DATA SUMMARY REPORT

AND

HOME EVALUATION

SOIL VAPOR INTRUSION INVESTIGATION

SITE 1 – FORMER DRUM MARSHALLING AREA

NWIRP BETHPAGE

Bethpage, New York

Naval Facilities Engineering Command
Mid-Atlantic

Contract No. N62470-08-D-1001
Contract Task Order WE06

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NAVAL FACILITIES ENGINEERING COMMAND
MID-ATLANTIC

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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ACRONYMS

APU	Air Purification Unit
AS/SVE	Air Sparging/Soil Vapor Extraction
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	Chain of Custody
CTO	Contract Task Order
°F	Degrees Fahrenheit
HI	Hazard Index
IND	Indoor air sample
INDB	Basement indoor air sample
INDL	Living space indoor air sample
IS	Initial Sampling
mL	Milliliter
mL/min	Milliliter per Minute
NE	Not Established
ND	Non Detect
NFA	No Further Action
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ODA	Outdoor air
PCE	Tetrachloroethene
PSSD	Post Sub-Slab Depressurization
PSVE	Post Soil Vapor Extraction system startup
PUS	Post Air Purification Unit Installation Sampling
RSL	Regional Screening Levels
SSB	Sub-Slab
SSD	Sub-Slab Depressurization
ST	Stack
SVPM	Soil Vapor Pressure Monitor
TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
Tetra Tech	Tetra Tech NUS, Inc.
TR	Target Risk
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
$\mu g/m^3$	micrograms per cubic meter

1.0 INTRODUCTION

Tetra Tech NUS Inc. (Tetra Tech) under Contract Task Order (CTO) WE06 prepared this Data Summary Report and Home Evaluation for the Naval Facilities Engineering Command Mid-Atlantic under the Comprehensive Long-Term Environmental Action Navy (CLEAN) contract number N62470-08-D-1001. This Report summarizes field activities conducted in November 2010. These activities included indoor air, outdoor air, sub-slab vapor, and soil gas sampling at the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York and in the residential neighborhood east of Site 1 at NWIRP Bethpage, Long Island (Figures 1 and 2). This report also includes an evaluation of mitigation measures for each home based on the November 2010 sampling event and recommendations for future actions.

Site 1 – Former Drum Marshalling Area was impacted by the historic releases of chlorinated solvents and was remediated via an air sparging/soil vapor extraction (AS/SVE) system between 1998 and 2002. The treatment and remedial goals were based on protection of groundwater. Soil gas testing conducted in January 2008 indicated elevated concentrations of Volatile Organic Compounds (VOCs) existing along the eastern boundary of Site 1 that could potentially affect the adjacent residential neighborhood (Tetra Tech, 2008a). Additional soil gas testing was conducted in the Town of Oyster Bay right-of-ways from October 2008 through January 2009 to evaluate the potential migration of contaminated soil vapor off-site (Tetra Tech, 2009a). Based on evaluation of this soil gas data, sampling (indoor air, outdoor air, and sub-slab soil vapor) was recommended to evaluate potential vapor intrusion into residential homes.

From January through April 2009, initial soil vapor intrusion sampling was conducted in the residential neighborhood located east and adjacent to Site 1. A total of 18 residential homes were sampled during investigation activities through April 2009 (Tetra Tech, 2009b). As an interim measure, air purification units (APUs) were placed in homes to treat vapors that may have entered the homes. Based on the sample results, six homes did not require further sampling/remediation. Due to the sub-slab vapor and indoor air sampling results, Sub-Slab Depressurization (SSDs) were installed in six residential homes in May 2009.

In June 2009, indoor air monitoring began in order to evaluate mitigation measures installed in the homes and monitor air quality (Tetra Tech, 2009c). The second post SSD system sampling event was conducted in August 2009 (Tetra Tech, 2009d) and the third post SSD sampling event was conducted in November 2009 (Tetra Tech, 2010a). Although the Navy, New York State Department of Environmental Conservation (NYSDEC), and New York State Department of Health (NYSDOH) recommended continued operation of the APU and the SSD at Home #6, the

resident requested removal of these remedial systems. The Navy complied with the request by removing the APU after sampling in November 2009 and removing the SSD in January 2010.

In December 2009, construction of an SVE Containment System along the eastern boundary of Navy property was completed. System start up activities began in December 2009 and was finished in early January 2010. The SVE Containment System is currently in operation at Site 1.

Indoor air monitoring activities continued in 2010 and sampling events were conducted in March, July, August, and November 2010. The November 2010 results are the focus of this report. Results from the March, July, and August 2010 events are presented in the May and November 2010 Quarterly Reports. Indoor air was sampled in ten homes and the SSD system stacks were sampled at five homes during the March 2010 event. In July 2010, air-monitoring activities were only conducted at Home #3 since the house was put on the market to be sold. The two APUs located in the basement and living space were removed and the SSD System was shut down two weeks prior to sampling. A sub-slab (SSB) soil vapor sample, indoor air (basement and living space) samples, and outdoor air sample were collected at Home #3 with only the SVE Containment System in operation. Soil vapor samples were collected from the SSD stacks and Soil Vapor Pressure Monitors (SVPMs) in August 2010. Prior to the sampling activities, SVPMs were retrofitted with Geoprobe® stainless steel implants to minimize potential surface air infiltration and provide better soil gas sampling and vacuum monitoring points. The SVE Containment System was also shutdown prior to sampling to mimic natural conditions and provide existing (or current) soil gas concentrations from the SVPMs and SSD stacks. The November 2010 field activities are described in Section 2.

Air and vapor samples were analyzed for VOCs via United States Environmental Protection Agency (USEPA) TO-15 method. With concurrence from the NYSDOH and NYSDEC the TO-15 list was modified to analyze for site specific compounds associated with Site 1. This work was conducted in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006).

2.0 FIELD AND SAMPLING ACTIVITIES

Soil vapor and air sampling activities were conducted in November 2010. A total of twelve homes and eleven SVPMs were sampled to evaluate soil vapor intrusion and the effectiveness of SVE Containment System. Table 2-1 presents a sample summary of the indoor air, outdoor air, SSB soil vapor, and SVPM soil gas samples collected.

The average temperature during the November 2010 sampling event was approximately 47 degrees Fahrenheit (°F). The predominant wind direction ranged from north to northwest, while the wind speed was variable at 0 to 35 miles per hour. A total of 0.32 inches of precipitation was recorded during this four-day sampling event.

The air and soil vapor samples were shipped to Air Toxics Ltd. in Folsom, CA via overnight carrier (Federal Express) and analyzed for site specific VOCs using the USEPA TO-15 method. The field activities and procedures are described in the following sections.

2.1 Indoor Air Sampling

Indoor air, sub-slab vapor, and outdoor air sampling was conducted at twelve residential homes located in the neighborhood adjacent to Site 1. APU and the SSD Systems were shut off in the homes approximately one week prior to the sampling event to mimic conditions with only the SVE Containment System in operation. The outdoor air samples were collected over the same time period as the sub-slab and indoor air samples to evaluate potential influence of ambient air on indoor air quality. The activities for this sampling event are summarized as follows:

- Scheduled sampling with homeowners
- Re-established previous sampling locations in homes
- Collected a sub-slab vapor, indoor air, and outdoor air samples
- Shipped and analyzed samples for the modified TO-15 VOCs

Sub-slab soil vapor, indoor air, and outdoor air samples were collected using SUMMA® canisters (6 liter) with 24-hour pre-set regulators. The field sampling team completed an Air Sampling Logsheet for each of the sampling locations. Air Sampling Logsheets are presented in Appendix A. A field logbook was also maintained during the field event. Information including sample identification, date and time of sample collection, identity of samplers, sampling methods and devices (including canister and regulator ID numbers), vacuum before and after samples were collected, and weather data were recorded on the sample logsheets and/or in the field logbook.

Indoor air samples were collected in the same locations or as close as possible to the previous and/or initial sample locations in each home. The temporary sub-slab soil vapor probes were installed within approximately 10 inches of the initial sub-slab sample locations. The probe holes were abandoned after sampling by removing the tubing and surface seal followed by filling and/or patching the resulting hole with a bentonite/cement mixture.

Wind direction during sampling was primarily out of the north/northwest during the field event. Outdoor air samples were positioned in an upwind location, within approximately 200 feet of the associated homes at a height of approximately 4 feet above grade. The indoor air, outdoor air, and sub-slab vapor samples were collected in accordance with NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006).

2.2 Soil Gas Sampling

In November 2010, eleven SVPMs were sampled and analyzed for site specific VOCs. The SVE Containment System was not shutdown prior to SVPM soil gas sampling. The soil gas sampling procedures for each SVPM were as follows:

- Connected tee and valve assembly to the sampling port of the SVPM.
- Connected the vacuum pump and purged 2,500 to 3,000 milliliter (mL) of air from the soil gas point and sampling line at a rate of approximately 200 milliliter per minute (mL/min).
- After purge, the vacuum pump was isolated and soil gas was collected in the SUMMA® canister.
- After sample collection, SUMMA® Canisters were shipped and analyzed for VOCs

Soil gas samples were collected using 6 liter SUMMA® canisters with 30 minute pre-set regulators. As with the indoor air sampling, the field team completed Air Sampling Logsheets and recorded sampling information in a field logbook. The Air Sampling Logsheets are presented in Appendix A and the Chain of Custody (COC) Forms are provided in Appendix B.

3.0 HOME EVALUATIONS

In November 2010, indoor air sampling was conducted at twelve of the eighteen homes initially evaluated for soil vapor intrusion. Based on the NYSDOH soil vapor/indoor air matrix, these twelve homes required mitigation and/or monitoring due to the initial sampling results for each home in 2009. For the remaining six homes, based on the initial sampling results, the recommendation was No Further Action (NFA). This section summarizes the analytical results from the indoor air, outdoor air, and sub-slab soil vapor sampling in November 2010 and also presents the re-evaluation of these homes with the NYSDOH matrices (Table 3.3, NYSDOH, 2006).

Based on previous sampling results, it was determined that trichloroethylene (TCE), tetrachloroethene (PCE), and 1,1,1-trichloroethane (TCA) represented the primary chemicals of concern. Therefore, the analytical results for TCE, PCE, and TCA are the focus of the analytical discussions in this section. Other site-related VOC detections are discussed in Section 4.3. Details for each of the air and sub-slab samples that were collected from the twelve homes can be found on the air sample log sheets provided in Appendix A. COC forms and a database summary of analytical results are located in Appendix B and C, respectively. The data summary provided in Appendix C includes the analytical results by home for each of the sampling events beginning with the initial sampling in each home. Data validation summaries are presented in Appendix D. A summary table including the analytical results for TCE, PCE, and TCA for all 18 homes is presented in Appendix E.

Analytical results from the indoor air sampling are compared to the air guideline values presented in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006). The air guideline values used for evaluation of indoor air and sub-slab soil vapor are in the table below.

Air Guideline Values for Indoor Air and Sub-Slab Values

Chemical	Indoor Air Guideline Value ($\mu g/m^3$)	Sub-Slab Guidance Value ($\mu g/m^3$)
Tetrachloroethene	100[(1)]	1,000[(2)]
Trichloroethene	5[(1)]	250[(2)]
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]

[(1)] = Value derived from NYSDOH guidance (2006), Table 3.1
[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)
$\mu g/m^3$ = micrograms per cubic meter of air

3.1 Home #1

The home was initially sampled in January 2009. Home #1 does not have a basement, so indoor air samples were collected from the ground floor living space. After initial sampling, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed on the ground floor living space. Based on the initial sampling results (Table 3-1), the NYSDOH soil vapor/indoor air matrix recommended mitigation for TCE and PCE, and monitoring for TCA at Home #1.

Indoor air monitoring was conducted throughout 2009 and in March 2010. A sampling summary presenting analytical results (TCE, PCE, and TCA only) for these monitoring events can be found in Appendix E.

The APU was turned off approximately one week prior to the November 2010 sampling event in order to mimic conditions in the home with only the SVE Containment System running. PCE and TCA were not detected in the indoor air sample and TCE was detected at a concentration of 0.22 J µg/m^3. This concentration is below the NYSDOH Air Guideline Value for TCE. A sub-slab sample was also collected during the November sampling event and the results indicated sub-slab vapor concentrations of TCE at 1.8 µg/m^3, PCE at 1.5 µg/m^3, and TCA at 0.42 µg/m^3. These concentrations were below the NYSDOH Guideline Values and were significantly lower than the initial sub-slab results in 2009. Analytical results from the initial sampling event and the November 2010 sampling are presented in Table 3-1. The November 2010 analytical results were compared to the NYSDOH decision matrices and based on this evaluation, NFA was recommended for site-related VOCs in this home. The APU installed on the ground floor living space was turned back on after sampling and remains in operation.

3.2 Home #2

The home was initially sampled in January 2009. After the initial sampling event, an APU was installed in the basement as an interim mitigation measure. The sewer utility sump in the basement was also sealed to reduce a potential pathway for soil vapor to enter the home. Due to the initial first floor living space results, a second APU was installed on the first floor in March 2009. Analytical results from the initial sampling event are presented in Table 3-2. Based on the NYSDOH matrix evaluation of the initial sampling results, mitigation was the recommended action for concentrations of TCE, PCE, and TCA. Therefore a SSD system was installed in May 2009 as a supplemental mitigation measure. Since the SSD stack concentrations reported in September

2009 remained elevated, the SSD fan was upgraded after sample collection in November 2009 to increase the vacuum under the slab of the home.

Indoor air monitoring was conducted throughout 2009 and 2010. Figure 3 depicts the time trends for TCE, PCE, and TCA concentrations from January 2009 through November 2010 and also presents the dates for the implementation of mitigation systems. An analytical summary table presenting results for TCE, PCE, and TCA during these monitoring events can be found in Appendix E.

The APU and SSD System were turned off prior to the November 2010 sampling event in order to mimic conditions in the home with only the SVE Containment System in operation. The November 2010 sampling results indicated concentrations of TCA in the living space at a concentration of 0.95 µg/m^3 and 3.1 µg/m^3 in the basement air. TCE and PCE were not detected in either air sample. All concentrations were below the NYSDOH indoor air guideline values. The sub-slab vapor results indicated concentrations of TCA at 1.3 µg/m^3 and PCE at 0.47 J µg/m^3. TCE was not detected in the sub-slab vapor sample. November 2010 analytical results were evaluated against the NYSDOH decision matrices (Table 3-2) and NFA was the recommended action for site-related VOCs in this home. The SSD system and the APUs installed in the basement and first floor were turned back on after sampling and remain in operation.

3.3 Home #3

The home was initially sampled in January 2009 and the analytical results are presented in Table 3-3. After the initial sampling event, an APU was installed in the basement as an interim mitigation measure. The sewer utility sump and observable cracks in the basement floor and walls were sealed at this time to reduce these potential pathways for soil vapor to enter the home. Based on the indoor air results, a second APU was installed on the first floor in February 2009. Based on the NYSDOH matrix evaluation of the initial sampling results, mitigation was the recommended action for concentrations of TCE, PCE, and TCA. Therefore a SSD system was installed in May 2009 as a supplemental mitigation measure. Based on the SSD stack concentrations observed in September 2009, the SSD fan was upgraded after sample collection in November 2009 to increase the vacuum under the slab of the home. At the homeowner's request, the APUs in the basement and living space of Home #3 were removed in July 2010.

Indoor air monitoring was conducted throughout 2009 and 2010. Figure 4 depicts the time trends for TCE, PCE, and TCA concentrations from January 2009 through November 2010 and also presents the dates for the implementation of mitigation systems. An analytical summary table

presenting results for TCE, PCE, and TCA during these monitoring events can be found in Appendix E.

The SSD system was turned off prior to the November 2010 sampling event. The November 2010 sampling results for indoor air indicated a concentration of TCA at 2.9 µg/m^3 in the living space and 0.27 J µg/m^3 in the basement air. PCE and TCE were not detected in either indoor air sample. All indoor air concentrations were below NYSDOH indoor air guidelines. The sub-slab vapor results indicated concentrations of TCE at 0.74 µg/m^3, PCE at 0.56 µg/m^3, and TCA at 0.32 J µg/m^3. The sub-slab vapor results were below NYSDOH guidance values. The November 2010 analytical results were evaluated against the NYSDOH decision matrices (Table 3-3) and NFA was the recommended action for site-related VOCs in this home. The SSD system was turned back on after sampling and remains in operation.

3.4 Home #4

The home was initially sampled in January 2009 and the analytical results are presented in Table 3-4. After the initial sampling event, an APU was installed in the southern portion of the basement as an interim mitigation measure. The sewer utility sump, also located in this southern portion of the basement, was sealed to reduce this potential pathway for soil vapor to enter the home. Comparing the initial sampling result to the NYSDOH matrix, mitigation was the recommended action for concentrations of TCE and TCA. Therefore a SSD system was installed in May 2009 as a supplemental mitigation measure.

Indoor air monitoring was conducted throughout 2009 and 2010. Figure 5 depicts the time trends for TCE, PCE, and TCA concentrations from January 2009 through November 2010 and also presents the dates for the implementation of mitigation systems. An analytical summary table presenting results for TCE, PCE, and TCA during these monitoring events can be found in Appendix E.

The SSD system and the APU installed in the basement were turned off prior to the November 2010 sampling event. TCE, PCE, and TCA were not detected in the basement indoor air sample. The sub-slab soil vapor sampling results indicated concentrations of TCE at 7.3 µg/m^3, PCE at 2.0 µg/m^3, and TCA at 0.17 J µg/m^3. The November 2010 analytical results were evaluated against the NYSDOH decision matrices (Table 3-4) and NFA was the recommended action for site-related VOCs in this home. The SSD system and APU were turned back on after sampling and remain in operation.

3.5 Home #5

The home was initially sampled in January 2009 and included the collection of basement air and a sub-slab vapor samples. It should be noted that the homeowner was a professional painter and worked in the basement of the home. Paints, thinners, and other painting supplies were stored in the basement. The homeowner had a personal APU in the basement that was not in operation during the initial sampling.

Sample results from the basement sub-slab vapor sample indicated concentrations of TCE at 0.35 µg/m^3, PCE at 4.5 µg/m3 and TCA at 1.7 µg/m^3. Sample results from the basement air indicated TCA at a concentration of 0.72 µg/m^3. TCE and PCE were not detected in the basement air sample. Analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for site-related VOCs in this home. Therefore, no interim mitigation measures or additional monitoring activities were conducted.

3.6 Home #6

The home was initially sampled in February 2009 and analytical results are presented in Table 3-5. After the initial sampling event and as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Based on the NYSDOH matrix evaluation of the initial sampling results, mitigation was the recommended action for concentrations of TCE, PCE, and TCA. Therefore a SSD system was installed in May 2009 as a supplemental mitigation measure. Based on the SSD stack concentrations observed in September 2009, the SSD fan was upgraded after sample collection in November 2009 to increase the vacuum under the slab of the home.

Although the Navy, NYSDEC, and NYSDOH recommended continued operation of the APU and the SSD at Home #6, the resident requested removal of these mitigation systems. The Navy complied with the request by removing the APU after sampling in November 2009 and removing the SSD in January 2010.

Indoor air monitoring was conducted during several events in 2009 and 2010. Figure 6 depicts the time trends for TCE, PCE, and TCA concentrations from January 2009 through November 2010 and also presents the dates for the implementation and removal of mitigation systems. An analytical summary table presenting results for TCE, PCE, and TCA for these monitoring events can be found in Appendix E.

In November 2010, there were no detections of TCE and PCE in the basement indoor air sample. TCE was detected at a concentration of 0.13 J µg/m^3 in the basement air sample. This concentration was below NYSDOH indoor air guidance value. A sub-slab vapor sample was also collected in November 2010. Sampling results indicated concentrations of TCE at 0.67 µg/m^3, PCE at 0.59 µg/m^3, and TCA at 0.36 J µg/m^3. The November 2010 analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for site-related VOCs in this home.

3.7 Home #7

The home was initially sampled in February 2009 and analytical results from the initial and sampling event are presented in Table 3-6. After the initial sampling event, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Based on the NYSDOH matrix evaluation of the initial sampling results, monitoring and mitigation was the recommended action for concentrations of TCE and PCE.

Indoor air monitoring was conducted during several events in 2009 and 2010. An analytical summary table presenting results for TCE, PCE, and TCA for these monitoring events can be found in Appendix E.

The APU installed in the basement was turned off prior to the November 2010 sampling event in order to mimic conditions in the home with only the SVE Containment System in operation. TCE, PCE, and TCA were not detected to the basement air sample. The sub-slab vapor results indicated concentrations of TCE at 0.23 J µg/m^3, and PCE at 1.4 µg/m^3, while TCA was not detected. The November 2010 analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for site-related VOCs in this home. The APU was turned on after sampling and remains in operation.

3.8 Home #8

Home #8 was initially sampled in February 2009 and included the collection of two indoor air samples in the basement and first floor living space, and a sub-slab vapor sample. As an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement immediately after sample collection in February 2009. TCE was detected at a concentration of 16 µg/m^3 in the sub-slab vapor sample. TCE was not detected in the basement or first floor living space samples. PCE was detected at 2.6 µg/m^3, 0.34 µg/m^3, and 3.4 µg/m^3 in the first floor living space, basement air, and sub-slab vapor samples, respectively. TCA was

detected at 0.49 µg/m^3 and 45 µg/m^3 in the basement air and sub-slab vapor samples, respectively. TCA was not detected in the first floor living space sample.

A sampling summary table presenting the analytical results (TCE, PCE, and TCA only) for the initial sampling can be found in Appendix E. The analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for TCE, PCE and TCA. Based on this NYSDOH matrix evaluation, post air purification unit sampling or monitoring was not conducted and the APU was removed from Home #8 in April 2009.

3.9 Home #9

Home #9 was initially sampled in February 2009 and the sampling included the collection of two indoor air samples (basement and first floor living space) and a basement sub-slab vapor sample. As an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement immediately after sample collection in February 2009. Analytical results from the initial sampling event are presented in Table 3-7.

During the initial sampling event, TCE was detected at concentrations of 0.34 µg/m^3, 0.50 µg/m^3, and 21 µg/m^3 in the first floor living space, basement air and sub-slab vapor, respectively. PCE was detected at 0.33 µg/m^3, 0.62 µg/m^3, and 8.8 µg/m^3 in the first floor living space, basement air and sub-slab vapor samples, respectively. TCA was detected at 0.61 µg/m^3, 1.8 µg/m^3, and 140 µg/m^3 in the first floor living space, basement air and sub-slab vapor samples, respectively. The analytical results were evaluated against the NYSDOH decision matrices and NFA was recommended for PCE, while monitoring was recommended for TCE and TCA.

At the homeowner's request, the APU was removed in March 2009. However, the homeowner later decided that they would like to have an APU re-installed in their home. In April 2009, an APU was re-installed in Home #9.

The APU was turned off prior to the November 2010 sampling event in order to mimic conditions in the home with only the SVE Containment System in operation. Concentrations of PCE at 0.38 J µg/m^3 and TCA at 0.45 µg/m^3 were detected in the basement air sample, while TCE was not detected in basement air. Analytical results for the sub-slab vapor sample indicated concentrations of TCE at 0.86 µg/m^3, PCE at 15 µg/m^3, and TCA at 0.73 J µg/m^3. The November 2010 analytical results were evaluated against the NYSDOH decision matrices (Table 3-7) and NFA was the recommended action for site-related VOCs in this home. The APU was turned on at the completion of sampling and remains in operation.

3.10 Home #10

The home was initially sampled in February 2009 and analytical results from the initial sampling event are presented in Table 3-8. After the initial sampling event, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Based on the NYSDOH matrix evaluation of the initial sampling results, monitoring and mitigation was the recommended action for concentrations of TCE, PCE, and TCA.

Indoor air monitoring was conducted during several events in 2009 and 2010. An analytical summary table presenting results for TCE, PCE, and TCA for these monitoring events can be found in Appendix E.

An indoor air sample was collected in the basement in March 2010. The sampling results indicated no detections of TCE, PCE, and TCA in basement air. It should be noted that the APU in the basement was turned off prior to sampling by the resident in February 2010.

The APU was also turned off prior to the November 2010 sampling event. Analytical results for the basement air sample indicate a concentration of PCE at 0.24 J µg/m^3, TCE and TCA were not detected in basement air. A sub-slab vapor sample was also collected and detected a concentration of TCE at 0.83 µg/m^3 and PCE at 3.4 µg/m^3, while TCA was not detected in the sub-slab vapor. The November 2010 analytical results were evaluated against the NYSDOH decision matrices (Table 3-8) and NFA was the recommended action for site-related VOCs in this home. The APU was turned on after sampling was complete and remains in operation.

3.11 Home #11

Home #11 was initially sampled in February 2009, which included the collection of two indoor air samples (basement and first floor living space) and a basement sub-slab vapor sample. During the initial sampling event, TCE and TCA were detected in the sub-slab vapor sample at a concentration of 15 µg/m^3 and 50 µg/m^3, respectively. TCE and TCA were not detected in the first floor living space or basement air samples. PCE was detected at 0.29 µg/m^3 and 40 µg/m^3 in the basement air and sub-slab vapor samples, respectively. PCE was not detected in the first floor living space sample. As an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement immediately after sample collection in February 2009.

The analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for TCE, PCE and TCA. Based on the sampling results and the NYSDOH soil vapor/indoor air matrix, post air purification unit sampling was not conducted and the APU was removed from the home in April 2009.

3.12 Home #12

The home was initially sampled in February 2009 and analytical results from the initial sampling event are presented in Table 3-9. After the initial sampling event, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Based on the NYSDOH matrix evaluation of the initial sampling results, monitoring and mitigation was the recommended action for concentrations of TCE and TCA.

Indoor air monitoring was conducted during several events in 2009 and 2010. An analytical summary table presenting results for TCE, PCE, and TCA for these monitoring events can be found in Appendix E.

The APU installed in the basement was turned off prior to the November 2010 sampling event in order to mimic conditions in the home with only the SVE Containment System in operation. Analytical results for the basement air sample indicate concentrations of PCE at 0.91 µg/m^3 and TCA at 1.5 µg/m^3, while TCE was not detected. These concentrations were below NYSDOH indoor air guidance values. Analytical results for the sub-slab sample indicate concentrations of TCE at 4.8 µg/m^3, PCE at 5.9 µg/m^3, and TCA at 1.2 J µg/m^3. The November 2010 analytical results were evaluated against the NYSDOH decision matrices (Table 3-9) and NFA was the recommended action for site-related VOCs in this home. The APU was turned on after the sampling event and remains in operation.

3.13 Home #13

The home was initially sampled in February 2009. Analytical results from the initial sampling events are presented in Table 3-10. After the initial sampling event, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Based on the NYSDOH soil vapor/indoor air matrix, the initial sampling results at Home #13, mitigation was the recommended action for concentrations of TCE and monitoring was recommended for PCE and TCA. Therefore an SSD system was installed in May 2009 as a supplemental mitigation measure.

Indoor air monitoring was conducted during several events in 2009 and 2010. An analytical summary table presenting results for TCE, PCE, and TCA for these monitoring events can be found in Appendix E. Figure 7 presents the time trends for concentrations of TCE, TCA, and PCE from January 2009 to November 2010.

The SSD system and APU were turned off prior to the November 2010 sampling event to mimic conditions in the home with only the SVE Containment System in operation. TCE, PCE, and TCA were not detected in basement indoor air. A sub-slab sample was also collected. Analytical results indicated concentrations of TCE at 13 µg/m^3, PCE at 5.7 µg/m^3, and TCA at 0.12 J µg/m^3. The November 2010 analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for site-related VOCs in this home. The SSD system stack and APU were turned on after sampling and remain in operation.

3.14 Home #14

The home was initially sampled in March 2009 and analytical results from the March 2009 and November 2010 sampling events are presented in Table 3-11. After the initial sampling event, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Based on the NYSDOH matrix evaluation of the initial sampling results, mitigation was the recommended action for concentrations of TCE and monitoring was recommended for TCA. Therefore an SSD system was installed in May 2009 as a supplemental mitigation measure.

Indoor air monitoring was conducted during several events in 2009 and 2010. An analytical summary table presenting results for TCE, PCE, and TCA for these monitoring events can be found in Appendix E. Figure 8 presents the time trends for concentrations of TCE, TCA, and PCE from January 2009 to November 2010.

The SSD system and the APU installed in the basement were turned off prior to the November 2010 sampling event. TCA was detected at a concentration of 0.38 J µg/m^3, while TCE and PCE were not detected in the basement air sample. A sub-slab vapor sample was also collected during this event and PCE was detected at a concentration of 0.48 J µg/m^3, while TCE and TCA were not detected. The November 2010 analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for site-related VOCs in this home. The SSD system and APU were turned back on after sampling and remain in operation.

3.15 Home #15

Home #15 was initially sampled in March 2009 and the sampling included the collection of two indoor air samples (basement and first floor living space) and a basement sub-slab vapor sample. Analytical results from the initial sampling event are presented in Table 3-12. As an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement immediately after sample collection in March 2009.

During the initial sampling event, TCE was detected at 25 µg/m^3 in the sub-slab vapor sample. TCE was not detected in the basement air and living space samples. PCE was detected at concentrations of 0.3 µg/m^3, 0.62 µg/m^3, and 38 µg/m^3 in the first floor living space, basement air and sub-slab vapor samples, respectively. TCA was detected at 0.66 µg/m^3 and 160 µg/m^3 in the basement air and sub-slab vapor samples, respectively. TCA was not detected in the first floor living space sample. Analytical results were evaluated against the NYSDOH decision matrices (Table 3-12) and NFA was recommended for TCE and PCE, while monitoring was recommended for TCA. Based on the homeowner's request, the APU installed in the basement of Home #15 remained in operation. Since VOC concentrations did not exceed the NYSDOH air guideline values, additional air monitoring was not conducted.

The APU was shut off prior to the November 2010 sampling event in order to mimic conditions in the home with only the SVE Containment System in operation. TCE, PCE, and TCA were not detected in the basement air sample in November 2010. A sub-slab vapor sample was collected and results indicated concentrations of PCE at 0.40 J µg/m^3 and TCA at 0.36 J µg/m^3. TCE was not detected in the sub-slab vapor sample. The November 2010 analytical results were evaluated against the NYSDOH decision matrices (Table 3-12) and NFA was the recommended action for site-related VOCs in this home. The APU was turned back on after sampling and remains in operation.

3.16 Home #16

Based on an evaluation of the indoor air sampling conducted in Homes #1 through #15, the Navy and NYSDOH selected Home #16 for indoor air sampling in 2009. Since Home #16 was considered less likely to be impacted by contaminated soil vapor, an APU was not installed immediately after Initial sampling.

The home was initially sampled in April 2009 and the sampling included the collection of two indoor air samples (basement and first floor living space) and a basement sub-slab vapor sample.

TCE was detected at 9.1 µg/m^3 in the sub-slab vapor sample. TCE was not detected in the basement air and living space samples. PCE was detected at concentrations of 0.31 µg/m^3 and 3.8 µg/m^3 in the first floor living space and sub-slab vapor samples, respectively. PCE was not detected in the basement air sample. TCA was detected at 0.27 µg/m^3, 0.51 µg/m^3, and 24 µg/m^3 in the first floor living space, basement air and sub-slab vapor samples, respectively. Analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for this home. Therefore, no interim mitigation measures were conducted and sampling was not conducted during November 2010 sampling event.

3.17 Home #17

Based on an evaluation of the indoor air sampling conducted in Homes #1 through #15, the Navy and NYSDOH selected Home #17 for indoor air sampling. Since Home #17 was considered less likely to be impacted by contaminated soil vapor, an APU was not installed immediately after Initial sampling. Home #17 was initially sampled in April 2009 and the sampling included the collection of two indoor air samples (basement and first floor living space) and a basement sub-slab vapor sample.

TCE was detected at 11 µg/m^3 in the sub-slab vapor sample. TCE was not detected in the basement air and living space air samples. PCE was detected at concentrations of 3 µg/m^3, 6.2 µg/m^3, and 5 µg/m^3 in the first floor living space, basement air, and sub-slab vapor samples, respectively. TCA was detected at 0.15 µg/m^3 and 26 µg/m^3 in the basement air and sub-slab vapor samples, respectively. TCA was not detected in the first floor living space sample. Analytical results were evaluated against the NYSDOH decision matrices and NFA was the recommended action for this home. Therefore, no interim mitigation measures were conducted and sampling was not conducted during November 2010 sampling event.

3.18 Home #18

Based on an evaluation of the indoor air sampling conducted in Homes #1 through #15, the Navy and NYSDOH selected Home #18 for indoor air sampling. Since Home #18 was considered less likely to be impacted by contaminated soil vapor, an APU was not installed immediately after initial sampling.

The home was initially sampled in April 2009 and the sampling included the collection of a basement air and basement sub-slab vapor. A first floor living space sample was not collected

during the April 2009 sampling event due to painting being conducted in the first floor living space.

TCE was detected at concentrations of 1.8 µg/m^3 and 64 µg/m^3, PCE at 1.8 µg/m^3 and 8.4 µg/m^3, and TCA at 0.84 µg/m^3 and 68 µg/m^3 in the basement air and sub-slab vapor samples, respectively. These VOC concentrations were below the respective NYSDOH guideline values. However, analytical results from the ambient outdoor air sample associated with these indoor air samples, contained concentrations of VOCs greater than those detected in the basement air sample. In particular, TCE and PCE were detected at concentrations of 27 µg/m^3 and 3.8 µg/m^3, respectively. Therefore, the Navy and NYSDOH concluded that re-sampling should be conducted to determine whether the TCE and PCE detections were potentially related to soil vapor intrusion.

The re-sampling event was conducted in May 2009 and samples were collected from the basement air, first floor living space, and ambient outdoor air. The analytical results from the outdoor air sample did not show the elevated levels of VOCs as detected in the initial outdoor air sample collected at Home #18. During the re-sampling event, TCE was detected at 0.41 µg/m^3, in the basement air sample. TCE was not detected in the first floor living space sample. PCE was detected at 0.39 µg/m^3 and 0.58 µg/m^3 in the first floor living space and basement air samples, respectively. TCA was not detected in the first floor living space and basement air samples. The analytical results from this re-sampling event and the sub-slab vapor results from the April 2009 sampling event were evaluated against the NYSDOH decision matrices and monitoring/mitigation was recommended for TCE, while NFA was recommended for PCE and TCA. Therefore, interim mitigation measures were not conducted at Home #18.

Attempts were made to contact the homeowners to schedule sampling in November 2010. However, the homeowners did not reply to any of the messages left for them and sampling could not be conducted during November 2010 sampling event.

3.19 November 2010 Outdoor Air Samples

During the November sampling event, outdoor air samples were collected to evaluate potential influence of outdoor air on indoor air quality. The outdoor air samples were collected to represent upwind ambient air data at the time of indoor air sampling in individual homes. For some samples, a single upwind outdoor air sample was used to evaluate multiple homes. Four outdoor air samples were collected during the sampling event in November 2010. None of the nine targeted VOCs were detected in the outdoor air samples. Table 3-13 provides an analytical summary of the outdoor air sampling conducted in November 2010.

3.20 Home Evaluation Summary

TCE, PCE, and TCA represent the primary COCs and are the primary focus for evaluating sub-slab vapor and indoor air data for this soil vapor intrusion investigation. The NYSDOH Soil Vapor Intrusion Guidance document (NYSDOH, 2006) presents decision matrices for these compounds that provide recommended actions and a basis for evaluating the analytical data. The NYSDOH matrices provide guidelines for future action in regards to mitigation, monitoring, and/or NFA. Appendix C presents an analytical data summary including all compounds tested for VOCs during each sampling/monitoring event at each home.

After the initial sampling of all 18 homes in early 2009, analytical data from the indoor air and sub-slab sampling was compared against the NYSDOH matrices. Table 3-14 presents a summary of the NYSDOH soil vapor/indoor air matrix evaluation for each of the residential homes. Based on the evaluation of the initial sampling results, six homes were recommended for NFA, and the remaining twelve homes were recommended for mitigation and/or monitoring.

After evaluating the NYSDOH soil vapor/indoor air matrix for the November 2010 sampling results, NFA was the recommended action at all twelve homes.

4.0 DATA EVALUATION

4.1 Soil Gas and SVE Containment System Evaluation

In December 2009, construction of an SVE Containment System along the eastern boundary of Navy property was completed. System start up activities began in December 2009 and was finished in early January 2010. Vacuum readings from the piezometers located in the residential neighborhood were collected monthly for the first six months of operation. Another round of vacuum readings was collected prior to soil gas sampling in August 2010. The vacuum readings confirm the presence of a SVE Containment System induced vacuum in the subsurface vadose zone below the homes in the residential neighborhood. Table 4-1 presents the vacuum readings recorded during SVE Containment System operation.

Eleven SVPMs were sampled in November 2010. Analytical results for the soil gas samples are presented in Table 4-2 and Figure 9. A comparison of the concentration of VOCs from the initial soil gas testing conducted in January and October 2008 with concentrations observed in the November 2010 sampling event find that the VOCs have been significantly reduced. For example, the highest offsite detection of TCE was found in soil gas sample BPS1-SG2002-20 at 89,000 µg/m^3 in October 2008. During the November 2010 sampling event TCE was detected at 20 µg/m^3 at the same location (BPS1-SVPM2002I). As presented in Table 4-2, the percent reduction of total VOCs in soil gas at these monitoring points ranged from 95.83% to 99.99%.

4.2 Sub-Slab and SSD Stack Evaluation

A summary of TCE, PCE, and TCA concentrations for sub-slab and SSD Stack samples collected during monitoring activities at homes where SSD systems were installed is presented in Table 4-3. Figure 10 through Figure 15 present a time trend of concentrations observed from the initial sampling event at these homes (January, February, or March 2009) through November 2010. While monitoring of the SSD stacks, there was gradual decrease in VOC concentrations after SSD installation.

Concentrations of TCE, PCE, and TCA from the initial sub-slab sampling conducted from January 2009 through March 2009 were compared with the sub-slab concentrations observed in the November 2010. Sub-slab concentrations have been reduced significantly since the initial sampling in these homes. For example, the highest sub-slab concentration of TCE (16,000 µg/m^3), was observed at Home #2 during the initial sampling event. TCE was not detected in the sub-slab sample collected in November 2010. The remaining four homes with SSD systems

have showed similar decreases in concentrations with reductions of TCE in sub-slab soil vapor ranging from 95 - 100%.

4.3 Screening Values and Criteria

Based on the soil gas sampling in the neighborhood and the initial sampling results from the residential homes, it was determined that TCE, PCE, and TCA represented the primary chemicals of concern. However, nine site specific compounds of concern were identified and analyzed for evaluating vapor intrusion in the residential homes. Concentrations of these VOCs in indoor air were also compared to the USEPA regional screening levels for assessing impacts to residential air. The following table presents the USEPA regional screening levels for residential air, the NYSDOH Air Guideline Values, and the maximum concentrations of site-specific VOCs detected in indoor air during the November 2010 sampling.

