished	partially finished	
j. Sump present?	(Y) / N			

k. Water in sump? Y / N / not applicable – capped; contains sump pump for discharge to sewer

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

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

small (~3" ϕ) hole in laundry room concrete slab floor proximal to sub-slab vapor sample location, used as a condensation drain for boiler/furnace equipment; homeowner stated that he installed the drain himself and it extends ~2-3' laterally beneath the floor.

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 _____

The primary type of fuel used is:

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

Domestic hot water tank fueled by: natural gas

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	recreation, laundry, storage
1st Floor	kitchen, living areas, dining room
2nd Floor	bedrooms
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? _____

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? _____

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: N/A

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:

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.

Sprayway Fast Open 32 (Screen opener for water-based inks) 19 oz. spray can U Basement bathroom

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** Y / N
	Tide Laundry Detergent	25 oz.	U	Basement Laundry Rm.		
	Kirkland Ultra Clean Laundry Det.	1.51 gal	U	" " "		
	Ultra Snuggle Fabric Softener	1.23 gal	U	" " "		
	Spray N' Wash Stain Remover	650 mL	U	" " "		
	Febreeze Fabric Refresher	33.81 fl. oz	U	" " "		
	Ultra Downey Fabric Softener	34 fl. oz	U	" " "		
	Clorox Disinfecting Wipes (wet)	78 wipes	U	" " "		
	Kirkland Fabric Softener Sheets	250 sheets	U	" " "		
	Clorox 2 Laundry Detergent - Stain Remover & Color Booster	3.52 Qt	U	" " "		
	Febreze Extra Strength	116.9 fl. oz	U	" " "		
	Krasdale All-Purpose Ammonia	64 fl. oz	U	" " "		
	Turtle Wax Concentrated Car Wash	1 gal	U	" " "		
MARKED "OIL"	Eater Cleaner/ Degreaser	1 gal	U	" " "		
	Bonide Household Insect Control	128 fl. oz	U	" " "		
	Raid Max Bug Barrier (2)	~~128~~ 156 fl. oz	U	" " "		
(x4)	Behr Interior Semi-Gloss Enamel	480 fl. oz	U	" " "		
	Klean Strip Paint Thinner	1 Qt	U	Basement bathroom		
	Glade Carpet & Room Deoderizer	32 oz	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.

- Clorox Toilet Bowl Cleaner 24 fl. oz Empty Basement bathroom

- Fantastik Oxy Power 26 fl. oz " " "
- Epsom Salt 4 lbs U " "

220 Lakeville Rd.

Appendix B
Indoor air quality questionnaire and building inventory

As discussed in Section 2.11, products in buildings should be inventoried every time indoor air is sampled to provide an accurate assessment of the potential contribution of volatile chemicals. In addition, the type of structure, floor layout and physical conditions of the building being studied should be noted to identify (and minimize) conditions that may interfere with the proposed testing.

Toward this end, a blank copy of the NYSDOH Center for Environmental Health's Indoor Air Quality Questionnaire and Building Inventory is provided in this appendix. Also provided is an example that demonstrates how the form should be completed properly.

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 Jessica Bluth Date/Time Prepared 2/17/2016

Preparer's Affiliation Walden Environmental Engineering Phone No (516) 624-7200

Purpose of Investigation Soil Vapor Intrusion Investigation
Former Imperial Cleaners Site (VCP Site # V-00244-1)

1. OCCUPANT:

Interviewed: Y / N

Last Name: Goodstein Development Corporation First Name: _____

Address: 220 Lakeville Road, Great Neck NY 11020

County: Nassau

Home Phone: _____ Office Phone: (516) 482-8222

Number of Occupants/persons at this location < 10 Age of Occupants 25+

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) N/A - Converted Residence

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) development corp. office

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

Other characteristics:

Number of floors 2 + B Building age ~ 1932

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 _____	
f. Foundation walls:	(poured)	block	stone	other brick
g. Foundation walls:	unsealed	partially sealed?	sealed with paint	
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)

crack traversing basement concrete slab floor in same portion of room as sub-slab vapor sample location; appears to coincide with location of underground sewer pipe. Crack sealed with hydraulic cement prior to sampling.

