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FINAL QUARTERLY DATA SUMMARY REPORT FOR SOIL VAPOR INTRUSION MONITORING NWIRP BETHPAGE NY

5/1/2010

TETRA TECH

QUARTERLY DATA SUMMARY REPORT
SOIL VAPOR INTRUSION MONITORING
(February, March, and April 2010)

NWIRP Bethpage
Bethpage, New York

Naval Facilities Engineering Command
Mid-Atlantic

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

May 2010

TETRA TECH

QUARTERLY DATA SUMMARY REPORT
SOIL VAPOR INTRUSION MONITORING

(FEBRUARY, MARCH, AND APRIL 2010)

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
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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
IND	indoor air sample
INDB	basement indoor air sample
INDL	Living space indoor air sample
ND	not detected
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	tetrachloroethene
PID	photoionization detector
PSSD	Post Sub-Slab Depressurization
SSB	sub-slab vapor sample
SSD	sub-slab depressurization system
SVECS	soil vapor extraction containment system
TCA	1,1,1-trichloroethane
TCE	trichloroethene
Tetra Tech	Tetra Tech NUS, Inc.
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 Quarterly Data Summary Report 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 February, March, and April 2010, and includes indoor air, outdoor air, and sub-slab depressurization (SSD) system stack monitoring that took place in March 2010 in the residential neighborhood east of Site 1 at Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York (Figures 1 and 2). 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, indoor air, outdoor air, and sub-slab soil vapor sampling was recommended to evaluate potential vapor intrusion into residential homes.

From January through April 2009, 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, eight homes did not require further sampling/remediation. Based on sub-slab soil vapor and indoor air sampling results, SSDs were installed in six residential homes in May 2009. A total of 10 homes were sampled in June 2009 to monitor and evaluate mitigation measures established in homes with APUs and including the 6 homes with SSD systems (Tetra Tech, 2009c).

In August 2009, the second post SSD system sampling event was conducted. The sampling focused on the collection of indoor air, outdoor air, and SSD system stack samples at the six homes with SSD systems in operation. The August sampling event also included an outdoor air evaluation in and around the neighborhood (Tetra Tech, 2009d). The outdoor air testing was conducted to evaluate outdoor air quality that may affect indoor air concentrations.

The third post SSD sampling event was conducted in November 2009 at ten residential homes. Indoor air samples were taken at all ten homes, while six homes with a SSD system had samples taken from the SSD system stack (Tetra Tech, 2010). APUs were present at all ten homes being sampled. Outdoor air

samples were also collected simultaneously during the indoor air sampling to evaluate any influence of ambient air on indoor air quality.

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

Air and vapor samples were analyzed for VOCs via United States Environmental Protection Agency (USEPA) 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 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

In March 2010, indoor air monitoring activities were conducted at ten residential homes located in the neighborhood adjacent to Site 1. Indoor air and SSD system stack samples were collected from six homes that were equipped with SSD systems and APUs, and indoor air samples were collected from four homes with APUs only. Outdoor air samples were also collected simultaneously during the indoor air sampling to evaluate any influence of ambient air on indoor air quality. The general field activities for sampling are summarized as follows:

1. Scheduled sampling with homeowners
2. Mobilized to neighborhood
3. Re-established previous sampling locations
4. Collected indoor air, outdoor air samples, and SSD stack samples
5. Shipped and analyzed samples for the modified TO-15 VOCs

Homeowners were contacted to schedule and coordinate field sampling activities. Indoor air, SSD stack and outdoor air samples were collected using SUMMA® canisters (6 liter) with pre-set regulators. Unless noted on the air sampling log sheets or in the field logbook, indoor air samples were collected from the same locations that were previously sampled. During the indoor air sampling, outdoor air samples were placed in an upwind direction (at the start of the sampling period) approximately 50 to 200 feet from the associated indoor air sampling locations, at a height of approximately 3 feet above the ground surface. Some of the outdoor air samples were used in evaluating more than one home given the proximity of the homes being sampled at that time.

The week prior to the March 2010 sampling event, weather conditions were cold (mean 35°F) with a total of 4.99 inches of rainfall. During the week of sampling, 0.11 inches of rain and 0.3 inches of snow fell with temperatures ranging from 33°F at night to 48°F during the day. The predominant wind direction was northerly and ranged from NW to ENE, while the wind speed was variable averaging 8 to 18 miles per hour during the sampling event.