Site Specific Chemicals of Concern	USEPA Regional Screening Levels (Residential Air)**		NYSDOH Air Guideline Values ($\mu g/m^3$)	Maximum Indoor Air Concentrations (November 2010)
	Carcinogenic Target Risk	Noncancer Hazard Index		
	Target Risk**	Hazard Index**	Air Guideline Values	
1,1,1-Trichloroethane	NE	5,200	100	3.1
1,1-Dichloroethane	1.5	NE	NE	ND
1,1-Dichloroethene	NE	210	NE	ND
1,2-Dichloroethane	0.094	250	NE	0.75
cis-1,2-Dichloroethene	NE	NE	NE	ND
trans-1,2-Dichloroethene	NE	63	NE	ND
Tetrachloroethene	0.41	280	100	0.91
Trichloroethene	1.2	NE	5	0.22 J
Vinyl Chloride	0.16	100	NE	ND

**USEPA Regional Screening Levels (RSLs) - Residential Air Supporting Table, May 2010, in $\mu g/m^3$
(Carcinogenic Target Risk [TR] = 1E-06, Noncancer Hazard Index [HI] = 1)
NE = Not Established
ND = Not Detected

Based on this table, 4 of the 9 site-specific compounds are currently being detected in indoor air and include TCE, PCE, TCA, and 1,2-dichloroethane. The maximum concentrations of TCE and TCA detected in indoor air are below the NYSDOH Air Guidelines and below the USEPA Carcinogenic Target Risk levels at 1E-06 for these compounds. However, concentrations of both PCE and 1,2-dichloroethane exceed the Carcinogenic Target Risk levels at 1E-06, but are within the Carcinogenic Target Risk range of 1E-06 to 1E-04.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the current evaluation of the sampling results the following conclusions were developed:

1. Based on two consecutive rounds of indoor air sampling in 2010, all indoor air concentrations are below the NYSDOH air guideline values with a maximum TCE concentration of 0.22 J µg/m^3 at Home #1 in November 2010. For comparison, after initial sampling in early 2009, three homes had concentrations above NYSDOH air guideline values (maximum concentration of TCE at 180 µg/m^3 in Home #3) and by November 2009, only one home had concentrations above the NYSDOH guidelines (Home #3 with TCE at 5.1 µg/m^3).
2. These reductions resulted from the installation and operation of the APUs, SSDs, and the SVE Containment System.
3. In early 2010, the SVE Containment System began operation and soil gas results have decreased throughout the study area by 95 to 99% (e.g., maximum TCE concentration in co-located soil gas sample decreased from 89,000 µg/m^3 in October 2008 to 18 µg/m^3 in November 2010). This reduction is being attributable to the SVE Containment System.
4. Vacuum readings collected in offsite SVPMs in the residential neighborhood have demonstrated the SVE Containment System is meeting or exceeding its design criteria of preventing further migration of onsite contaminated soil vapor and to the extent practical pulling offsite contaminated soil vapor back to the site.
5. Based on the comparison of the sub-slab soil vapor and indoor air results from the twelve homes sampled in November 2010 to the NYSDOH decision matrices, NFA is the recommended action at all twelve homes.

Recommendations to address soil vapor intrusion from Site 1 are as follows:

1. Conduct a round of soil vapor intrusion sampling in February 2011 to:
    - Confirm the November 2010 analytical results
    - Determine whether the SVE Containment System establishes a vacuum under the residential area of concern and, in particular the homes with SSD systems
    - Determine whether the SVPMs can be used to evaluate vacuum and soil vapor concentrations under the home

2. If inadequate vacuums are being developed under the current SVE Containment System operation, evaluate potential options for improved sub-slab vacuums (e.g., changes in valve positions or operation of second blower)

3. If two consecutive NFAs (November 2010 and February 2011) are determined for a home, and vacuum readings from SVPMs and sub-slab locations indicate the SVE Containment System is forming a vacuum under the home, then discontinue operation of APU and SSD system and limit future sampling and offsite soil vapor monitoring to vacuum readings and VOC concentration measurements in the SVPMs.

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TABLES

TABLE 2-1
SAMPLE SUMMARY
NOVEMBER 2010
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	DATE(s) COLLECTED	DURATION OF SAMPLE
BPS1-SVPM11S	11/12/2010	30 MINUTE
BPS1-SVPM12S	11/12/2010	30 MINUTE
BPS1-SVPM2002D-20101109	11/9/2010	30 MINUTE
BPS1-SVPM2002I-20101109	11/9/2010	30 MINUTE
BPS1-SVPM2002S-20101109	11/9/2010	30 MINUTE
BPS1-SVPM2003D-20101111	11/11/2010	30 MINUTE
BPS1-SVPM2003I-20101111	11/11/2010	30 MINUTE
BPS1-SVPM2004D-20101109	11/9/2010	30 MINUTE
BPS1-SVPM2004I-20101109	11/9/2010	30 MINUTE
BPS1-SVPM2007D-20101111	11/11/2010	30 MINUTE
BPS1-SVPM2007I-20101111	11/11/2010	30 MINUTE
BPS1-AR001-INDL-4	11/10/10 - 11/11/10	24 HOUR
BPS1-AR001-ODA-4	11/10/10 - 11/11/10	24 HOUR
BPS1-AR001-SSB-2	11/10/10 - 11/11/10	24 HOUR
BPS1-AR002-INDB-5	11/8/10 - 11/9/10	24 HOUR
BPS1-AR002-INDL-5	11/8/10 - 11/9/11	24 HOUR
BPS1-AR002-ODA-6	11/8/10 - 11/9/12	24 HOUR
BPS1-AR002-SSB-2	11/8/10 - 11/9/13	24 HOUR
BPSI-AR003-INDB-6	11/8/10 - 11/9/14	24 HOUR
BPSI-AR003-INDL-6	11/8/10 - 11/9/15	24 HOUR
BPSI-AR003-SSB4	11/8/10 - 11/9/16	24 HOUR
BPS1-AR004-INDB-5	11/10/10 - 11/11/10	24 HOUR
BPS1-AR004-SSB-2	11/10/10 - 11/11/10	24 HOUR
BPS1-AR006-INDB-5	11/10/10 - 11/11/10	24 HOUR
BPS1-AR006-ODA-5	11/10/10 - 11/11/10	24 HOUR
BPS1-AR006-SSB-2	11/10/10 - 11/11/10	24 HOUR
BPS1-AR007-INDB-4	11/9/10 - 11/10/10	24 HOUR
BPS1-AR007-ODA-4	11/9/10 - 11/10/10	24 HOUR
BPS1-AR007-SSB-2	11/9/10 - 11/10/10	24 HOUR
BPS1-AR009-INDB-2	11/9/10 - 11/10/10	24 HOUR
BPS1-AR009-SSB-2	11/9/10 - 11/10/10	24 HOUR
BPS1-AR010-INDB-4	11/9/10 - 11/10/10	24 HOUR
BPS1-AR010-SSB-3	11/9/10 - 11/10/10	24 HOUR
BPS1-AR012-INDB-4	11/10/10 - 11/11/10	24 HOUR
BPS1-AR012-SSB-2	11/10/10 - 11/11/11	24 HOUR
BPS1-AR013-INDB-5	11/9/10 - 11/10/10	24 HOUR
BPS1-AR013-SSB-2	11/9/10 - 11/10/10	24 HOUR
BPS1-AR014-INDB-3	11/10/10 - 11/11/10	24 HOUR
BPS1-AR014-SSB-2	11/10/10 - 11/11/10	24 HOUR
BPS1-AR015-INDB-2	11/9/10 - 11/10/10	24 HOUR
BPS1-AR015-SSB-2	11/9/10 - 11/10/10	24 HOUR

NOTES:
All samples collected post SVE Containment System start-up (January 2010)
DUP = Duplicate Sample ST = Stack
INDB = Basement Indoor Air
INDL = Living Space Indoor Air
ODA = Outdoor Air

TABLE 3-1
INDOOR AIR EVALUATION
HOME #1
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (JANUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	LIVING SPACE AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	LIVING SPACE AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**660**	**2.1**	MONITOR	**0.42**	0.53 U	NFA
1,1-Dichloroethane	NE	NE	6 U	0.71 U	NA	0.56 U	0.79 U	NA
1,1-Dichloroethene	NE	NE	**10 J**	0.69 U	NA	0.55 U	0.78 U	NA
1,2-Dichloroethane	NE	NE	6 U	0.71 U	NA	**0.12 J**	0.79 U	NA
cis-1,2-Dichloroethene	NE	NE	5.9 U	0.69 U	NA	0.55 U	0.78 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**520**	**10**	MON/MIT	**1.5**	0.56 U	NFA
trans-1,2-Dichloroethene	NE	NE	5.9 U	0.69 U	NA	0.55 U	0.78 U	NA
Trichloroethene	5[(1)]	250[(2)]	**160**	**2.2**	MITIGATE	**1.8**	**0.22 J**	NFA
Vinyl Chloride	NE	NE	3.8 U	0.45 U	NA	0.36 U	0.50 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-2
INDOOR AIR EVALUATION
HOME #2
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (JANUARY 2009)				NOVEMBER 2010			
			SUB-SLAB VAPOR	BASEMENT AIR	LIVING SPACE AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	LIVING SPACE AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**15,000**	**92**	**73**	MITIGATE	**1.3**	**3.1**	**0.95**	NFA
1,1-Dichloroethane	NE	NE	**78**	**0.66 J**	2.4 U	NA	0.66 U	0.58 U	1.1 U	NA
1,1-Dichloroethene	NE	NE	**130**	**0.89**	2.3 U	NA	0.65 U	0.57 U	1.1 U	NA
1,2-Dichloroethane	NE	NE	34 U	0.74 U	2.4 UJ	NA	0.66 U	0.58 U	1.1 U	NA
cis-1,2-Dichloroethene	NE	NE	**7.2 J**	0.72 U	2.3 U	NA	0.65 U	0.57 U	1.1 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**310**	**7.6**	**4.9**	MON/MIT	**0.47 J**	0.49 U	0.95 U	NFA
trans-1,2-Dichloroethene	NE	NE	34 U	0.72 U	2.3 U	NA	0.65 U	0.57 U	1.1 U	NA
Trichloroethene	5[(1)]	250[(2)]	**16,000**	**140**	**100**	MITIGATE	0.44 U	0.39 U	0.75 U	NFA
Vinyl Chloride	NE	NE	22 U	0.47 U	1.5 U	NA	0.42 U	0.37 U	0.72 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-3
INDOOR AIR EVALUATION
HOME #3
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (JANUARY 2009)				NOVEMBER 2010			
			SUB-SLAB VAPOR	BASEMENT AIR	LIVING SPACE AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	LIVING SPACE AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**10,000**	**95**	**74**	MITIGATE	**0.32 J**	**0.27 J**	**2.9**	NFA
1,1-Dichloroethane	NE	NE	**99**	**0.80**	**0.6 J**	NA	0.6 U	0.72 U	0.64 U	NA
1,1-Dichloroethene	NE	NE	**120**	**0.83**	**0.81 J**	NA	0.59 U	0.71 U	0.63 U	NA
1,2-Dichloroethane	NE	NE	26 U	0.79 U	1.4 UJ	NA	**0.4 J**	**0.36 J**	**0.34 J**	NA
cis-1,2-Dichloroethene	NE	NE	**15 J**	0.78 U	1.3 U	NA	0.59 U	0.71 U	0.63 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**130**	**4.3**	**3.1**	MON/MIT	**0.56**	0.61 U	0.54 U	NFA
trans-1,2-Dichloroethene	NE	NE	26 U	0.78 U	1.3 U	NA	0.59 U	0.71 U	0.63 U	NA
Trichloroethene	5[(1)]	250[(2)]	**13,000**	**180**	**110**	MITIGATE	**0.74**	0.48 U	0.42 U	NFA
Vinyl Chloride	NE	NE	17 U	0.5 U	0.86 U	NA	0.38 U	0.46 U	0.40 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-4
INDOOR AIR EVALUATION
HOME #4
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (JANUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[2]	1,000[2]	**2,100**	**6.4**	MITIGATE	**0.17 J**	0.38 U	NFA
1,1-Dichloroethane	NE	NE	**3 J**	1.5 U	NA	**0.18 J**	0.57 U	NA
1,1-Dichloroethene	NE	NE	**16**	1.4 U	NA	0.41 U	0.56 U	NA
1,2-Dichloroethane	NE	NE	6.3 U	1.5 U	NA	**0.35 J**	**0.75**	NA
cis-1,2-Dichloroethene	NE	NE	6.1 U	1.4 U	NA	0.64 U	0.56 U	NA
Tetrachloroethene	100[1]	1,000[2]	**42**	1.2 U	NFA	**2.0**	0.48 U	NFA
trans-1,2-Dichloroethene	NE	NE	6.1 U	1.4 U	NA	0.64 U	0.56 U	NA
Trichloroethene	5[1]	250[2]	**1,400**	**6.8**	MITIGATE	**7.3**	0.38 U	NFA
Vinyl Chloride	NE	NE	4 U	0.93 U	NA	0.41 U	0.36 U	NA

NOTES:

[1]= Value derived from NYSDOH guidance (2006), Table 3.1

[2] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-5
INDOOR AIR EVALUATION
HOME #6
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (FEBRUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**1,600**	**40**	MITIGATE	**0.36 J**	**0.13 J**	NFA
1,1-Dichloroethane	NE	NE	**3.2 J**	0.72 U	NA	0.60 U	0.58 U	NA
1,1-Dichloroethene	NE	NE	**13**	**0.33 J**	NA	0.59 U	0.57 U	NA
1,2-Dichloroethane	NE	NE	5.1 UJ	0.72 UJ	NA	**0.091 J**	0.58 U	NA
cis-1,2-Dichloroethene	NE	NE	5 U	0.71 U	NA	0.59 U	0.57 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**650**	**56**	MITIGATE	**0.59**	0.49 U	NFA
trans-1,2-Dichloroethene	NE	NE	5 U	0.71 U	NA	0.59 U	0.57 U	NA
Trichloroethene	5[(1)]	250[(2)]	**740**	**43**	MITIGATE	**0.67**	0.39 U	NFA
Vinyl Chloride	NE	NE	3.2 U	0.46 U	NA	0.38 U	0.37 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-6
INDOOR AIR EVALUATION
HOME #7
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (FEBRUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**370**	**1**	MONITOR	0.36 U	0.48 U	NFA
1,1-Dichloroethane	NE	NE	**4.9**	0.63 U	NA	0.54 U	0.71 U	NA
1,1-Dichloroethene	NE	NE	**4.5**	0.61 U	NA	0.53 U	0.69 U	NA
1,2-Dichloroethane	NE	NE	2.3 UJ	**1.3 J**	NA	**0.22 J**	0.71 U	NA
cis-1,2-Dichloroethene	NE	NE	2.2 U	0.61 U	NA	0.53 U	0.69 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**310**	**3.2**	MON/MIT	**1.4**	0.59 U	NFA
trans-1,2-Dichloroethene	NE	NE	2.2 U	0.61 U	NA	0.53 U	0.69 U	NA
Trichloroethene	5[(1)]	250[(2)]	**170**	**0.75**	MON/MIT	**0.23 J**	0.47 U	NFA
Vinyl Chloride	NE	NE	1.4 U	0.4 U	NA	0.34 U	0.45 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-7
INDOOR AIR EVALUATION
HOME #9
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (FEBRUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**140**	**1.8**	MONITOR	**0.73 J**	**0.45**	NFA
1,1-Dichloroethane	NE	NE	0.76 U	0.66 U	NA	1.2 U	0.60 U	NA
1,1-Dichloroethene	NE	NE	0.74 U	0.65 U	NA	1.2 U	0.59 U	NA
1,2-Dichloroethane	NE	NE	**0.24 J**	0.66 U	NA	**0.62 J**	**0.19 J**	NA
cis-1,2-Dichloroethene	NE	NE	0.74 U	0.65 U	NA	1.2 U	0.59 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**8.8**	**0.62**	NFA	**15**	**0.38 J**	NFA
trans-1,2-Dichloroethene	NE	NE	0.74 U	0.65 U	NA	1.2 U	0.59 U	NA
Trichloroethene	5[(1)]	250[(2)]	**21**	**0.5**	MONITOR	**0.86**	0.40 U	NFA
Vinyl Chloride	NE	NE	0.48 U	0.42 U	NA	0.75 U	0.38 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

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NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-8
INDOOR AIR EVALUATION
HOME #10
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (FEBRUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**590**	**3.9**	MON/MIT	0.83 U	0.37 U	NFA
1,1-Dichloroethane	NE	NE	**8.2**	0.54 U	NA	1.2 U	0.55 U	NA
1,1-Dichloroethene	NE	NE	**7.1**	0.53 U	NA	1.2 U	0.54 U	NA
1,2-Dichloroethane	NE	NE	3.1 U	0.54 U	NA	**0.28 J**	0.55 U	NA
cis-1,2-Dichloroethene	NE	NE	**3 J**	0.53 U	NA	1.2 U	0.54 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**670**	**16**	MON/MIT	**3.4**	**0.24 J**	NFA
trans-1,2-Dichloroethene	NE	NE	**1.6 J**	0.53 U	NA	1.2 U	0.54 U	NA
Trichloroethene	5[(1)]	250[(2)]	**300**	**2.9**	MITIGATE	**0.83**	0.36 U	NFA
Vinyl Chloride	NE	NE	2 U	0.34 U	NA	0.78 U	0.35 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-9
INDOOR AIR EVALUATION
HOME #12
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (FEBRUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**330**	**2.2**	MONITOR	**1.2 J**	**1.5**	NFA
1,1-Dichloroethane	NE	NE	**0.58 J**	0.71 U	NA	3 U	0.70 U	NA
1,1-Dichloroethene	NE	NE	**2.2**	0.69 U	NA	2.9 U	0.69 U	NA
1,2-Dichloroethane	NE	NE	1.2 U	**0.27 J**	NA	**0.42 J**	**0.32 J**	NA
cis-1,2-Dichloroethene	NE	NE	1.2 U	0.69 U	NA	2.9 U	0.69 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**19**	**0.85**	NFA	**5.9**	**0.91**	NFA
trans-1,2-Dichloroethene	NE	NE	1.2 U	0.69 U	NA	2.9 U	0.69 U	NA
Trichloroethene	5[(1)]	250[(2)]	**94**	**0.55**	MON/MIT	**4.8**	0.47 U	NFA
Vinyl Chloride	NE	NE	0.76 U	0.45 U	NA	1.9 U	0.44 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-10
INDOOR AIR EVALUATION
HOME #13
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (FEBRUARY 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**440**	**2.3**	MONITOR	**0.12 J**	0.38 U	NFA
1,1-Dichloroethane	NE	NE	**0.46 J**	0.63 U	NA	1.1 U	0.56 U	NA
1,1-Dichloroethene	NE	NE	**2.6**	0.61 U	NA	1.1 U	0.55 U	NA
1,2-Dichloroethane	NE	NE	1.5 U	0.63 U	NA	**0.29 J**	0.56 U	NA
cis-1,2-Dichloroethene	NE	NE	1.5 U	0.61 U	NA	1.1 U	0.55 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**12**	**0.56**	MONITOR	**5.7**	0.47 U	NFA
trans-1,2-Dichloroethene	NE	NE	1.5 U	0.61 U	NA	1.1 U	0.55 U	NA
Trichloroethene	5[(1)]	250[(2)]	**250**	**1.5**	MITIGATE	**13**	0.37 U	NFA
Vinyl Chloride	NE	NE	0.95 U	0.4 U	NA	0.68 U	0.36 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

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NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-11
INDOOR AIR EVALUATION
HOME #14
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (MARCH 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**970**	**2.6**	MONITOR	0.46 U	0.37 U	NFA
1,1-Dichloroethane	NE	NE	3 U	0.69 U	NA	0.68 U	0.55 U	NA
1,1-Dichloroethene	NE	NE	**1.7 J**	0.68 U	NA	0.67 U	0.54 U	NA
1,2-Dichloroethane	NE	NE	3 U	**0.29 J**	NA	0.68 U	0.55 U	NA
cis-1,2-Dichloroethene	NE	NE	2.9 U	0.68 U	NA	0.67 U	0.54 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**15**	**0.46 J**	NFA	**0.48 J**	**0.38 J**	NFA
trans-1,2-Dichloroethene	NE	NE	2.9 U	0.68 U	NA	0.67 U	0.54 U	NA
Trichloroethene	5[(1)]	250[(2)]	**290**	**1.9**	MITIGATE	0.45 U	0.36 U	NFA
Vinyl Chloride	NE	NE	1.9 U	0.44 U	NA	0.43 U	0.35 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-12
INDOOR AIR EVALUATION
HOME #15
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

VOCs (µg/m^3)	NYSDOH INDOOR AIR GUIDELINE VALUES	NYSDOH SUB-SLAB GUIDELINE VALUES	INITIAL SAMPLING (MARCH 2009)			NOVEMBER 2010		
			SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION	SUB-SLAB VAPOR	BASEMENT AIR	NYSDOH MATRIX EVALUATION
1,1,1-Trichloroethane	100[(2)]	1,000[(2)]	**160**	**0.66**	MONITOR	**0.36 J**	0.48 U	NFA
1,1-Dichloroethane	NE	NE	0.66 U	0.72 U	NA	0.64 U	0.71 U	NA
1,1-Dichloroethene	NE	NE	**1.3**	0.71 U	NA	0.63 U	0.69 U	NA
1,2-Dichloroethane	NE	NE	**0.28 J**	**0.72**	NA	**0.43 J**	**0.27 J**	NA
cis-1,2-Dichloroethene	NE	NE	0.65 U	0.71 U	NA	0.63 U	0.69 U	NA
Tetrachloroethene	100[(1)]	1,000[(2)]	**38**	**0.62**	NFA	**0.40 J**	0.59 U	NFA
trans-1,2-Dichloroethene	NE	NE	0.65 U	0.71 U	NA	0.63 U	0.69 U	NA
Trichloroethene	5[(1)]	250[(2)]	**25**	0.48 U	NFA	0.42 U	0.47 U	NFA
Vinyl Chloride	NE	NE	0.42 U	0.46 U	NA	0.40 U	0.45 U	NA

NOTES:

[(1)]= Value derived from NYSDOH guidance (2006), Table 3.1

[(2)] = Value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 1 and 2)

BOLD = Detection

SHADED = Exceedance of NYSDOH Guideline Value

MON/MIT = Monitor or Mitigate

NA = Not Applicable

NE = Not Established

NFA = No Further Action

NYSDOH = New York State Department of Health

µg/m^3 = Micrograms per Cubic Meter

TABLE 3-13
ANALYTICAL SUMMARY
NOVEMBER 2010 OUTDOOR AIR SAMPLING
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR002-ODA-6	BPS1-AR007-ODA-4	BPS1-AR006-ODA-5	BPS1-AR001-ODA-4
VOCs (µg/m^3)				
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	ND	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND

NOTES:
J = Estimated Value
ND = Non-Detect Value
µg/m^3 = micrograms per cubic meter
VOCs = Volatile Organic Compounds

TABLE 3-14
HOME EVALUATION SUMMARY
MATRIX EVALUATION
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

Home Number	INITIAL JANUARY TO MAY 2009 SAMPLING				NOVEMBER 2010 SAMPLING			
	TCE	PCE	TCA	MITIGATION MEASURE	TCE	PCE	TCA	CURRENT MITIGATION MEASURE
1	MITIGATE	MON/MIT	MONITOR	APU	NFA	NFA	NFA	APU
2	MITIGATE	MON/MIT	MITIGATE	APU/SSD	NFA	NFA	NFA	APU/SSD
3	MITIGATE	MON/MIT	MITIGATE	APU/SSD	NFA	NFA	NFA	SSD[(1)]
4	MITIGATE	NFA	MITIGATE	APU/SSD	NFA	NFA	NFA	APU/SSD
5	NFA	NFA	NFA	NOT REQUIRED	NS	NS	NS	NOT REQUIRED
6	MITIGATE	MITIGATE	MITIGATE	APU/SSD	NFA	NFA	NFA	REMOVED[(1)]
7	MON/MIT	MON/MIT	MONITOR	APU	NFA	NFA	NFA	APU
8	NFA	NFA	NFA	APU	NS	NS	NS	REMOVED[(2)]
9	MONITOR	NFA	MONITOR	APU	NFA	NFA	NFA	APU
10	MITIGATE	MON/MIT	MON/MIT	APU	NFA	NFA	NFA	APU
11	NFA	NFA	NFA	APU	NS	NS	NS	REMOVED[(2)]
12	MON/MIT	NFA	MONITOR	APU	NFA	NFA	NFA	APU
13	MITIGATE	MONITOR	MONITOR	APU/SSD	NFA	NFA	NFA	APU/SSD
14	MITIGATE	NFA	MONITOR	APU/SSD	NFA	NFA	NFA	APU/SSD
15	NFA	NFA	MONITOR	APU	NFA	NFA	NFA	APU
16	NFA	NFA	NFA	NOT REQUIRED	NS	NS	NS	NOT REQUIRED
17	NFA	NFA	NFA	NOT REQUIRED	NS	NS	NS	NOT REQUIRED
18	NFA	NFA	NFA	NOT REQUIRED	NS	NS	NS	NOT REQUIRED

NOTES:

[(1)] APU and/or SSD was removed at homeowner's request.

[(2)] APU was installed immediately after initial sampling was conducted. Upon receipt of analytical results and determination of NFA, the APU was removed.

MON/MIT= Monitor or Mitigate

NFA = No Further Action

NS = Not Sampled

SVPM = Soil Vapor Point Monitor

TABLE 4-1
VACUUM READINGS
SVE CONTAINMENT SYSTEM
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

	1/13/2010 *Vacuum (i.w.)*	**1/26/2010** *Vacuum (i.w.)*	**3/4/2010** *Vacuum (i.w.)*	**4/15/2010** *Vacuum (i.w.)*	**5/13/2010** *Vacuum (i.w.)*	**5/27/2010** *Vacuum (i.w.)*	**6/18/2010** *Vacuum (i.w.)*	**8/24/2010** *Vacuum (i.w.)*
SVPM-2002-S	0.08	0.08	0.05	0.06	0.06	0.12	0.04	0.12
SVPM-2002-I	0.14	0.1	0.1	0.12	0.06	0.21	0.04	0.17
SVPM-2002-D	0.2	0.16	0.1	0.1	0.08	0.25	0.04	0.21
SVPM-2003-I	0.05	0.04	0	0.04	0	0.1	0.02	0
SVPM-2003-D	0.05	0.04	0	0.04	0.04	0.08	0.1	0.05
SVPM-2004-I	0.04	0.06	0.05	0.06	0.05	0.1	0.02	0.065
SVPM-2004-D	0	0	0	0.04	0.02	0.04	0.04	0.065
SVPM-2007-I	0.01	0	0	0.03	0.03	0.02	0.02	0.01
SVPM-2007-D	0.02	0	0	0.02	0.04	0	0.02	0.01
Barometric Pressure (in Hg)	30.15	29.7	29.65	30.25	30.3	29.85	29.6	29.9
Wind	8 (NW)	9 mph (W)	10 mph (NNW)	6 mph (NNW)	7 mph (N)	5 mph (SE)	15 mph (SW)	16 mph (NNE)

Notes:
Weather data obtained from www.underground.com for each day of readings
i.w. = inches of water column
in Hg = inches of mercury column
0 = No detectable pressure or vacuum. Detection Limit is approximately 0.01 i.w.

TABLE 4-2
ANALYTICAL COMPARISION OF DETECTIONS
SOIL VAPOR PRESSURE MONITORS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

	SVPM 11		SVPM 12		SVPM 2002							SVPM 2003				SVPM 2004				SVPM 2007			
DEPTH - (BGS)	24 Feet		25 Feet		8 Feet		20 Feet			44 Feet		20 Feet		49 Feet		20 Feet		49 Feet		20 Feet		49 Feet	
SAMPLE ID	SVPM11-24	BPSI - SVPM-11S	SVPM12 S-25	BPS1 - SVPM-12S	BPSI - SG2002-08	BPSI - SVPM-2002S	BPSI - SG2002-20	BPSI - SVPM-2002I	BPSI SVPM-2002I DUP	BPSI - SG2002-44	BPSI - SVPM-2002D	BPSI - SG2003-20	BPSI - SVPM-2003I	BPSI - SG2003-49	BPSI - SVPM-2003D	BPSI - SG2004-20	BPSI - SVPM-2004I	BPSI - SG2004-49	BPSI - SVPM-2004D	BPSI - SG-2007-20	BPSI SVPM-2007I	BPSI - SG2007-49	BPSI - SVPM-2007D
DATE	Jan-08	Nov-10	Jan-08	Nov-10	Oct-08	Nov-10	Oct-08	Nov-10	Nov-10	Oct-08	Nov-10	Oct-08	Nov-10	Oct-08	Nov-10	Oct-08	Nov-10	Oct-08	Nov-10	Oct-08	Nov-10	Oct-08	Nov-10
VOCs (µg/m^3)																							
1,1,1-TRICHLOROETHANE	2,400	2.5	36,000	3.4	21,000	ND	52,000	0.5	0.5	27,000	0.8	170 J	0.14 J	720 J	1.2	460	ND	480	0.7	260	ND	870	1.4
1,1-DICHLOROETHANE	63	ND	710	.097 J	170	ND	680	ND	ND	490	0.20 J	0.49 J	ND	8.6	ND	44	ND	74	ND	ND	ND	3.0 J	ND
1,1-DICHLOROETHENE	ND	ND	1,700	ND	220	ND	890	ND	ND	480	ND	2	ND	23	ND	7.1	ND	ND	ND	0.69 J	ND	13	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	860	1.6	200J	6.4	49 J	ND	170	ND	ND	130	0.19 J	ND	ND	1.6	ND	4.6	ND	ND	ND	ND	ND	ND	0.87
TETRACHLOROETHENE	5,300	39	ND	1.7	420	0.67	740	0.91	0.8	48 J	2.8	14	2.1	8.9	3.6	1,000	0.74	580	5	25	0.30 J	5.3 J	1.8
TRANS-1,2-DICHLOROETHENE	64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.9	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	7,200	620	73,000	52	34,000	3.6	89,000	18	20	26,000	170	82	0.38 J	710	6.4	550	ND	600	0.52	16	ND	400	0.62
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCs	15,887	663.10	111,610	63.60	55,859	4.27	143,480	19.41	21.30	54,148	174.22	268.49	2.74	1,472.10	11.20	2,069.60	0.74	1,734	6.22	301.69	0.30	1,291.30	4.69
PERCENT REDUCTION		95.83%		99.94%		99.99%		99.99%			99.68%		98.98%		99.24%		99.96%		99.64%		99.90%		99.64%

	2008	Nov-10
MEAN TOTAL VOCs	35,284	86.41
MEAN PERCENT REDUCTION		99.76%

NOTES:
BGS = Below Ground Surface
J = estimated value
ND = No Detect
SVPM = Soil Vapor Point Monitor
µg/m^3 = micrograms per cubic meter
VOCs - Volatile Organic Compounds

TABLE 4-3
SUB-SLAB AND SSD STACK ANALYTICAL SUMMARY
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

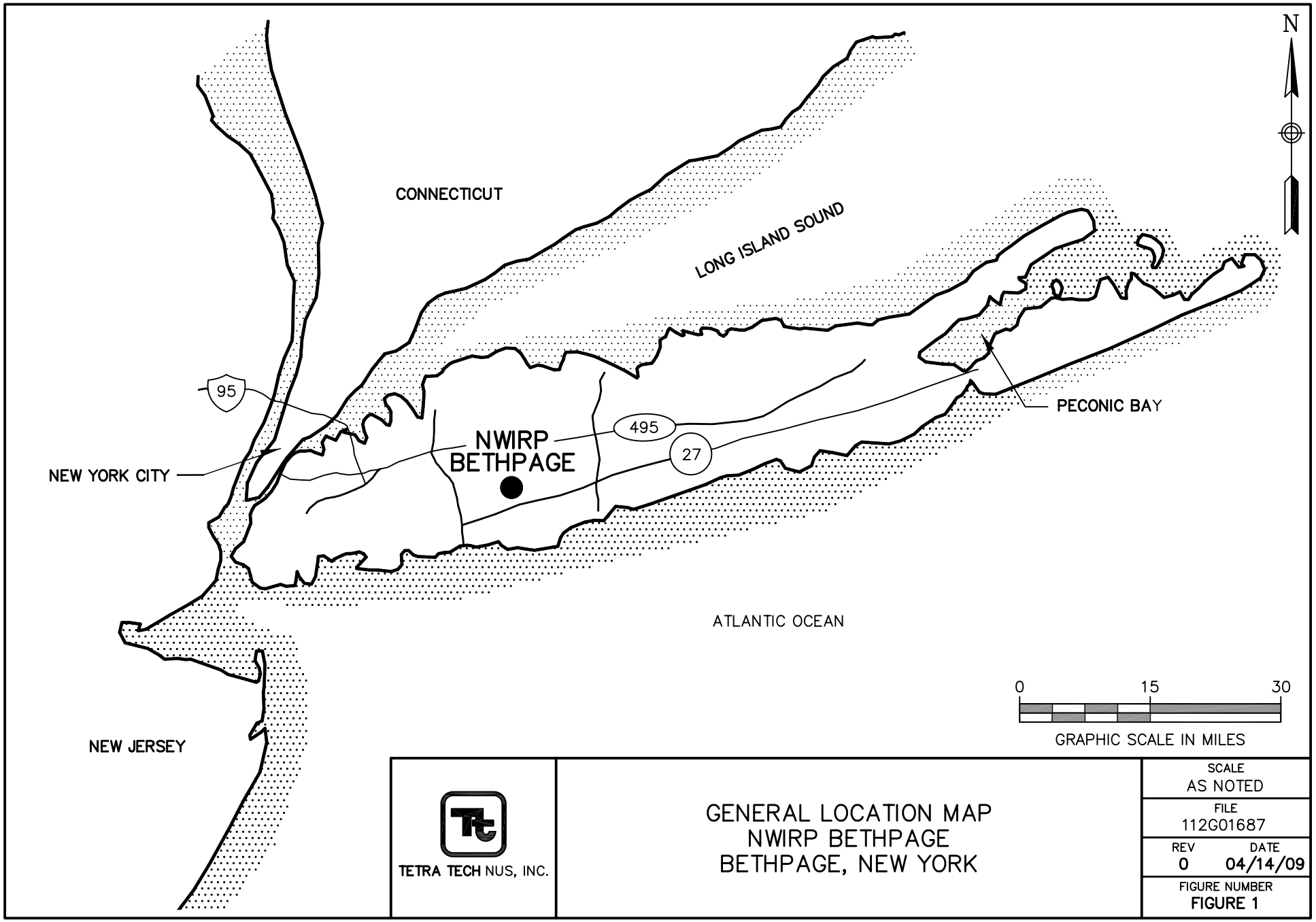
Home #	Mitigation Type	Date Collected	Sample ID	Sample Type	Event Type	TCE ($\mu g/m^3$)	PCE ($\mu g/m^3$)	TCA ($\mu g/m^3$)
2	APU/SSD	1/21/2009	BPS1-AR002-SSB	Subslab	IS	16,000	310	15,000
		6/22/2009	BPS1-AR002-ST01	SSD Stack	PSSD	11,000	280	5,900
		8/25/2009	BPS1-AR002-ST02	SSD Stack	PSSD	12,000	460	5,300
		8/25/2009	BPS1-AR002-ST02 DUP	SSD Stack	PSSD	12,000	500	5,400
		11/16/2009	BPS1-AR002-ST03	SSD Stack	PSSD	9,900	330	3,800
		3/1/2010	BPS1-AR002-ST04 *	SSD Stack	PSSD/PSVE	11	2.4	1.7
		3/1/2010	BPS1-AR002-ST04-DUP *	SSD Stack	PSSD/PSVE	12	2.4	1.9
		8/24/2010	BPS1-AR002-ST05*	SSD Stack	PSSD/PSVE	9.6 J	3.9 J	1.2 J
		11/9/2010	BPS1-AR002-SSB-2*	Subslab	PSSD/PSVE	ND	0.47 J	1.3
3	APU/SSD	1/22/2009	BPS1-AR003-SSB	Subslab	IS	13,000	130	10,000
		6/22/2009	BPS1-AR003-ST01	SSD Stack	PSSD	7,700	92	3,600
		8/25/2009	BPS1-AR003-ST02	SSD Stack	PSSD	10,000	170	4,200
		8/26/2009	BPS1-AR003-SSB2	Subslab	PSSD	260	3.7	38
		11/16/2009	BPS1-AR003-ST03	SSD Stack	PSSD	6,200	64	2,900
		11/16/2009	BPS1-AR003-ST03 DUP	SSD Stack	PSSD	5,400	61	2,200
		3/2/2010	BPS1-AR003-ST04 *	SSD Stack	PSSD/PSVE	3.8	0.82	0.98
		7/28/2010	BPS1-AR003-SSB3*	Subslab	PSVE only	14	0.96	2.3
		8/24/2010	BPS1-AR003-ST05*	SSD Stack	PSSD/PSVE	4.3	2.4	2.4
		11/9/2010	BPS1-AR003-SSB4*	Subslab	PSSD/PSVE	0.74	0.56	0.32 J
4	APU/SSD	1/21/2009	BPS1-AR004-SSB	Subslab	IS	1,400	42	2,100
		6/25/2009	BPS1-AR004-ST01	SSD Stack	PSSD	160	2	190
		6/25/2009	BPS1-AR004-ST01 DUP	SSD Stack	PSSD	160	1.7	180
		8/25/2009	BPS1-AR004-ST02	SSD Stack	PSSD	360	31	210
		11/17/2009	BPS1-AR004-ST03	SSD Stack	PSSD	300	17	140
		3/2/2010	BPS1-AR004-ST04 *	SSD Stack	PSSD/PSVE	1.8	1.5	0.21 J
		8/24/10	BPS1-AR004-ST05*	SSD Stack	PSSD/PSVE	2.3 J	1.9 J	0.17 J
		11/10/10	BPS1-AR004-SSB-2*	Subslab	PSSD/PSVE	7.3	2	0.17 J
13	APU/SSD	2/26/2009	BPS1-AR013-SSB	Subslab	IS	230	11	420
		2/26/2009	BPS1-AR013-SSB DUP	Subslab	IS	250	12	440
		6/24/2009	BPS1-AR013-ST01	SSD Stack	PSSD	70	68	84
		8/25/2009	BPS1-AR013-ST02	SSD Stack	PSSD	48	8.6	58
		11/16/2009	BPS1-AR013-ST03	SSD Stack	PSSD	29	4.8	30
		3/2/2010	BPS1-AR013-ST04 *	SSD Stack	PSSD/PSVE	1.1	1.3	1.8
		8/24/2010	BPS1-AR013-ST05*	SSD Stack	PSSD/PSVE	0.87	2.2	0.31 J
		8/24/2010	BPS1-AR013-ST05 DUP*	SSD Stack	PSSD/PSVE	0.94	2.5	0.34 J
		11/10/2010	BPS1-AR013-SSB-2*	Subslab	PSSD/PSVE	13	5.7	0.12 J
14	APU/SSD	3/11/2009	BPS1-AR014-SSB	Subslab	IS	290	15	970
		6/24/2009	BPS1-AR014-ST01	SSD Stack	PSSD	88	13	110
		8/26/2009	BPS1-AR014-ST02	SSD Stack	PSSD	30	10	43
		11/17/2009	BPS1-AR014-ST03	SSD Stack	PSSD	12	5.3	13
		3/1/2010	BPS1-AR014-ST04 *	SSD Stack	PSSD/PSVE	1	1.6	0.95
		8/24/2010	BPS1-AR014-ST05*	SSD Stack	PSSD/PSVE	0.55	2.90	0.34 J
		11/11/2010	BPS1-AR014-SSB-2*	Subslab	PSSD/PSVE	ND	0.48 J	ND

NOTES:

* Sample collected after SVE Containment System began operation in January 2010
IS = Initial Sampling
PSSD = Post SSD Installation Sampling
PSVE = Post Soil Vapor Extraction Containment system start up

FIGURES

112G01687/0510/112G01687CM01.DWG 04/14/09 MKB

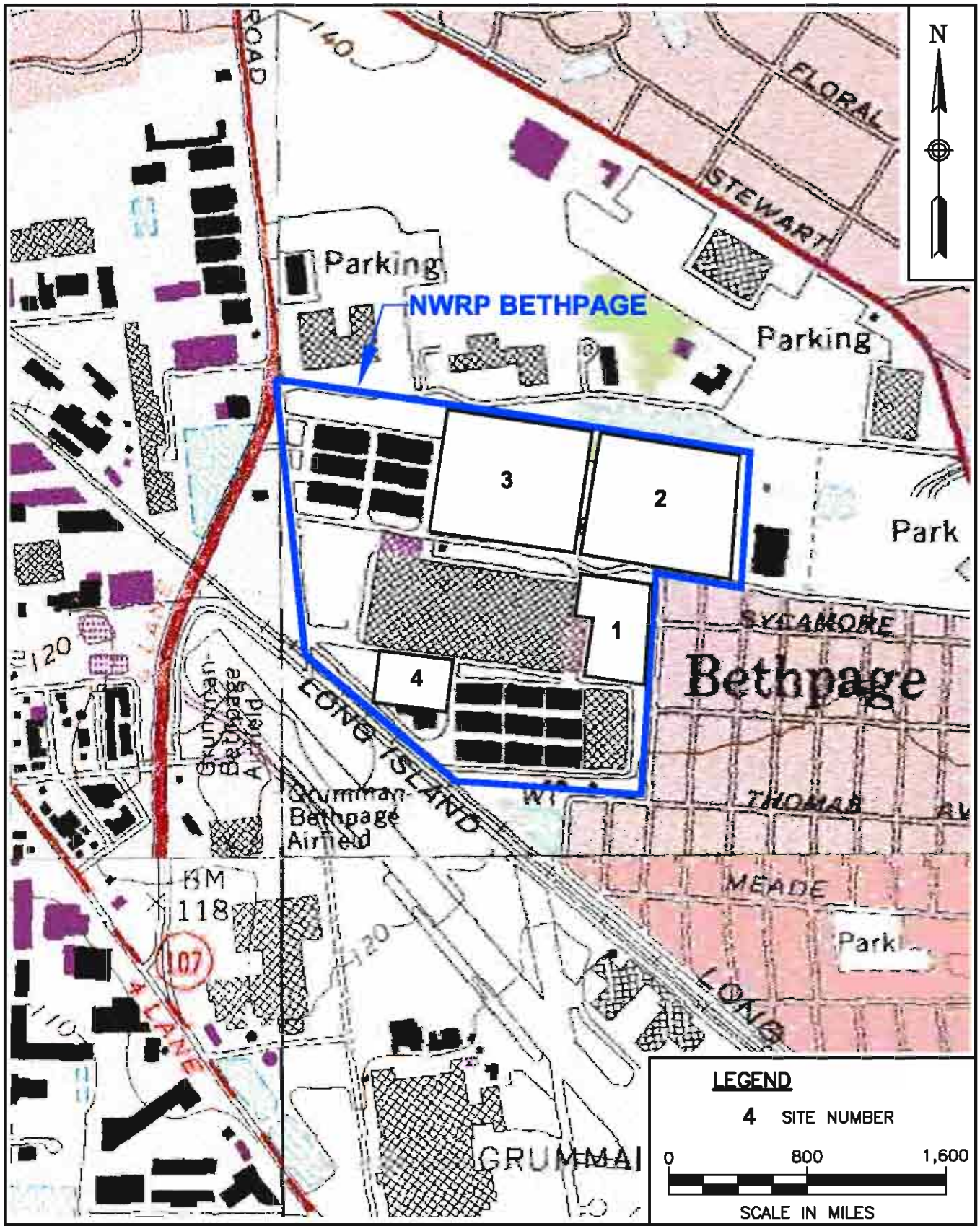


TETRA TECH NUS, INC.