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 _____

The primary type of fuel used is:

(Natural Gas)	Fuel Oil	Kerosene	* formerly fuel oil
Electric	Propane	Solar	
Wood	Coal		

Domestic hot water tank fueled by: natural gas

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	document storage
1st Floor	offices
2nd Floor	
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? _____

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? _____

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: N/A

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:

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*	Location ~~Chemical Ingredients~~	Field Instrument Reading (units)	Photo** Y / N
	Klean-Strip Lacquer Thinner	1 Qt	U	West basement room		
Gaps & Cracks	Great Stuff Insulating Foam Sealant	16 oz	U	" " "		
	" " Window & Door	16 oz	UO	" " "		
	Klean-Strip Acetone	1 Qt	U	" " "		
	Klean-Strip S-L-X Denatured Alcohol	1 Qt	U	" " " rust on bottom of can		
	Flood Penetrol (Oil-Based Paint Additive)	1 Qt	U	" " " rust on bottom of can		
	Klean-Strip Japan Drier	16 fl.oz	U	" " "		
	Minwax Polyurethane (2)	16 oz. total	U	" " "		
	Minwax Pre-Stain Wood Conditioner	1 Qt	U	" " "		
	Klean-Strip Mineral Spirits	1 gal	U/D	" " " rust on bottom of can		
	DAP Plaster of Paris	4 lbs	U	" " "		
	Acryl Pro Ceramic Tile Adhesive	1 gal	U	" " "		
	Simple Set Thin-Set Mortar	1 gal	U	" " " (for stone, porcelain & ceramic tile)		
	Sheetrock All Purpose Joint Compound	61.7 lbs	U	" " "		
	Comet Spray Gel Mildew Remover	32 fl.oz	U	East basement (file) room		
	Mr. Clean with Febreze Cleaner	1 gal	U	" " "		
	America's Choice White Distilled Vinegar	1 gal	U	" " "		
	Konica Minolta Toner Cartridges	5	U/UO	Central basement room		

* 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.

APPENDIX C
Laboratory Analytical Report

APPENDIX D
Data Usability Summary Report

Data Usability Summary Report

Soil Vapor Intrusion Investigation
Former Imperial Cleaners Site
218 Lakeville Road, Lake Success, NY
VCP Site #V-00244-1

This Data Usability Summary Report (DUSR) has been prepared in accordance with the NYSDEC Draft DER-10 Appendix 2B Guidance for the Development of Data Usability Summary Reports. The DUSR provides a thorough evaluation of analytical data without using the services of an independent third party data validator. The primary objective of the DUSR is to determine whether or not the data presented meets project specific criteria for data quality and use.

The analytical data were evaluated by Ms. Jessica Bluth (Walden), whose experience and qualifications to prepare the DUSR for this project are presented in the attached resume. The samples collected for laboratory analysis as part of the soil vapor intrusion investigation were submitted to Phoenix Environmental Laboratories, Inc. (Phoenix) of Manchester, NH, a NYSDOH ELAP certified laboratory, and analyzed for VOCs using USEPA Method TO-15 with the analytical detection limits set forth in the NYSDOH SVI guidance document. The DUSR process consisted of evaluating the analytical data package produced by Phoenix and answering the following questions.

1. Were there any deviations in the sampling protocol which deviated from established sampling procedures?

The regulators attached to the 6-liter Summa® canisters were set for 24 hours by the laboratory. The samples were collected over an average of approximately 26 hours, with a sampling flow rate well below the required maximum rate of 0.2 liters (200 mls) per minute.

2. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The sampling and analytical program outlined in the *Soil Vapor Intrusion Investigation Work Plan* (Work Plan; Walden, December 2015) was designed to conform to the NYSDEC ASP Category B and USEPA CLP deliverables criteria. Both field sampling and laboratory analytical activities were performed with built-in QA/QC programs. Duplicate samples were collected at a minimum of one sample per ten samples collected with a minimum of one of each type of sample (i.e. one sub-slab, one indoor air, and one outdoor air). The analytical

laboratory (Phoenix) included method blanks and batch QA/QC samples as part of their standard QA/QC program. Additionally, the samples were handled in compliance with the holding time allowances.