The indoor and outdoor air samples were obtained over a 24-hour time period. SSD system stack samples were obtained over a 30-minute time period. Prior to sampling the SSD system stack, a photoionization detector (PID) reading was collected from the SSD system stack sampling port. PID readings were recorded on the air sampling log sheets (Appendix A). The SSD system stack samples were collected through polyethylene tubing which was secured to a brass nipple fitting threaded into the SSD system exhaust sampling port. Once the sample was collected, the SSD system exhaust sampling port was sealed using a brass plug. The air and vapor samples were shipped to Air Toxics Ltd. in

Folsom, CA via overnight carrier (Federal Express) for the modified TO-15 analysis list. The sampling procedures for indoor air, SSD system exhaust stack samples, and outdoor air were in accordance with NYSDOH Guidance for Evaluating Soil Vapor Intrusion (NYSDOH, 2006).

The field sampling team maintained air sampling log sheets and a field logbook that summarized the following information:

- sample identification
- date and time of sample collection
- sample location description
- identity of samplers
- sampling methods and devices (including canister and regulator ID numbers)
- vacuum before and after samples were collected
- wind speed and direction (for outdoor air sampling)
- ambient temperature (for outdoor air sampling)

Table 2-1 presents a sample summary of the indoor air, outdoor air, and SSD system stack samples collected, corresponding sample nomenclature, date collected, sample type, and event type. Sample date corresponds to the end of the sample collection period (i.e., 24-hour for indoor air). Sample containers were labeled with a unique sample identifier as presented on Table 2-1.

Additional information regarding sample identification and sample collection was recorded in the field logbook and/or on the corresponding sample log sheets. Sample log sheets were completed for each sample collected and are provided as Appendix A. Chain of Custody (COC) Forms are provided in Appendix B.

3.0 ANALYTICAL RESULTS

This section summarizes the analytical results from the SSD system and APU sampling event conducted in March 2010. 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. Sample results for each of the homes are summarized in Tables 3-1 through 3-10. Details for each of the air samples collected from the homes are on the air sample log sheets provided in Appendix A. COC Forms and the laboratory analytical reports are in Appendix B and C, respectively. Data validation summaries are presented in Appendix D.

Analytical results from the indoor air sampling conducted in residential homes were 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 are in the table below.

Air Guideline Values for Indoor Air

Chemical	Air Guideline Value ($\mu g/m^3$)
Tetrachloroethene	100
Trichloroethane	5
1,1,1-Trichloroethane	100*

* = value derived from NYSDOH guidance (2006), Table 3.3 (Matrix 2)
$\mu g/m^3$ = micrograms per cubic meter of air

During this quarterly monitoring event, the following ten homes were sampled in March 2010:

- Home #1
- Home #2
- Home #3
- Home #4
- Home #6
- Home #7
- Home #10
- Home #12
- Home #13
- Home #14

3.1 Home #1

The home was initially sampled on January 20, 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 in the ground floor living space.

An indoor air sample was collected on March 4, 2010. Sample results indicated a concentration of PCE at 0.22 J µg/m^3. This concentration was below the NYSDOH Air Guideline Value for PCE. TCE and TCA were not detected in the indoor air sample. Sample results from each event are summarized on Table 3-1. The APU installed on the ground floor living space remains in operation.

3.2 Home #2

The home was initially sampled on January 21, 2009. After sampling, 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. Based on first floor living space VOC results, a second APU was installed on the first floor on March 10, 2009. Since the sub-slab concentrations of TCE and TCA were above the NYSDOH guidelines, an SSD system was installed on May 19, 2009 as a supplemental mitigation measure.

In September 2009, the homeowner requested the temporary removal of the SSD system in order to replace the siding on the home. The exterior portion of the SSD system was dismantled on September 9th and re-installed on September 16, 2009 after the new siding was completed. During the re-installation of the SSD system, the APU (basement unit) was moved from the original location in the western portion of the basement to a more central location in the basement to facilitate better circulation and filtration of basement air. Based on the SSD stack concentrations observed in September 2009, the SSD fan at Home #2 was upgraded after sample collection in November 2009 to increase the vacuum under the slab of the home.