GENERAL LOCATION MAP
NWIRP BETHPAGE
BETHPAGE, NEW YORK

SCALE	AS NOTED
FILE	112G01687
REV	0
DATE	04/14/09
FIGURE NUMBER	FIGURE 1

112G01687/0510/112G01687CM02.DWG 04/14/09 MKB



TETRA TECHNUS, INC.

SITE LOCATION MAP
SITE 1
NWIRP
BETHPAGE, NEW YORK

SCALE	AS NOTED
FILE	112G01687CM02
REV	0
DATE	04/14/09
FIGURE NUMBER	FIGURE 2

FIGURE 3
HOME #2 TIME TREND
INDOOR AIR CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

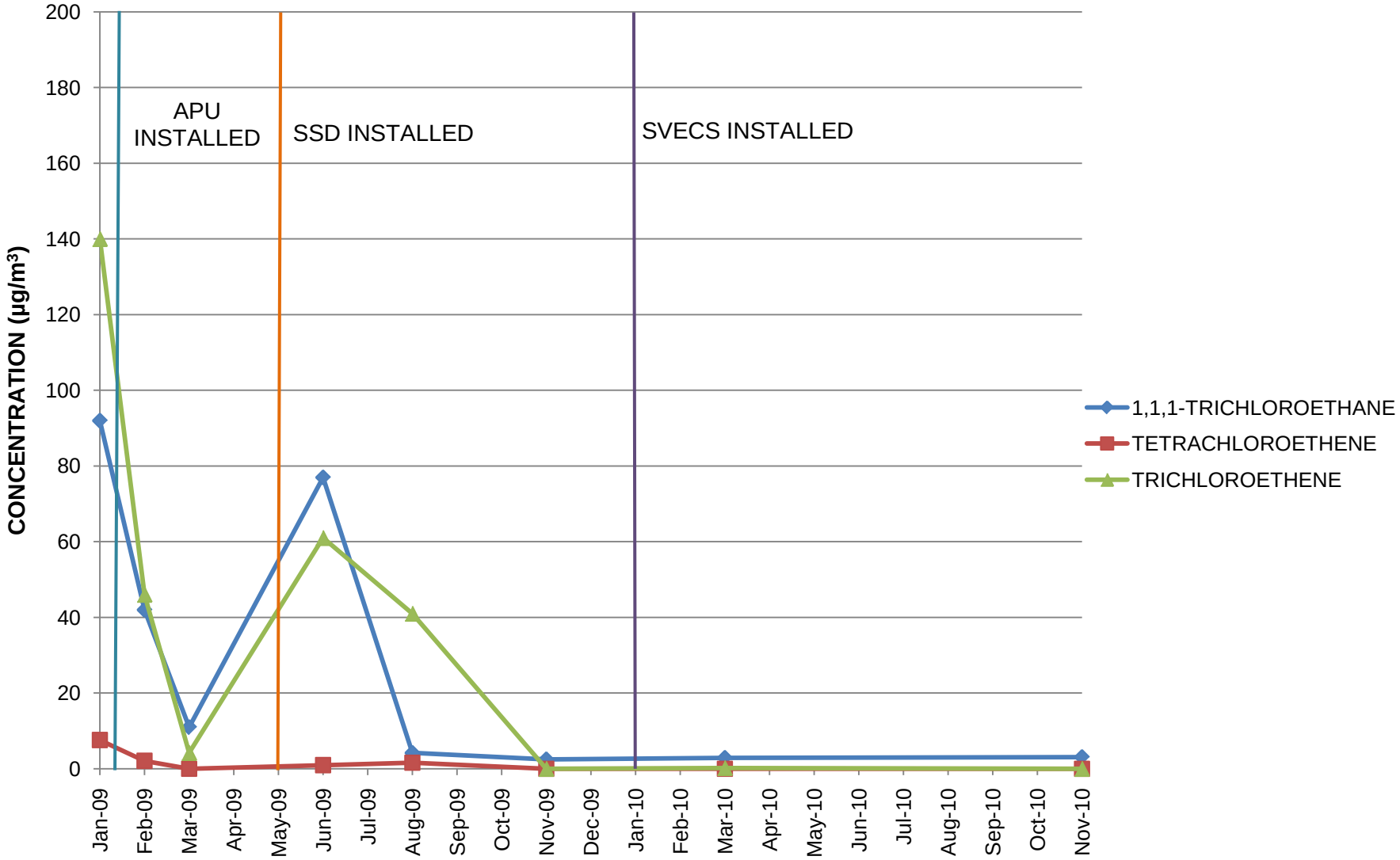


FIGURE 4
HOME #3 TIME TREND
INDOOR AIR CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

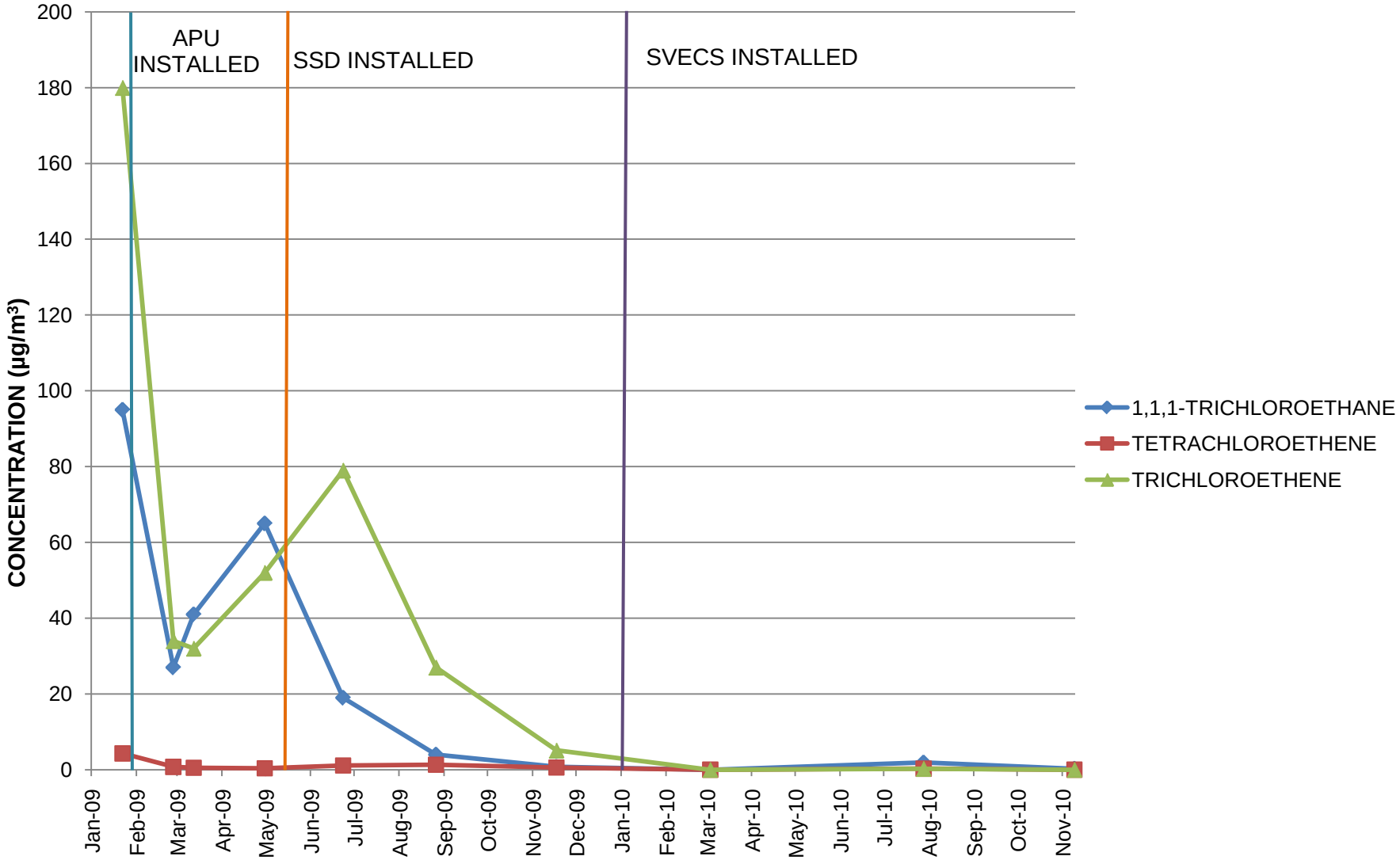


FIGURE 5
HOME #4 TIME TREND
INDOOR AIR CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

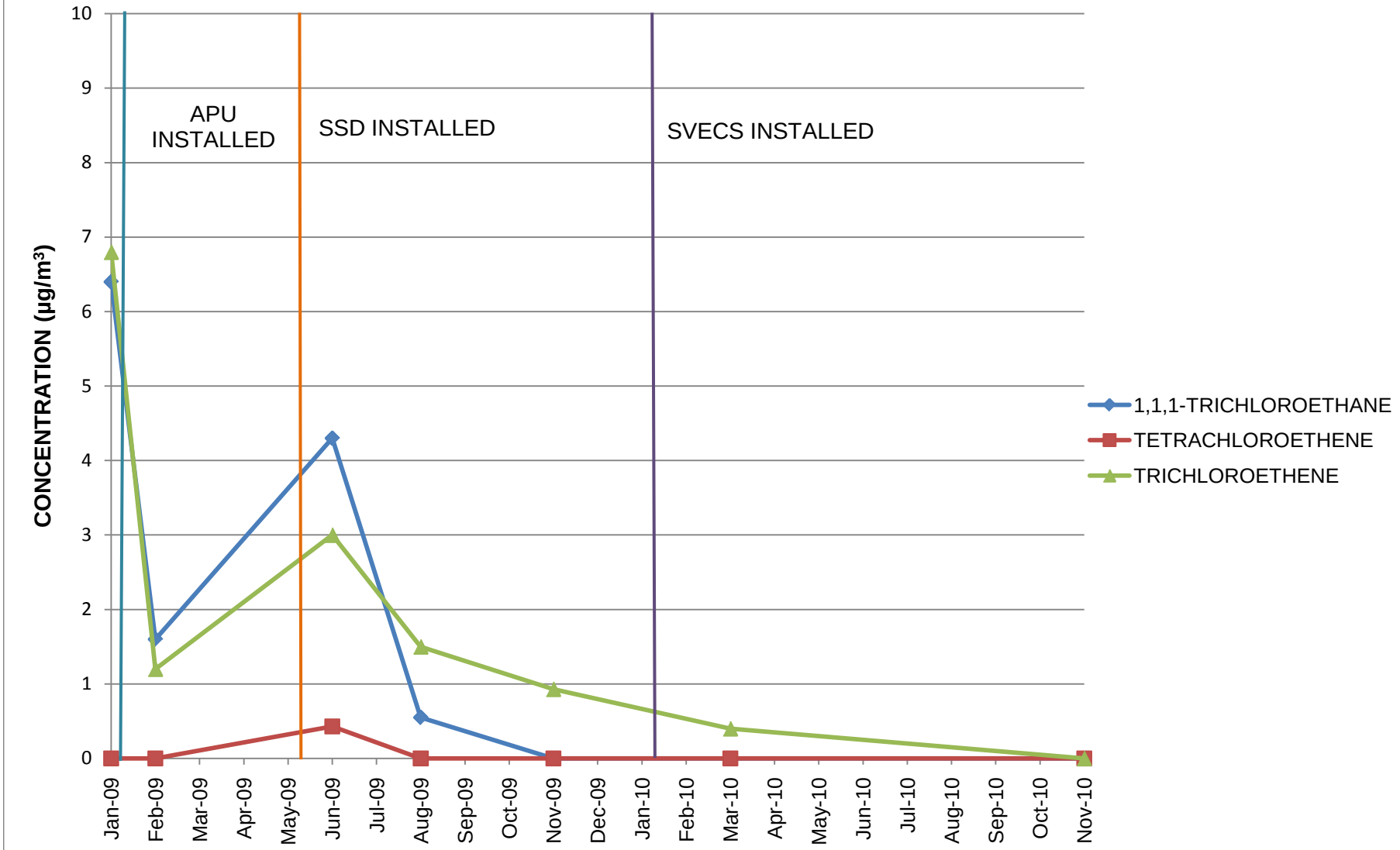


FIGURE 6
HOME #6 TIME TREND
INDOOR AIR CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

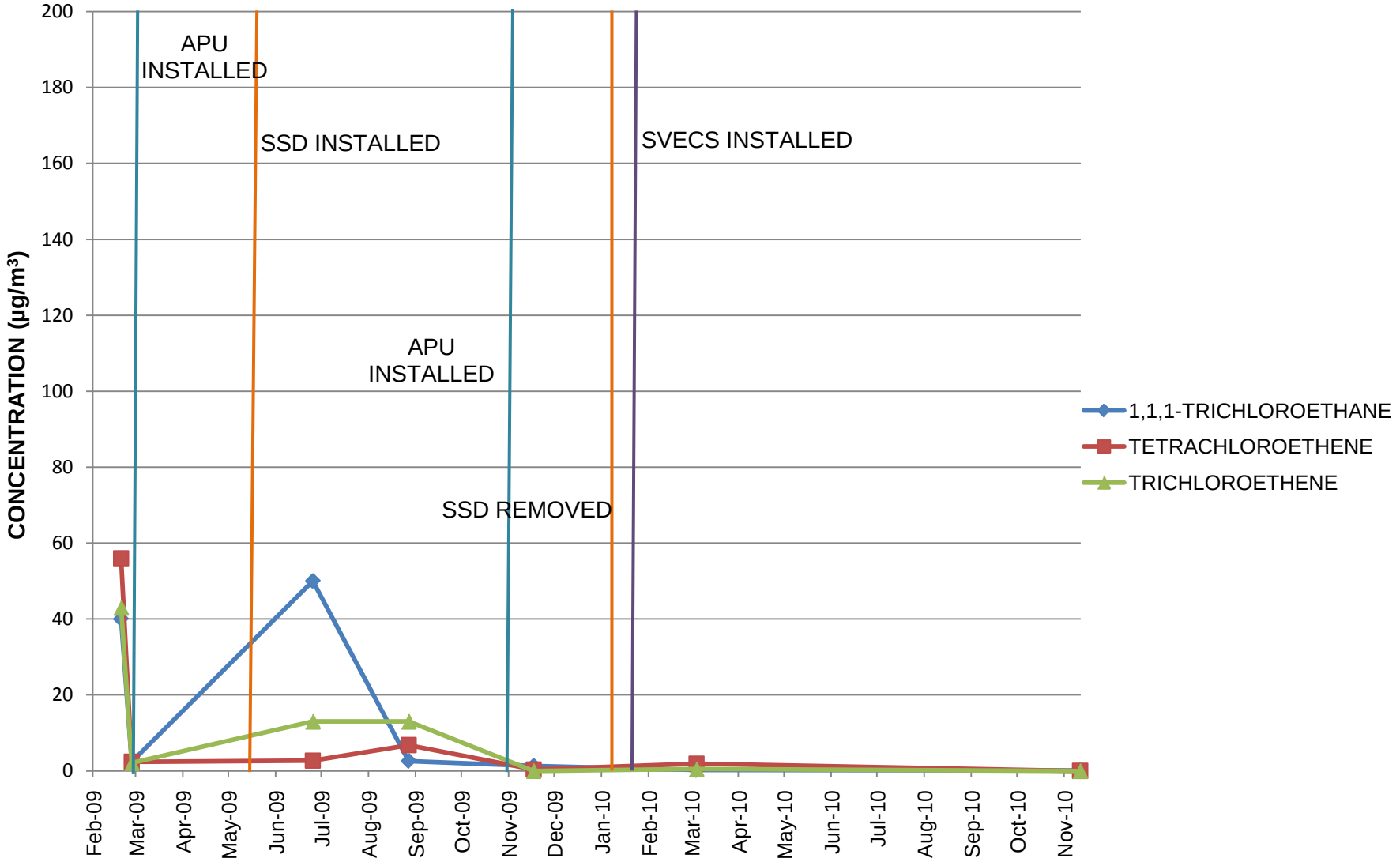


FIGURE 7
HOME #13 TIME TREND
INDOOR AIR CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

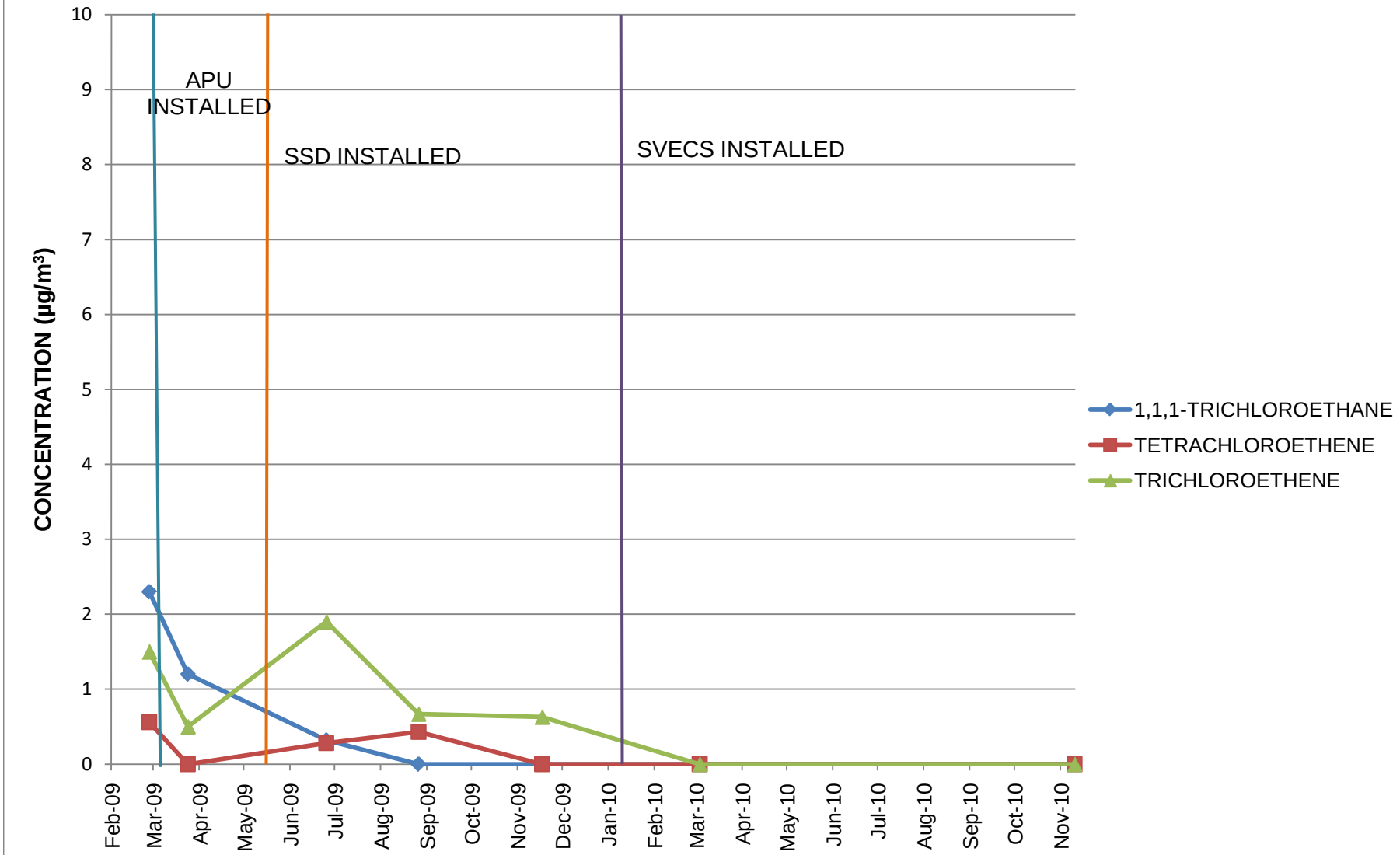
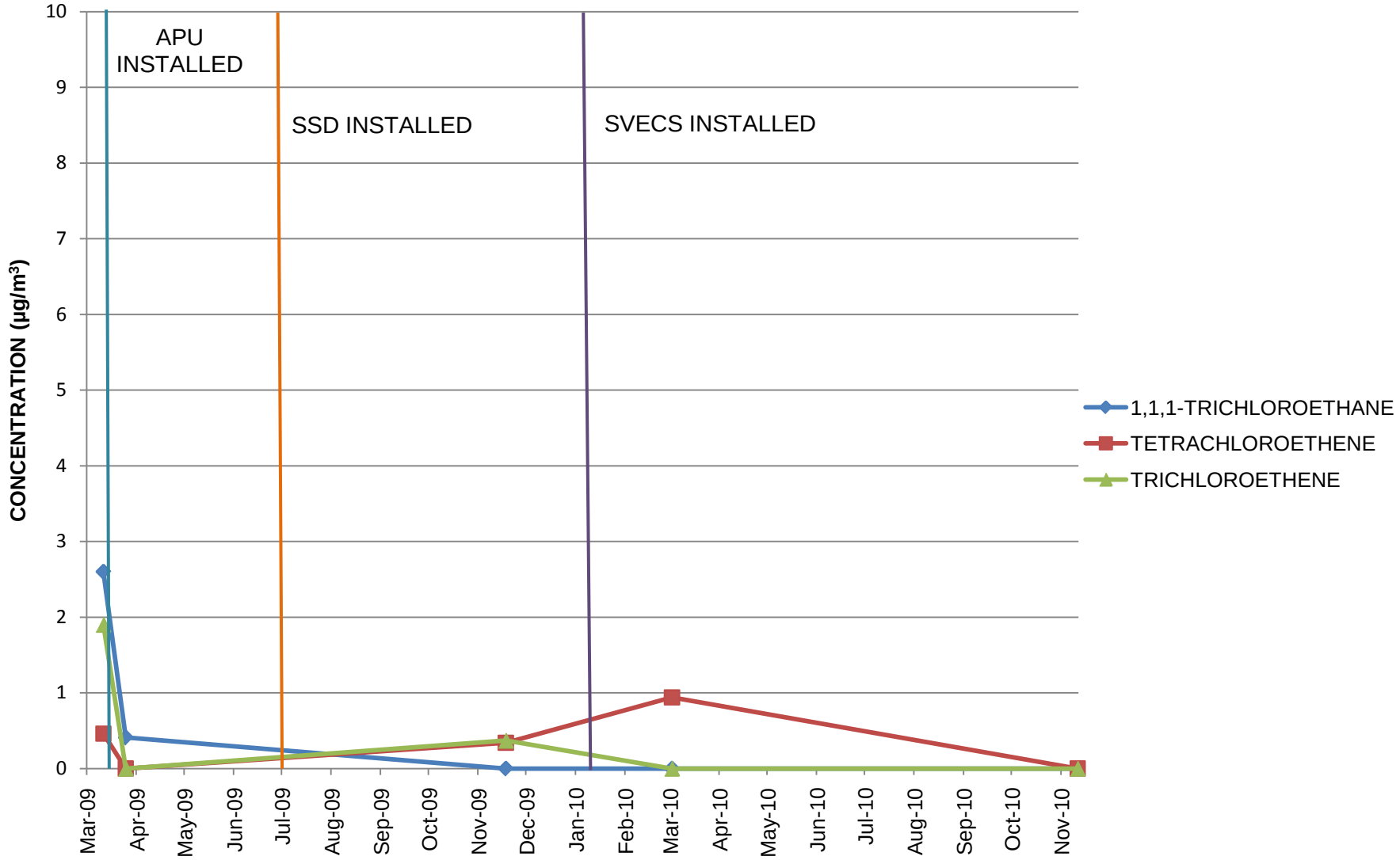


FIGURE 8
HOME #14 TIME TREND
INDOOR AIR CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK



112G02019/0810/112G02019GM04.DWG 01/31/11 MKB

FIGURE 10
HOME #2 TIME TREND
SUB-SLAB and SSD STACK CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