3. Have all holding times been met?

Times of sample receipt, extraction, and analysis have been inspected to determine whether the holding time specifications have been met. All of the samples were analyzed within the specified holding times.

4. Do all QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls, and sample data fall within the protocol-required limits and specifications?

All of the primary sample data and QC data were reviewed. Duplicate sample analyses amongst the primary samples (sub-slab soil vapor, indoor air and ambient air) demonstrated a reasonable level of accuracy in the analytical results, and all of the data met the protocol-required criteria with only a few exceptions as noted below.

Batch QA/QC samples were run by the laboratory as part of their standard QA/QC program. Evaluation of the QA/QC data indicated that all laboratory control sample (LCS) recovery and relative percent difference (RPD) values were within required limits with the following exceptions:

- RPDs slightly above the designated limit of 20 were reported for 4-methyl-2-pentanone, acetone and chloromethane in one batch QA/QC sample. These values indicate the potential for slight variability (i.e. reduced precision) in the primary sample results for these analytes. For 4-methyl-2-pentanone and chloromethane, the QC sample results were very close to the reporting limit of 1.00 $\mu g/m^3$; according to a laboratory representative, high RPDs are commonly reported under such circumstances. The RPD exceedances were minor and these compounds are not primary NYSDOH-specified contaminants of concern; therefore, this data does not present an issue.
- The LCS recovery for acetone slightly exceeded criteria in one QA/QC sample, indicating that the acetone results reported for the primary samples may be slightly biased high. Measurable concentrations of acetone were detected in all of the primary environmental samples; however, the concentrations were less than 150 $\mu g/m^3$ and acetone is not a NYSDOH-specified contaminant of concern. Therefore, this LCS exceedance does not present an issue.

- An elevated RPD was reported for tetrachlorothene in one batch QA/QC sample, indicating potential variability in the primary tetrachloroethene sample results. Both the primary and duplicate QA/QC sample results were less than five times the reporting limit of 0.25 $\mu g/m^3$; according to a laboratory representative, as per EPA guidance there is no criteria for RPD under such circumstances. Therefore, the reported RPD value does not present an issue for the relevance of the data.

In summary, although some of the QA/QC sample data did not meet required laboratory criteria, the reliability of the laboratory results should not be affected.

5. Have all the data been generated using established and agreed upon analytical protocols?

Laboratory analytical protocols have been developed by the USEPA and are published in USEPA Compendium Method TO-15 (Determination of Volatile Organic Compounds in Air Collected in Specially Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry). The review of the laboratory deliverables indicated that the analytical data for this project was generated following these standard protocols.

6. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

An evaluation of the raw data confirmed the accuracy of the results provided in the data summary sheets and the quality control verification forms included in the analytical data package prepared by the laboratory.

7. Have the correct data qualifiers been used?

The laboratory provided a list of qualifiers used in their data reporting. QC failures such as potential sample contamination by laboratory solvents or estimation of sample result values due to analyte concentrations detected above calibration ranges were checked back to the reported data to determine whether the qualifiers were properly used. The evaluation indicated that the laboratory flagged the data using the correct data qualifiers when necessary. The data qualifiers comply with the NYSDEC ASP 95 revised guidelines.

8. Have the minimum reporting limits been met?

The required reporting limits are 0.25 µg/m^3 for TCE and 1.0 µg/m^3 for all other reportable VOCs. The laboratory utilized reporting limits of 0.25 µg/m^3 for PCE, TCE, vinyl chloride, and carbon tetrachloride, and 1.0 µg/m^3 for all other reportable VOCs.

The required reporting limits were met for all samples with the exception of the sub-slab soil vapor samples (SS-1 through SS-9). According to a laboratory representative, these reporting limits could not be obtained for the sub-slab soil vapor samples due to the concentrations of PCE and other VOCs detected in these samples which were present at concentrations above the calibration range(s) for the laboratory instrumentation. Therefore, these samples were run at dilution factors greater than one (1), resulting in higher reporting limits for all reportable VOCs.