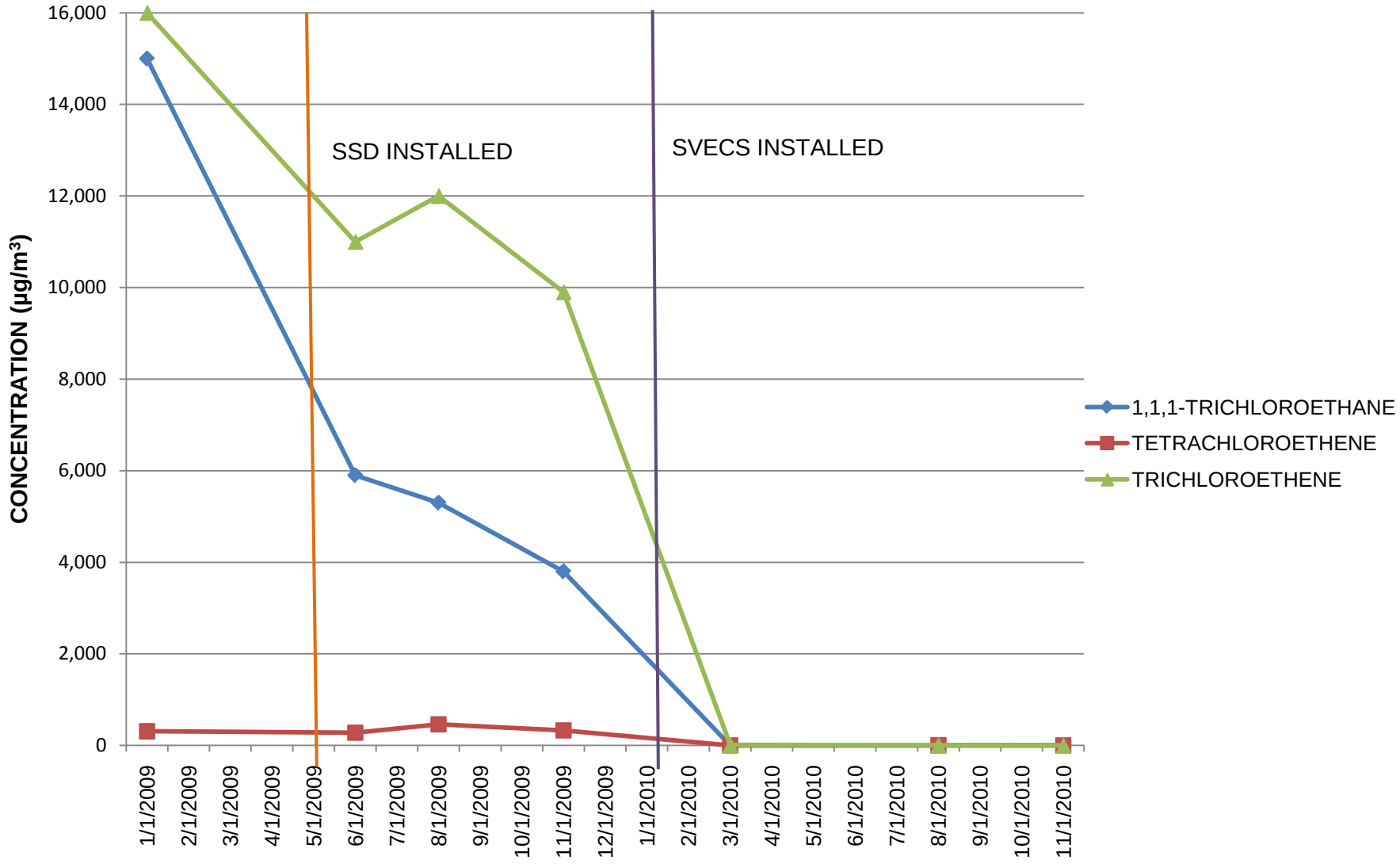


FIGURE 11
HOME #3 TIME TREND
SUB-SLAB AND SSD STACK CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

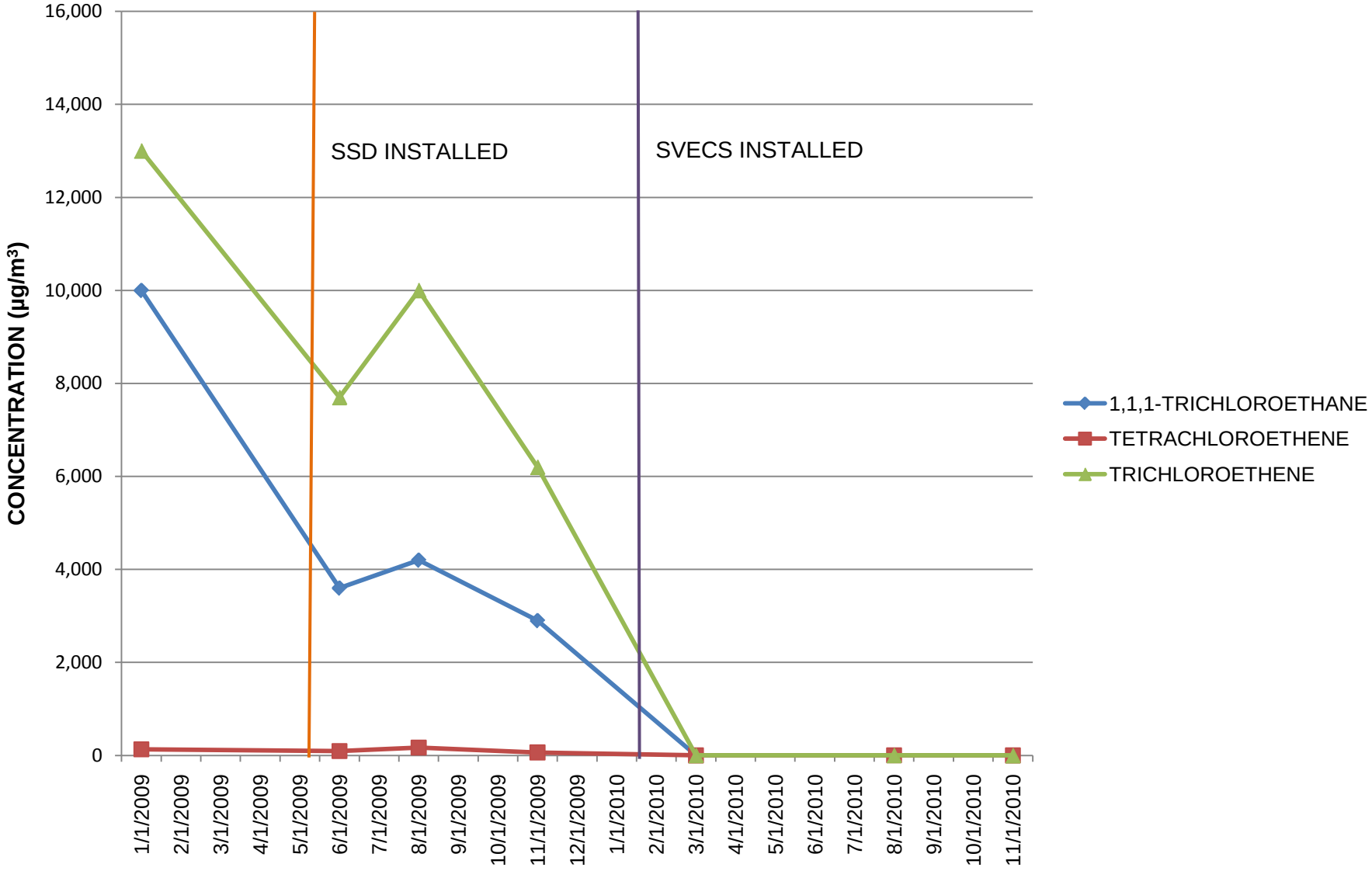


FIGURE 12
HOME #4 TIME TREND
SUB-SLAB AND SSD STACK CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

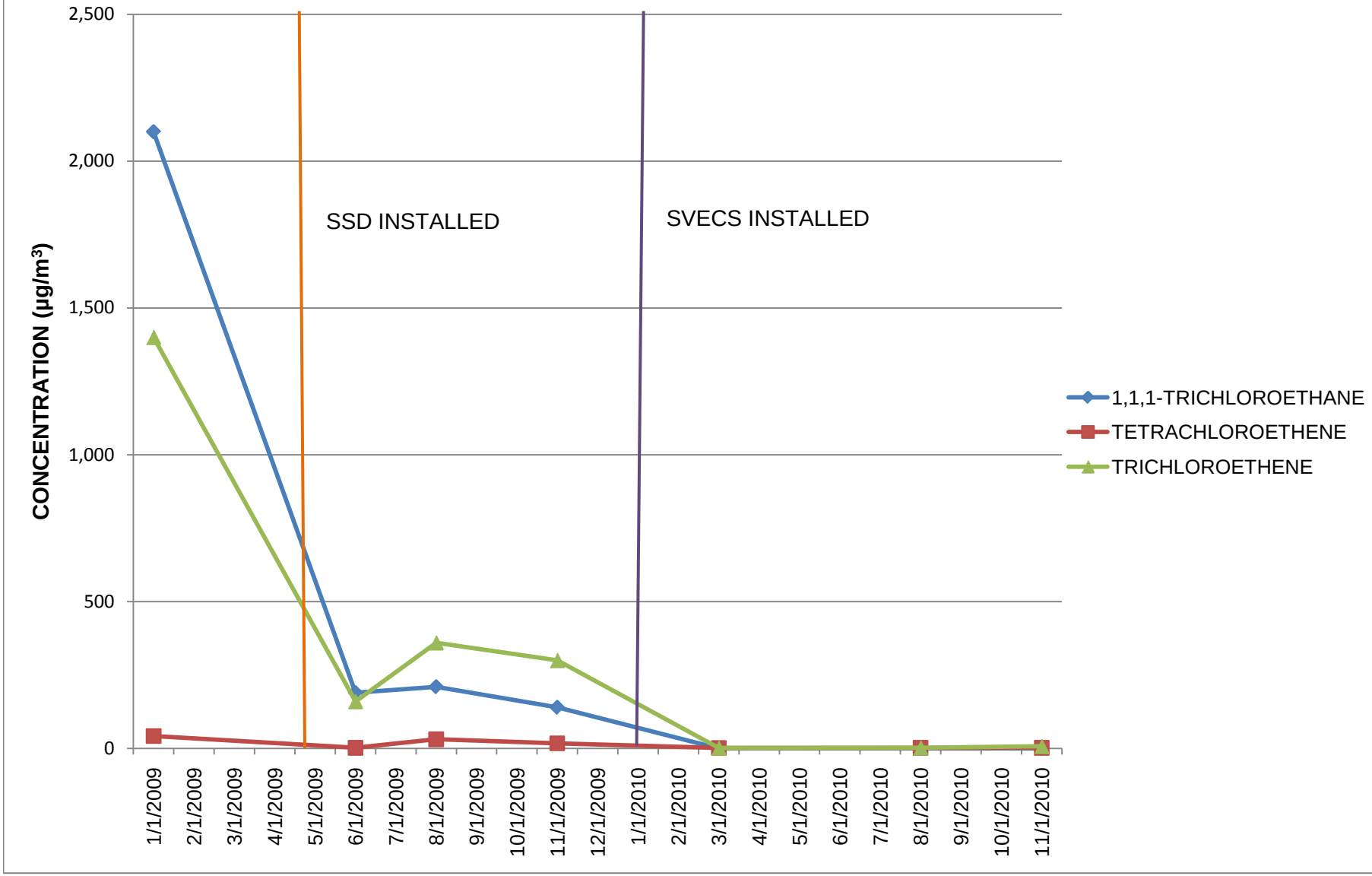


FIGURE 13
HOME #6 TIME TREND
SUB-SLAB AND SSD STACK CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

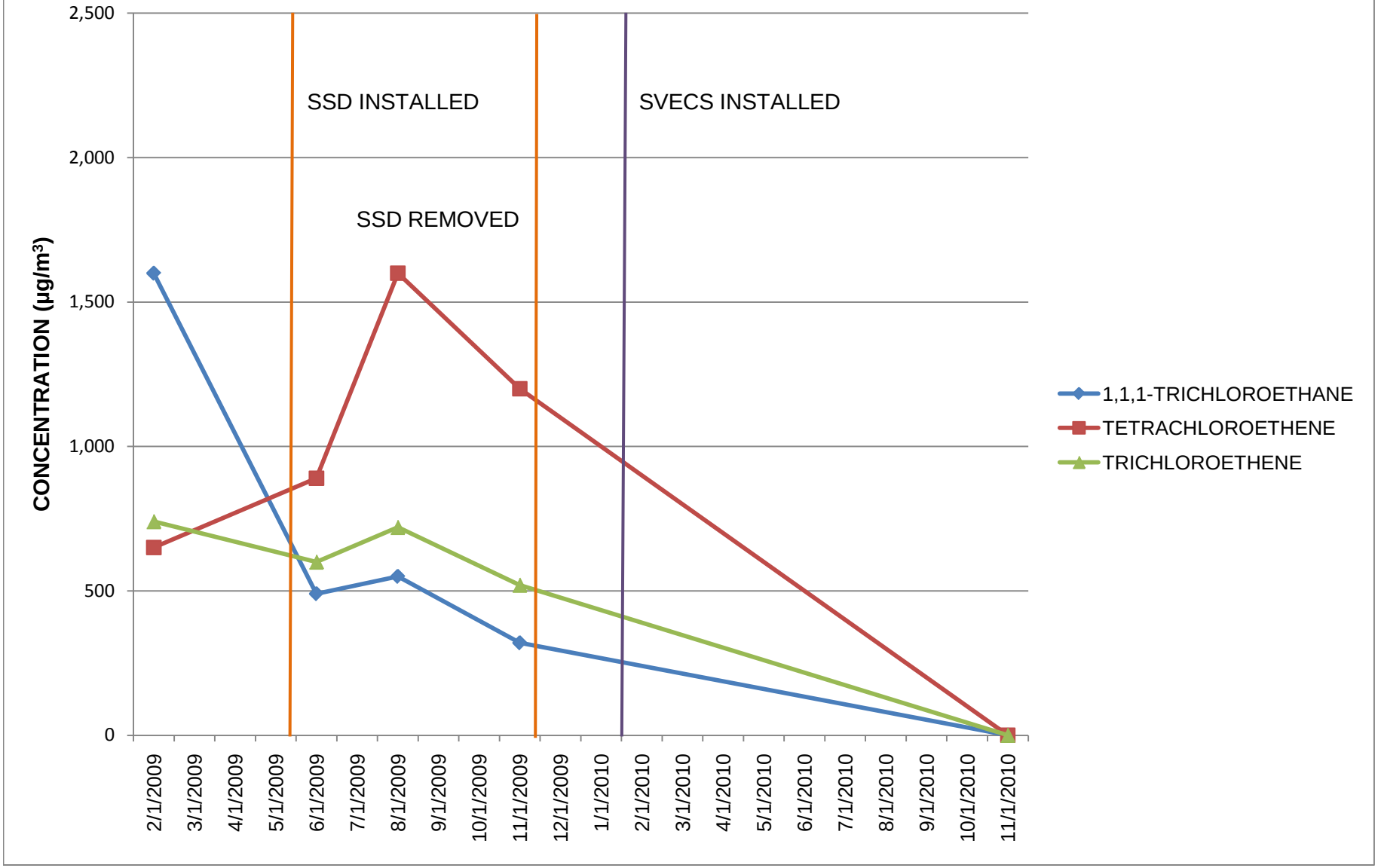


FIGURE 14
HOME #13 TIME TREND
SUB-SLAB AND SSD STACK CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK

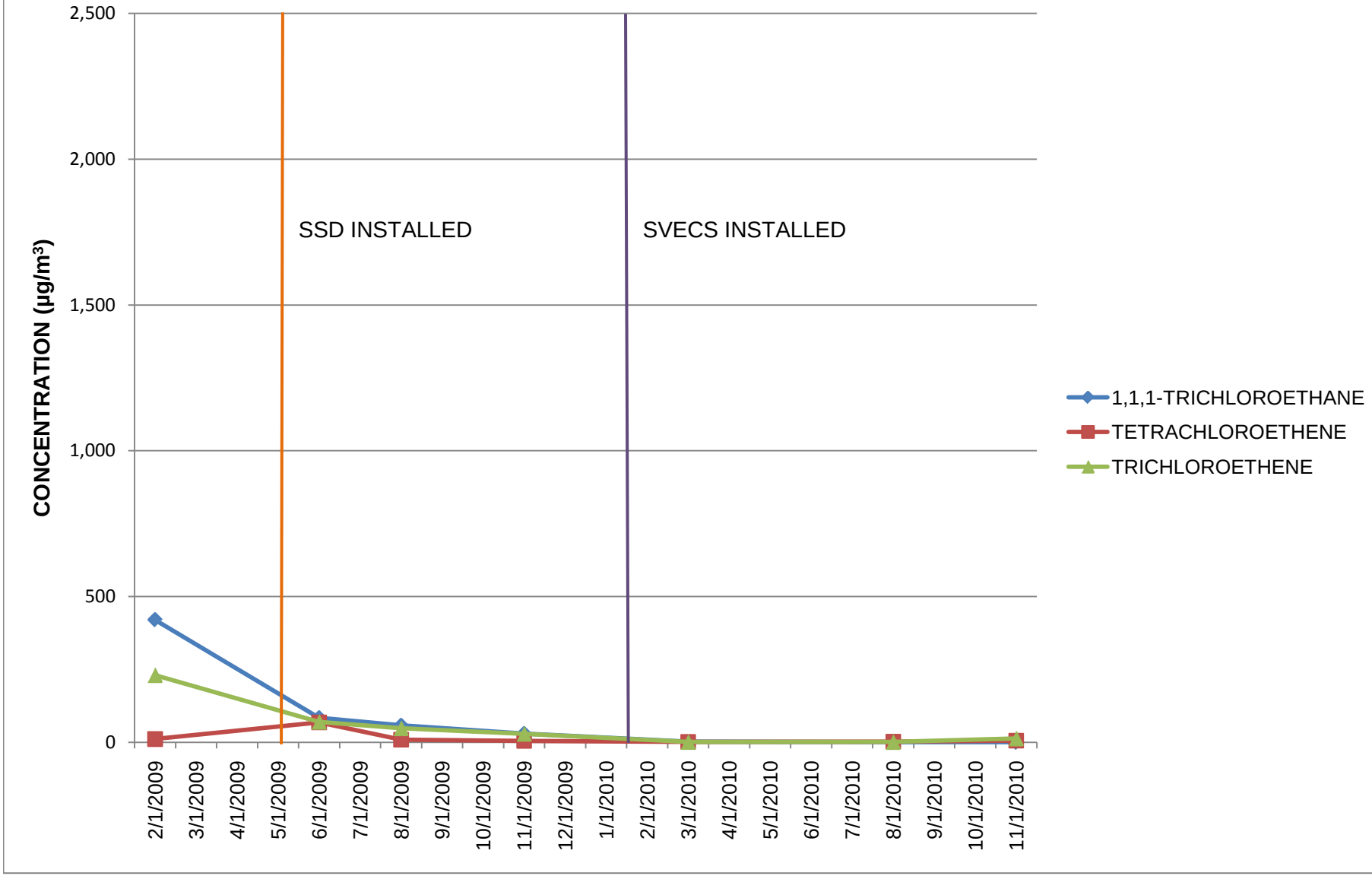
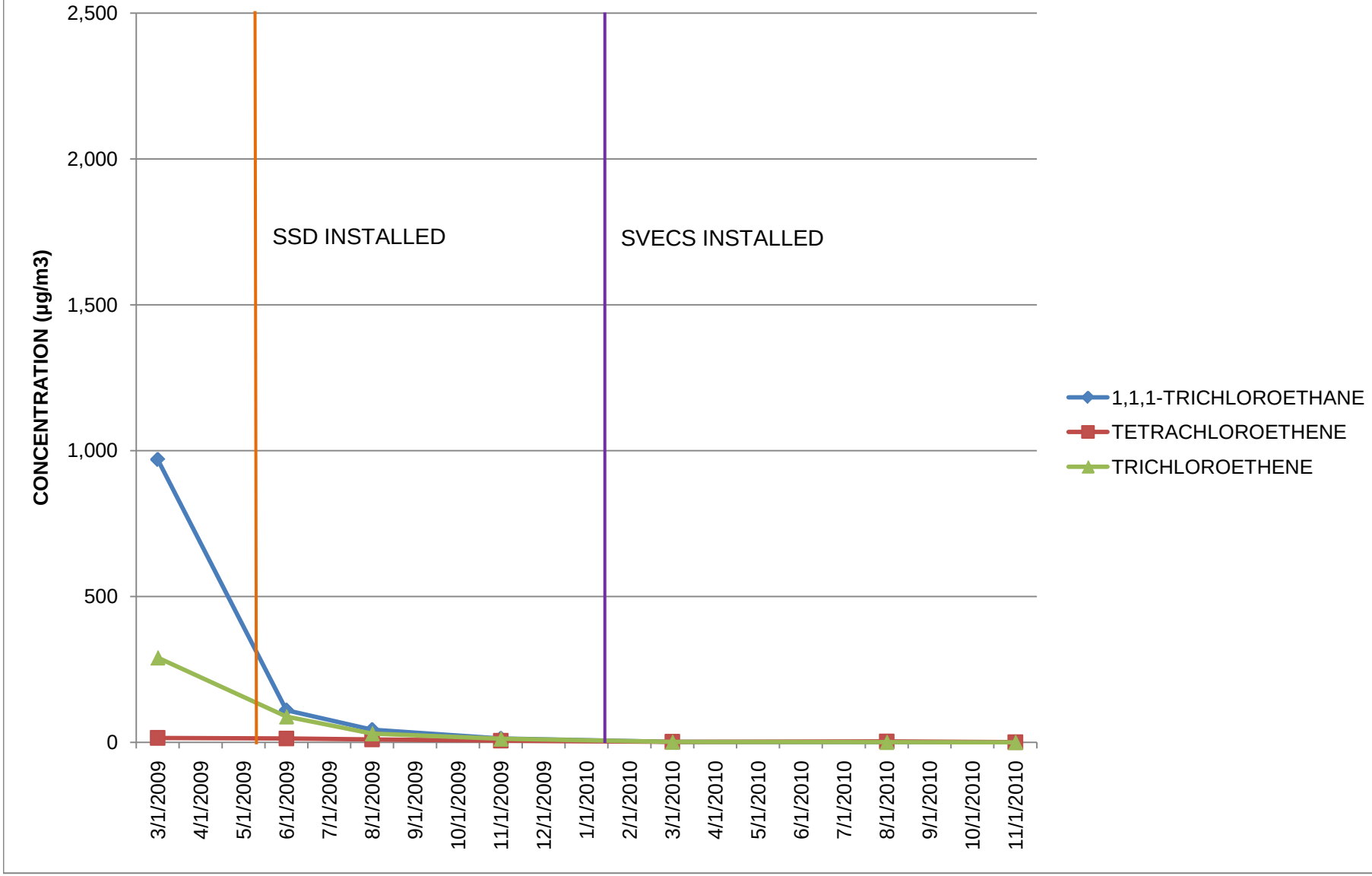


FIGURE 15
HOME #14 TIME TREND
SUB-SLAB AND SSD STACK CONCENTRATIONS
NWIRP BETHPAGE, NEW YORK



APPENDICES

APPENDIX A

SAMPLING LOG SHEETS

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

OA 4

Page__1_ of __1_

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:

Sample ID No.: BPS1-AR001-INDL-4
Sample Location: Home #1
Sampled By: VAS/RMS

SAMPLING DATA:						
Date: 11/11/10	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (°C)	Barometric Pressure (°C)	Relative Humidity (%)	Other
Time: 1709						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	34373
Filter Type/Rate	24 hr

24hr Duplicate: BPS1 - DUP04
Can# 11880

	Time	Date		
Start Time Vacuum	1750	11/10/10	-27	in Hg
End Time Vacuum	1709	11/11/10	-7.5	in Hg

Time	Date	vacuum
1750	11/10/10	-26.5
1709	11/11/10	-1.5

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
—	—	—

PID Readings	ppm	Volume

1959 hrs
13,624 carbon

Notes:

NA

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name:	NWIRP Bethpage	**Sample ID No.:**	BP51-AR001-ODA-4
Project No.:	112G02019	**Sample Location:**	Home #1
C.O.C. No.:		**Sampled By:**	VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/11/10						
Time: 1740	(Visual)	(S.U.)	(°C)	~~(°e)~~(in)	(%)	
Method: Summa	5-10mph	N-NW	~45°F	30.06	—	—

Summa Canister #	33660
Filter Type/Rate	24hr

	Time	Date		
Start Time Vacuum	1757	11/10/10	-29.5	**in Hg**
End Time Vacuum	1740	11/11/10	-3	**in Hg**

He check	**Start**	**Stop**	**Reading**
—	—	—	—

Purge Data	**Start**	**Stop**
—	—	—

PID Readings	**ppm**	**Volume**

Notes:

Collected ODA from north central portion of backyard (clipped canister to swing set chain).

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name:	NWIRP Bethpage	**Sample ID No.:**	BPS1-AR001-SSB-2
Project No.:	112G02019	**Sample Location:**	Home #7
C.O.C. No.:		**Sampled By:**	VAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (°C)	Barometric Pressure (°C)	Relative Humidity (%)	Other
Date: 11/11/10						
Time: 1710						
Method: Summa 6L	—	—	—	—	—	—

SSB Duplicate BPS1-DUP03
24hr #9411

Summa Canister #	12076
Filter Type/Rate	24hr

	Time	Date		
Start Time Vacuum	1748	11/10/10	-29	in Hg
End Time Vacuum	1710	11/11/10	-1.5	in Hg

Time	Date	Vacuum
1748	11/10/10	-29
1710	11/11/10	-1.5

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
see below	1745	1748

PID Readings	ppm	Volume
1	0.0	60mL
2	0.0	120mL
3	0.0	180mL

Notes:

Collected SSB sample ~~from~~ in attached garage near previous SSB sample locations.
No basement, house on slab.

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR002-IN0B-5
Sample Location: Home # 2
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/9/10	(Visual)	(estimated)	(°F)	(in.)	(%)	
Time: 1543						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	913		**Duplicate** (if collected)	NA
Filter Type/Flow	24hr			—
Start Time Vacuum	1551	in Hg -28.5	—	in Hg
End Time Vacuum	1543	in Hg -1	—	in Hg

He check	**Start**	**Stop**	**Reading**
NA →			→
Purge Data	**Start**	**Stop**	**Notes:**
NA →		→	

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:
Basement air sample collected in same location as previous basement air samples, on divider wall in central portion of basement

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR002-INDL-S
Sample Location: Home # 2
Sampled By: VAS/RWS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/9/10	(Visual)	(estimated)	(°F)	(in.)	(%)	
Time: 1548	—	—	—	—	—	—
Method: Summa 6L						

Summa Canister #	5761	**Duplicate** (if collected)	NA
Filter Type/Flow	24hr		—

Start Time Vacuum	1555	in Hg - 31	—	in Hg
End Time Vacuum	1548	in Hg - 10	—	in Hg

He check	**Start**	**Stop**	**Reading**
NA →			→
Purge Data	**Start**	**Stop**	**Notes:**
NA →		→	

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:

Living space sample collected at same location as previous samples (on end table, near sofa in south central living room)

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR002-00A-6
Sample Location: Home # 2
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/9/10						
Time: 1728	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa 6L	10-15 mph	From North-Northwest	44°	30.06	—	—

Summa Canister #	12939	**Duplicate** (if collected)	NA
Filter Type/Flow	24 hr		—

Start Time Vacuum	1535	in Hg -30	—	in Hg
End Time Vacuum	1728	in Hg -15	—	in Hg

? broken gauge

He check	**Start**	**Stop**	**Reading**
—	—	—	—

Purge Data	**Start**	**Stop**	**Notes:**
—	—	—	—

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:
- outdoor PID reading → 0.0 ppm
- Sample placed in north central portion of backyard

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR002-SSB2
Sample Location: Home # 2
Sampled By: VAS/RMS

SAMPLING DATA:

Date: 11/9/10 Time: 1541 Method: Summa 6L	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
	—	—	—	—	—	—

Summa Canister #	35161		**Duplicate** (if collected)	NA
Filter Type/Flow	24hr			—
Start Time Vacuum	1545	in Hg -30	—	in Hg
End Time Vacuum	1541	in Hg -6	—	in Hg

He check	Start	Stop	Reading
NA			→

Purge Data	Start	Stop	Notes:
(see below)	1541	1544	

Purge
Readings:
Liters/minute
0.0 @ 60
0.1 @ 60
0.8 @ 60

Notes:
SSB sample collected ~~from~~ near intial SSB sample location

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR023-INDB-6
Sample Location: Home #3
Sampled By: VAS and RS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 11/9/10						
Time: 1434						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	22508		**Duplicate** (if collected)	NA
Filter Type/Flow	24hr			—
Start Time Vacuum	1457	in Hg -30	—	in Hg
End Time Vacuum	1434	in Hg -8	—	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	—

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:
Collected basement air sample in middle of basement (placed on small bench) at the same location as previous basement air samples in Home #3

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR003-INDL-6
Sample Location: Home # 3
Sampled By: VAS and RS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/9/10	(Visual)	(estimated)	(°F)	(in.)	(%)	
Time: 1453	—	—	—	—	—	—
Method: Summa 6L						

Summa Canister #	5774	**Duplicate** (if collected)	NA
Filter Type/Flow	24hr		—

Start Time Vacuum	1502	in Hg -29.5	—	in Hg
End Time Vacuum	1453	in Hg -4	—	in Hg

He check	**Start**	**Stop**	**Reading**
—	—	—	—

Purge Data	**Start**	**Stop**	**Notes:**
—	—	—	

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:

Collected living space air sample in living room (on folding table) in same location as previous samples.

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR003-5584
Sample Location: Home # 3
Sampled By: VAS and RS

SAMPLING DATA:

Date: 11/9/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1432						
Method: Summa (6hr can)	—	—	—	—	—	—

Summa Canister #	33885		**Duplicate** (if collected)	NA
Filter Type/Flow	24hr			—
Start Time Vacuum	1455	in Hg -29.5	—	in Hg
End Time Vacuum	1432	in Hg -2.5	—	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	

Readings:
Liters/minute
0.0 @ 60 ml
0.0 @ 120 mL
0.0 @ 180 mL

Notes:
SSB sample collected near previous sample locations (west central portion of basement).

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR004-INDB-S
Sample Location: Home #4
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/10/10						
Time: 1728	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa 6L	–	–	–	–	–	–

Summa Canister #	4176	**Duplicate** (if collected)	NA
Filter Type/Flow	24hr		–

Start Time Vacuum	1510	in Hg -31	–	in Hg
End Time Vacuum	1728	in Hg -4	–	in Hg

He check	**Start**	**Stop**	**Reading**
–	–	–	–

Purge Data	**Start**	**Stop**	**Notes:**
–	–	–	–

APU
Premark: 1844 hrs

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:
Collected basement air in finished area of southern portion of basement near previous

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BP51-AR004-SSB-2
Sample Location: Home # 4
Sampled By: VAS/KMS

SAMPLING DATA:

Date: 11/10/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1802						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	12020		**Duplicate** (if collected)	NA
Filter Type/Flow	24hr			—
Start Time Vacuum	1625	in Hg -31	—	in Hg
End Time Vacuum	1802	in Hg -7	—	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
See below	1622	1625	—

Readings:
Liters/minute
0.3 @ 60mL
1.1 @ 120mL
1.2 @ 180mL

Notes:
Collected SSB sample near initial SSB sample in NE portion of basement.

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name:	NWIRP Bethpage	**Sample ID No.:**	BPS1-AR006-INDB-5
Project No.:	112G02019	**Sample Location:**	Home #6
C.O.C. No.:		**Sampled By:**	VAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (^{0}C)	Barometric Pressure (^{0}C)	Relative Humidity (%)	Other
Date: 11/14/10						
Time: 1700						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	35279
Filter Type/Rate	24hr

	Time	Date		
Start Time Vacuum	1550	11/10/10	-29	**in Hg**
End Time Vacuum	1700	11/11/10	-1	**in Hg**

He check	**Start**	**Stop**	**Reading**
—	—	—	—

Purge Data	**Start**	**Stop**
—	—	—

PID Readings	**ppm**	**Volume**
NA		

Notes:

NA

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BPSI-AR006-0DA5
Sample Location: Home #6
Sampled By: VAS and RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11-11-10						
Time: 0920	(Visual)	(S.U.)	(°C)	~~(°C)~~ (in)	(%)	
Method: Summa 6-Liter	5-10 mph	N-NW	mid 40s°F	30.06	—	—

Summa Canister #	944
Filter Type/Rate	24 hour

	Time	Date		
Start Time Vacuum	~~0~~ 0920	11-10-10	-30.0	in Hg
End Time Vacuum	0920	11/11/10	-3	in Hg

He check	Start	Stop	Reading
NA →			→

Purge Data	Start	Stop
NA →		→

PID Readings	ppm	Volume
NA →		→
↓		
↓		

Notes:

Collected Outdoor air sample in North central portion of backyard.

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:

Sample ID No.: BPS1-AR006-SSB-2
Sample Location: Home #6
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (°C)	Barometric Pressure (°C)	Relative Humidity (%)	Other
Date: 11/11/10						
Time: 1702						
Method: Summa 6L	—	—	—	—	—	—

SSB Duplicate BPS1-DUP02
Can# 33772
24hr

Summa Canister #	34315
Filter Type/Rate	24hr

	Time	Date		
Start Time Vacuum	1545	11/10/10	-31	in Hg
End Time Vacuum	1702	11/11/10	-5	in Hg

time	Date	Vacuum
1545	11/10/10	-29
1702	11/11/10	-4

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
See below	1542	1545
PID Readings	**ppm**	**Volume**
1	0.5	60mL
2	0.7	120 mL
3	1.0	180 mL

Notes:

NA

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019

Sample ID No.: BPS1-AR007-INDB-4
Sample Location: Home # 7
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 10/10/10						
Time: 0934						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	5767
Filter Type/Flow	24hr

Duplicate (if collected)

NA	
—	

Start Time Vacuum	0930	in Hg -29
End Time Vacuum	0934	in Hg -3

—	in Hg
—	in Hg

He check	Start	Stop	Reading
NA			
Purge Data	**Start**	**Stop**	**Notes:**
NA			

Pre Max: speed #3 629hrs
Replaced HEPA now 11/10/10
reset 3100 hrs

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:

Collected basement air from same location as previous samples. middle of basement on end table near sofa.

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019

Sample ID No.: BPS1-AR007-ODA-4
Sample Location: Home # 7
Sampled By: VAS/Rms

SAMPLING DATA:

Date: 11/10/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 0930						
Method: Summa 6L	10-20 mph	NW	~45°F	30.0"	—	—

Summa Canister #	34009
Filter Type/Flow	24hr

Duplicate (if collected)

NA	
—	

Start Time Vacuum	0938	in Hg -31
End Time Vacuum	0930	in Hg -5

—	in Hg
—	in Hg

He check	Start	Stop	Reading
NA →			→
Purge Data	**Start**	**Stop**	**Notes:**
NA →		→	

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:

Setup outdoor air sample in middle of backyard, west of swimming pool.

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR007-SSB-2
Sample Location: Home # 7
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/10/10						
Time: 0932	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	35974	**Duplicate** (if collected)	NA
Filter Type/Flow	24hr		—

Start Time Vacuum	0928	in Hg -29	—	in Hg
End Time Vacuum	0932	in Hg -1	—	in Hg

He check	**Start**	**Stop**	**Reading**
—	—	—	—

Purge Data	**Start**	**Stop**	**Notes:**
—	—	—	—

Readings:
Liters/minute
0.0 @ 60ml
0.1 @ 120ml
0.9 @ 180ml

Notes:
Collected SSB sample from same location as initial sampling. (West side of basement in storage room)

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR009-INDB-2
Sample Location: Home # 9
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 11/10/10						
Time: 1000						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	35270
Filter Type/Flow	24 hr

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1012	in Hg -29
End Time Vacuum	1000	in Hg -3

—	in Hg
—	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	—

Readings:
Liters/minute
NA @ _____
_____ @ _____
_____ @ _____

Notes:

Basement air sample collected near same location as initial basement air sample.

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR009-SSB-2
Sample Location: Home # 9
Sampled By: VAS / RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 11/10/10						
Time: 0952						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	25267
Filter Type/Flow	24 hr

Duplicate (if collected)

NA	
—	

Can #34734 New Can

Start Time Vacuum	1010	in Hg -30
End Time Vacuum	0952	in Hg

—	in Hg
—	in Hg

1017 -29

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
(see below) —	1007 —	1009 —	—

Purge

Readings:
Liters/minute

0.1 @ 60ml
0.3 @ 120ml
0.6 @ 180ml

Notes:

Subslab sample collected from same location as initial SSB sample in basement utility room

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BPSI-AR009-SSB-2
Sample Location: Home #9
Sampled By: VAS and RMS

SAMPLING DATA:

Date: 11-11-10	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (^{0}C)	Barometric Pressure (^{0}C)	Relative Humidity (%)	Other
Time: 1009						
Method: Summa Canister	—	—	—	—	—	—

Summa Canister #	34734
Filter Type/Rate	24 hour

	Time	Date		
Start Time Vacuum	1012	11-10-10	-29.0	in Hg
End Time Vacuum	1009	11/11/10	-2	in Hg

He check	Start	Stop	Reading
NA		→	→
Purge Data	**Start**	**Stop**	
(see below)	1008	1010	
PID Readings	**ppm**	**Volume**	
①	0.1	60 ml	
②	0.3	120 ml	
③	0.6	180 ml	

Notes:

Subslab sample collected from same location as initial SSB sample in basement utility room. SSB sample setup on 11/9/10 did not pull sufficient volume and a new canister was used for this re-sample at Home #9.

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR010-INOB-4
Sample Location: Home # 10
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/10/10						
Time: 1311	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	~~34448~~	
Filter Type/Flow	~~24hr~~	
Start Time Vacuum	~~1317~~	~~in Hg -31~~
End Time Vacuum	~~1311~~	~~in Hg -24.5~~

Duplicate (if collected)

BPS1-DUP01 → Now re-labeled as BPS1-AR010-INOB-4	
#33585	
1317	in Hg -30
1311	in Hg -2

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	—

★ Bad HEPA
KWH 459
Change HEPA
#3 - 3106hr
#2 - 4694hr

Readings:
Liters/minute

~~NA~~ @ ____
____ @ ____
____ @ ____

★ Parent sample did not seem to pull sufficient volume. Re-labeling duplicate for this location and will have the lab check Can# 34448.

Notes:

Collected Basement air and duplicate near bottom of stairs (on chairs). Same location as previous Basement air samples.

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR010-SSB-3
Sample Location: Home # 10
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 11/10/10						
Time: 1308						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	34221
Filter Type/Flow	24 hr

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1320	in Hg -29.5
End Time Vacuum	1308	in Hg -4

—	in Hg
—	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
See below	1318	1320	

Purge Readings:
Liters/minute
0.0 @ 60 ml
0.0 @ 120 ml
0.1 @ 180 ml

Notes:

Collected SSB sample near previous SSB location in SE portion of basement.

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BPS1-AR012-INDB-4
Sample Location: Home #12
Sampled By: UAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (^{0}C)	Barometric Pressure (^{0}C)	Relative Humidity (%)	Other
Date: 11/11/10						
Time: 1612						
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	33583
Filter Type/Rate	24 hr

	Time	Date		
Start Time Vacuum	1626	11/10/10	-30	in Hg
End Time Vacuum	1612	11/11/10	-3	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
—	—	—

PID Readings	ppm	Volume
NA		

★ APU HEPA needs replace 11/11/10. Speed #2
4696 hrs HEPA
7821 hrs Carbon/Pos

Notes:

Collected basement air ~~from~~ in same location (on table in east-central portion of basement) as all previous basement air samples.

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BPSI-AR012-SSB-2
Sample Location: Home #12
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/11/10						
Time: ~~11/11/10~~ 1614	(Visual)	(S.U.)	(^{0}C)	(^{0}C)	(%)	
Method: Summa 6L	—	—	—	—	—	—

Summa Canister #	36032
Filter Type/Rate	24 hr

	Time	Date	
Start Time Vacuum	1622	11/10/10	-30 in Hg
End Time Vacuum	1614	11/11/10	-4 in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
see below	1619	1622

PID Readings	ppm	Volume
1	0.3	60 mL
2	0.7	120 mL
3	1.4	180 mL

Notes:

Collected SSB sample near initial SSB location in workshop (southern portion of basement).

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BP51-AR013-INOB-S
Sample Location: Home # 13
Sampled By: UAS / RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 10/10/10	(Visual)	(estimated)	(°F)	(in.)	(%)	
Time: 1712	—	—	—	—	—	—
Method: Summa 6L						

Summa Canister #	34347
Filter Type/Flow	24hr

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1705	in Hg -29.8
End Time Vacuum	1712	in Hg -0.0

—	in Hg
—	in Hg

He check	**Start**	**Stop**	**Reading**
—	—	—	—

Purge Data	**Start**	**Stop**	**Notes:**
—	—	—	—

★ HEPA replaced Carbon/Post 5400 hrs

Readings:
Liters/minute
NA @ ____
____ @ ____
____ @ ____

Notes:

Collected Basement air sample in middle of basement living area near previous sample locations

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BP51-AR013-SSB-2
Sample Location: Home # 13
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 11/10/10						
Time: 1710						
Method: Summa 6L	—	—	~	—	—	—

Summa Canister #	12714
Filter Type/Flow	24 hr

Duplicate (if collected)

NA
—

Start Time Vacuum	1700	in Hg -30
End Time Vacuum	1710	in Hg 0.0

—	in Hg
—	in Hg

He check	**Start**	**Stop**	**Reading**
—	—	—	—

Purge Data	**Start**	**Stop**	**Notes:**
See below	1706	1710	—

Purge
Readings:
Liters/minute
0.10 @ 60 mL
0.10 @ 120 mL
0.14 @ 180 mL

Notes:

NA

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:

Sample ID No.: BP51-AR014-INOB-3
Sample Location: Home#14
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/11/10	(Visual)	(S.U.)	(°C)	(°C)	(%)	
Time: 1418	—	—	—	—	—	—
Method: Summa 6L						

Duplicate BP51-DUP01 time 2400
Can # 23923
24hr

Summa Canister #	5749
Filter Type/Rate	24hr

	Time	Date		
Start Time Vacuum	1434	11/10/10	-27.5	in Hg
End Time Vacuum	1418	11/11/10	0.0	in Hg

Duplicate time/vacuum
1434 | -31
1418 | -4

APU
★All lights flashing red
Replaced HEPA, Carbon & Post-filters
Speed #1 8856 hrs HEPA
30,856 hrs Carbon

1427 Turned SSD back on
★Meter reading 677 Kwh

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
—	—	—

PID Readings	ppm	Volume
—	—	—
—	—	—
—	—	—

Notes:

Collected Basement air and duplicate in central portion of basement on kitchen counter near previous basement air samples.

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:

Sample ID No.: BPS1-AR014-SSB-2
Sample Location: Home #14
Sampled By: VAS/RMS

SAMPLING DATA:

Date: 11/11/10 Time: 1416 Method: Summa CC	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (^{0}C)	Barometric Pressure (^{0}C)	Relative Humidity (%)	Other
	—	—	—	—	—	—

Summa Canister #	33886
Filter Type/Rate	24hr

	Time	Date		
Start Time Vacuum	1416	11/10/10	-31	in Hg
End Time Vacuum	1416	11/11/10	-7	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
see below	1413	1416
PID Readings	**ppm**	**Volume**
1	0.0	60ml
2	0.2	120ml
3	0.7	180ml

Notes:

Collected SSB sample in central portion of basement (in closet next to bathroom) near previous SSB sample

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:

Sample ID No.: BP51-AR015-INDB-2
Sample Location: Home # 15
Sampled By: VAS/RMS

SAMPLING DATA:						
	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/9/10	(Visual)	(S.U.)	(^{0}C)	(^{0}C)	(%)	
Time: 1635	—	—	—	—	—	—
Method: Summa 6L						

Summa Canister #	4223
Filter Type/Rate	24 hr

	Time	Date		
Start Time Vacuum	1645	11/8/10	-31	in Hg
End Time Vacuum	1635	11/9/10	-8.5	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
—	—	—

PID Readings	ppm	Volume
NA		

Notes:

Basement air sample collected near previous location (on table in central portion of Basement)

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BPS1-AR015-SSB-2
Sample Location: Home #15
Sampled By: VAS/RMS

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/9/10	(Visual)	(S.U.)	(^{0}C)	(^{0}C)	(%)	
Time: 1633	—	—	—	—	—	—
Method: Summa 6L						

Summa Canister #	5661
Filter Type/Rate	24hr

	Time	Date		
Start Time Vacuum	1642	10/8/10	-31	in Hg
End Time Vacuum	1633	10/9/10	-5.5	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop
—	—	—

PID Readings	ppm	Volume
1	0.0	60ml
2	0.8	120ml
3	1.0	180ml

Notes:

SSB sample collected near initial SSB sample in basement closet.

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BPSI-SVPM11S-20101112
Sample Location: SVPM11S
Sampled By: Chuck Meyer

SAMPLING DATA:

Date: 11/12/10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 0827 -- 0915	(Visual)	(S.U.)	(°F)	~~(°C)~~ (in)	(%)	
Method: Summa Canister	5-10	NE	45°F	30.06	—	—

Summa Canister #	34456
Filter Type/Rate	30 minute Regulator

	Time	Date		
Start Time Vacuum	0827	11/12/10	> -30	in Hg
End Time Vacuum	0915	11/12/10	-5	in Hg

He check	Start	Stop	Reading
N/A	N/A	N/A	N/A
Purge Data	**Start**	**Stop**	
Initial 0.7 ppm	0810	0825	
PID Readings	**ppm**	**Volume**	
0815	0.8	1 Volume	
0820	1.0	2 Volume	
0825	1.2	3 Volume	

Notes:

Purge pump flow Rate = 200 ml/min, Helium Leak not performed "opertunity sample"

Pressure	Time
> -30	0827
-16	0845
-10	0900
-5	0915

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BP51-SVPM12S-20101111
Sample Location: SVPM12S
Sampled By:

SAMPLING DATA:

	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Date: 11/12/10						
Time: 0935 - 1012	(Visual)	(S.U.)	(°F)	~~(°C)~~ (in)	(%)	
Method: Summa Canister	5 - 15	NW	45 F	30.06	—	—

Summa Canister #	5781
Filter Type/Rate	30 minute regulator

	Time	Date		
Start Time Vacuum	0935	11/12/10	> -30	**in Hg**
End Time Vacuum	1012	11/12/10	-5.5	**in Hg**

He check	**Start**	**Stop**	**Reading**
N/A	N/A	N/A	N/A
Purge Data	**Start**	**Stop**	
Initial 1.1	0915	0930	
PID Readings	**ppm**	**Volume**	
0920	2.0	Volume 1	
0925	2.3	Volume 2	
0930	2.3	Volume 3	

Notes:

Purge pump Flow Rate 200 ml/min. No Helium Test preformed "Opertunity Sample"

Pressure	Time
> -30	0935
-18	0950
-9	1005
-5.5	1012

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019

Sample ID No.: BPS1-SVPM20025-20101109
Sample Location: Home #
Sampled By: CM

SAMPLING DATA:

Date: 11/9/10 Time: 1511 1552 Method: Summa Canister	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
	10-20 MPH	NW	50	30.06	—	—

Summa Canister #	416
Filter Type/Flow	30 minute Regulator

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1511	in Hg -31
End Time Vacuum	1552	in Hg -5

—	in Hg
—	in Hg

He check	Start	Stop	Reading
N/A	N/A	N/A	N/A

Purge Data	Start	Stop	Notes: For additional info see Below
Initial	1455	1510	

Readings:
Liters/minute

1.1 ppm @ 1455
1.7 ppm @ 1500
2.0 ppm @ 1505

Notes: 2.1 at 1510

Pressure vs Time

-31	1511
-15	1530
-7	1545
-5	1552

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-SVPM2002I-20101109
Sample Location: Home #
Sampled By: CM

SAMPLING DATA:

Date: 11/9/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1417-1457						
Method: Summa Canister	10-20	NW	50	30.06	—	—

Summa Canister #	12006
Filter Type/Flow	30 Minute Regulator

Duplicate (if collected) BPS1-SVPM DUP 01-20101109

34503	
30 minute Regulator	

Start Time Vacuum	1417	in Hg >30
End Time Vacuum	1457	in Hg ~~-5.5~~ -5.5

1600	in Hg >30
1645	in Hg -5

He check	Start	Stop	Reading
N/A	N/A	N/A	
Purge Data	**Start**	**Stop**	**Notes:** For additional info see Below
Initial 0.4	1405	1415	

Readings:
Liters/minute

0.4 @ 1405
1.0 @ 1410
1.2 @ 1415

Notes:

Time	Pressure
1417	>30
1430	-18
1445	-11
1457	-5.5

Dup 01

Time	Pressure
1417	>30
1430	-16
1445	-10
1457	-5

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-SVPM20020-20101109
Sample Location: ~~Home #~~
Sampled By: CM

SAMPLING DATA:

Date: 11/9/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1312 - 1357						
Method: Summa Canister	10 - 20 mph	NW	50	30.06	—	—

Summa Canister #	939
Filter Type/Flow	30 minute Reg

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1312	in Hg -> 30
End Time Vacuum	1357	in Hg - 4

—	in Hg
—	in Hg

He check	Start	Stop	Reading
Initial	1255	1310	1450 ppm

see below for Add info

Purge Data	Start	Stop
Initial	1255	1310

Notes: For additional info see Tables

Readings:
Liters/minute

0.3 @ 1255 Initial
0.4 @ 1300 1 Liter
0.9 @ 1305

Notes: 0.6 at 1310

Pressure	Time
-> 30 PSI	1312
-17 PSI	1330
-6 PSI	1345

Helium Leak Test Data
1255 = 1450 ppm Initial
1300 = 650 ppm 1 Liter
1305 = 500 ppm 2 Liters
1310 = 500 ppm 3 Liters

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-SVPM2003E-20101111
Sample Location: Home #
Sampled By:

SAMPLING DATA:

Date: 11/11/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1447 - 1520						
Method: Summa Canister	5-10	SSE	55	30.06	—	—

Summa Canister #	33897
Filter Type/Flow	30 Minute Regulator

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1447	in Hg > -30
End Time Vacuum	1520	in Hg -5

—	in Hg
—	in Hg

He check	Start	Stop	Reading
N/A	N/A	N/A	N/A

Purge Data	Start	Stop	Notes:
Initial	1430	1445	

Readings:
Liters/minute

0.0 @ 1430
0.0 @ 1435
0.0 @ 1440

Notes: 0.0 at 1445

Water was in well vault was pulled out prior to beginning purge

Pressure	Time
>30	1447
#16	1502
-6	1517
-5	1520

Tetra Tech NUS, Inc. **INDOOR AIR SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
C.O.C. No.:
Sample ID No.: BPS1-SVPM2003D-20101111
Sample Location: SVPM2003D
Sampled By:

SAMPLING DATA:

Date: 11/11/09 Time: 1507 - 1535	Wind speed (Visual)	Wind Direction (S.U.)	Ambient temperature (°C)	Barometric Pressure ~~Pet~~(in)	Relative Humidity (%)	Other
Method: Summa Canister	5 - 10	SSE	55	30.06	—	—

Summa Canister #	34388
Filter Type/Rate	30 Minute Regulator

	Time	Date		
Start Time Vacuum	1507	11/11/10	>30	in Hg
End Time Vacuum	1535	11/11/10	-5	in Hg

He check	Start	Stop	Reading
N/A	N/A	N/A	N/A
Purge Data	**Start**	**Stop**	
Initial 0.0	1450	1605	
PID Readings	**ppm**	**Volume**	
1455	1.1	1 Liter	1455
1600	1.2	2 Liter	1600
1505	1.3	3 Liter	1605

Notes:

Pressure	Time
>-30	1507
-16	1517
-8.5	1527
-5	1535

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM20E4E-20101104
Sample Location: Home #
Sampled By: CM

SAMPLING DATA:

Date: 11/9/10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 1705 - 1735	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa Canister	10-20	N/W	45	30.06	—	—

Summa Canister #	1179
Filter Type/Flow	30 Minute Regulator

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1705	in Hg -29
End Time Vacuum	1735	in Hg -7

—	in Hg
—	in Hg

He check	Start	Stop	Reading
N/A	N/A	N/A	N/A
Purge Data	**Start**	**Stop**	**Notes:** For additional info
Initial 0.2	1650	1705	See Below

Readings:
Liters/minute

0.2 @ 1650
0.4 @ 1655
1.0 @ 1700
Notes: 1.2 at 1705

Time	Pressure
1705	-29
1720	-16
1735	-7

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019

Sample ID No.: BPSI-SVPM2002B-20101104
Sample Location: Home #
Sampled By: CM

SAMPLING DATA:

Date: 11/4/10 Time: 1635 - 1722 Method: Summa Canister	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
	10-20	NW	45	30.06	—	—

Summa Canister #	5763
Filter Type/Flow	30 minute Regulator

Duplicate (if collected)

NA	
—	

Start Time Vacuum	1635	in Hg >30
End Time Vacuum	1722	in Hg ~5

—	in Hg
—	in Hg

He check	Start	Stop	Reading
N/A	N/A	N/A	N/A
Purge Data	**Start**	**Stop**	**Notes:** For additional info see Below
Initial 1.2 ppm	1615	1630	

Readings:
Liters/minute

1.2 ppm @ 1615
0.7 ppm @ 1620
0.7 ppm @ 1625
Notes: 0.8 at 1630

Pressure	Time
>20	1635
~18.5	1650
~10	1705
~5.5	1720
~5	1722

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019

Sample ID No.: BPSI - SVPM2007I-20101111
Sample Location: ~~Home #~~
Sampled By: CM

SAMPLING DATA:

Date: 11/11/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1247 - 1340						
Method: Summa Canister	5-15	SSE	55°	30.06	—	—

Summa Canister #	1243
Filter Type/Flow	30 minute Regulator

Duplicate (if collected)

N/A	
N/A	

Start Time Vacuum	1247	in Hg > -30
End Time Vacuum	1340	in Hg -5

N/A	in Hg
N/A	in Hg

He check	Start	Stop	Reading
	1215	1245	850 ppm
Purge Data	**Start**	**Stop**	**Notes:** Pump slowed due to pulling harder never stopped
	1215	1245	

Readings:
Liters/minute

0.0 ppm @ 1215
0.0 ppm @ 1225
0.0 PPM @ 1235

Notes: 0.0 at 1245

Helium Leak test

	Time	He reading
Initial	1215	850 ppm
1 Liter	1225	1754 ppm
2 Liter	1235	1675 PPM
3 Liter	1245	1575 ppm

While purging the flow rate of the pump was cut in half from 200 ml/min to 100 ml/min

Pressure	Time
>-30	1247
-21	1300
-13	1315
-7	1330
-5	1340

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-SVPM20070-20101111
Sample Location: ~~Home #~~
Sampled By: CM

SAMPLING DATA:

Date: 11/11/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1335 – 1410						
Method: Summa Canister	5-15	SSE	55°	30.06	—	—

Summa Canister #	13133
Filter Type/Flow	30 minute Regulator

Duplicate (if collected)

N/A	
N/A	

Start Time Vacuum	1335	in Hg > -30
End Time Vacuum	1410	in Hg -5

N/A	in Hg
N/A	in Hg

He check	Start	Stop	Reading
N/A	N/A	N/A	N/A

Purge Data	Start	Stop	Notes:
Initial 0.0	1315	1330	

Readings:
Liters/minute

0.0 ppm @ 1315
0.0 ppm @ 1320
0.0 ppm @ 1325

Notes: 0.0 at 1330

Pressure	Time
>-30	1335
-16	1350
-7.5	1405
-5.0	1410

APPENDIX B

CHAIN OF CUSTODY RECORDS

Air Toxics LTD.
180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling or shipping of samples. D.O.T. Hotline (800) 467-4922

Project Manager: Dave Brayack
Collected by: (Print and Sign) Robert Sok
Company: Tetra Tech Email: rob.sok@tetratech.com
Address: 5700 Lake Wright City: Norfolk State: VA Zip: 23502
Phone: (757) 518-2104 Fax:

Project Info:
P.O. #:
Project #: 112C02019 CTO-WE06
Project Name: NWIRP Bethpage

Turn Around Time: ☒ Normal ☐ Rush (specify)

Total Canister Pressurized by:
Date:
Pressurization Gas: N2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final
C1A	BPS1-AR003-SSB-4	33885	11/9/10	1432	TO-15 (SIM) (1x2)	-29.5	-2.5		
C2A	BPS1-AR003-IN0B-6	22508	11/9/10	1434		-30	-8		
C3A	BPS1-AR003-IN0L-6	5774	11/9/10	1453		-29.5	-4		
C4A	BPS1-AR002-SSB-2	35161	11/9/10	1541		-30	-6		
C5A	BPS1-AR002-IN0B-5	913	11/9/10	1543		-28.5	-1		
C6A	BPS1-AR002-IN0L-5	5761	11/9/10	1548		-31	-10		
C7A	BPS1-AR015-SSB-2	5661	11/9/10	1633		-31	-5.5		
C8A	BPS1-AR015-IN0B-2	4223	11/9/10	1635		-31	-8.5		
C9A	BPS1-AR002-00A-6	12939	11/9/10	1728		-30	-15		
C10A	BPS1-AR007-00A-4	34009	11/10/10	0930		-31	-5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11-12-10 1200	[signature]	11/15/10
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
*Use project specific TO-15 shortlist for CTO-WE06
*Check Can#12939, ? broken gauge or ? grab sample volume pulled

Lab Use Only	Shipper Number	Air Bill No.	Temp °C	Condition	Custody Seals Intact?	Work Order
	Fedex		NA	Good	Yes, No, None	1011366

Form 1299 (rev. 1)

COC received 11/17/10

Air Toxics LTD.
180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Sample Transportation Notice
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CHAIN-OF-CUSTODY RECORD

Project Manager: Dave Breyack
Collected by: (Print and Sign) Robert Sok
Company: Tetra Tech Email: rob.sok@tetratech.com
Address: 5700 Lake Wright Dr. City: Norfolk State: VA Zip: 23502
Phone: (757) 518-2104 Fax:

Project Info:
P.O. #:
Project #: 112G0019 2TO-WE06
Project Name: WATER Boundary

Turn Around Time:
☒ Normal
☐ Rush
specify

Results Only:
Pressurized by:
Date:
Pressurization Gas: ☐ N ☐ He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psig)
1A	BPS1-AR007-SSB-2	35934	11/10/10	0932	TO-15 (shortlist)	-29	-1		
2A	BPS1-AR007-INDB-4	5767	11/10/10	0934		-29	-3		
3A	BPS1-AR009-INDB-2	35270	11/10/10	1000		-29	-3		
4A	BPS1-AR010-SSB-3	31321	11/10/10	1308		-29.5	-4		
5A	BPS1-AR010-INDB-4	33585	11/10/10	1311		-30	-2		
6A	BPS1-AR013-SSB-2	12714	11/10/10	1710		-30	0.0		
7A	BPS1-AR013-INDB-5	34347	11/10/10	1712		-29.5	0.0		
8A	BPS1-AR004-INDB-5	4176	11/10/10	1728		-31	-4		
9A	BPS1-AR009-SSB-2	13020	11/10/10	1802		-31	-7		
10A	BPS1-AR009-SSB-2	34734	11/11/10	1009		-29	-2		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	11-12-10 1200		11/12/10 730
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp °C	Condition	Custody Seals Intact? (Yes / No / None)	Work Order #
	FedEx		N/A	Good		1011366

Form 283 rev 1

cc: received 11/17/10

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
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180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: Dave Brayack
Collected by: (Print and Sign) Robert Sok [signature]
Company: Tetra Tech Email: rob.sok@tetratech.com
Address: 5700 Lake Wright Dr City: Norfolk State: VA Zip: 23502
Phone: (757) 466-4904 Fax:

Project Info
P.O. #
Project #: 112G02019 LTD-WE06
Project Name: NWIRP Bethpage

Turn Around Time
☒ Normal
☐ Rush
specify

Lab Use Only: Pressurized by: Date: Pressurization Gas: N2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final
	BPS1-SVPM2002D-20101109	939	11/9/10	1357	TO-15 (short list)	-30	-4		
	BPS1-SVPM2002I-20101109	12006	11/9/10	1457		-30	-5.5		
	BPS1-SVPM2002S-20101109	416	11/9/10	1552		-31	-5		
	BPS1-SVPM2004D-20101109	5763	11/9/10	1722		-30	-5		
	BPS1-SVPMDUP01-20101109	34503	11/9/10	1645		-30	-5		
	BPS1-SVPM2004I-20101109	1179	11/9/10	1735		-29	-7		
	BPS1-AR006-00A-5	944	11/11/10	0920		-30	-3		
	BPS1-AR014-INDR-3	5749	11/11/10	1418		-27.5	0.0		
	BPS1-AR014-SSB-2	33886	11/11/10	1416		-31	-7		
	BPS1-DUP01	23923	11/11/10	2400		-31	-4		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	Notes
[signature] 11-12-10 1200	Tyra Whittaker ATL 11/13/10	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		N/A	Good	Yes No None	1011366

COC received 11/17/10

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 4 of 5

Project Manager: Dave Brayack
Collected by: (Print and Sign) Robert Sok [signature]
Company: Tetra Tech Email:
Address: 5700 Lake Wright Dr. City: Norfolk State: VA Zip: 23502
Phone: (757) 466-4904 Fax:

Project Info
P.O. #:
Project #: 112G02019 CTO-WE06
Project Name: NWIRP Bethpage

Turn Around Time
☒ Normal
☐ Rush
specify

Lab Use Only: Pressurized by: Date: Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
[illegible]	BPS1-AR012-INDB-4	33583	11/11/10	1612	TO-15 (short list)	-30	-3		
[illegible]	BPS1-AR012-SSB-2	36032	11/11/10	1614		-30	-4		
[illegible]	BPS1-AR006-INAB-5	35272	11/11/10	1700		-29	-1		
[illegible]	BPS1-AR006-SSB-2	34595	11/11/10	1702		-31	-5		
[illegible]	BPS1-AR001-INOL-4	34373	11/11/10	1709		-27	-7.5		
[illegible]	BPS1-AR001-SSB-2	12076	11/11/10	1710		-29	-1.5		
[illegible]	BPS1-AR001-OOA-4	33660	11/11/10	1740		-29.5	-3		
[illegible]	BPS1-DUP02	33772	11/11/10	2400		-29	-4		
[illegible]	BPS1-DUP03	9411	11/11/10	2400		-29	-1.5		
[illegible]	BPS1-DUP04	11880	11/11/10	2400		-26.5	-1.5		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	Notes:
[signature] 11-12-10 1200	Brian Whittaker ATL 11/15/10	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx	[illegible]	N/A	Good	(Yes) No None	1011136

Form 1293 rev.11

COC Received 11/17/10

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Dave Brayack
Collected by: (Print and Sign) Robert Sok
Company Tetra Tech Email
Address 5700 Lake Wright Dr City Norfolk State VA Zip 23502
Phone (757) 466-4904 Fax

Project Info:
P.O. #
Project # 112G02019
CTO - WE06
Project Name NWIRP Bayhouse

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	BPS1-AR012-INDB-4	33583	11/11/10	1612	TO-15 (shortlist)	-30	-3		
	BPS1-AR012-SSB-2	36032	11/11/10	1614		-30	-4		
	BPS1-AR006-INDB-5	35272	11/11/10	1700		-29	-1		
	BPS1-AR006-SSB-2	34315	11/11/10	1702		-31	-5		
	BPS1-AR001-INDL-4	34373	11/11/10	1709		-27	-7.5		
	BPS1-AR001-SSB-2	12076	11/11/10	1710		-29	-1.5		
37A	BPS1-AR001-ODA-4	33660	11/11/10	1740		-29.5	-3		
	BPS1-DUP02	33772	11/11/10	2400		-29	-4		
	BPS1-DUP03	9411	11/11/10	2400		-29	-1.5		
	BPS1-DUP04	11880	11/11/10	2400		-26.5	-1.5		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
11-12-10 1200	K McKiernan ATL 11/19/10 9:10
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	good	Yes No None	10113666

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Air Toxics LTD.
180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
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CHAIN-OF-CUSTODY RECORD

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Project Manager: Dave Brayack
Collected by: (Print and Sign) Robert Sok
Company: TetraTech Email: rob.sok@tetratech.com
Address: 5700 Lake Wright Dr City: Norfolk State: VA Zip: 23502
Phone: (757) 466-4904 Fax:

Project Info:
P.O. #:
Project #: 112602019 CTO-WE06
Project Name: NWIRP Bethpage

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	BPS1-SVPM 2002D-20101109	939	11/9/10	1357	TO-15 (shortlist)	-30	-4		
	BPS1-SVPM 2002I-20101109	12006	11/9/10	1457		-30	-5.5		
	BPS1-SVPM 20025-20101109	416	11/9/10	1552		-31	-5		
	BPS1-SVPM 2004D-20101109	5763	11/9/10	1722		-30	-5		
	BPS1-SVPMDUP01-20101109	34503	11/9/10	1645		-30	-5		
	BPS1-SVPM 2004I-20101109	1179	11/9/10	1735		-29	-7		
	BPS1-AR006-00A-5	944	11/11/10	0920		-30	-3		
28A	BPS1-AR014-IN08-3-	5749	11/11/10	1418		-27.5	0.0		
	BPS1-AR014-SSB-2	33896	11/11/10	1416		-31	-7		
	BPS1-DUP01	23923	11/11/10	2400		-31	-4		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
11-12-10 1200	R. McKiernan ATL 11/13/10 9:15
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	good	(Yes) No None	1011366

Form 1293 rev.11

APPENDIX C

ANALYTICAL DATA

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR001-SSB	BPS1-AR001-SSB-D	BPS1-AR001-IND2	BPS1-AR001-IND	BPS1-AR002-SSB	BPS1-AR002-IND3	BPS1-AR002-IND	BPS1-AR002-IND5	BPS1-AR002-IND4
SAMPLE DATE	20090120	20090120	20090224	20090120	20090121	20090224	20090121	20090324	20090324
VOLATILES (µg/m^3)									
1,1,1-TRICHLOROETHANE	660	690	0.87	2.1	16000	42	92	11	4.8
1,1,2,2-TETRACHLOROETHANE	5.1 U	3.9 U	0.46 U	0.6 U	58 U	0.52 U	0.63 U	0.58 U	0.55 U
1,1,2-TRICHLOROETHANE	4.1 U	3.1 U	0.36 U	0.48 U	46 U	0.41 U	0.5 U	0.46 U	0.44 U
1,1,2-	2700	2600	1.9 J	5.6	130	0.48 J	1	0.35 J	0.32 J
1,1-DICHLOROETHANE	6 U	1.4 J	0.54 U	0.71 U	78	0.32 J	0.66 J	0.28 J	0.65 U
1,1-DICHLOROETHENE	10 J	7 J	0.53 U	0.69 U	130	0.66	0.89	0.33 J	0.64 U
1,2,4-TRICHLOROBENZENE	55 U	43 U	5 U	6.5 U	250 U	5.6 U	6.8 UJ	6.2 UJ	6 UJ
1,2,4-TRIMETHYLBENZENE	7.3 U	0.62 J	0.32 J	2.8	4.9 J	0.18 J	0.35 J	0.82 U	0.11 J
1,2-DIBROMOETHANE	5.7 U	4.4 U	0.51 U	0.67 U	65 U	0.58 U	0.7 U	0.64 U	0.62 U
1,2-DICHLOROBENZENE	4.5 U	3.4 U	0.4 U	0.53 U	51 U	0.46 U	0.55 U	0.50 U	0.48 U
1,2-DICHLOROETHANE	6 U	4.6 U	0.54 U	0.71 U	34 U	0.62 U	0.74 U	0.68 U	0.65 U
1,2-DICHLOROPROPANE	6.9 U	5.3 U	0.62 U	0.81 U	39 U	0.7 U	0.84 U	0.78 U	0.74 U
1,2-	5.2 U	4 U	0.47 U	0.61 U	59 U	0.53 U	0.64 U	0.59 U	0.56 U
1,3,5-TRIMETHYLBENZENE	7.3 U	5.6 U	0.66 U	0.66 J	42 U	0.75 U	0.9 U	0.82 U	0.79 U
1,3-DICHLOROBENZENE	4.5 U	3.4 U	0.4 U	0.53 U	51 U	0.46 U	0.55 U	0.50 U	0.48 U
1,4-DICHLOROBENZENE	4.5 U	3.4 U	0.4 U	0.53 U	51 U	0.46 U	0.55 U	0.50 U	0.14 J
1,4-DIOXANE	5.4 U	4.1 U	0.48 U	0.63 U	120 U	0.55 U	0.25 J	0.60 U	0.58 U
2,2,4-TRIMETHYLPENTANE	7 U	5.4 U	0.62 U	3.6	40 U	0.71 U	0.85 U	0.78 U	0.75 U
2-BUTANONE	3.2 U	3.1 U	2	3.4	25 U	1.1	2.6	0.21 J	1.1
4-METHYL-2-PENTANONE	6.1 U	4.7 U	0.11 J	0.72 U	35 U	0.62 U	0.2 J	0.69 U	0.66 U
BENZENE	1.7 J	1.7 J	0.52	4.3	27 U	0.27 J	1.1	0.54 U	0.51 U
BENZYL CHLORIDE	7.7 U	6 U	0.69 UJ	0.9 U	44 U	0.79 UJ	0.95 U	0.87 U	0.83 U
BROMODICHLOROMETHANE	5 U	3.8 U	0.45 U	0.59 U	57 U	0.51 U	0.61 U	0.56 U	0.54 U
BROMOFORM	7.7 U	5.9 U	0.69 UJ	0.9 U	88 U	0.78 UJ	0.94 U	0.87 U	0.83 U
BROMOMETHANE	5.8 U	4.5 U	0.49 U	0.68 U	33 U	0.59 U	0.71 U	0.34 J	0.32 J
CARBON TETRACHLORIDE	3.2 J	2.2 J	0.42 U	0.7	53 U	0.48 U	0.51 J	0.53 U	0.51 U
CHLOROBENZENE	6.8 U	5.3 U	0.62 U	0.8 U	39 U	0.7 U	0.84 U	0.77 U	0.74 U
CHLORODIBROMOMETHANE	6.3 U	4.9 U	0.57 U	0.74 U	72 U	0.65 U	0.78 U	0.72 U	0.68 U
CHLOROETHANE	3.9 U	3 U	0.35 U	0.46 U	22 U	0.4 U	0.48 U	0.44 U	0.42 U
CHLOROFORM	26	26	0.65 U	0.85 U	19 J	0.74 U	0.89 U	0.82 U	0.79 U
CHLOROMETHANE	3.1 U	2.4 U	2	1.7	70 U	1.2	1.2	1.2	1.3
CIS-1,2-DICHLOROETHENE	5.9 U	4.6 U	0.53 U	0.69 U	7.2 J	0.6 U	0.72 U	0.67 U	0.64 U
CIS-1,3-DICHLOROPROPENE	6.8 U	5.2 U	0.61 U	0.79 U	38 U	0.69 U	0.83 U	0.76 U	0.73 U
CYCLOHEXANE	5.1 UJ	12 J	0.21 J	2.3	29 U	0.65	1.8	0.58 U	0.55 U
DICHLORODIFLUOROMETHANE	2.5 J	3.3	2.7	2.4	42 U	2.8	2.7	2.2	2.2
ETHANOL	14 U	2.6 U	150 J	350 J	64 U	34	64	31 J	300 J
ETHYLBENZENE	6.5 U	5 U	0.25 J	2.9	15 J	0.66 U	0.35 J	0.73 U	0.70 U
HEXACHLOROBUTADIENE	79 U	61 U	7.1 U	9.3 U	360 U	8.1 U	9.8 U	9 U	8.6 U
HEXANE	5.2 U	4 U	0.9	11	30 U	0.54 U	0.62 U	0.59 U	0.57 U
M+P-XYLENES	3.4 J	3.6 J	0.8	9.2	26 J	0.21 J	0.86	0.73 U	0.29 J
METHYL TERT-BUTYL ETHER	5.4 U	4.1 U	0.48 U	0.14 J	31 U	0.55 U	0.66 U	0.60 U	0.58 U
METHYLENE CHLORIDE	26 U	20 U	0.33 J	1.2 J	30 U	0.43 J	0.51 J	0.42 J	0.54 J
O-XYLENE	1.5 J	1.4 J	0.3 J	2.9	6.7 J	0.088 J	0.32 J	0.73 U	0.10 J
STYRENE	6.3 U	4.9 U	0.57 U	0.31 J	6.2 J	0.65 U	0.18 J	0.72 U	0.24 J
TERTIARY-BUTYL ALCOHOL	22 U	17 U	0.34 J	0.46 J	100 U	2.3 U	1.1 J	2.5 U	0.64 J
TETRACHLOROETHENE	520	550	2.2	10	310	2.1	7.6	0.57 U	0.91
TOLUENE	31	30	2.2	25	600	0.57	2	0.63 U	2
TRANS-1,2-DICHLOROETHENE	5.9 U	4.6 U	0.53 U	0.69 U	34 U	0.6 U	0.72 U	0.67 U	0.64 U
TRANS-1,3-DICHLOROPROPENE	6.8 U	5.2 U	0.61 U	0.79 U	38 U	0.69 U	0.83 U	0.76 U	0.73 U
TRICHLOROETHENE	160	160	0.44	2.2	16000	46	140	4.2	3.1
TRICHLOROFLUOROMETHANE	3.5 J	3.4	1.2	1.5	48 U	1.5	2.2	1.5	1.5
VINYL CHLORIDE	3.8 U	2.9 U	0.34 U	0.45 U	22 U	0.39 U	0.47 U	0.43 U	0.41 U

Notes
D = Duplicate
IND = Indoor Air Sample
INDB = Indoor Air Basement Sample
INDL = Indoor Air Living Space Sample
J = estimated value
SSB = Sub-Slab Sample
U = Not Detected
(µg/m^3) - Micrograms per Meter Cubed

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR002-IND2	BPS1-AR003-SSB	BPS1-AR003-IND	BPS1-AR003-IND-D	BPS1-AR003-IND3	BPS1-AR003-IND3-D	BPS1-AR003-IND4	BPS1-AR003-IND5	BPS1-AR003-IND5-D
SAMPLE DATE	20090219	20090122	20090122	20090122	20090226	20090226	20090311	20090311	20090311
VOLATILES (µg/m^3)									
1,1,1-TRICHLOROETHANE	73	10000	95	98	27	27	41	5.2	5.5
1,1,2,2-TETRACHLOROETHANE	2 U	45 U	0.67 U	0.74 U	0.58 U	0.58 U	0.53 U	0.53 U	0.56 U
1,1,2-TRICHLOROETHANE	1.6 U	36 U	0.53 U	0.59 U	0.46 U	0.46 U	0.42 U	0.42 U	0.45 U
1,1,2-	0.86 J	50 U	0.72 J	0.59 J	0.33 J	0.24 J	0.76	0.59 U	0.26 J
1,1-DICHLOROETHANE	2.4 U	99	0.8	0.83 J	0.39 J	0.3 J	0.87	0.19 J	0.21 J
1,1-DICHLOROETHENE	2.3 U	120	0.83	0.98	0.51 J	0.44 J	1	0.61 U	0.47 J
1,2,4-TRICHLOROBENZENE	22 U	190 U	7.3 UJ	8 UJ	6.2 UJ	6.2 UJ	5.8 UJ	5.8 UJ	6.1 UJ
1,2,4-TRIMETHYLBENZENE	0.53 J	6.5 J	5.6	6.1	2.2 J	1.1 J	3.4	0.42 J	0.4 J
1,2-DIBROMOETHANE	2.2 U	50 U	0.75 U	0.83 U	0.64 U	0.64 U	0.6 U	0.6 U	0.63 U
1,2-DICHLOROBENZENE	1.8 U	39 U	0.59 U	0.65 U	0.5 U	0.5 U	0.46 U	0.46 U	0.49 U
1,2-DICHLOROETHANE	2.4 UJ	26 U	0.79 U	0.88 U	0.68 U	0.68 U	0.34 J	0.63 U	0.66 U
1,2-DICHLOROPROPANE	2.7 U	30 U	0.9 U	1 U	0.78 U	0.78 U	0.72 U	0.72 U	0.76 U
1,2-	2 U	46 U	0.68 U	0.76 U	0.59 U	0.59 U	0.54 U	0.54 U	0.57 U
1,3,5-TRIMETHYLBENZENE	2.9 U	32 U	1.5	1.6	0.64 J	0.52 J	0.93	0.76 U	0.81 U
1,3-DICHLOROBENZENE	1.8 U	39 U	0.59 U	0.65 U	0.5 U	0.5 U	0.46 U	0.46 U	0.49 U
1,4-DICHLOROBENZENE	1.2 J	39 U	4.3	4.1	1.1 U	1 U	1.4	0.38 J	0.45 J
1,4-DIOXANE	2.1 U	94 U	0.71 U	0.78 U	0.6 U	0.6 U	0.56 U	0.56 U	0.59 U
2,2,4-TRIMETHYLPENTANE	2.7 U	30 U	8.2	8	3.1	3.4	3.6	0.72 U	0.77 U
2-BUTANONE	1.9	19 U	0.72	0.97	0.51	0.49 U	1.7	0.58	1.2
4-METHYL-2-PENTANONE	2.4 U	27 U	0.8 U	0.89 U	0.69 U	0.69 U	0.63 U	0.63 U	0.67 U
BENZENE	1.9 U	9.7 U	6.3	7	2.8	3	3.6	0.5 U	0.52 U
BENZYL CHLORIDE	3 UJ	34 U	1 U	1.1 U	0.87 U	0.87 U	0.8 U	0.8 U	0.85 U
BROMODICHLOROMETHANE	2 UJ	44 U	0.66 U	0.73 U	0.56 U	0.56 U	0.52 U	0.52 U	0.55 U
BROMOFORM	3 UJ	68 U	1 U	1.1 U	0.87 U	0.87 U	0.8 U	0.8 U	0.85 U
BROMOMETHANE	2.3 U	25 U	0.76 U	0.84 U	0.56 J	0.65 U	0.6 U	0.6 U	0.64 U
CARBON TETRACHLORIDE	1.8 U	41 U	0.6 J	0.65 J	0.53 U	0.53 U	0.39 J	0.48 J	0.52 U
CHLOROBENZENE	2.7 U	30 U	0.9 U	1 U	0.77 U	0.77 U	0.71 U	0.71 U	0.76 U
CHLORODIBROMOMETHANE	2.5 U	56 U	0.83 U	0.92 U	0.72 U	0.72 U	0.66 U	0.66 U	0.7 U
CHLOROETHANE	1.5 U	17 U	0.52 U	0.57 U	0.44 U	0.44 U	0.41 U	0.41 U	0.43 U
CHLOROFORM	2.8 U	9.7 J	0.96 U	1 U	0.82 U	0.82 U	0.76 U	0.76 U	0.8 U
CHLOROMETHANE	1.9	54 U	1.2	1.2	1.1	1.1	1.1	1.2	1.3
CIS-1,2-DICHLOROETHENE	2.3 U	15 J	0.78 U	0.86 U	0.67 U	0.67 U	0.61 U	0.61 U	0.65 U
CIS-1,3-DICHLOROPROPENE	2.6 U	30 U	0.89 U	0.98 U	0.76 U	0.76 U	0.7 U	0.7 U	0.74 U
CYCLOHEXANE	1.5 J	22 U	9.4	10	4.8	5.2	8	0.56	0.5 J
DICHLORODIFLUOROMETHANE	3	32 U	2.6	2.9	2.3	2.1	2.3	2.2	2.3
ETHANOL	910 J	100	41	41	32	30	55	500 J	560 J
ETHYLBENZENE	0.81 J	28 U	4.3	4.4	1.8	1.5	2.3	0.22 J	0.22 J
HEXACHLOROBUTADIENE	31 U	280 U	10 U	12 U	9 U	9 U	8.3 U	8.3 U	8.7 U
HEXANE	2 U	33	23	24	9.3	9.8	12	0.69	0.61
M+P-XYLENES	1.9 J	12 J	13	14	5.4	3.8	6.7	0.58 J	0.57 J
METHYL TERT-BUTYL ETHER	2.1 U	24 UJ	0.71 U	0.78 U	0.6 U	0.6 U	0.56 U	0.56 U	0.59 U
METHYLENE CHLORIDE	1 J	23 U	2.1 J	2.1 J	1.5 J	1.4 J	1.4 J	0.77 J	0.77 J
O-XYLENE	0.51 J	28 U	5	5	2	1.7	2.5	0.24 J	0.23 J
STYRENE	2.5 U	28 U	0.83 U	0.92 U	0.72 U	0.72 U	0.66 U	0.66 U	0.7 U
TERTIARY-BUTYL ALCOHOL	8.8 U	79 U	3 U	3.3 U	2.5 U	2.5 U	0.41 J	2.3 U	2.5 U
TETRACHLOROETHENE	4.9	130	4.3	4.2	0.75	0.72	0.49 J	0.52 U	0.56 U
TOLUENE	4	120	19	21	9.3	7.6	9.9	1.5	1.3
TRANS-1,2-DICHLOROETHENE	2.3 U	26 U	0.78 U	0.86 U	0.67 U	0.67 U	0.61 U	0.61 U	0.65 U
TRANS-1,3-DICHLOROPROPENE	2.6 U	30 U	0.89 U	0.98 U	0.76 U	0.76 U	0.7 U	0.7 U	0.74 U
TRICHLOROETHENE	100	13000	180	180	34	31	32	2.8	3
TRICHLOROFLUOROMETHANE	1.9	37 U	1.7	1.9	1.6	1.4	2.7	3.7	4.1
VINYL CHLORIDE	1.5 U	17 U	0.5 U	0.55 U	0.43 U	0.43 U	0.4 U	0.4 U	0.42 U

Notes
D = Duplicate
IND = Indoor Air Sample
INDB = Indoor Air Basement Sample
INDL = Indoor Air Living Space Sample
J = estimated value
SSB = Sub-Slab Sample
U = Not Detected
(µg/m^3) - Micrograms per Meter Cubed

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR003-IND2	BPS1-AR004-SSB	BPS1-AR004-IND4	BPS1-AR004-IND	BPS1-AR004-IND2	BPS1-AR004-IND5	BPS1-AR004-IND3	BPS1-AR005-SSB	BPS1-AR005-IND
SAMPLE DATE	20090218	20090121	20090226	20090121	20090121	20090324	20090218	20090121	20090121
VOLATILES (µg/m^3)									
1,1,1-TRICHLOROETHANE	74	2100	1.6	6.4	2.7	1.2	6.2	1.7	0.72
1,1,2,2-TETRACHLOROETHANE	1.2 U	5.3 U	0.53 U	1.2 U	0.67 U	0.46 U	1.3 U	0.64 U	0.59 U
1,1,2-TRICHLOROETHANE	0.92 U	4.2 U	0.42 U	1 U	0.53 U	0.36 U	1 U	0.51 U	0.47 U
1,1,2-	1.3 U	4.4 J	0.59 U	1.4 U	0.62 J	0.39 J	0.66 J	0.82	0.81
1,1-DICHLOROETHANE	0.6 J	3 J	0.63 U	1.5 U	0.79 U	0.54 U	1.5 U	0.76 U	0.69 U
1,1-DICHLOROETHENE	0.81 J	16	0.61 U	1.4 U	0.78 U	0.53 U	1.5 U	0.74 U	0.68 U
1,2,4-TRICHLOROBENZENE	12 U	58 U	5.8 UJ	14 U	7.3 UJ	5 UJ	14 U	6.9 U	6.3 U
1,2,4-TRIMETHYLBENZENE	4.4	2.2 J	0.76 U	0.44 J	0.54 J	0.41 J	0.83 J	2.2	0.73 J
1,2-DIBROMOETHANE	1.3 U	6 U	0.6 U	1.4 U	0.75 U	0.51 U	1.4 U	0.72 U	0.66 U
1,2-DICHLOROBENZENE	1 U	4.6 U	0.46 U	1.1 U	0.59 U	0.40 U	1.1 U	0.56 U	0.52 U
1,2-DICHLOROETHANE	1.4 UJ	6.3 U	0.63 U	1.5 U	0.31 J	0.24 J	1.5 UJ	0.2 J	0.69 U
1,2-DICHLOROPROPANE	1.6 U	7.2 U	0.72 U	1.7 U	0.9 U	0.62 U	1.7 U	0.86 U	0.79 U
1,2-	1.2 U	5.4 U	0.54 U	1.3 U	0.68 U	0.47 U	1.3 U	0.65 U	0.6 U
1,3,5-TRIMETHYLBENZENE	1.2 J	7.6 U	0.76 U	1.8 U	0.16 J	0.10 J	0.27 J	0.62 J	0.16 J
1,3-DICHLOROBENZENE	1 U	4.6 U	0.46 U	1.1 U	0.59 U	0.40 U	1.1 U	0.56 U	0.51 U
1,4-DICHLOROBENZENE	3.2	4.6 U	0.46 U	1.1 U	0.59 U	0.67	0.32 J	1.1 U	0.51 U
1,4-DIOXANE	1.2 U	5.6 U	0.56 U	1.3 U	0.71 U	0.48 U	1.3 U	1.2	0.62 U
2,2,4-TRIMETHYLPENTANE	6.2	7.2 U	0.72 U	1.7 U	0.92 U	0.62 U	1.7 U	0.87 U	0.89
2-BUTANONE	1.2	4 U	1.1	2.2 U	4.4	1.7	2.7	1.4 U	2.2 U
4-METHYL-2-PENTANONE	1.4 U	6.3 U	0.63 U	0.25 J	0.24 J	0.31 J	1.8	0.44 J	0.7 U
BENZENE	5.4	2.8 J	0.24 J	2.1	1.3	0.44 U	1.8 U	0.87	1.5
BENZYL CHLORIDE	1.7 UJ	8 U	0.8 U	1.9 U	1 U	0.69 U	1.9 UJ	0.97 U	0.88 U
BROMODICHLOROMETHANE	1.1 UJ	5.2 U	0.52 U	1.2 U	0.66 U	0.45 U	1.2 UJ	0.63 U	0.57 U
BROMOFORM	1.7 UJ	8 U	0.8 U	1.9 U	1 U	0.69 U	1.9 UJ	0.97 U	0.88 U
BROMOMETHANE	1.3 U	6 U	0.32 J	1.4 U	0.76 U	0.27 J	1.4 U	0.73 U	0.66 U
CARBON TETRACHLORIDE	1 U	4.9 U	0.49 U	1.1 U	0.44 J	0.30 J	0.69 J	0.59 U	0.54
CHLOROBENZENE	1.5 U	7.1 U	0.71 U	1.7 U	0.9 U	0.62 U	1.7 U	0.36 J	0.79 U
CHLORODIBROMOMETHANE	1.4 U	6.6 U	0.66 U	1.6 U	0.83 U	0.57 U	1.6 U	0.8 U	0.73 U
CHLOROETHANE	0.89 U	4.1 U	0.41 U	0.96 U	0.52 U	0.35 U	0.99 U	0.49 U	0.45 U
CHLOROFORM	1.6 U	24	0.76 U	1.8 U	0.96 U	0.65 U	1.8 U	59	0.73 J
CHLOROMETHANE	1.7	3.2 U	1.2	1.2	1.1	1	1.7	0.37 J	1
CIS-1,2-DICHLOROETHENE	1.3 U	6.1 U	0.61 U	1.4 U	0.78 U	0.53 U	1.5 U	0.74 U	0.68 U
CIS-1,3-DICHLOROPROPENE	1.5 U	7 U	0.7 U	1.6 U	0.89 U	0.61 U	1.7 U	0.85 U	0.78 U
CYCLOHEXANE	7.5	5.3 U	0.53 U	1.2 U	0.67 U	0.46 U	0.82 J	0.29 J	0.7
DICHLORODIFLUOROMETHANE	3.5	2.6 J	1.9	2.4	2.3	1.8	3.4	1.9	2.4
ETHANOL	570 J	3.9 U	47	110	510 J	180 J	840 J	8.9	99 J
ETHYLBENZENE	3.2	2.8 J	0.67 U	0.38 J	0.52 J	0.34 J	1 J	2.4	0.82
HEXACHLOROBUTADIENE	18 U	83 U	8.3 U	19 U	10 U	7.1 U	20 U	10 U	9.1 U
HEXANE	17	5.5 U	0.55 U	0.51 J	0.73	0.47 U	1.3 U	0.57 J	1.8
M+P-XYLENES	9.8	6.9	0.2 J	1.4 J	0.93	0.68	2.3	6.3	2
METHYL TERT-BUTYL ETHER	1.2 U	5.6 U	0.56 U	1.3 U	0.71 U	0.48 U	1.3 U	0.67 U	0.62 U
METHYLENE CHLORIDE	2.3 J	27 U	0.37 J	6.3 U	0.4 J	0.89 J	1.2 J	7	40
O-XYLENE	3.8	2.6 J	0.67 U	0.51 J	0.36 J	0.33 J	0.99 J	3	0.7 J
STYRENE	0.28 J	6.6 U	0.66 U	0.32 J	0.26 J	0.82	1.3 J	0.86	0.15 J
TERTIARY-BUTYL ALCOHOL	5.1 U	23 U	0.78 J	5.5 U	1.3 J	0.91 J	1.3 J	2 J	0.44 J
TETRACHLOROETHENE	3.1	42	0.52 U	1.2 U	2.2	0.45 U	0.82 J	4.5	0.58 U
TOLUENE	22	70	0.76	4.6	4.9	3.6	11	110	3.5
TRANS-1,2-DICHLOROETHENE	1.3 U	6.1 U	0.61 U	1.4 U	0.78 U	0.53 U	1.5 U	0.74 U	0.68 U
TRANS-1,3-DICHLOROPROPENE	1.5 U	7 U	0.7 U	1.6 U	0.89 U	0.61 U	1.7 U	0.85 U	0.78 U
TRICHLOROETHENE	110	1400	1.2	6.8	2.9	1.1	6.1	0.35 J	0.46 U
TRICHLOROFLUOROMETHANE	5	2.9 J	0.99	1.6	2.4	1.2	2.2	2.7	1.8
VINYL CHLORIDE	0.86 U	4 U	0.4 U	0.93 U	0.5 U	0.34 U	0.96 U	0.48 U	0.44 U

Notes
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APPENDIX C
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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR006-SSB	BPS1-AR006-IND3	BPS1-AR006-IND	BPS1-AR006-IND2	BPS1-AR006-IND4	BPS1-AR007-SSB	BPS1-AR007-IND	BPS1-AR007-IND3	BPS1-AR007-IND2
SAMPLE DATE	20090219	20090226	20090219	20090219	20090324	20090220	20090220	20090325	20090220
VOLATILES (µg/m^3)									
1,1,1-TRICHLOROETHANE	1600	2.4	40	8.8	7	370	1	0.47	0.51
1,1,2,2-TETRACHLOROETHANE	4.4 U	0.51 U	0.61 U	0.47 U	1 U	2 U	0.53 U	0.46 U	0.52 U
1,1,2-TRICHLOROETHANE	3.5 U	0.41 U	0.49 U	0.37 U	0.83 U	1.6 U	0.42 U	0.36 U	0.41 U
1,1,2-	1200	1.2	16	3	1.1 U	1600	6.2	2.5	2.8
1,1-DICHLOROETHANE	3.2 J	0.6 U	0.72 U	0.55 U	1.2 U	4.9	0.63 U	0.54 U	0.62 U
1,1-DICHLOROETHENE	13	0.59 U	0.33 J	0.54 U	1.2 U	4.5	0.61 U	0.53 U	0.6 U
1,2,4-TRICHLOROBENZENE	47 U	5.5 UJ	6.6 U	5 U	11 UJ	21 U	5.8 U	5 U	5.6 U
1,2,4-TRIMETHYLBENZENE	1.8 J	0.44 J	0.92	1.3	0.78 J	9.4	0.67 J	0.14 J	0.47 J
1,2-DIBROMOETHANE	4.9 U	0.57 U	0.69 U	0.52 U	1.2 U	2.2 U	0.6 U	0.51 U	0.58 U
1,2-DICHLOROBENZENE	3.8 U	0.45 U	0.54 U	0.24 J	0.91 U	1.7 U	0.46 U	0.40 U	0.46 U
1,2-DICHLOROETHANE	5.1 UJ	0.6 U	0.72 UJ	0.55 UJ	1.2 U	2.3 UJ	1.3 J	0.49 J	0.69 J
1,2-DICHLOROPROPANE	5.9 U	0.69 U	0.83 U	0.63 U	1.4 U	2.6 U	0.72 U	0.62 U	0.7 U
1,2-	4.4 U	0.26 J	0.41 J	0.5	1.1 U	2 U	0.54 U	0.47 U	0.53 U
1,3,5-TRIMETHYLBENZENE	6.2 U	0.14 J	0.31 J	0.43 J	0.22 J	2.9	0.17 J	0.66 U	0.75 U
1,3-DICHLOROBENZENE	3.8 U	0.45 U	0.54 U	0.18 J	0.91 U	1.7 U	0.46 U	0.40 U	0.46 U
1,4-DICHLOROBENZENE	2.3 J	1	14	180	240	1.1 J	0.3 J	0.40 U	0.41 J
1,4-DIOXANE	4.6 U	0.54 U	0.64 U	0.46 J	1.1 U	2 U	0.56 U	0.48 U	0.18 J
2,2,4-TRIMETHYLPENTANE	5.9 U	0.7 U	1.1	0.62 J	1.4 U	4.4	0.72 U	0.62 U	0.71 U
2-BUTANONE	18	2.2	6	4.8	1.8	2.8	1.1	0.50	0.84
4-METHYL-2-PENTANONE	5.2 U	0.21 J	0.75	0.56 U	1.2 U	2.3 U	0.63 U	0.55 U	0.62 U
BENZENE	4 U	0.27 J	1.5	1.4	0.97 U	8.6	1.2	0.46	1
BENZYL CHLORIDE	6.6 UJ	0.77 U	0.93 UJ	0.7 UJ	1.6 U	3 UJ	0.8 UJ	0.69 U	0.79 UJ
BROMODICHLOROMETHANE	4.2 UJ	0.5 U	0.6 UJ	0.46 UJ	1 U	1.9 UJ	0.52 UJ	0.45 U	0.51 UJ
BROMOFORM	6.6 UJ	0.77 U	0.92 UJ	0.7 UJ	1.6 U	2.9 UJ	0.8 UJ	0.69 U	0.78 UJ
BROMOMETHANE	4.9 U	0.58 U	0.7 U	0.53 U	1.2 U	2.2 U	0.6 U	0.52 U	0.59 U
CARBON TETRACHLORIDE	4 U	0.47 U	0.37 J	0.5	0.59 J	2.1	0.56	0.29 J	0.57
CHLOROBENZENE	5.8 U	0.68 U	0.82 U	0.63 U	1.4 U	2.6 U	0.71 U	0.62 U	0.7 U
CHLORODIBROMOMETHANE	5.4 U	0.63 U	0.76 U	0.58 U	1.3 U	2.4 U	0.66 U	0.57 U	0.65 U
CHLOROETHANE	3.4 U	0.39 U	0.47 U	0.36 U	0.80 U	1.5 U	0.41 U	0.35 U	0.4 U
CHLOROFORM	68	0.73 U	0.52 J	0.89	1.1 J	4.3	0.76 U	0.65 U	0.74 U
CHLOROMETHANE	2.6 U	1.2	1.3	1.3	1.2	0.76 J	1.2	1.1	1.6
CIS-1,2-DICHLOROETHENE	5 U	0.59 U	0.71 U	0.54 U	1.2 U	2.2 U	0.61 U	0.53 U	0.6 U
CIS-1,3-DICHLOROPROPENE	5.8 U	0.68 U	0.81 U	0.62 U	1.4 U	2.6 U	0.7 U	0.61 U	0.69 U
CYCLOHEXANE	24	0.51 U	1.4	0.52	1 U	7.5	0.38 J	0.46 U	0.24 J
DICHLORODIFLUOROMETHANE	3 J	2.6	3.4	3.7	3.9	3.2	2.6	2.3	2.4
ETHANOL	13	27	51	150 J	560 J	11	56	23 J	190 J
ETHYLBENZENE	3.2 J	0.3 J	0.77 U	2.5	0.37 J	12	0.34 J	0.58 U	0.29 J
HEXACHLOROBUTADIENE	68 U	7.9 U	9.5 U	7.2 U	16 U	30 U	8.3 U	7.1 U	8.1 U
HEXANE	2.4 J	0.52 U	2.6	1.3	1.1 U	9	0.99	0.47 U	0.72
M+P-XYLENES	9	0.93	2.1	7.3	1.2 J	43	0.83	0.20 J	0.67
METHYL TERT-BUTYL ETHER	4.6 U	0.54 U	0.64 U	0.49 U	1.1 U	2 U	0.56 U	0.48 U	0.55 U
METHYLENE CHLORIDE	22 U	0.47 J	0.73 J	0.63 J	5.3 U	1.2 J	0.54 J	0.27 J	0.37 J
O-XYLENE	3 J	0.35 J	0.75 J	2.2	0.51 J	16	0.34 J	0.092 J	0.27 J
STYRENE	0.9 J	0.63 U	0.22 J	0.42 J	0.24 J	2.4 U	0.24 J	0.12 J	0.18 J
TERTIARY-BUTYL ALCOHOL	3.9 J	0.7 J	0.81 J	0.78 J	4.6 U	9.6	2.3 U	2 U	2.3 U
TETRACHLOROETHENE	650	2.4	56	8.8	1.6	310	3.2	0.90	1.6
TOLUENE	36	0.7	5.2	8.6	4.3	91	2	1.2	2.7
TRANS-1,2-DICHLOROETHENE	5 U	0.59 U	0.71 U	0.54 U	1.2 U	2.2 U	0.61 U	0.53 U	0.6 U
TRANS-1,3-DICHLOROPROPENE	5.8 U	0.68 U	0.81 U	0.62 U	1.4 U	2.6 U	0.7 U	0.61 U	0.69 U
TRICHLOROETHENE	740	2.1	43	6.6	1.2	170	0.75	0.20 J	0.4 U
TRICHLOROFLUOROMETHANE	5	1	2.6	3.5	6.1	3.4	1.8	1.4	1.6
VINYL CHLORIDE	3.2 U	0.38 U	0.46 U	0.35 U	0.78 U	1.4 U	0.4 U	0.34 U	0.39 U