In summary, analytical data package review conducted when preparing this DUSR found no data deficiencies, analytical protocol deviations, or quality control problems that impact the quality of the data. No QC exceedances were identified and it was determined that none of the data should be rejected. Therefore, there is no need for resampling or reanalysis based on the evaluation presented herein.

Prepared by:
Jessica Bluth, M.S.

WALDEN ASSOCIATES

Jessica Bluth
Project Geologist

Ms. Bluth is one of Walden Associates' highly knowledgeable project geologists. She specializes in compliance inspections, tank removal, permitting and violation resolution. She has worked with a diverse clientele, including municipal, commercial, industrial and state markets. Ms. Bluth has conducted numerous soil/groundwater quality and sub-surface investigations and has also performed UST-related services for many commercial and industrial petroleum distribution sites throughout New York state.

EDUCATION

M.S. in Geology
University of Pittsburgh, 2004

B.S. Geology
State University of New York at Binghamton, Harpur College of Arts and Sciences, 2001
cum laude

LICENSE/ CERTIFICATIONS

American Institute of Professional Geologists (AIPG)

Certified Professional Geologist (CPG) certification in progress

OSHA 40-hour HAZWOPER Health and Safety Training

Current Loss Prevention System (LPS) Training

Long Island Association of Professional Geologists

SELECTED RELEVANT EXPERIENCE

Retail Petroleum Spill Sites, Long Island and New York City
Managed activities at 17 spill sites. Coordinated and performed field activities including groundwater and soil sampling, soil boring/well installations, well abandonments, subsurface utility markouts and waste disposal oversight. Prepared technical hydrogeologic reports (Subsurface Investigation Reports, Site Conceptual Models, Exposure Assessments, Well Abandonment Reports, etc.) and associated materials including hydrographs, geologic cross-sections, soil boring/ well construction logs, groundwater potentiometric surface and flow direction maps, and contaminant concentration isocontour maps. Responsibilities included the analysis, interpretation and reporting of data (utilizing EQuIS and GAMA for data management purposes); procurement and review of subcontractor proposals; compliance of project-related work with regulatory protocols and deadlines; third-party correspondence; providing direction to contractors and field technicians; and adherence to health and safety requirements.

Multi-Media Sampling Investigations, Long Island, New York City and Westchester County
Performed groundwater, soil/sediment, sub-slab/soil vapor, indoor air) sampling activities at developed and undeveloped residential, commercial, industrial and municipal sites in accordance with Phase II and other investigations as well as ongoing monitoring programs. Coordinated and directed subcontractors performing excavation and remedial activities, soil boring and well installation activities, utility markouts and ground-penetrating radar surveys. Performed and managed monitoring and remedial activities at New York State Brownfield, Inactive Hazardous Waste Disposal (Superfund), Voluntary Cleanup and Solid Waste Management Program sites throughout Long Island and New York City.

WALDEN ASSOCIATES

Department of Parks and Recreation, Village of East Hills, East Hills, NY
Conducted a 5-year compliance inspection on a 2,625 gallon AST for the Village's public pool. Developed a detailed Spill Response and Prevention Plan including flow diagrams for possible spill outcomes, first response methods, management responsibilities, instructions in case of fire, effects of the spill inside and outside of the secondary containment facility and instructions for spill reporting.

Department of Highways, Town of Hempstead, Inwood, NY
Performed "dry-as-a-bone" tightness tests on the facility's 2,500-gallon gasoline UST and 4,000-gallon diesel UST in accordance with Nassau County Fire Marhsal's (NCFM) office. Worked with the Department of Highways to address several violations under the Nassau County Health Department (NCHD) and notified NCHD upon completion.

Various Retail Petroleum Sites
Worked with various industrial and commercial petroleum distribution sites throughout New York. Conducted UST removals, compliance testing, permitting and violation resolutions for a variety of clients.