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(µg/m^3) - Micrograms per Meter Cubed

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR008-SSB	BPS1-AR008-IND	BPS1-AR008-IND2	BPS1-AR009-SSB	BPS1-AR009-IND	BPS1-AR009-IND-D	BPS1-AR009-IND2	BPS1-AR010-SSB2	BPS1-AR010-IND3
SAMPLE DATE	20090220	20090220	20090220	20090225	20090225	20090225	20090225	20090226	20090324
VOLATILES (µg/m^3)									
1,1,1-TRICHLOROETHANE	45	0.49 J	2.3 U	140	1.8	1.5	0.61	590	2.2
1,1,2,2-TETRACHLOROETHANE	0.55 U	0.63 U	2.9 U	0.64 U	0.56 U	0.76 U	0.67 U	2.7 U	0.55 U
1,1,2-TRICHLOROETHANE	0.44 U	0.5 U	2.3 U	0.51 U	0.45 U	0.61 U	0.53 U	2.1 U	0.44 U
1,1,2-	1.2	1	3.2 U	2.4 J	0.89 J	0.66 J	0.73 J	2000	5.5
1,1-DICHLOROETHANE	0.65 U	0.74 U	3.4 U	0.76 U	0.66 U	0.9 U	0.79 U	8.2	0.65 U
1,1-DICHLOROETHENE	0.64 U	0.72 U	3.3 U	0.74 U	0.65 U	0.88 U	0.78 U	7.1	0.64 U
1,2,4-TRICHLOROBENZENE	6 U	6.8 U	31 U	6.9 U	6.1 U	8.3 UJ	7.3 UJ	29 UJ	6 U
1,2,4-TRIMETHYLBENZENE	6.7	0.9 U	4.1 U	3	0.51 J	1.1 U	0.96 U	4.7	0.15 J
1,2-DIBROMOETHANE	0.62 U	0.7 U	3.2 U	0.72 U	0.63 U	0.86 U	0.75 U	3 U	0.62 U
1,2-DICHLOROBENZENE	0.48 U	0.55 U	2.5 U	0.56 U	0.49 U	0.67 U	0.59 U	2.3 U	0.48 U
1,2-DICHLOROETHANE	0.38 J	0.4 J	3.4 U	0.24 J	0.66 U	0.9 U	0.79 U	3.1 U	0.65 U
1,2-DICHLOROPROPANE	0.74 U	0.84 U	3.9 U	0.86 U	0.76 U	1 U	0.9 U	3.6 U	0.74 U
1,2-	0.56 U	0.64 U	2.9 U	0.65 U	0.57 U	0.78 U	0.68 U	2.7 U	0.56 U
1,3,5-TRIMETHYLBENZENE	2.1	0.9 U	4.1 U	0.61 J	0.15 J	0.15 J	0.16 J	1.6 J	0.79 U
1,3-DICHLOROBENZENE	0.48 U	0.55 U	2.5 U	0.56 U	0.49 U	0.67 U	0.59 U	2.3 U	0.48 U
1,4-DICHLOROBENZENE	0.83 U	0.55 U	2.5 U	1.5	0.49 U	0.67 U	0.59 U	2.3 U	0.48 U
1,4-DIOXANE	0.25 J	0.66 U	3 U	0.38 J	0.59 U	0.8 U	0.71 U	2.8 U	0.58 U
2,2,4-TRIMETHYLPENTANE	2.9	0.3 J	3.9 U	1.1	1.2	1.5	5	2.6 J	0.75 U
2-BUTANONE	8.5 J	1.5 J	4.3 J	16	0.77	1.1	0.92	4.9	4.7
4-METHYL-2-PENTANONE	1.1	0.75 U	3.4 U	1.3	0.23 J	0.2 J	0.27 J	3.2 U	0.66 U
BENZENE	8.4	1.2	2.7 U	3.6	0.86	0.67 J	0.69	3.3	0.32 J
BENZYL CHLORIDE	0.83 U	0.95 U	4.3 U	0.97 UJ	0.85 UJ	1.2 U	1 U	4 U	0.83 U
BROMODICHLOROMETHANE	0.54 U	0.61 U	2.8 U	0.63 U	0.55 U	0.75 U	0.66 U	2.6 U	0.54 U
BROMOFORM	0.83 U	0.94 U	4.3 U	0.97 UJ	0.85 UJ	1.2 U	1 U	4 U	0.83 U
BROMOMETHANE	0.62 U	0.71 U	3.3 U	0.73 U	0.64 U	0.47 J	0.51 J	1.2 J	0.62 U
CARBON TETRACHLORIDE	0.28 J	0.58 U	2.6 U	0.45 J	0.54	0.66 J	0.69	1.9 J	0.32 J
CHLOROBENZENE	0.11 J	0.84 U	3.9 U	0.86 U	0.76 U	1 U	0.9 U	3.6 U	0.74 U
CHLORODIBROMOMETHANE	0.68 U	0.78 U	3.6 U	0.8 U	0.7 U	0.95 U	0.83 U	3.3 U	0.68 U
CHLOROETHANE	0.42 U	0.48 U	2.2 U	0.49 U	0.43 U	0.59 U	0.52 U	2 U	0.42 U
CHLOROFORM	19	0.33 J	4.1 U	1.3	0.8 U	1.1 U	0.96 U	16	0.79 U
CHLOROMETHANE	0.21 J	1.6	2.1	0.26 J	1.3	1.3	1.3	1.6 U	1.1
CIS-1,2-DICHLOROETHENE	0.64 U	0.72 U	3.3 U	0.74 U	0.65 U	0.88 U	0.78 U	3 J	0.64 U
CIS-1,3-DICHLOROPROPENE	0.73 U	0.83 U	3.8 U	0.85 U	0.74 U	1 U	0.89 U	3.5 U	0.73 U
CYCLOHEXANE	2.2	0.63 U	1.1 J	2.7	0.56 U	0.77 U	0.67 U	12	0.55 U
DICHLORODIFLUOROMETHANE	2.9	3.3	3.8	5.2	1.7	2.3	2.1	2.3	2
ETHANOL	48	74	1100 J	14	26 J	140 J	300 J	8.7 U	11 J
ETHYLBENZENE	11	0.42 J	0.91 J	3.9	0.4 J	0.41 J	0.27 J	8.6	0.70 U
HEXACHLOROBUTADIENE	8.6 U	9.8 U	45 U	10 U	8.7 U	12 U	10 U	41 U	8.6 U
HEXANE	5.6	0.49 J	1.7 J	2.6	0.58 U	0.78 U	0.69 U	2.7 U	0.57 U
M+P-XYLENES	45	0.75 J	2.7 J	12	0.81	0.88 J	0.81 J	30	0.21 J
METHYL TERT-BUTYL ETHER	0.58 U	0.66 U	3 U	0.67 U	0.59 U	0.8 U	0.71 U	2.8 U	0.58 U
METHYLENE CHLORIDE	0.82 J	2.1 J	2.3 J	3.2 U	0.92 J	1 J	0.82 J	13 U	2.8 U
O-XYLENE	14	0.31 J	0.94 J	3.6	0.34 J	0.38 J	0.32 J	11	0.097 J
STYRENE	0.68 U	0.78 U	3.6 U	0.9	0.26 J	0.95 U	0.83 U	1 J	0.16 J
TERTIARY-BUTYL ALCOHOL	6.5	2.8 U	13 U	7.7	2.5 U	3.4 U	0.52 J	4 J	2.4 U
TETRACHLOROETHENE	3.4	0.34 J	2.6 J	8.8	0.62	0.62 J	0.33 J	670	7.4
TOLUENE	97	4.4	14	130	4.2	4.7	3.2	98	1.9
TRANS-1,2-DICHLOROETHENE	0.64 U	0.72 U	3.3 U	0.74 U	0.65 U	0.88 U	0.78 U	1.6 J	0.64 U
TRANS-1,3-DICHLOROPROPENE	0.73 U	0.83 U	3.8 U	0.85 U	0.74 U	1 U	0.89 U	3.5 U	0.73 U
TRICHLOROETHENE	16	0.49 U	2.2 U	21	0.5	0.41 J	0.34 J	300	1.5
TRICHLOROFLUOROMETHANE	20	4.4	3	4.3	1.9 J	1.1 J	1.3	2.6	1.5
VINYL CHLORIDE	0.41 U	0.47 U	2.1 U	0.48 U	0.42 U	0.57 U	0.5 U	2 U	0.41 U

Notes
D = Duplicate
IND = Indoor Air Sample
INDB = Indoor Air Basement Sample
INDL = Indoor Air Living Space Sample
J = estimated value
SSB = Sub-Slab Sample
U = Not Detected
(µg/m^3) - Micrograms per Meter Cubed

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR010-IND3-D	BPS1-AR010-IND	BPS1-AR010-IND2	BPS1-AR011-SSB	BPS1-AR011-IND	BPS1-AR011-IND2	BPS1-AR012-SSB	BPS1-AR012-IND3	BPS1-AR012-IND
SAMPLE DATE	20090324	20090225	20090225	20090225	20090225	20090225	20090226	20090325	20090226
VOLATILES (µg/m^3)									
1,1,1-TRICHLOROETHANE	2.2	3.9	0.58 J	50	0.44 U	0.89 U	330	1	2.2
1,1,2,2-TETRACHLOROETHANE	0.54 U	0.46 U	0.92 U	0.85 U	0.55 U	1.1 U	1 U	0.50 U	0.6 U
1,1,2-TRICHLOROETHANE	0.43 U	0.36 U	0.73 U	0.68 U	0.44 U	0.89 U	0.81 U	0.40 U	0.48 U
1,1,2-	5.6	12	2.4	430	1	0.93 J	30	0.31 J	0.75
1,1-DICHLOROETHANE	0.64 U	0.54 U	1.1 U	1 U	0.65 U	1.3 U	0.58 J	0.59 U	0.71 U
1,1-DICHLOROETHENE	0.63 U	0.53 U	1.1 U	1.1	0.64 U	1.3 U	2.2	0.58 U	0.69 U
1,2,4-TRICHLOROBENZENE	5.9 UJ	5 UJ	9.9 UJ	9.2 UJ	6 UJ	12 UJ	11 UJ	5.4 U	6.5 UJ
1,2,4-TRIMETHYLBENZENE	0.18 J	0.43 J	0.65 J	1.9	0.61 J	1.6 U	2.4	2.9	8.2
1,2-DIBROMOETHANE	0.61 U	0.51 U	1 U	0.95 U	0.62 U	1.2 U	1.1 U	0.56 U	0.67 U
1,2-DICHLOROBENZENE	0.47 U	0.4 U	0.8 U	0.74 U	0.48 U	0.98 U	0.9 U	0.44 U	0.53 U
1,2-DICHLOROETHANE	0.64 U	0.54 U	1.1 U	0.31 J	0.65 U	1.3 U	1.2 U	0.59 U	0.27 J
1,2-DICHLOROPROPANE	0.73 U	0.62 U	1.2 U	1.1 U	0.74 U	1.5 U	1.4 U	0.67 U	0.81 U
1,2-	0.55 U	0.47 U	0.94 U	0.87 U	0.56 U	1.1 U	1 U	0.51 U	0.61 U
1,3,5-TRIMETHYLBENZENE	0.78 U	0.13 J	1.3 U	0.53 J	0.16 J	1.6 U	0.58 J	0.78	2.1
1,3-DICHLOROBENZENE	0.48 U	0.4 U	0.8 U	0.74 U	0.48 U	0.98 U	0.9 U	0.44 U	0.53 U
1,4-DICHLOROBENZENE	0.48 U	0.4 U	0.8 U	0.94 U	0.48 U	0.98 U	0.9 U	0.44 U	0.53 U
1,4-DIOXANE	0.57 U	0.48 U	0.96 U	0.89 U	0.58 U	1.2 U	0.36 J	0.53 U	0.63 U
2,2,4-TRIMETHYLPENTANE	0.74 U	0.62 U	1.2 U	1.2 U	0.75 U	1.5 U	2.2	1.6	4.6
2-BUTANONE	5.4	15	2.5	12	15	7.6	30	22	250
4-METHYL-2-PENTANONE	0.65 U	0.55 U	1.1 U	0.54 J	0.66 U	1.3 U	0.9 J	0.70	2.2
BENZENE	0.38 J	0.62	0.71 J	2.3	0.78	0.93 J	1.6	0.91	2.7
BENZYL CHLORIDE	0.82 U	0.69 U	1.4 U	1.3 U	0.83 U	1.7 U	1.5 U	0.76 U	0.9 U
BROMODICHLOROMETHANE	0.53 U	0.45 U	0.9 U	0.83 U	0.54 U	1.1 U	1 U	0.49 U	0.59 U
BROMOFORM	0.82 U	0.69 U	1.4 U	1.3 U	0.83 U	1.7 U	1.5 U	0.75 U	0.9 U
BROMOMETHANE	0.24 J	0.52 U	1 U	0.5 J	0.48 J	0.62 J	1.2 U	0.57 U	0.68 U
CARBON TETRACHLORIDE	0.40 J	0.56	0.84 U	0.55 J	0.56	0.64 J	0.73 J	0.46 U	0.52 J
CHLOROBENZENE	0.73 U	0.62 U	1.2 U	1.1 U	0.74 U	1.5 U	1.4 U	0.67 U	0.8 U
CHLORODIBROMOMETHANE	0.67 U	0.57 U	1.1 U	1 U	0.68 U	1.4 U	1.3 U	0.62 U	0.74 U
CHLOROETHANE	0.42 U	0.35 U	0.71 U	0.65 U	0.42 U	0.86 U	0.79 U	0.38 U	0.46 U
CHLOROFORM	0.77 U	0.29 J	1.3 U	41	0.79 U	1.6 U	6.6	0.71 U	0.45 J
CHLOROMETHANE	1.2	1.2	1.3	0.51 U	1.2	1.7	0.44 J	1.2	1.2
CIS-1,2-DICHLOROETHENE	0.63 U	0.53 U	1.1 U	0.98 U	0.64 U	1.3 U	1.2 U	0.58 U	0.69 U
CIS-1,3-DICHLOROPROPENE	0.72 U	0.61 U	1.2 U	1.1 U	0.73 U	1.5 U	1.4 U	0.66 U	0.79 U
CYCLOHEXANE	0.54 U	0.46 U	0.92 U	1.2	0.42 J	1.1 U	6.8	0.59	1.3
DICHLORODIFLUOROMETHANE	2.4	2.4	2.2	2.6	2.1	2.6	3.1	1.8	1.8
ETHANOL	12 J	27	370 J	26	330 J	1000 J	42	88 J	62
ETHYLBENZENE	0.69 U	0.22 J	0.31 J	2.9	0.24 J	1.4 U	3.2	6.3	10
HEXACHLOROBUTADIENE	8.4 U	7.1 U	14 U	13 U	8.6 U	17 U	16 U	7.8 U	9.3 U
HEXANE	0.56 U	0.47 U	0.94 U	1.2	0.79	1.2 U	2.7	1.8	5.5
M+P-XYLENES	0.24 J	0.54 J	0.65 J	8.9	0.76	0.76 J	11	21	33
METHYL TERT-BUTYL ETHER	0.57 U	0.48 U	0.97 U	0.89 U	0.58 U	1.2 U	0.64 J	0.16 J	0.39 J
METHYLENE CHLORIDE	2.7 U	0.48 J	0.59 J	0.75 J	0.39 J	5.7 U	1.8 J	1.6 J	1.9 J
O-XYLENE	0.091 J	0.22 J	0.31 J	2.6	0.29 J	0.42 J	3.2	5.1	7.3
STYRENE	0.67 U	0.25 J	0.4 J	1 U	0.68 U	1.4 U	0.75 J	0.48 J	1.1
TERTIARY-BUTYL ALCOHOL	0.51 J	2 U	0.66 J	3.8	0.48 J	0.94 J	4.1 J	2.2 U	2.6 U
TETRACHLOROETHENE	6.6	16	2.1	40	0.29 J	1.1 U	19	0.50 U	0.85
TOLUENE	1.8	6.7	7.5	190	2.2	2	87	14	44
TRANS-1,2-DICHLOROETHENE	0.63 U	0.53 U	1.1 U	0.98 U	0.64 U	1.3 U	1.2 U	0.58 U	0.69 U
TRANS-1,3-DICHLOROPROPENE	0.72 U	0.61 U	1.2 U	1.1 U	0.73 U	1.5 U	1.4 U	0.66 U	0.79 U
TRICHLOROETHENE	1.2	2.9	0.72 U	15	0.43 U	0.88 U	94	0.21 J	0.55
TRICHLOROFLUOROMETHANE	1.7	1.9	1.4	2.1	1.3	1.2	2.2	1.8	1.3
VINYL CHLORIDE	0.40 U	0.34 U	0.68 U	0.63 U	0.41 U	0.84 U	0.76 U	0.37 U	0.45 U

Notes
D = Duplicate
IND = Indoor Air Sample
INDB = Indoor Air Basement Sample
INDL = Indoor Air Living Space Sample
J = estimated value
SSB = Sub-Slab Sample
U = Not Detected
(µg/m^3) - Micrograms per Meter Cubed

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR012-IND2	BPS1-AR013-SSB	BPS1-AR013-SSB-D	BPS1-AR013-IND3	BPS1-AR013-IND	BPS1-AR013-IND2	BPS1-AR014-SSB	BPS1-AR014-IND3
SAMPLE DATE	20090226	20090226	20090226	20090324	20090226	20090226	20090311	20090325
VOLATILES (µg/m^3)								
1,1,1-TRICHLOROETHANE	0.81 J	420	440	1.2	2.3	0.9 J	970	0.41 J
1,1,2,2-TETRACHLOROETHANE	1.4 U	1.3 U	1 U	0.56 U	0.53 U	1.2 U	2.5 U	0.60 U
1,1,2-TRICHLOROETHANE	1.1 U	1 U	0.8 U	0.45 U	0.42 U	0.92 U	2 U	0.48 U
1,1,2-	0.68 J	1.8	1.7	0.30 J	0.55 J	0.58 J	11	0.67 U
1,1-DICHLOROETHANE	1.6 U	0.46 J	0.48 J	0.66 U	0.63 U	1.4 U	3 U	0.71 U
1,1-DICHLOROETHENE	1.6 U	2.6	2.7	0.65 U	0.61 U	1.3 U	1.7 J	0.69 U
1,2,4-TRICHLOROBENZENE	15 UJ	14 UJ	11 UJ	6.1 UJ	5.8 UJ	12 UJ	27 UJ	6.5 U
1,2,4-TRIMETHYLBENZENE	2.9	1.7 J	1.5	0.59 J	0.9	1.1 J	4.1	0.86 U
1,2-DIBROMOETHANE	1.5 U	1.4 U	1.1 U	0.63 U	0.6 U	1.3 U	2.8 U	0.67 U
1,2-DICHLOROBENZENE	1.2 U	1.1 U	0.88 U	0.49 U	0.46 U	1 U	2.2 U	0.53 U
1,2-DICHLOROETHANE	0.54 J	1.5 U	1.2 U	0.66 U	0.63 U	1.4 U	3 U	0.71 U
1,2-DICHLOROPROPANE	1.8 U	1.7 U	1.3 U	0.76 U	0.72 U	1.6 U	3.4 U	0.81 U
1,2-	1.4 U	1.3 U	1 U	0.57 U	0.54 U	1.2 U	2.6 U	0.61 U
1,3,5-TRIMETHYLBENZENE	0.71 J	0.57 J	0.53 J	0.13 J	0.24 J	0.33 J	1.2 J	0.86 U
1,3-DICHLOROBENZENE	1.2 U	1.1 U	0.88 U	0.49 U	0.46 U	1 U	2.2 U	0.53 U
1,4-DICHLOROBENZENE	1.2 U	1.1 U	0.88 U	0.49 U	0.46 U	1 U	0.75 J	0.53 U
1,4-DIOXANE	1.4 U	1.3 U	1 U	0.59 U	0.56 U	1.2 U	2.6 U	0.63 U
2,2,4-TRIMETHYLPENTANE	2.6	1.7 U	1.4 U	0.77 U	1.2	1.6 U	3.4 U	0.82 U
2-BUTANONE	100	6.2	5.5	0.70	1.1	2	4.6	0.16 J
4-METHYL-2-PENTANONE	0.95 J	1.5 U	1.2 U	0.67 U	0.63 U	1.4 U	3 U	0.72 U
BENZENE	1.7	2.2	1.9	0.52 U	2.2	1.4	2.3 U	0.17 J
BENZYL CHLORIDE	2.1 U	1.9 U	1.5 U	0.85 U	0.8 U	1.7 U	3.8 U	0.90 U
BROMODICHLOROMETHANE	1.3 U	1.2 U	0.98 U	0.55 U	0.52 U	1.1 U	2.4 U	0.59 U
BROMOFORM	2.1 U	1.9 U	1.5 U	0.85 U	0.8 U	1.7 U	3.8 U	0.90 U
BROMOMETHANE	1.6 U	1.4 U	1.1 U	0.24 J	0.6 U	1.3 U	2.8 U	0.68 U
CARBON TETRACHLORIDE	1.3 U	1.2 U	0.92 U	0.52 U	0.63	0.59 J	2.3 U	0.55 U
CHLOROBENZENE	1.8 U	1.7 U	1.3 U	0.76 U	0.71 U	1.5 U	3.4 U	0.80 U
CHLORODIBROMOMETHANE	1.7 U	1.6 U	1.2 U	0.70 U	0.66 U	1.4 U	3.1 U	0.74 U
CHLOROETHANE	1.1 U	0.98 U	0.77 U	0.43 U	0.41 U	0.89 U	1.9 U	0.46 U
CHLOROFORM	1.2 J	13	13	0.44 J	0.76 U	1.6 U	1.8 J	0.85 U
CHLOROMETHANE	1.7	0.77 U	0.6 U	0.99	1.1	2.1	1.5 U	1.1
CIS-1,2-DICHLOROETHENE	1.6 U	1.5 U	1.2 U	0.65 U	0.61 U	1.3 U	2.9 U	0.69 U
CIS-1,3-DICHLOROPROPENE	1.8 U	1.7 U	1.3 U	0.74 U	0.7 U	1.5 U	3.3 U	0.79 U
CYCLOHEXANE	1.4 U	8.8	8.9	0.56 U	0.62	1.2 U	20	0.60 U
DICHLORODIFLUOROMETHANE	2.7	2.4	2.3	2	1.4	2.5	2.9	3.2
ETHANOL	1700 J	16 J	8.1 J	38 J	32	550 J	9.4	4 U
ETHYLBENZENE	3.8	3	3	0.20 J	0.85	0.71 J	4.1	0.76 U
HEXACHLOROBUTADIENE	21 U	20 U	16 U	8.7 U	8.3 U	18 U	39 U	9.3 U
HEXANE	2.3	1.3 U	1.2	1.2	3.5	1.4	2.6 U	0.62 U
M+P-XYLENES	11	9.7	11	0.56 J	2.2	2	14	0.76 U
METHYL TERT-BUTYL ETHER	1.4 U	1.3 U	1 U	0.59 U	0.56 U	1.2 U	2.6 U	0.63 U
METHYLENE CHLORIDE	1.4 J	6.5 U	5.1 U	2.8 U	0.48 J	5.8 U	13 U	3 U
O-XYLENE	2.7	3.1	3.5	0.20 J	0.86	0.88 J	5	0.76 U
STYRENE	0.62 J	0.57 J	0.58 J	0.70 U	0.16 J	0.25 J	1.1 J	0.74 U
TERTIARY-BUTYL ALCOHOL	6.1 U	2.8 J	2.6 J	2.5 U	0.4 J	5.1 U	5.2 J	2.6 U
TETRACHLOROETHENE	0.83 J	11	12	0.56 U	0.56	0.59 J	15	0.59 U
TOLUENE	20	63	66	2.5	6.3	6.2	88	0.39 J
TRANS-1,2-DICHLOROETHENE	1.6 U	1.5 U	1.2 U	0.65 U	0.61 U	1.3 U	2.9 U	0.69 U
TRANS-1,3-DICHLOROPROPENE	1.8 U	1.7 U	1.3 U	0.74 U	0.7 U	1.5 U	3.3 U	0.79 U
TRICHLOROETHENE	1.1 U	230	250	0.50	1.5	0.9 U	290	0.47 U
TRICHLOROFLUOROMETHANE	1.2	2.4	2.4	1.6	1.5	1.3	2.6	2.4
VINYL CHLORIDE	1 U	0.95 U	0.75 U	0.42 U	0.4 U	0.86 U	1.9 U	0.45 U

Notes
D = Duplicate
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U = Not Detected
(µg/m^3) - Micrograms per Meter Cubed

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR014-IND	BPS1-AR014-IND2	BPS1-AR015-SSB	BPS1-AR015-IND	BPS1-AR015-IND2	BPS1-AR016-SSB	BPS1-AR016-INDB	BPS1-AR016-INDL	BPS1-AR017-SSB
SAMPLE DATE	20090311	20090311	20090311	20090311	20090311	20090428	20090428	20090428	20090428
VOLATILES (µg/m^3)									
1,1,1-TRICHLOROETHANE	2.6	1.3	160	0.66	0.49 U	24	0.51	0.27 J	26
1,1,2,2-TETRACHLOROETHANE	0.59 U	0.48 U	0.56 U	0.61 U	0.61 U	0.77 U	0.54 U	0.58 U	1.2 U
1,1,2-TRICHLOROETHANE	0.47 U	0.38 U	0.45 U	0.49 U	0.49 U	0.61 U	0.43 U	0.46 U	0.95 U
1,1,2-	0.73	0.55	260	1.9	0.72	1.2	0.91	0.76	3
1,1-DICHLOROETHANE	0.69 U	0.56 U	0.66 U	0.72 U	0.72 U	0.91 U	0.64 U	0.68 U	1.4 U
1,1-DICHLOROETHENE	0.68 U	0.55 U	1.3	0.71 U	0.71 U	0.89 U	0.63 U	0.67 U	1.4 U
1,2,4-TRICHLOROBENZENE	6.3 UJ	5.2 UJ	6.1 UJ	6.6 UJ	6.6 UJ	8.3 U	5.9 U	6.2 U	13 U
1,2,4-TRIMETHYLBENZENE	0.75 J	0.35 J	6.5	5.2	5.2	10	1	0.92	12
1,2-DIBROMOETHANE	0.66 U	0.53 U	0.63 U	0.69 U	0.69 U	0.86 U	0.61 U	0.64 U	1.3 U
1,2-DICHLOROBENZENE	0.51 U	0.42 U	0.49 U	0.54 U	0.54 U	0.67 U	0.47 U	0.5 U	1 U
1,2-DICHLOROETHANE	0.29 J	0.82	0.28 J	0.72	2.2	0.91 UJ	0.22 J	3 J	0.57 J
1,2-DICHLOROPROPANE	0.79 U	0.64 U	0.76 U	0.83 U	0.83 U	1 U	0.73 U	0.78 U	1.6 U
1,2-	0.6 U	0.48 U	0.57 U	0.62 U	0.62 U	0.78 U	0.55 U	0.59 U	1.2 U
1,3,5-TRIMETHYLBENZENE	0.32 J	0.68 U	1.5	1.3	1.2	2.4	0.32 J	0.22 J	3.2
1,3-DICHLOROBENZENE	0.51 U	0.42 U	0.49 U	0.54 U	0.54 U	0.67 U	0.48 U	0.5 U	1 U
1,4-DICHLOROBENZENE	0.51 U	0.17 J	0.72	0.26 J	0.24 J	0.67 U	0.48 U	0.50 U	1.0 U
1,4-DIOXANE	0.62 U	0.5 U	0.76	0.64 U	0.64 U	0.5 J	0.57 U	3	1.3 U
2,2,4-TRIMETHYLPENTANE	0.8 U	0.65 U	1.4	2.7	3	27	0.74 U	0.78 U	31
2-BUTANONE	0.71	2.2	19	2.3	2.9	6.4	1.2	2.2	8.8
4-METHYL-2-PENTANONE	0.7 U	0.57 U	1.4	0.73 U	0.6 J	0.71 J	0.26 J	0.3 J	1.9
BENZENE	0.59 U	0.58	3.6	3.7	4.1	1.4	0.63 U	0.74 U	2.4
BENZYL CHLORIDE	0.88 U	0.72 U	0.85 U	0.93 U	0.93 U	1.2 U	0.82 U	0.87 U	1.8 U
BROMODICHLOROMETHANE	0.57 U	0.46 U	0.55 U	0.6 U	0.6 U	0.75 U	0.53 U	0.56 U	1.2 U
BROMOFORM	0.88 U	0.72 U	0.85 U	0.92 U	0.92 U	1.2 U	0.82 U	0.87 U	1.8 U
BROMOMETHANE	0.66 U	0.54 U	0.64 U	0.7 U	0.7 U	2	0.63 U	0.65 U	1.4 U
CARBON TETRACHLORIDE	0.55	0.71	0.48 J	0.61	0.73	0.7 U	0.68	0.94	1.1 U
CHLOROBENZENE	0.79 U	0.64 U	0.76 U	0.82 U	0.82 U	2.4	0.73 U	0.77 U	2.6
CHLORODIBROMOMETHANE	0.73 U	0.59 U	0.7 U	0.76 U	0.76 U	0.95 U	0.67 U	0.72 U	1.5 U
CHLOROETHANE	0.45 U	0.37 U	0.43 U	0.47 U	0.47 U	0.59 U	0.42 U	0.44 U	0.92 U
CHLOROFORM	0.62 J	0.68 U	18	0.87 U	0.87 U	1.1 U	0.52 J	4.6	1.7 U
CHLOROMETHANE	1.1	1.1	0.34 U	1.3	1.4	0.62	1.9	1.4	0.72 U
CIS-1,2-DICHLOROETHENE	0.68 U	0.55 U	0.65 U	0.71 U	0.71 U	0.89 U	0.63 U	0.67 U	1.4 U
CIS-1,3-DICHLOROPROPENE	0.78 U	0.63 U	0.74 U	0.81 U	0.81 U	1 U	0.72 U	0.76 U	1.6 U
CYCLOHEXANE	0.59 U	0.48 U	3.7	1.3	1.4	0.92	0.92	0.55 J	0.89 J
DICHLORODIFLUOROMETHANE	2.9	2.3	2.2	2.1	2	2.5 J	2.9 J	2.6 J	12 J
ETHANOL	27	100	95	220 J	710 J	18 J	150 J	1100 J	31 J
ETHYLBENZENE	0.49 J	0.17 J	9.9	5.2	5.4	5.1	1.6	1.4	6.6
HEXACHLOROBUTADIENE	9.1 U	7.4 U	8.7 U	9.5 U	9.5 U	12 U	8.4 U	9 U	19 U
HEXANE	0.6 U	0.49 U	2.3	11	12	2.4	0.56 U	1	2.4
M+P-XYLENES	2.4	0.57 J	26	19	21	15	4.4	4.6	20
METHYL TERT-BUTYL ETHER	0.62 U	0.5 U	0.38 J	0.15 J	0.64 U	0.81 U	0.57 U	0.6 U	1.3 U
METHYLENE CHLORIDE	3 U	2.4 U	0.34 J	0.59 J	0.76 J	0.8 J	0.56 J	0.74 J	6.1 U
O-XYLENE	0.92	0.2 J	11	5.5	6.1	6.2	0.8	1	7.1
STYRENE	0.35 J	0.19 J	1.6	0.6 J	0.79	1.9	0.29 J	0.5 J	4
TERTIARY-BUTYL ALCOHOL	2.6 U	0.75 J	9.8	1.9 J	0.83 J	5.8	0.88 J	2.4 J	4.9 J
TETRACHLOROETHENE	0.46 J	0.36 J	38	0.62	0.3 J	3.8	0.54 U	0.31 J	5
TOLUENE	2.4	4.1	150	41	49	240	2.5	6.6	300
TRANS-1,2-DICHLOROETHENE	0.68 U	0.55 U	0.65 U	0.71 U	0.71 U	0.89 U	0.63 U	0.67 U	1.4 U
TRANS-1,3-DICHLOROPROPENE	0.78 U	0.63 U	0.74 U	0.81 U	0.81 U	1 U	0.72 U	0.76 U	1.6 U
TRICHLOROETHENE	1.9	0.73	25	0.48 U	0.48 U	9.1	0.42 U	0.45 U	11
TRICHLOROFLUOROMETHANE	4.8	2.3	2.5	5.9	6.8	3.4	4.2	2	2.4
VINYL CHLORIDE	0.44 U	0.36 U	0.42 U	0.46 U	0.46 U	0.57 U	0.4 U	0.43 U	0.89 U

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NWIRP BETHPAGE, NEW YORK

SAMPLE ID	BPS1-AR017-INDB	BPS1-AR017-INDL	BPS1-AR018-SSB	BPS1-AR018-INDB
SAMPLE DATE	20090428	20090428	20090429	20090429
VOLATILES (µg/m^3)				
1,1,1-TRICHLOROETHANE	0.15 J	0.46 U	68	0.84
1,1,2,2-TETRACHLOROETHANE	0.52 U	0.58 U	0.54 U	0.56 U
1,1,2-TRICHLOROETHANE	0.41 U	0.46 U	0.43 U	0.45 U
1,1,2-	0.79	0.86	110	1.4
1,1-DICHLOROETHANE	0.62 U	0.68 U	20	0.22 J
1,1-DICHLOROETHENE	0.6 U	0.67 U	0.76	0.65 U
1,2,4-TRICHLOROBENZENE	5.6 U	6.2 U	5.9 UJ	6.1 U
1,2,4-TRIMETHYLBENZENE	1.3	1.2	8.9	22
1,2-DIBROMOETHANE	0.58 U	0.64 U	0.61 U	0.63 U
1,2-DICHLOROBENZENE	0.46 U	0.5 U	0.47 U	0.49 U
1,2-DICHLOROETHANE	0.56 J	2.1 J	0.48 J	0.16 J
1,2-DICHLOROPROPANE	0.37 J	0.41 J	0.29 J	0.76 U
1,2-	0.53 U	0.59 U	0.55 U	0.57 U
1,3,5-TRIMETHYLBENZENE	0.3 J	0.28 J	2.5	5.7
1,3-DICHLOROBENZENE	0.46 U	0.5 U	0.48 U	0.49 U
1,4-DICHLOROBENZENE	3.5	12	0.63 U	0.49 U
1,4-DIOXANE	0.55 U	0.6 U	0.56 J	1.5
2,2,4-TRIMETHYLPENTANE	0.71 U	0.64 J	6.5	0.87
2-BUTANONE	21	10	5.2 J	1.7
4-METHYL-2-PENTANONE	0.5 J	0.82	0.84	0.56 J
BENZENE	0.9	0.96	4.2	2.4
BENZYL CHLORIDE	0.79 U	0.87 U	0.82 U	0.85 U
BROMODICHLOROMETHANE	0.51 U	0.56 U	0.53 U	0.55 U
BROMOFORM	0.78 U	0.87 U	0.82 U	0.85 U
BROMOMETHANE	0.59 U	0.65 U	0.61 U	0.64 U
CARBON TETRACHLORIDE	0.58	0.6	0.65	0.51 J
CHLOROBENZENE	0.7 U	0.77 U	1.1	0.76 U
CHLORODIBROMOMETHANE	0.65 U	0.72 U	0.67 U	0.7 U
CHLOROETHANE	0.4 U	0.44 U	0.42 U	0.43 U
CHLOROFORM	0.74 U	0.82 U	0.91	0.8 U
CHLOROMETHANE	1.3	1.3	0.67	1.2
CIS-1,2-DICHLOROETHENE	0.6 U	0.67 U	1.2	0.65 U
CIS-1,3-DICHLOROPROPENE	0.69 U	0.76 U	0.72 U	0.74 U
CYCLOHEXANE	0.33 J	0.58 U	2.8	0.4 J
DICHLORODIFLUOROMETHANE	2.6 J	2.4 J	1.7	3.1 J
ETHANOL	83 J	430 J	170 J	96 J
ETHYLBENZENE	1.7	1	7.4	8
HEXACHLOROBUTADIENE	8.1 U	9 U	8.4 U	8.7 U
HEXANE	0.75	0.8	2.5	1.2
M+P-XYLENES	2.4	1.6	22	29
METHYL TERT-BUTYL ETHER	0.55 U	0.6 U	0.33 J	0.59 U
METHYLENE CHLORIDE	0.36 J	0.58 J	2.7 U	0.34 J
O-XYLENE	0.84	0.71 J	8.2	12
STYRENE	1.8	1.4	2.3	2.2
TERTIARY-BUTYL ALCOHOL	0.5 J	0.9 J	6.2	23
TETRACHLOROETHENE	6.2	3	8.4	1.8
TOLUENE	8.2	11	130	31
TRANS-1,2-DICHLOROETHENE	0.6 U	0.67 U	1.1	0.65 U
TRANS-1,3-DICHLOROPROPENE	0.69 U	0.76 U	0.72 U	0.74 U
TRICHLOROETHENE	0.41 U	0.45 U	64	1.8
TRICHLOROFLUOROMETHANE	1.7	1.5	2.8	3.4
VINYL CHLORIDE	0.39 U	0.43 U	0.4 U	0.42 U

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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR001-INDL-01 20090624**	**BPS1-AR001-INDL-02-D 20091118**	**BPS1-AR001-INDL-02 20091119**	**BPS1-AR001-INDL-03 20100304**	**BPS1-AR001-SSB-2 20101111**	**BPS1-AR001-SSB-2-D 20101111**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.38 J	0.43 U	0.41 U	0.46 U	0.42	0.33 J
1,1-DICHLOROETHANE	0.77 U	0.64 U	0.62 U	0.68 U	0.56 U	0.71 U
1,1-DICHLOROETHENE	0.76 U	0.63 U	0.60 U	0.67 U	0.55 U	0.70 U
1,2-DICHLOROETHANE	0.77 U	0.64 U	0.62 U	0.68 U	0.12 J	0.71 U
CIS-1,2-DICHLOROETHENE	0.76 U	0.63 U	0.60 U	0.67 U	0.55 U	0.70 U
TETRACHLOROETHENE	2.4	0.72	0.77	0.22 J	1.5	1.6
TRANS-1,2-DICHLOROETHENE	0.76 U	0.63 U	0.60 U	0.67 U	0.55 U	0.70 U
TRICHLOROETHENE	0.93	0.42 U	0.41 U	0.45 U	1.8	2.1
VINYL CHLORIDE	0.49 U	0.40 U	0.39 U	0.43 U	0.36 U	0.45 U

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SAMPLE ID SAMPLE DATE	**BPS1-AR001-INDL-4 20101111**	**BPS1-AR001-INDL-4-D 20101111**	**BPS1-AR002-INDB-01 20090623**	**BPS1-AR002-INDB-02 20090826**	**BPS1-AR002-INDB-03 20091117**	**BPS1-AR002-INDB-03-D 20091117**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.53 U	0.36 U	77	4.2	2.5	2.0
1,1-DICHLOROETHANE	0.79 U	0.54 U	0.77 U	0.74 U	0.65 U	0.58 U
1,1-DICHLOROETHENE	0.78 U	0.53 U	0.76 U	0.72 U	0.64 U	0.57 U
1,2-DICHLOROETHANE	0.79 U	0.27 J	0.13 J	0.74 U	0.65 U	0.58 U
CIS-1,2-DICHLOROETHENE	0.78 U	0.53 U	0.76 U	0.72 U	0.64 U	0.57 U
TETRACHLOROETHENE	0.66 U	0.25 J	0.96	1.6	0.55 U	0.41 J
TRANS-1,2-DICHLOROETHENE	0.78 U	0.24 J	0.76 U	0.72 U	0.64 U	0.57 U
TRICHLOROETHENE	0.22 J	0.36 U	61	41	0.43 U	0.24 J
VINYL CHLORIDE	0.50 U	0.34 U	0.49 U	0.47 U	0.41 U	0.36 U

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SAMPLE ID SAMPLE DATE	**BPS1-AR002-INDB-04 20100302**	**BPS1-AR002-ST04 20100301**	**BPS1-AR002-ST04-D 20100301**	**BPS1-AR002-ST02 20090825**	**BPS1-AR002-ST02-D 20090825**	**BPS1-AR002-ST01 20090622**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	2.9	1.7	1.9	5300	5400	5900
1,1-DICHLOROETHANE	0.74 U	0.63 U	0.60 U	56	54	63
1,1-DICHLOROETHENE	0.72 U	0.61 U	0.14 J	54	56	520
1,2-DICHLOROETHANE	0.74 U	0.63 U	0.60 U	45 U	32 U	21 U
CIS-1,2-DICHLOROETHENE	0.72 U	0.61 U	0.59 U	44 U	32 U	12 J
TETRACHLOROETHENE	0.62 U	2.4	2.4	460	500	280
TRANS-1,2-DICHLOROETHENE	0.72 U	0.61 U	0.59 U	44 U	32 U	21 U
TRICHLOROETHENE	0.20 J	11	12	12000	12000	11000
VINYL CHLORIDE	0.47 U	0.40 U	0.38 U	28 U	20 U	13 U

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SAMPLE ID SAMPLE DATE	**BPS1-AR002-ST05 20100824**	**BPS1-AR002-ST03 20091116**	**BPS1-AR002-INDL-01 20090623**	**BPS1-AR002-INDL-04 20100302**	**BPS1-AR002-INDL-03 20091117**	**BPS1-AR002-INDL-02 20090826**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	1.2 J	3800	25	1.3	2.3 U	0.87
1,1-DICHLOROETHANE	0.65 U	51	0.69 U	1.4 U	3.5 U	0.77 U
1,1-DICHLOROETHENE	0.048 J	20 J	0.68 U	1.4 U	3.4 U	0.76 U
1,2-DICHLOROETHANE	0.056 J	28 U	0.18 J	1.4 U	3.5 U	0.77 U
CIS-1,2-DICHLOROETHENE	0.64 U	14 J	0.68 U	1.4 U	3.4 U	0.76 U
TETRACHLOROETHENE	3.9 J	330	0.34 J	1.2 U	2.9 U	0.41 J
TRANS-1,2-DICHLOROETHENE	0.64 U	28 U	0.68 U	1.4 U	3.4 U	0.76 U
TRICHLOROETHENE	9.6 J	9900	9.2	1.4	2.7	3.4
VINYL CHLORIDE	0.41 U	18 U	0.44 U	0.87 U	2.2 U	0.49 U

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SAMPLE ID SAMPLE DATE	**BPS1-AR002-SSB-2 20101109**	**BPS1-AR002-INDB-5 20101109**	**BPS1-AR002-INDL-5 20101109**	**BPS1-AR003-SSB2 20090826**	**BPS1-AR003-SSB3 20100728**	**BPS1-AR003-INDB5 20100728**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	1.3	3.1	0.95	38	2.3	1.9
1,1-DICHLOROETHANE	0.66 U	0.58 U	1.1 U	0.51 J	0.65 U	0.55 U
1,1-DICHLOROETHENE	0.65 U	0.57 U	1.1 U	0.72 U	0.64 U	0.54 U
1,2-DICHLOROETHANE	0.66 U	0.58 U	1.1 U	4.2	1.4	2.8
CIS-1,2-DICHLOROETHENE	0.65 U	0.57 U	1.1 U	0.72 U	0.024 J	0.54 U
TETRACHLOROETHENE	0.47 J	0.49 U	0.95 U	3.7	0.96	0.28 J
TRANS-1,2-DICHLOROETHENE	0.65 U	0.57 U	1.1 U	0.72 U	0.64 U	0.54 U
TRICHLOROETHENE	0.44 U	0.39 U	0.75 U	260	14	0.27 J
VINYL CHLORIDE	0.42 U	0.37 U	0.72 U	0.47 U	0.41 U	0.35 U

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SAMPLE ID SAMPLE DATE	**BPS1-AR003-INDB-02 20090826**	**BPS1-AR003-INDB-03 20091117**	**BPS1-AR003-INDB-04 20100303**	**BPS1-AR003-INDB-01 20090623**	**BPS1-AR003-INDB 20090430**	**BPS1-AR003-INDB-D 20090430**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	4.0	0.78	0.47 U	19	65	64
1,1-DICHLOROETHANE	0.72 U	0.66 U	0.69 U	0.69 U	0.7 J	0.8
1,1-DICHLOROETHENE	0.71 U	0.65 U	0.68 U	0.68 U	0.48 J	0.47 J
1,2-DICHLOROETHANE	8.5	1.1	0.69 U	3.8	0.97	1.2
CIS-1,2-DICHLOROETHENE	0.71 U	0.65 U	0.68 U	0.68 U	0.69 U	0.63 U
TETRACHLOROETHENE	1.3	0.58	0.58 U	1.1	0.38 J	0.54
TRANS-1,2-DICHLOROETHENE	0.71 U	0.65 U	0.68 U	0.68 U	0.69 U	0.63 U
TRICHLOROETHENE	27	5.1	0.46 U	79	52	50
VINYL CHLORIDE	0.46 U	0.42 U	0.44 U	0.44 U	0.45 U	0.4 U

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SAMPLE ID SAMPLE DATE	**BPS1-AR003-ST01 20090622**	**BPS1-AR003-ST02 20090825**	**BPS1-AR003-ST03 20091116**	**BPS1-AR003-ST03-D 20091116**	**BPS1-AR003-ST04 20100302**	**BPS1-AR003-INDL5-D 20100728**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	3600	4200	2900	2200	0.98	2.9
1,1-DICHLOROETHANE	42	44	38	33	0.60 U	1.3 U
1,1-DICHLOROETHENE	330	44	23 J	16	0.59 U	1.2 U
1,2-DICHLOROETHANE	16 U	23 U	13 U	14 U	0.11 J	1.5
CIS-1,2-DICHLOROETHENE	7.8 J	22 U	9.7 J	8.8 J	0.59 U	1.2 U
TETRACHLOROETHENE	92	170	64	61	0.82	0.28 J
TRANS-1,2-DICHLOROETHENE	16 U	22 U	13 U	14 U	0.59 U	1.2 U
TRICHLOROETHENE	7700	10000	6200	5400	3.8	0.15 J
VINYL CHLORIDE	10 U	14 U	8.4 U	8.8 U	0.38 U	0.8 U

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VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	2.4	3.3	5.2	3.7	5.0 J	30
1,1-DICHLOROETHANE	0.053 J	0.65 U	0.72 U	0.79 U	0.66 UJ	1.4 U
1,1-DICHLOROETHENE	0.15 J	0.64 U	0.71 U	0.78 U	0.65 UJ	1.4 U
1,2-DICHLOROETHANE	1.7	1.6	0.79	0.28 J	1.1 J	1.2 J
CIS-1,2-DICHLOROETHENE	0.61 U	0.64 U	0.71 U	0.78 U	0.65 UJ	1.4 U
TETRACHLOROETHENE	2.4	0.28 J	0.43 J	0.66 U	0.56 UJ	2.4
TRANS-1,2-DICHLOROETHENE	0.61 U	0.64 U	0.71 U	0.78 U	0.65 UJ	1.4 U
TRICHLOROETHENE	4.3	0.16 J	9.9	0.64	1.1 J	16
VINYL CHLORIDE	0.4 U	0.41 U	0.46 U	0.50 U	0.42 UJ	0.89 U

Notes
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(µg/m^3) - Micrograms per Meter Cube

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR003-SSB-4 20101109**	**BPS1-AR003-INDB-6 20101109**	**BPS1-AR003-INDL-6 20101109**	**BPS1-AR004-INDB-01 20090626**	**BPS1-AR004-INDB-01-D 20090626**	**BPS1-AR004-INDB-02 20090826**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.32 J	0.27 J	2.9	4.3	4.7	0.55
1,1-DICHLOROETHANE	0.60 U	0.72 U	0.64 U	0.65 U	0.72 U	0.69 U
1,1-DICHLOROETHENE	0.59 U	0.71 U	0.63 U	0.64 U	0.71 U	0.68 U
1,2-DICHLOROETHANE	0.40 J	0.36 J	0.34 J	0.57 J	0.58 J	1.2
CIS-1,2-DICHLOROETHENE	0.59 U	0.71 U	0.63 U	0.64 U	0.71 U	0.68 U
TETRACHLOROETHENE	0.56	0.61 U	0.54 U	0.43 J	0.61 U	0.58 U
TRANS-1,2-DICHLOROETHENE	0.59 U	0.71 U	0.63 U	0.64 U	0.71 U	0.68 U
TRICHLOROETHENE	0.74	0.48 U	0.42 U	3.0	3.3	1.5
VINYL CHLORIDE	0.38 U	0.46 U	0.40 U	0.41 U	0.46 U	0.44 U

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APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR004-INDB-04 20100303**	**BPS1-AR004-INDB-04-D 20100303**	**BPS1-AR004-INDB-03 20091118**	**BPS1-AR004-ST04 20100302**	**BPS1-AR004-ST05 20100824**	**BPS1-AR004-ST03 20091117**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.48 U	0.53 U	0.46 U	0.21 J	0.17 J	140
1,1-DICHLOROETHANE	0.71 U	0.79 U	0.68 U	0.63 U	0.061 J	0.92 J
1,1-DICHLOROETHENE	0.69 U	0.78 U	0.67 U	0.61 U	0.61 U	1.3
1,2-DICHLOROETHANE	0.14 J	0.79 U	0.48 J	0.63 U	0.15 J	0.99 U
CIS-1,2-DICHLOROETHENE	0.69 U	0.78 U	0.67 U	0.61 U	0.024 J	0.97 U
TETRACHLOROETHENE	0.59 U	0.66 U	0.57 U	1.5	1.9 J	17
TRANS-1,2-DICHLOROETHENE	0.69 U	0.78 U	0.67 U	0.61 U	0.61 U	0.97 U
TRICHLOROETHENE	0.40 J	0.38 J	0.93	1.8	2.3 J	300
VINYL CHLORIDE	0.45 U	0.50 U	0.43 U	0.40 U	0.047 J	0.63 U

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APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR004-ST02 20090825**	**BPS1-AR004-ST01 20090625**	**BPS1-AR004-ST01-D 20090625**	**BPS1-AR004-SSB-2 20101110**	**BPS1-AR004-INDB-5 20101110**	**BPS1-AR006-INDB-01 20090625**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	210	190	180	0.17 J	0.38 U	50
1,1-DICHLOROETHANE	1.4	1.2	1.2	0.18 J	0.57 U	0.64 U
1,1-DICHLOROETHENE	1.6	2.4	2.2	0.64 U	0.56 U	0.63 U
1,2-DICHLOROETHANE	24	1.0	1.0	0.35 J	0.75	0.19 J
CIS-1,2-DICHLOROETHENE	0.72 U	0.60 U	0.71 U	0.64 U	0.56 U	0.63 U
TETRACHLOROETHENE	31	2.0	1.7	2	0.48 U	2.7
TRANS-1,2-DICHLOROETHENE	0.72 U	0.60 U	0.71 U	0.64 U	0.56 U	0.63 U
TRICHLOROETHENE	360	160	160	7.3	0.38 U	13
VINYL CHLORIDE	0.47 U	0.39 U	0.46 U	0.41 U	0.36 U	0.094 J

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APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
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NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR006-INDB-02 20090827**	**BPS1-AR006-INDB-02-D 20090827**	**BPS1-AR006-INDB-03 20091117**	**BPS1-AR006-INDB-04 20100304**	**BPS1-AR006-ST03 20091117**	**BPS1-AR006-ST02 20090826**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	2.6	2.8	1.3	0.21 J	320	550
1,1-DICHLOROETHANE	0.81 U	0.83 U	0.76 U	0.74 U	4.5	5.3
1,1-DICHLOROETHENE	0.80 U	0.82 U	0.74 U	0.72 U	2.8	6.8
1,2-DICHLOROETHANE	0.81 U	0.83 U	0.76 U	0.74 U	2.0 U	3.5 U
CIS-1,2-DICHLOROETHENE	0.80 U	0.82 U	0.74 U	2.2	12	12
TETRACHLOROETHENE	6.8	7.7	0.35 J	1.9	1200	1600
TRANS-1,2-DICHLOROETHENE	0.80 U	0.82 U	0.74 U	0.72 U	2.2	2.5 J
TRICHLOROETHENE	13	14	0.50 U	0.48 J	520	720
VINYL CHLORIDE	0.51 U	0.53 U	0.48 U	0.47 U	1.3 U	2.2 U

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APPENDIX C
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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR006-ST01 20090624**	**BPS1-AR006-SSB-2 20101111**	**BPS1-AR006-SSB-2-D 20101111**	**BPS1-AR006-INDB-5 20101111**	**BPS1-AR007-INDB-01 20090624**	**BPS1-AR007-INDB-02 20091118**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	490	0.36 J	0.30 J	0.13 J	0.29 J	0.45 U
1,1-DICHLOROETHANE	3.9	0.60 U	0.71 U	0.58 U	0.69 U	0.67 U
1,1-DICHLOROETHENE	5.1	0.59 U	0.70 U	0.57 U	0.68 U	0.65 U
1,2-DICHLOROETHANE	2.4 U	0.091 J	0.71 U	0.58 U	0.17 J	0.18 J
CIS-1,2-DICHLOROETHENE	6.3	0.59 U	0.70 U	0.57 U	0.68 U	0.65 U
TETRACHLOROETHENE	890	0.59	0.56 J	0.49 U	1.2	0.55 J
TRANS-1,2-DICHLOROETHENE	1.3 J	0.59 U	0.70 U	0.57 U	0.68 U	0.65 U
TRICHLOROETHENE	600	0.67	0.72	0.39 U	0.40 J	0.44 U
VINYL CHLORIDE	1.5 U	0.38 U	0.45 U	0.37 U	0.44 U	0.42 U

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APPENDIX C
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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR007-INDB-03 20100303**	**BPS1-AR007-SSB-2 20101110**	**BPS1-AR007-INDB-4 20101110**	**BPS1-AR009-SSB-2 20101111**	**BPS1-AR009-INDB-2 20101110**	**BPS1-AR010-INDB-01 20090624**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.51 U	0.36 U	0.48 U	0.73 J	0.45	4.8
1,1-DICHLOROETHANE	0.76 U	0.54 U	0.71 U	1.2 U	0.60 U	0.71 U
1,1-DICHLOROETHENE	0.74 U	0.53 U	0.69 U	1.2 U	0.59 U	0.69 U
1,2-DICHLOROETHANE	0.76 U	0.22 J	0.71 U	0.62 J	0.19 J	0.37 J
CIS-1,2-DICHLOROETHENE	0.74 U	0.53 U	0.69 U	1.2 U	0.59 U	0.69 U
TETRACHLOROETHENE	0.28 J	1.4	0.59 U	15	0.38 J	4.1
TRANS-1,2-DICHLOROETHENE	0.74 U	0.53 U	0.69 U	1.2 U	0.59 U	0.69 U
TRICHLOROETHENE	0.50 U	0.23 J	0.47 U	0.86	0.40 U	2.1
VINYL CHLORIDE	0.48 U	0.34 U	0.45 U	0.75 U	0.38 U	0.45 U

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APPENDIX C
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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR010-INDB-02 20091117**	**BPS1-AR010-INDB-03 20100303**	**BPS1-AR010-SSB-3 20101110**	**BPS1-AR010-INDB-4 20101110**	**BPS1-AR012-INDB-01 20090624**	**BPS1-AR012-INDB-02 20091118**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.44 J	0.49 U	0.83 U	0.37 U	3.0	0.69
1,1-DICHLOROETHANE	0.67 U	0.72 U	1.2 U	0.55 U	0.74 U	0.68 U
1,1-DICHLOROETHENE	0.65 U	0.71 U	1.2 U	0.54 U	0.72 U	0.67 U
1,2-DICHLOROETHANE	0.67 U	0.20 J	0.28 J	0.55 U	0.28 J	0.20 J
CIS-1,2-DICHLOROETHENE	0.65 U	0.71 U	1.2 U	0.54 U	0.72 U	0.67 U
TETRACHLOROETHENE	2.5	0.61 U	3.4	0.24 J	0.72	0.49 J
TRANS-1,2-DICHLOROETHENE	0.65 U	0.71 U	1.2 U	0.54 U	0.72 U	0.67 U
TRICHLOROETHENE	0.57	0.48 U	0.83	0.36 U	0.22 J	0.45 U
VINYL CHLORIDE	0.42 U	0.46 U	0.78 U	0.35 U	0.47 U	0.43 U

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(µg/m^3) - Micrograms per Meter Cube

APPENDIX C
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR012-INDB-03 20100303**	**BPS1-AR012-SSB-2 20101111**	**BPS1-AR012-INDB-4 20101111**	**BPS1-AR013-INDB-01 20090625**	**BPS1-AR013-INDB-02 20090826**	**BPS1-AR013-INDB-04 20100303**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	1.0	1.2 J	1.5	0.32 J	0.48 U	0.46 U
1,1-DICHLOROETHANE	0.76 U	3 U	0.70 U	0.74 U	0.71 U	0.68 U
1,1-DICHLOROETHENE	0.74 U	2.9 U	0.69 U	0.72 U	0.69 U	0.67 U
1,2-DICHLOROETHANE	0.25 J	0.42 J	0.32 J	0.26 J	1.1	0.68 U
CIS-1,2-DICHLOROETHENE	0.74 U	2.9 U	0.69 U	0.72 U	0.69 U	0.67 U
TETRACHLOROETHENE	25	5.9	0.91	0.28 J	0.43 J	0.57 U
TRANS-1,2-DICHLOROETHENE	0.74 U	2.9 U	0.69 U	0.72 U	0.69 U	0.67 U
TRICHLOROETHENE	0.50 U	4.8	0.47 U	1.9	0.67	0.45 U
VINYL CHLORIDE	0.48 U	1.9 U	0.44 U	0.47 U	0.45 U	0.43 U

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APPENDIX C
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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR013-INDB-03 20091117**	**BPS1-AR013-ST04 20100302**	**BPS1-AR013-ST05 20100824**	**BPS1-AR013-ST05-D 20100824**	**BPS1-AR013-ST03 20091116**	**BPS1-AR013-ST02 20090825**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.52 U	1.8	0.31 J	0.34 J	30	58
1,1-DICHLOROETHANE	0.77 U	0.63 U	0.66 U	0.0088 J	1.1 U	0.74 U
1,1-DICHLOROETHENE	0.76 U	0.61 U	0.64 U	0.58 U	1.1 U	0.72
1,2-DICHLOROETHANE	0.77 U	0.63 U	0.082 J	0.039 J	1.1 U	0.27 J
CIS-1,2-DICHLOROETHENE	0.76 U	0.61 U	0.64 U	0.58 U	1.1 U	0.72 U
TETRACHLOROETHENE	0.65 U	1.3	2.2	2.5	4.8	8.6
TRANS-1,2-DICHLOROETHENE	0.76 U	0.61 U	0.64 U	0.58 U	1.1 U	0.72 U
TRICHLOROETHENE	0.63	1.1	0.87	0.94	29	48
VINYL CHLORIDE	0.49 U	0.40 U	0.41 U	0.38 U	0.68 U	0.47 U

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APPENDIX C
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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR013-ST01 20090624**	**BPS1-AR013-SSB-2 20101110**	**BPS1-AR013-INDB-5 20101110**	**BPS1-AR014-INDB-01 20091118**	**BPS1-AR014-INDB-02 20100302**	**BPS1-AR014-ST05 20100824**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	84	0.12 J	0.38 U	0.46 U	0.47 U	0.34 J
1,1-DICHLOROETHANE	0.16 J	1.1 U	0.56 U	0.68 U	0.69 U	0.57 U
1,1-DICHLOROETHENE	0.70	1.1 U	0.55 U	0.67 U	0.68 U	0.56 U
1,2-DICHLOROETHANE	0.10 J	0.29 J	0.56 U	0.68 U	0.20 J	0.068 J
CIS-1,2-DICHLOROETHENE	0.54 U	1.1 U	0.55 U	0.67 U	0.68 U	0.012 J
TETRACHLOROETHENE	68	5.7	0.47 U	0.34 J	0.94	2.9
TRANS-1,2-DICHLOROETHENE	0.54 U	1.1 U	0.55 U	0.67 U	0.68 U	0.56 U
TRICHLOROETHENE	70	13	0.37 U	0.37 J	0.46 U	0.55
VINYL CHLORIDE	0.35 U	0.68 U	0.36 U	0.43 U	0.44 U	0.36 U

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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR014-ST04 20100301**	**BPS1-AR014-ST01 20090624**	**BPS1-AR014-ST02 20090826**	**BPS1-AR014-ST03 20091117**	**BPS1-AR014-SSB2 20101111**	**BPS1-AR014-INDB-3 20101111**
VOLATILES (µg/m^3)						
1,1,1-TRICHLOROETHANE	0.95	110	43	13	0.46 U	0.37 U
1,1-DICHLOROETHANE	0.59 U	0.11 J	0.69 U	0.68 U	0.68 U	0.55 U
1,1-DICHLOROETHENE	0.58 U	0.46 J	0.37 J	0.67 U	0.67 U	0.54 U
1,2-DICHLOROETHANE	0.59 U	0.68 U	0.31 J	0.68 U	0.68 U	0.55 U
CIS-1,2-DICHLOROETHENE	0.58 U	0.67 U	0.68 U	0.67 U	0.67 U	0.54 U
TETRACHLOROETHENE	1.6	13	10	5.3	0.48 J	0.38 J
TRANS-1,2-DICHLOROETHENE	0.58 U	0.67 U	0.68 U	0.67 U	0.67 U	0.54 U
TRICHLOROETHENE	1.0	88	30	12	0.45 U	0.36 U
VINYL CHLORIDE	0.37 U	0.43 U	0.44 U	0.43 U	0.43 U	0.35 U

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APPENDIX C
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SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

SAMPLE ID SAMPLE DATE	**BPS1-AR014-INDB-3-D 20101111**	**BPS1-AR015-SSB-2 20101109**	**BPS1-AR015-INDB-2 20101109**	**BPS1-AR018-INDB-02 20090521**	**BPS1-AR018-INDL 20090521**
VOLATILES (µg/m^3)					
1,1,1-TRICHLOROETHANE	0.38 U	0.36 J	0.48 U	0.44 U	0.49 U
1,1-DICHLOROETHANE	0.56 U	0.64 U	0.71 U	0.65 U	0.72 U
1,1-DICHLOROETHENE	0.55 U	0.63 U	0.69 U	0.64 U	0.71 U
1,2-DICHLOROETHANE	0.21 J	0.43 J	0.27 J	0.65 U	0.72 U
CIS-1,2-DICHLOROETHENE	0.55 U	0.63 U	0.69 U	0.64 U	0.71 U
TETRACHLOROETHENE	0.39 J	0.40 J	0.59 U	0.58	0.39 J
TRANS-1,2-DICHLOROETHENE	0.55 U	0.63 U	0.69 U	0.64 U	0.71 U
TRICHLOROETHENE	0.37 U	0.42 U	0.47 U	0.41 J	0.48 U
VINYL CHLORIDE	0.36 U	0.40 U	0.45 U	0.41 U	0.46 U

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APPENDIX D

DATA VALIDATION SUMMARIES

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **D. BRAYACK** **DATE:** **JANUARY 6, 2011**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC**
NWIRP BETHPAGE CTO WE06
SDG 1011366A

SAMPLES: 20 / Air / VOC

BPS1-AR002-INDB-5	BPS1-AR002-INDL-5
BPS1-AR002-ODA-6	BPS1-AR002-SSB-2
BPS1-AR003-INDB-6	BPS1-AR003-INDL-6
BPS1-AR003-SSB-4	BPS1-AR004-INDB-5
BPS1-AR004-SSB-2	BPS1-AR007-INDB-4
BPS1-AR007-ODA-4	BPS1-AR007-SSB-2
BPS1-AR009-INDB-2	BPS1-AR009-SSB-2
BPS1-AR010-INDB-4	BPS1-AR003-SSB-3
BPS1-AR013-INDB-5	BPS1-AR013-SSB-2
BPS1-AR015-INDB-2	BPS1-AR015-SSB-2

Overview

The sample set for NWIRP Bethpage, SDG 1011366A consists of twenty (20) air environmental samples. The air samples were analyzed for volatile organic compounds (VOC).

The samples were collected by Tetra Tech on November 9, 10, and 11, 2010 and analyzed by Air Toxics LTD. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Hold times
* • GCMS System Tuning and Performance
* • Initial/continuing calibrations
* • Laboratory Control Sample Recoveries
* • Laboratory Method/Field Blank Results
* • Surrogate Spike Recoveries
* • Internal Standard Recoveries
* • Lab Duplicate Analysis
* • Compound Identification
* • Compound Quantitation
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

Volatile

No qualification of the data was necessary.

Additional Comments

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

The laboratory reported the VOC air result concentrations in units of both ppbv and ug/m3 on the sample forms. The results in the database and the qualified analytical result concentrations are reported as 'ug/m3' only.

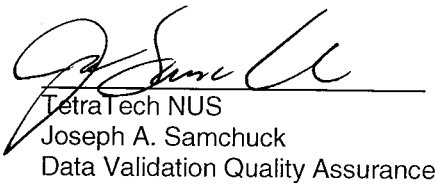
EXECUTIVE SUMMARY

Laboratory Performance Issues: No qualification of the data was necessary.

Other Factors Affecting Data Quality: Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the "Volatile Organic Analysis of Ambient Air In Canister By Method TO-15" EPA Region II SOP #HW-31 Revision #4 October 2006, and the NFESC guidelines "Navy IRCDQM" (September 1999).

TetraTech NUS
Edward Sedlmyer
Chemist/Data Validator



TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C – Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$ / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 02019	NSAMPLE	BPS1-AR002-INDB-5			BPS1-AR002-INDL-5			BPS1-AR002-ODA-6			BPS1-AR002-SSB-2		
SDG: 1011366A	LAB_ID	1011366A-05A			1011366A-06A			1011366A-09A			1011366A-04A		
FRACTION: OV	SAMP_DATE	11/9/2010			11/9/2010			11/9/2010			11/9/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		3.1			0.95			0.68	U		1.3		
1,1-DICHLOROETHANE		0.58	U		1.1	U		1	U		0.66	U	
1,1-DICHLOROETHENE		0.57	U		1.1	U		1	U		0.65	U	
1,2-DICHLOROETHANE		0.58	U		1.1	U		1	U		0.66	U	
CIS-1,2-DICHLOROETHENE		0.57	U		1.1	U		1	U		0.65	U	
TETRACHLOROETHENE		0.49	U		0.95	U		0.85	U		0.47	J	P
TRANS-1,2-DICHLOROETHENE		0.57	U		1.1	U		1	U		0.65	U	
TRICHLOROETHENE		0.39	U		0.75	U		0.67	U		0.44	U	
VINYL CHLORIDE		0.37	U		0.72	U		0.64	U		0.42	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR003-INDB-6			BPS1-AR003-INDL-6			BPS1-AR003-SSB-4			BPS1-AR004-INDB-5		
SDG: 1011366A	LAB_ID	1011366A-02A			1011366A-03A			1011366A-01A			1011366A-18A		
FRACTION: OV	SAMP_DATE	11/9/2010			11/9/2010			11/9/2010			11/10/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.27	J	P	2.9			0.32	J	P	0.38	U	
1,1-DICHLOROETHANE		0.72	U		0.64	U		0.6	U		0.57	U	
1,1-DICHLOROETHENE		0.71	U		0.63	U		0.59	U		0.56	U	
1,2-DICHLOROETHANE		0.36	J	P	0.34	J	P	0.4	J	P	0.75		
CIS-1,2-DICHLOROETHENE		0.71	U		0.63	U		0.59	U		0.56	U	
TETRACHLOROETHENE		0.61	U		0.54	U		0.56			0.48	U	
TRANS-1,2-DICHLOROETHENE		0.71	U		0.63	U		0.59	U		0.56	U	
TRICHLOROETHENE		0.48	U		0.42	U		0.74			0.38	U	
VINYL CHLORIDE		0.46	U		0.4	U		0.38	U		0.36	U	

PROJ_NO: 02019 SDG: 1011366A FRACTION: OV MEDIA: AIR	NSAMPLE	BPS1-AR004-SSB-2			BPS1-AR007-INDB-4			BPS1-AR007-ODA-4			BPS1-AR007-SSB-2		
	LAB_ID	1011366A-19A			1011366A-12A			1011366A-10A			1011366A-11A		
	SAMP_DATE	11/10/2010			11/10/2010			11/10/2010			11/10/2010		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.17	J	P	0.48	U		0.38	U		0.36	U	
1,1-DICHLOROETHANE		0.18	J	P	0.71	U		0.57	U		0.54	U	
1,1-DICHLOROETHENE		0.64	U		0.69	U		0.56	U		0.53	U	
1,2-DICHLOROETHANE		0.35	J	P	0.71	U		0.57	U		0.22	J	P
CIS-1,2-DICHLOROETHENE		0.64	U		0.69	U		0.56	U		0.53	U	
TETRACHLOROETHENE		2			0.59	U		0.48	U		1.4		
TRANS-1,2-DICHLOROETHENE		0.64	U		0.69	U		0.56	U		0.53	U	
TRICHLOROETHENE		7.3			0.47	U		0.38	U		0.23	J	P
VINYL CHLORIDE		0.41	U		0.45	U		0.36	U		0.34	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR009-INDB-2			BPS1-AR009-SSB-2			BPS1-AR010-INDB-4			BPS1-AR010-SSB-3		
SDG: 1011366A	LAB_ID	1011366A-13A			1011366A-20A			1011366A-15A			1011366A-14A		
FRACTION: OV	SAMP_DATE	11/10/2010			11/11/2010			11/10/2010			11/10/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.45			0.73	J	P	0.37	U		0.83	U	
1,1-DICHLOROETHANE		0.6	U		1.2	U		0.55	U		1.2	U	
1,1-DICHLOROETHENE		0.59	U		1.2	U		0.54	U		1.2	U	
1,2-DICHLOROETHANE		0.19	J	P	0.62	J	P	0.55	U		0.28	J	P
CIS-1,2-DICHLOROETHENE		0.59	U		1.2	U		0.54	U		1.2	U	
TETRACHLOROETHENE		0.38	J	P	15			0.24	J	P	3.4		
TRANS-1,2-DICHLOROETHENE		0.59	U		1.2	U		0.54	U		1.2	U	
TRICHLOROETHENE		0.4	U		0.86			0.36	U		0.83		
VINYL CHLORIDE		0.38	U		0.75	U		0.35	U		0.78	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR013-INDB-5			BPS1-AR013-SSB-2			BPS1-AR015-INDB-2			BPS1-AR015-SSB-2		
SDG: 1011366A	LAB_ID	1011366A-17A			1011366A-16A			1011366A-08A			1011366A-07A		
FRACTION: OV	SAMP_DATE	11/10/2010			11/10/2010			11/9/2010			11/9/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.38	U		0.12	J	P	0.48	U		0.36	J	P
1,1-DICHLOROETHANE		0.56	U		1.1	U		0.71	U		0.64	U	
1,1-DICHLOROETHENE		0.55	U		1.1	U		0.69	U		0.63	U	
1,2-DICHLOROETHANE		0.56	U		0.29	J	P	0.27	J	P	0.43	J	P
CIS-1,2-DICHLOROETHENE		0.55	U		1.1	U		0.69	U		0.63	U	
TETRACHLOROETHENE		0.47	U		5.7			0.59	U		0.4	J	P
TRANS-1,2-DICHLOROETHENE		0.55	U		1.1	U		0.69	U		0.63	U	
TRICHLOROETHENE		0.37	U		13			0.47	U		0.42	U	
VINYL CHLORIDE		0.36	U		0.68	U		0.45	U		0.4	U	

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **D. BRAYACK** **DATE:** **JANUARY 13, 2011**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC**
NWIRP BETHPAGE CTO WE06
SDG 1011366B

SAMPLES: 18 / Air / VOC

BPS1-AR001-INDL-4	BPS1-AR001-SSB-2	BPS1-AR006-INDB-5
BPS1-AR006-ODA-5	BPS1-AR006-SSB-2	BPS1-AR012-INDB-4
BPS1-AR012-SSB-2	BPS1-AR014-SSB2	BPS1-DUP01
BPS1-DUP02	BPS1-DUP03	BPS1-DUP04
BPS1-SVPM 2002D-20101109	BPS1-SVPM 2002I-20101109	
BPS1-SVPM 2002S-20101109	BPS1-SVPM 2004D-20101109	
BPS1-SVPM2004I-20101109	BPS1-SVPMDUP01-20101109	

Overview

The sample set for NWIRP Bethpage SDG 1011366B consisted of eighteen (18) air environmental samples. The air samples were analyzed for a select list of volatile organic compounds (VOC). Five (5) field duplicate pairs were associated with this sample delivery group (SDG) and one from SDG 1011366D; BPS1-DUP01 (SDG 1011366D) / BPS1-AR014-INDB-3, BPS1-DUP02 / BPS1-AR006-SSB-2, BPS1-DUP03 / BPS1-AR001-SSB-2, BPS1-DUP04 / BPS1-AR001-INDL-4, and BPS1-SVPMDUP01-20101109 / BPS1-SVPM 2002I-20101109.

The samples were collected by Tetra Tech on November 9 and 11, 2010 and analyzed by Air Toxics Ltd. The analysis was conducted in accordance with EPA Method TO-15 analytical and reporting protocols. The data contained in this SDG was validated with regard to the following parameters:

* • Data completeness
* • Hold times
* • GCMS System Tuning and Performance
* • Initial/continuing calibrations
* • Laboratory Control Sample Recoveries
* • Laboratory Method Blank Results
* • Surrogate Spike Recoveries
* • Internal Standard Recoveries
* • Compound Identification
* • Compound Quantitation
* • Field Duplicate Precision
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

Volatile

No issues were identified.

Additional Comments

Sample BPS1-DUP01 was labeled by the laboratory as BPS1-DUP although it was correctly entered on the chain of custody (COC). The laboratory forms were manually corrected by the data validation chemist.

The COC information for sample BPS1-AR006-INDB-5 did not match the information on the canister with regard to canister identification. The information on the canister was used to process and report the sample.

Sample BPS1-AR012-SSB-2 was diluted 7.30X due to high levels of a non-target analyte.

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

The laboratory reported the VOC air result concentrations in units of both ppbv and µg/m3 on the sample forms. The results in the database and the qualified analytical result concentrations are reported as µg/m3 only.

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the "Volatile Organic Analysis of Ambient Air In Canister By Method TO-15" EPA Region II SOP #HW-31 Revision #4 October 2006 and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006).

TetraTech NUS
Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C – Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 02019	NSAMPLE	BPS1-AR001-INDL-4			BPS1-AR001-SSB-2			BPS1-AR006-INDB-5			BPS1-AR006-ODA-5		
SDG: 1011366B	LAB_ID	1011366B-35A			1011366B-36A			1011366B-33A			1011366B-27A		
FRACTION: OV	SAMP_DATE	11/11/2010			11/11/2010			11/11/2010			11/11/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.53	U		0.42			0.13	J	P	0.37	U	
1,1-DICHLOROETHANE		0.79	U		0.56	U		0.58	U		0.55	U	
1,1-DICHLOROETHENE		0.78	U		0.55	U		0.57	U		0.54	U	
1,2-DICHLOROETHANE		0.79	U		0.12	J	P	0.58	U		0.55	U	
CIS-1,2-DICHLOROETHENE		0.78	U		0.55	U		0.57	U		0.54	U	
TETRACHLOROETHENE		0.66	U		1.5			0.49	U		0.46	U	
TRANS-1,2-DICHLOROETHENE		0.78	U		0.55	U		0.57	U		0.54	U	
TRICHLOROETHENE		0.22	J	P	1.8			0.39	U		0.36	U	
VINYL CHLORIDE		0.5	U		0.36	U		0.37	U		0.35	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR006-SSB-2			BPS1-AR012-INDB-4			BPS1-AR012-SSB-2			BPS1-AR014-SSB2		
SDG: 1011366B	LAB_ID	1011366B-34A			1011366B-31A			1011366B-32A			1011366B-29A		
FRACTION: OV	SAMP_DATE	11/11/2010			11/11/2010			11/11/2010			11/11/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.36	J	P	1.5			1.2	J	P	0.46	U	
1,1-DICHLOROETHANE		0.6	U		0.7	U		3	U		0.68	U	
1,1-DICHLOROETHENE		0.59	U		0.69	U		2.9	U		0.67	U	
1,2-DICHLOROETHANE		0.091	J	P	0.32	J	P	0.42	J	P	0.68	U	
CIS-1,2-DICHLOROETHENE		0.59	U		0.69	U		2.9	U		0.67	U	
TETRACHLOROETHENE		0.59			0.91			5.9			0.48	J	P
TRANS-1,2-DICHLOROETHENE		0.59	U		0.69	U		2.9	U		0.67	U	
TRICHLOROETHENE		0.67			0.47	U		4.8			0.45	U	
VINYL CHLORIDE		0.38	U		0.44	U		1.9	U		0.43	U	

PROJ_NO: 02019	NSAMPLE	BPS1-DUP			BPS1-DUP02			BPS1-DUP03			BPS1-DUP04		
SDG: 1011366B	LAB_ID	1011366B-30A			1011366B-38A			1011366B-39A			1011366B-40A		
FRACTION: OV	SAMP_DATE	11/11/2010			11/11/2010			11/11/2010			11/11/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	BPS1-AR014-INDB-3			BPS1-AR006-SSB-2			BPS1-AR001-SSB-2			BPS1-AR001-INDL-4		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.38	U		0.3	J	P	0.33	J	P	0.36	U	
1,1-DICHLOROETHANE		0.56	U		0.71	U		0.71	U		0.54	U	
1,1-DICHLOROETHENE		0.55	U		0.7	U		0.7	U		0.53	U	
1,2-DICHLOROETHANE		0.21	J	P	0.71	U		0.71	U		0.27	J	P
CIS-1,2-DICHLOROETHENE		0.55	U		0.7	U		0.7	U		0.53	U	
TETRACHLOROETHENE		0.39	J	P	0.56	J	P	1.6			0.25	J	P
TRANS-1,2-DICHLOROETHENE		0.55	U		0.7	U		0.7	U		0.24	J	P
TRICHLOROETHENE		0.37	U		0.72			2.1			0.36	U	
VINYL CHLORIDE		0.36	U		0.45	U		0.45	U		0.34	U	

PROJ_NO: 02019	NSAMPLE	BPS1-SVPM 2002D-20101109			BPS1-SVPM 2002I-20101109			BPS1-SVPM 2002S-20101109			BPS1-SVPM 2004D-20101109		
SDG: 1011366B	LAB_ID	1011366B-21A			1011366B-22A			1011366B-23A			1011366B-24A		
FRACTION: OV	SAMP_DATE	11/9/2010			11/9/2010			11/9/2010			11/9/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.8			0.5			0.41	U		0.7		
1,1-DICHLOROETHANE		0.2	J	P	0.63	U		0.6	U		0.58	U	
1,1-DICHLOROETHENE		0.55	U		0.61	U		0.59	U		0.57	U	
1,2-DICHLOROETHANE		0.56	U		0.63	U		0.6	U		0.58	U	
CIS-1,2-DICHLOROETHENE		0.19	J	P	0.61	U		0.59	U		0.57	U	
TETRACHLOROETHENE		2.8			0.91			0.67			5		
TRANS-1,2-DICHLOROETHENE		0.55	U		0.61	U		0.59	U		0.57	U	
TRICHLOROETHENE		170			18			3.6			0.52		
VINYL CHLORIDE		0.23	J	P	0.4	U		0.38	U		0.37	U	

PROJ_NO: 02019	NSAMPLE	BPS1-SVPM2004I-20101109			BPS1-SVPMDUP01-20101109		
SDG: 1011366B	LAB_ID	1011366B-26A			1011366B-25A		
FRACTION: OV	SAMP_DATE	11/9/2010			11/9/2010		
MEDIA: AIR	QC_TYPE	NM			NM		
	UNITS	UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF				BPS1-SVPM 2002I-20101109		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.44	U		0.5		
1,1-DICHLOROETHANE		0.65	U		0.62	U	
1,1-DICHLOROETHENE		0.64	U		0.6	U	
1,2-DICHLOROETHANE		0.65	U		0.62	U	
CIS-1,2-DICHLOROETHENE		0.64	U		0.6	U	
TETRACHLOROETHENE		0.74			0.8		
TRANS-1,2-DICHLOROETHENE		0.64	U		0.6	U	
TRICHLOROETHENE		0.43	U		20		
VINYL CHLORIDE		0.41	U		0.39	U	

Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: D. BRAYACK

DATE: JANUARY 4, 2011

FROM: EDWARD SEDLMYER

COPIES: DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC
NWIRP BETHPAGE CTO WE06
SDG 1011366C and 101366D

SAMPLES: 8 / Air / VOC

BPS1-SVPM 2003D-2010111
BPS1-SVPM 2007D-2010111
BPS1-SVPM11S
BPS1-AR001-ODA-4
BPS1-SVPM 2003I-2010111
BPS1-SVPM 2007I-2010111
BPS1-SVPM12S
BPS1-AR014-INDB-3

Overview

The sample set for NWIRP Bethpage, SDGs 1011366C and 101366D consists of eight (8) air environmental samples. The air samples were analyzed for volatile organic compounds (VOC).

The samples were collected by Tetra Tech on November 11 and 12, 2010 and analyzed by Air Toxics LTD. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Hold times
* • GCMS System Tuning and Performance
* • Initial/continuing calibrations
* • Laboratory Control Sample Recoveries
* • Laboratory Method/Field Blank Results
* • Surrogate Spike Recoveries
* • Internal Standard Recoveries
* • Lab Duplicate Analysis
* • Compound Identification
* • Compound Quantitation
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

Volatile

No qualification of the data was necessary.

Additional Comments

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

The laboratory reported the VOC air result concentrations in units of both ppbv and ug/m3 on the sample forms. The results in the database and the qualified analytical result concentrations are reported as 'ug/m3' only.

EXECUTIVE SUMMARY

Laboratory Performance Issues: No qualification of the data was necessary.

Other Factors Affecting Data Quality: Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the "Volatile Organic Analysis of Ambient Air In Canister By Method TO-15" EPA Region II SOP #HW-31 Revision #4 October 2006, and the NFESC guidelines "Navy IRCDQM" (September 1999).

TetraTech NUS
Edward Sedlmyer
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C – Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$ / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 02019	NSAMPLE	BPS1-SVPM 2003D- 2010111			BPS1-SVPM 2003I-20101111			BPS1-SVPM 2007D-20101111			BPS1-SVPM 2007I-20101111		
SDG: 1011366C	LAB_ID	1011366C-44A			1011366C-43A			1011366C-42A			1011366C-41A		
FRACTION: OV	SAMP_DATE	11/11/2010			11/11/2010			11/11/2010			11/11/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1.2			0.14	J	P	1.4			0.41	U	
1,1-DICHLOROETHANE		0.59	U		0.58	U		0.62	U		0.6	U	
1,1-DICHLOROETHENE		0.58	U		0.57	U		0.6	U		0.59	U	
1,2-DICHLOROETHANE		0.59	U		0.12	J	P	0.62	U		0.6	U	
CIS-1,2-DICHLOROETHENE		0.58	U		0.57	U		0.87			0.59	U	
TETRACHLOROETHENE		3.6			2.1			1.8			0.3	J	P
TRANS-1,2-DICHLOROETHENE		0.58	U		0.57	U		0.6	U		0.59	U	
TRICHLOROETHENE		6.4			0.38	J	P	0.62			0.4	U	
VINYL CHLORIDE		0.37	U		0.37	U		0.39	U		0.38	U	

PROJ_NO: 02019	NSAMPLE	BPS1-SVPM11S			BPS1-SVPM12S		
SDG: 1011366C	LAB_ID	1011366C-45A			1011366C-46A		
FRACTION: OV	SAMP_DATE	11/12/2010			11/12/2010		
MEDIA: AIR	QC_TYPE	NM			NM		
	UNITS	UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		2.5			3.4		
1,1-DICHLOROETHANE		1.2	U		0.097	J	P
1,1-DICHLOROETHENE		1.2	U		0.53	U	
1,2-DICHLOROETHANE		1.2	U		0.54	U	
CIS-1,2-DICHLOROETHENE		1.6			6.4		
TETRACHLOROETHENE		39			1.7		
TRANS-1,2-DICHLOROETHENE		1.2	U		0.53	U	
TRICHLOROETHENE		620			52		
VINYL CHLORIDE		0.76	U		0.34	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR001-ODA-4			BPS1-AR014-INDB-3		
SDG: 1011366D	LAB_ID	1011366D-37A			1011366D-28A		
FRACTION: OV	SAMP_DATE	11/11/2010			11/11/2010		
MEDIA: AIR	QC_TYPE	NM			NM		
	UNITS	UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.38	U		0.37	U	
1,1-DICHLOROETHANE		0.56	U		0.55	U	
1,1-DICHLOROETHENE		0.55	U		0.54	U	
1,2-DICHLOROETHANE		0.56	U		0.55	U	
CIS-1,2-DICHLOROETHENE		0.55	U		0.54	U	
TETRACHLOROETHENE		0.47	U		0.38	J	P
TRANS-1,2-DICHLOROETHENE		0.55	U		0.54	U	
TRICHLOROETHENE		0.37	U		0.36	U	
VINYL CHLORIDE		0.36	U		0.35	U	

APPENDIX E

ANALYTICAL SUMMARY TABLE

APPENDIX E
INDOOR AIR/SUB-SLAB/SSD STACK SAMPLING SUMMARY FOR OFFSITE RESIDENTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

Home #	Mitigation Type	Date Collected	Sample ID	Sample Type	Event Type	TCE ($\mu g/m^3$)	PCE ($\mu g/m^3$)	TCA ($\mu g/m^3$)
1	APU	1/20/2009	BPS1-AR001-SSB	Subslab	IS	160	520	660
		1/20/2009	BPS1-AR001-SSB DUP	Subslab	IS	160	550	690
		11/11/2010(10)	BPS1-AR001-SSB-2	Subslab	PSVE	1.8	1.5	0.42
		11/11/2010(10)	BPS1-AR001-SSB-2 DUP	Subslab	PSVE	2.1	1.6	0.33 J
		1/20/2009	BPS1-AR001-IND	Living Space	IS	2.2	10.0	2.1
		2/24/2009	BPS1-AR001-IND2	Living Space	PUS	0.44	2.2	0.87
		6/24/2009	BPS1-AR001-INDL-01	Living Space	PUS	0.93	2.4	0.38 J
		11/19/2009	BPS1-AR001-INDL-02	Living Space	PUS	ND	0.77	ND
		11/19/2009	BPS1-AR001-INDL-02 DUP	Living Space	PUS	ND	0.72	ND
		3/4/2010	BPS1-AR001-INDL-03 *	Living Space	PUS/PSVE	ND	0.22 J	ND
		11/11/2010(10)	BPS1-AR001-INDL-04	Living Space	PSVE	0.22 J	ND	ND
		11/11/2010(10)	BPS1-AR001-INDL-04 DUP	Living Space	PSVE	ND	0.25 J	ND
2	APU/SSD	1/21/2009	BPS1-AR002-SSB	Subslab	IS	**16,000**	310	**15,000**
		11/9/2010(10)	BPS1-AR002-SSB-2	Subslab	PSSD/PSVE	ND	0.47 J	1.3
		6/22/2009	BPS1-AR002-ST01	SSD Stack	PSSD	11,000	280	5,900
		8/25/2009	BPS1-AR002-ST02	SSD Stack	PSSD	12,000	460	5,300
		8/25/2009	BPS1-AR002-ST02 DUP	SSD Stack	PSSD	12,000	500	5,400
		11/16/2009	BPS1-AR002-ST03	SSD Stack	PSSD	9,900	330	3,800
		3/1/2010	BPS1-AR002-ST04 *	SSD Stack	PSSD(3)/PSVE	11	2.4	1.7
		3/1/2010	BPS1-AR002-ST04-DUP *	SSD Stack	PSSD(3)/PSVE	12	2.4	1.9
		8/24/2010	BPSI-AR002-ST05*	SSD Stack	PSSD/PSVE	9.6 J	3.9 J	1.2 J
		1/21/2009	BPS1-AR002-IND	Basement	IS	**140**	7.6	92.0
		2/24/2009	BPS1-AR002-IND3	Basement	PUS	**46**	2.1	42
		3/24/2009	BPS1-AR002-IND5	Basement	PUS	4.2	ND	11
		6/23/2009	BPS1-AR002-INDB-1	Basement	PSSD	**61**	0.96	77
		8/26/2009	BPS1-AR002-INDB-2	Basement	PSSD	**41**	1.6	4.2
		11/172009	BPS1-AR002-INDB-3	Basement	PSSD (4)	ND	ND	2.5
		11/17/2009	BPS1-AR002-INDB-3 DUP	Basement	PSSD (4)	0.24 J	0.41 J	2
		3/2/2010	BPS1-AR002-INDB-4 *	Basement	PSSD(3)/PSVE	0.20 J	ND	2.9
		11/9/2010(10)	BPS1-AR002-INDB-5	Basement	PSSD/PSVE	ND	ND	3.1
		2/19/2009	BPS1-AR002-IND2	Living Space	IS	**100**	4.9	73
		3/24/2009	BPS1-AR002-IND4	Living Space	PUS	3.1	0.91	4.8
		6/23/2009	BPS1-AR002-INDL-1	Living Space	PSSD	**9.2**	0.34 J	25
		8/26/2009	BPS1-AR002-INDL-2	Living Space	PSSD	3.4	0.41	0.87
		11/17/2009	BPS1-AR002-INDL-3**	Living Space	PSSD	2.7	ND	ND
		3/2/2010	BPS1-AR002-INDL-4 *	Living Space	PSSD(3)/PSVE	1.4	ND	1.3
		11/9/2010(10)	BPS1-AR002-INDL-5	Living Space	PSSD/PSVE	ND	ND	0.95
3	APU/SSD	1/22/2009	BPS1-AR003-SSB	Subslab	IS	**13,000**	130	**10,000**
		8/26/2009	BPS1-AR003-SSB2	Subslab	PSSD	**260**	3.7	38
		7/28/2010 (9)	BPS1-AR003-SSB3	Subslab	PSVE only	14	0.96	2.3
		11/9/2010(10)	BPS1-AR003-SSB4	Subslab	PSVE only	0.74	0.56	0.32 J
		6/22/2009	BPS1-AR003-ST01	SSD Stack	PSSD	7,700	92	3,600
		8/25/2009	BPS1-AR003-ST02	SSD Stack	PSSD	10,000	170	4,200
		11/16/2009	BPS1-AR003-ST03	SSD Stack	PSSD	6,200	64	2,900
		11/16/2009	BPS1-AR003-ST03 DUP	SSD Stack	PSSD	5,400	61	2,200
		3/2/2010	BPS1-AR003-ST04 *	SSD Stack	PSSD(3)/PSVE	3.8	0.82	0.98
		8/24/2010	BPSI-AR003-ST05*	SSD Stack	PSSD/PSVE	4.3	2.4	2.4
		1/22/2009	BPS1-AR003-IND	Basement	IS	**180**	4.3	95
		1/22/2009	BPS1-AR003-IND DUP	Basement	IS	**180**	4.2	98
		2/26/2009	BPS1-AR003-IND3	Basement	PUS	**34**	0.75	27
		2/26/2009	BPS1-AR003-IND3 DUP	Basement	PUS	**31**	0.72	27
		3/12/2009	BPS1-AR003-IND4	Basement	PUS	**32**	0.49 J	41
		4/30/2009	BPS1-AR003-INDB	Basement	PUS	**52**	0.38 J	65
		4/30/2009	BPS1-AR003-INDB DUP	Basement	PUS	**50**	0.54	64

NOTES:
IS = Initial Sampling
PUS = Post Unit Sampling
PSSD = Post SSD Sampling
PSVE = Post Soil Vapor Extraction
Basement or "B" = Basement Air
Living Space or "L" = Living Space Air

APPENDIX E
INDOOR AIR/SUB-SLAB/SSD STACK SAMPLING SUMMARY FOR OFFSITE RESIDENTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

Home #	Mitigation Type	Date Collected	Sample ID	Sample Type	Event Type	TCE ($\mu g/m^3$)	PCE ($\mu g/m^3$)	TCA ($\mu g/m^3$)
3	APU/SSD	6/23/2009	BPS1-AR003-INDB-01	Basement	PSSD	**79**	1.1	19
		8/26/2009	BPS1-AR003-INDB-2	Basement	PSSD	**27**	1.3	4
		11/17/2009	BPS1-AR003-INDB-3	Basement	PSSD	**5.1**	0.58	0.78
		3/3/2010	BPS1-AR003-INDB-4 *	Basement	PSSD(3)/PSVE	ND	ND	ND
		7/28/2010 (9)	BPS1-AR003-INDB-5	Basement	PSVE only	0.27 J	0.28 J	1.9
		11/9/2010(10)	BPS1-AR003-INDB-6	Basement	PSVE only	ND	ND	0.27 J
		2/18/2009	BPS1-AR003-IND2	Living Space	IS	**110**	3.1	74
		3/12/2009	BPS1-AR003-IND5	Living Space	PUS	2.8	ND	5.2
		3/12/2009	BPS1-AR003-IND5 DUP	Living Space	PUS	3.0	ND	5.5
		6/23/2009	BPS1-AR003-INDL-01	Living Space	PSSD	**16**	2.40	30
		8/26/2009	BPS1-AR003-INDL-2	Living Space	PSSD	**10**	0.43	5.2
		11/17/2009	BPS1-AR003-INDL-3	Living Space	PSSD	1.1	ND	5
		3/3/2010	BPS1-AR003-INDL-4 *	Living Space	PSSD(3)/PSVE	0.6	ND	3.7
		7/28/2010 (9)	BPS1-AR003-INDL-5	Living Space	PSVE only	0.16 J	0.28 J	3.3
		7/28/2010 (9)	BPS1-AR003-INDL-5 DUP	Living Space	PSVE only	0.15 J	0.28 J	2.9
		11/9/2010(10)	BPS1-AR003-INDL-6	Living Space	PSVE only	ND	ND	2.9
4	APU/SSD	1/21/2009	BPS1-AR004-SSB	Subslab	IS	**1,400**	42	**2,100**
		11/10/2010(10)	BPS1-AR004-SSB-2	Subslab	PSSD/PSVE	7.3	2	0.17 J
		6/25/2009	BPS1-AR004-ST01	SSD Stack	PSSD	160	2	190
		6/25/2009	BPS1-AR004-ST01 DUP	SSD Stack	PSSD	160	1.7	180
		8/25/2009	BPS1-AR004-ST02	SSD Stack	PSSD	360	31	210
		11/17/2009	BPS1-AR004-ST03	SSD Stack	PSSD	300	17	140
		3/2/2010	BPS1-AR004-ST04 *	SSD Stack	PSSD/PSVE	1.8	1.5	0.21 J
		8/24/2010	BPSI-AR004-ST05*	SSD Stack	PSSD/PSVE	2.3 J	1.9 J	0.17 J
		1/21/2009	BPS1-AR004-IND2	Basement-APT	IS	2.9	2.2	2.7
		1/21/2009	BPS1-AR004-IND	Basement	IS	**6.8**	ND	6.4
		2/26/2009	BPS1-AR004-IND4	Basement	PUS	1.2	ND	1.6
		6/26/2009	BPS1-AR004-INDB-01	Basement	PSSD	3	0.43 J	4.3
		6/26/2009	BPS1-AR004-INDB-01 DUP	Basement	PSSD	3.3	ND	4.7
		8/26/2009	BPS1-AR004-INDB-02	Basement	PSSD	1.5	ND	0.55
		11/18/2009	BPS1-AR004-INDB-03	Basement	PSSD	0.93	ND	ND
		3/3/2010	BPS1-AR004-INDB-04 *	Basement	PSSD/PSVE	0.40 J	ND	ND
		3/3/2010	BPS1-AR004-INDB-04-DUP *	Basement	PSSD/PSVE	0.38 J	ND	ND
		11/10/2010(10)	BPS1-AR004-INDB-5	Basement	PSSD/PSVE	ND	ND	ND
		2/18/2009	BPS1-AR004-IND3	Living Space	IS	**6.1**	0.82 J	6.2
		3/24/2009	BPS1-AR004-IND5	Living Space	PUS	1.1	ND	1.2
5		1/21/2009	BPS1-AR005-SSB	Subslab	IS	0.35 J	4.5	1.7
		1/21/2009	BPS1-AR005-IND	Basement	IS	ND	ND	0.72
6	APU/SSD	2/19/2009	BPS1-AR006-SSB	Subslab	IS	**740**	650	**1,600**
		11/11/2010(10)	BPS1-AR006-SSB-2	Subslab	PSVE	0.67	0.59	0.36 J
		11/11/2010(10)	BPS1-AR006-SSB-2 DUP	Subslab	PSVE	0.72	0.56 J	0.30 J
		6/24/2009	BPS1-AR006-ST01	SSD Stack	PSSD	600	890	490
		8/26/2009	BPS1-AR006-ST02	SSD Stack	PSSD	720	1600	550
		11/18/2009	BPS1-AR006-ST03	SSD Stack	PSSD	520	1200	320
		2/19/2009	BPS1-AR006-IND	Basement	IS	**43**	56	40
		2/26/2009	BPS1-AR006-IND3	Basement	PUS	2.1	2.4	2.4
		6/25/2009	BPS1-AR006-INDB-01	Basement	PSSD	**13**	2.7	50
		8/27/2009	BPS1-AR006-INDB-02	Basement	PSSD	**13**	6.8	2.6
		8/27/2009	BPS1-AR006-INDB-02 DUP	Basement	PSSD	**14**	7.7	2.8
		11/17/2009	BPS1-AR006-INDB-03 (1)	Basement	PSSD	ND	0.35 J	1.3
		3/4/2010	BPS1-AR006-INDB-04 * (2)	Basement	PSVE (5)	0.48 J	1.9	0.21 J
		11/11/2010(10)	BPS1-AR006-INDB-05	Basement	PSVE	ND	ND	0.13 J
		2/19/2009	BPS1-AR006-IND2	Living Space	IS	**6.6**	8.8	8.8
		3/24/2009	BPS1-AR006-IND4	Living Space	PUS	1.2	1.6	7.0

NOTES:
IS = Initial Sampling
PUS = Post Unit Sampling
PSSD = Post SSD Sampling
PSVE = Post Soil Vapor Extraction
Basement or "B" = Basement Air
Living Space or "L" = Living Space Air

APPENDIX E
INDOOR AIR/SUB-SLAB/SSD STACK SAMPLING SUMMARY FOR OFFSITE RESIDENTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

Home #	Mitigation Type	Date Collected	Sample ID	Sample Type	Event Type	TCE ($\mu g/m^3$)	PCE ($\mu g/m^3$)	TCA ($\mu g/m^3$)
7	APU	2/20/2009	BPS1-AR007-SSB	Subslab	IS	170	310	370
		11/10/2010(10)	BPS1-AR007-SSB-2	Subslab	PSVE	0.23 J	1.4	ND
		2/20/2009	BPS1-AR007-IND	Basement	IS	0.75	3.2	1.0
		2/20/2009	BPS1-AR007-IND2	Living Space	IS	0.40	1.6	0.51
		3/25/2009	BPS1-AR007-IND3	Basement	PUS	0.2 J	0.90	0.47
		6/24/2009	BPS1-AR007-INDB-01	Basement	PUS	0.4 J	1.20	0.29 J
		11/18/2009	BPS1-AR007-INDB-02	Basement	PUS	ND	0.55 J	ND
		3/3/2010	BPS1-AR007-INDB-03 *	Basement	PUS/PSVE	ND	0.28 J	ND
		11/10/2010(10)	BPS1-AR007-INDB-04	Basement	PSVE	ND	ND	ND
8		2/20/2009	BPS1-AR008-SSB	Subslab	IS	16	3.4	45
		2/20/2009	BPS1-AR008-IND	Basement	IS	ND	0.34 J	0.49 J
		2/20/2009	BPS1-AR008-IND2	Living Space	IS	ND	2.6 J	ND
9	APU	2/25/2009	BPS1-AR009-SSB	Subslab	IS	21	8.8	140
		11/10/2010(10)	BPS1-AR009-SSB-2	Subslab	PSVE	0.86	15	0.73 J
		2/25/2009	BPS1-AR009-IND	Basement	IS	0.50	0.62	1.8
		2/25/2009	BPS1-AR009-IND DUP	Basement	IS	0.41 J	0.62 J	1.5
		11/10/2010(10)	BPS1-AR009-INDB-2	Basement	PSVE	ND	0.38 J	0.45
		2/25/2009	BPS1-AR009-IND2	Living Space	IS	0.34 J	0.33 J	0.61
10	APU	2/26/2009	BPS1-AR010-SSB2	Subslab	IS	**300**	670	590
		11/10/2010(10)	BPS1-AR010-SSB-3	Subslab	PSVE	0.83	3.4	ND
		2/25/2009	BPS1-AR010-IND2	Living Space	IS	ND	2.1	0.58 J
		2/25/2009	BPS1-AR010-IND	Basement	IS	2.9	16	3.9
		3/24/2009	BPS1-AR010-IND3	Basement	PUS	1.5	7.4	2.2
		3/24/2009	BPS1-AR010-IND3 DUP	Basement	PUS	1.2	6.6	2.2
		6/24/2009	BPS1-AR010-INDB-01	Basement	PUS	2.1	4.1	4.8
		11/17/2009	BPS1-AR010-INDB-02	Basement	PUS	0.57	2.5	0.44 J
		3/3/2010	BPS1-AR010-INDB-03 *	Basement (6)	PUS/PSVE	ND	ND	ND
		11/10/2010(10)	BPS1-AR010-INDB-04	Basement	PUS/PSVE	ND	0.24 J	ND
11		2/25/2009	BPS1-AR011-SSB	Subslab	IS	15	40	50
		2/25/2009	BPS1-AR011-IND	Basement	IS	ND	0.29 J	ND
		2/25/2009	BPS1-AR011-IND2	Living Space	IS	ND	ND	ND
12	APU	2/26/2009	BPS1-AR012-SSB	Subslab	IS	94	19	330
		11/11/2010(10)	BPS1-AR012-SSB-2	Subslab	PSVE	4.8	5.9	1.2 J
		2/26/2009	BPS1-AR012-IND	Basement	IS	0.55	0.85	2.2
		2/26/2009	BPS1-AR012-IND2	Living Space	IS	ND	0.83 J	0.81 J
		3/25/2009	BPS1-AR012-IND3	Basement	PUS	0.21 J	ND	1.0
		6/24/2009	BPS1-AR012-INDB-01	Basement	PUS	0.22 J	0.72	3.0
		11/18/2009	BPS1-AR012-INDB-02	Basement	PUS	ND	0.49 J	0.69
		3/3/2010	BPS1-AR012-INDB-03 *	Basement	PUS/PSVE	ND	25 (7)	1.0
		11/11/2010(10)	BPS1-AR012-INDB-04	Basement	PSVE	ND	0.91	1.5
13	APU/SSD	2/26/2009	BPS1-AR013-SSB	Subslab	IS	230	11	420
		2/26/2009	BPS1-AR013-SSB DUP	Subslab	IS	**250**	12	440
		11/10/2010(10)	BPS1-AR013-SSB-2	Subslab	PSSD/PSVE	13	5.7	0.12 J
		6/24/2009	BPS1-AR013-ST01	SSD Stack	PSSD	70	68	84
		8/25/2009	BPS1-AR013-ST02	SSD Stack	PSSD	48	8.6	58
		11/16/2009	BPS1-AR013-ST03	SSD Stack	PSSD	29	4.8	30
		3/2/2010	BPS1-AR013-ST04 *	SSD Stack	PSSD/PSVE	1.1	1.3	1.8
		8/24/2010	BPSI-AR013-ST05*	SSD Stack	PSSD/PSVE	0.87	2.20	0.31 J
		8/24/2010	BPSI-AR013-ST05 DUP*	SSD Stack	PSSD/PSVE	0.94	2.50	0.34 J

NOTES:
IS = Initial Sampling
PUS = Post Unit Sampling
PSSD = Post SSD Sampling
PSVE = Post Soil Vapor Extraction
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APPENDIX E
INDOOR AIR/SUB-SLAB/SSD STACK SAMPLING SUMMARY FOR OFFSITE RESIDENTS
SOIL VAPOR INVESTIGATION
NWIRP BETHPAGE, NEW YORK

Home #	Mitigation Type	Date Collected	Sample ID	Sample Type	Event Type	TCE ($\mu g/m^3$)	PCE ($\mu g/m^3$)	TCA ($\mu g/m^3$)
13	APU/SSD	2/26/2009	BPS1-AR013-IND	Basement	IS	1.5	0.56	2.3
		3/24/2009	BPS1-AR013-IND3	Basement	PUS	0.50	ND	1.2
		6/25/2009	BPS1-AR013-INDB-01	Basement	PSSD	1.9	0.28 J	0.32 J
		8/26/2009	BPS1-AR013-INDB-02	Basement	PSSD	0.67	0.43	ND
		11/17/2009	BPS1-AR013-INDB-03	Basement	PSSD	0.63	ND	ND
		3/3/2010	BPS1-AR013-INDB-04 *	Basement	PSSD/PSVE	ND	ND	ND
		11/10/2010(10)	BPS1-AR013-INDB-05	Basement	PSSD/PSVE	ND	ND	ND
		2/26/2009	BPS1-AR013-IND2	Living Space	IS	ND	0.58 J	0.9 J
14	APU/SSD	3/11/2009	BPS1-AR014-SSB	Subslab	IS	**290**	15	970
		11/11/2010(10)	BPS1-AR014-SSB-2	Subslab	PSSD/PSVE	ND	0.48 J	ND
		6/24/2009	BPS1-AR014-ST01	SSD Stack	PSSD	88	13	110
		8/26/2009	BPS1-AR014-ST02	SSD Stack	PSSD	30	10	43
		11/17/2009	BPS1-AR014-ST03	SSD Stack	PSSD	12	5.3	13
		3/1/2010	BPS1-AR014-ST04 *	SSD Stack	PSSD/PSVE	1	1.6	0.95
		8/24/2010	BPSI-AR014-ST05*	SSD Stack	PSSD/PSVE	0.55	2.90	0.34 J
		3/11/2009	BPS1-AR014-IND	Basement	IS	1.9	0.46 J	2.6
		3/25/2009	BPS1-AR014-IND3	Basement	PUS	ND	ND	0.41 J
		11/18/2009	BPS1-AR014-INDB-1	Basement	PSSD	0.37 J	0.34 J	ND
		3/2/2010	BPS1-AR014-INDB-2 *	Basement (8)	PSSD/PSVE	ND	0.94	ND
		11/11/2010(10)	BPS1-AR014-INDB-3	Basement	PSSD/PSVE	ND	0.38 J	ND
		11/11/2010(10)	BPS1-AR014-INDB-3 DUP	Basement	PSSD/PSVE	ND	0.39 J	ND
		3/11/2009	BPS1-AR014-IND2	Living Space	IS	0.73	0.36 J	1.3
15	APU	3/11/2009	BPS1-AR015-SSB	Subslab	IS	25	38	160
		11/9/2010(10)	BPS1-AR015-SSB-2	Subslab	PSSD/PSVE	ND	0.40 J	0.36 J
		3/11/2009	BPS1-AR015-IND	Basement	IS	ND	0.62	0.66
		11/9/2010(10)	BPS1-AR015-INDB-2	Basement	PSSD/PSVE	ND	ND	ND
		3/11/2009	BPS1-AR015-IND2	Living Space	IS	ND	0.3 J	ND
16	NA	4/28/2009	BPS1-AR016-SSB	Subslab	IS	9.1	3.8	24
		4/28/2009	BPS1-AR016-INDB	Basement	IS	ND	ND	0.51
		4/28/2009	BPS1-AR016-INDL	Living Space	IS	ND	0.31 J	0.27 J
17	NA	4/28/2009	BPS1-AR017-SSB	Subslab	IS	11	5	26
		4/28/2009	BPS1-AR017-INDB	Basement	IS	ND	6.20	0.15 J
		4/28/2009	BPS1-AR017-INDL	Living Space	IS	ND	3	ND
18	NA	4/29/2009	BPS1-AR018-SSB	Subslab	IS	64	8.4	68
		4/29/2009	BPS1-AR018-INDB	Basement	IS	1.8	1.8	0.84
		5/21/2009	BPS1-AR018-INDB-2	Basement	RE-IS	0.41 J	0.58	ND
		5/21/2009	BPS1-AR018-INDL	Living Space	RE-IS	ND	0.39 J	ND

Bold values indicate exceedance of NYSDOH guideline values

(1) APU removed at request of resident (November 17, 2009)
(2) SSD removed at request of resident (January 2010)
(3) SSD fan upgraded on system (after November 2009 sampling event)
(4) APU was moved to more central location in basement in September 2009
(5) Sample collected with no residential mitigation systems in place, only SVE system in operation
(6) APU was not in operation; APU was turned off on February 12, 2010 (warning lights for filter replacement)
(7) Elevated PCE may be due to residents workshop in basement or other background source in home
(8) APU was not in operation during sampling; unknown APU usage prior to sampling
(9) Sample collected with APUs removed from home and with SSD turned off
(10) APUs and SSD turned off prior to sample collection.
* Sample collected after SVE system began operation in January 2010
** Summa cannister did not past leak test when received by the lab. Sample integrity is in question.

NOTES:
IS = Initial Sampling
PUS = Post Unit Sampling
PSSD = Post SSD Sampling
PSVE = Post Soil Vapor Extraction
Basement or "B" = Basement Air
Living Space or "L" = Living Space Air

APPENDIX F

LETTER WORK PLAN – FEBRUARY 2011 SAMPLING

WORK PLAN ADDENDUM
INDOOR AIR AND SOIL GAS SAMPLING
SOIL VAPOR INVESTIGATION – FEBRUARY 2011
NWIRP BETHPAGE, NEW YORK

INTRODUCTION

This Work Plan Addendum has been prepared to address indoor air and soil gas sampling activities planned for February 2011 at Site 1 – Former Drum Marshalling Area at Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York. Soil vapor testing conducted in January 2008, October 2008, and January 2009 identified the presence of elevated concentrations of Volatile Organic Compounds (VOCs) existing along the eastern boundary of Site 1 and in the nearby residential neighborhood. Additional soil vapor testing and indoor air monitoring has been ongoing in residential homes and the neighborhood since January 2009.

In December 2009, construction of a Soil Vapor Extraction (SVE) Containment System along the eastern boundary of Navy property was completed and operation of the system started in January 2010. The SVE Containment System continues to operate.

Soil gas sampling and was conducted in November 2010 to evaluate the effectiveness of the SVE Containment System on reducing the concentrations of VOCs in onsite and offsite soil gas monitoring points. A comparison of the concentrations of chemical constituents in the initial soil gas testing conducted in January and October 2008, with the concentrations observed in the November 2010 sampling indicates that VOC concentrations have been reduced by 95.83% to 99.99% for total VOCs.

In November 2010, indoor air, sub-slab, and outdoor air samples were collected to re-evaluate vapor intrusion at the twelve homes in the monitoring program. The indoor air and sub-slab concentrations were compared to the NYSDOH matrices to determine the recommended actions for these homes. Based on this comparison, a No Further Action determination would result for all twelve homes.

The indoor air and soil gas sampling activities that will be conducted in February 2011 will include indoor air, sub-slab soil vapor, outdoor air, and soil gas sampling in the neighborhood located adjacent to Site 1. Air samples will be analyzed for VOCs via EPA TO-15 method. With concurrence from the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC), the TO-15 list was previously modified to analyze for site specific compounds associated with Site 1. The fieldwork outlined in this Work

Plan Addendum is being conducted in accordance with NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH 2006) and previous work plans and work plan addendums (Tetra Tech, 2008 and 2010).

SAMPLING APPROACH

Approximately 20 days prior to sampling, the operating SSD systems will be turned off to mimic conditions with just the SVE Containment System in operation during sampling. Homeowners will be contacted to turn off APUs in the home two weeks prior to sampling and to schedule the actual date and time of sampling. Before and after sampling, vacuum readings will be collected from the eleven SVPMs. In addition, vacuum readings will be collected before and after sub-slab soil vapor samples are collected to measure the vacuum/pressure field under the homes. If a vacuum cannot be confirmed at a home with an SSD system, a temporary probe will be installed in the sub-slab sample location and additional vacuum readings will be measured approximately one and two weeks later. If inadequate vacuum readings are observed, operation of the SVE Containment System will be modified. These modifications may include changes in valve positions and/or the operation of the second blower.

Each indoor/outdoor air and sub-slab soil vapor sample will be collected over a 24 hour time period and analyzed by Air Toxics, an Environmental Laboratory Approval Program (ELAP) certified laboratory (USEPA, 1999). Corresponding sample nomenclatures are presented in Table 1. Outdoor air samples will be collected simultaneously during the indoor air and sub-slab soil vapor sampling to evaluate the potential influence of outdoor air on indoor air quality. Outdoor air samples will be collected, as necessary, to provide representative air samples from an upwind location. It is anticipated that one outdoor air sample may be collected for every two homes targeted for indoor air sampling. Site specific conditions will be evaluated at the time of sampling and the outdoor air samples will be collected accordingly.

Soil gas sampling will also be conducted in February 2011 to further evaluate the effectiveness of the SVE Containment System. Soil gas samples will be collected over a 30-minute time period. Field activities will include the sampling of 11 Soil Vapor Pressure Monitor (SVPM) points as presented on Table 2. Soil gas and indoor air sampling will occur simultaneously and will be analyzed for VOCs via EPA TO-15 method.

Field and sampling procedures will be conducted as outlined in the 2008 work plan and subsequent work plan addendums.

TABLE 1
SOIL GAS AND INDOOR AIR SAMPLING - FEBRUARY 2011
SAMPLE NOMENCLATURE AND ANALYTICAL METHOD
NWIRP BETHPAGE, NEW YORK

Location	Sample ID	SAMPLE TYPE	VOCs-TO15A[(1)]
HOME 1	BPS1-AR001-INDL-4	LIVING SPACE	X
	BPS1-AR001-SSB-2	SUBSLAB	X
HOME 2	BPS1-AR002-INDL-5	LIVING SPACE	X
	BPS1-AR002-INDB-5	BASEMENT	X
	BPS1-AR002-SSB-2	SUBSLAB	X
HOME 3	BPSI-AR003-INDL-6	LIVING SPACE	X
	BPSI-AR003-INDB-6	BASEMENT	X
	BPSI-AR003-SSB4	SUBSLAB	X
HOME 4	BPS1-AR004-INDB-5	BASEMENT	X
	BPS1-AR004-SSB-2	SUBSLAB	X
HOME 6	BPS1-AR006-INDB-5	BASEMENT	X
	BPS1-AR006-SSB-2	SUBSLAB	X
HOME 7	BPS1-AR007-INDB-4	BASEMENT	X
	BPS1-AR007-SSB-2	SUBSLAB	X
HOME 9	BPS1-AR009-INDB-2	BASEMENT	X
	BPS1-AR009-SSB-2	SUBSLAB	X
HOME 10	BPS1-AR010-INDB-4	BASEMENT	X
	BPS1-AR010-SSB-3	SUBSLAB	X
HOME 12	BPS1-AR012-INDB-4	BASEMENT	X
	BPS1-AR012-SSB-2	SUBSLAB	X
HOME 13	BPS1-AR013-INDB-5	BASEMENT	X
	BPS1-AR013-SSB-2	SUBSLAB	X
HOME 14	BPS1-AR014-INDB-3	BASEMENT	X
	BPS1-AR014-SSB-2	SUBSLAB	X
HOME 15	BPS1-AR015-INDB-2	BASEMENT	X
	BPS1-AR015-SSB-2	SUBSLAB	X
HOME 18	BPS1-AR018-INDB-3	BASEMENT	X
	BPS1-AR018-SSB-2	SUBSLAB	X

Notes:

Quality Assurance samples such as duplicates and field blanks will be collected in accordance with the sampling SOP.
One outdoor air sample will be collected each day.
VOCs: Volatile Organic Compounds. (Site specific list: 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethen, trans-1,2-dichloroethene, trichlorothene, tetrachloroethene, vinyl chloride).
[(1)] : 21-Day results from Navy-approved laboratory via method TO-15

TABLE 2
SVPM SAMPLING - FEBRUARY 2011
SAMPLE NOMENCLATURE AND ANALYTICAL METHOD
NWIRP BETHPAGE, NEW YORK

Location	Sample ID	VOCs-TO15A[(1)]
SVPM 2002	BPS1-SVPM2002S-XXXXXX	X
	BPS1-SVPM2002I-XXXXXX	X
	BPS1-SVPM2002D-XXXXXX	X
SVPM 2003	BPS1-SVPM2003I-XXXXXX	X
	BPS1-SVPM2003D-XXXXXX	X
SVPM 2004	BPS1-SVPM2004I-XXXXXX	X
	BPS1-SVPM2004D-XXXXXX	X
SVPM 2007	BPS1-SVPM2007I-XXXXXX	X
	BPS1-SVPM2007D-XXXXXX	X
SVPM 11S	BPS1-SVPM11S-XXXXXX	X
SVPM 12S	BPS1-SVPM12S-XXXXXX	X

Notes:

Quality Assurance samples such as duplicates and field blanks will be collected in accordance with the sampling SOP. One outdoor air sample will be collected each day.

VOCs: Volatile Organic Compounds. (Site specific list: 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethen, trans-1,2-dichloroethene, trichlorothene, tetrachloroethene, vinyl chloride).

XXXXXX: Sample Date. For example, BPSI-SVPM2004D-110910, would be collected on November 9, 2010.

SVPM-11 and SVPM-12 will not be sampled. After further evaluation, it has been determined that both points cannot be repaired and will be abandoned.

[(1)] : 21-Day results from Navy-approved laboratory via method TO-15

SVPM: Soil Vapor Pressure Monitor