Indoor air and stack samples were collected on March 1 and 2, 2010. The sampling results indicated basement air concentrations of TCE at 0.20 J µg/m^3 and TCA at 2.9 µg/m^3. TCE and TCA were also detected in the first floor living space air at 1.4 µg/m^3 and 1.3 µg/m^3, respectively. PCE was not detected in the first floor living space or basement air samples. The indoor air results indicated basement and living space air concentrations were below the NYSDOH air guideline values. The SSD system stack sample and duplicate sample indicated similar concentrations, with detections of TCE at 11 µg/m^3, PCE at 2.4 µg/m^3, and TCA at 1.7 µg/m^3.

As of March 2010, TCE concentrations have decreased by approximately 99.9% in basement air and approximately 98.5% in the living space air since the initial sampling in January 2009. A comparison of the March 2010 SSD system stack sample results with initial stack sample results (June 2009) indicated TCE concentrations have decreased by approximately 99.9%. PCE and TCA have also shown similar decreases in concentrations. Sample results from each event are summarized on Table 3-2. The SSD system and the APUs installed in the basement and first floor of Home #2 remain in operation.

3.3 Home #3

The home was initially sampled on January 22, 2009. After sampling, 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 on February 26, 2009. Since the sub-slab concentrations for TCE and TCA were above the NYSDOH guidelines, an SSD system was installed on May 19, 2009 as a supplemental mitigation measure. Based on the SSD stack concentrations observed in September 2009, the SSD fan at Home #3 was upgraded after sample collection in November 2009 to increase the vacuum under the slab of the home.

Indoor air and stack samples were collected on March 2 and 3, 2010. The sampling results indicated SSD stack concentrations of TCE at 3.8 $\mu g/m^3$, PCE at 0.82 $\mu g/m^3$ and TCA at 0.98 $\mu g/m^3$. First floor living space results indicated air concentrations of TCE at 0.64 $\mu g/m^3$, and TCA at 3.7 $\mu g/m^3$; PCE was not detected. No detections of TCE, PCE, and TCA were found in the basement air sample. Basement and living space indoor air concentrations were below the NYSDOH air guideline values.

As of March 2010, TCE concentrations decreased by 99.9% in basement air and approximately 99.5% in the living space air since the initial sampling in January 2009. By comparing the SSD system stack sample result to the initial stack sample results collected in June 2009, the TCE concentration has decreased by approximately 99.9%. PCE and TCA have also shown similar decreases in concentrations. Sample results from each event are summarized on Table 3-3. The SSD system and the APUs installed in the basement and first floor of Home #3 remain in operation.

3.4 Home #4

The home was initially sampled on January 21, 2009. After sampling, 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. Since the sub-slab concentrations of TCE and TCA were above the NYSDOH guidelines, an SSD system was installed on May 20, 2009 as a supplemental mitigation measure.

Indoor air and SSD system stack samples were collected on March 2 and 3, 2010. The sampling results indicated basement air concentrations of TCE at 0.40 J µg/m^3 and neither TCA nor PCE were detected in the basement air sample or the duplicate sample collected at this location. The indoor air results indicated basement air concentrations were below the NYSDOH air guideline values.

SSD system stack results included concentrations of TCE at 1.8 µg/m^3, PCE at 1.5 µg/m^3 and TCA at 0.21 J µg/m^3. Comparing the SSD system stack results to the initial stack sample results in June 2009, TCE concentrations have decreased by approximately 99%. TCA has shown a similar decrease in concentration. Sample results from each event are summarized on Table 3-4. The SSD system and the APU installed in the basement remain in operation.

3.5 Home #6

The home was initially sampled on February 19, 2009. After sampling, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Since the sub-slab concentrations for TCE and TCA were above the NYSDOH guidelines, an SSD system was installed on May 20, 2009 as a supplemental mitigation measure. Based on the SSD stack concentrations observed in September 2009, the SSD fan at Home #6 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 remedial systems. The Navy complied with the request by removing the APU after sampling in November 2009 and removing the SSD in January 2010.

An indoor air sample was collected in the basement of Home #6 on March 4, 2010. The sampling results indicated basement air concentrations of TCE at 0.48 J µg/m^3, PCE at 1.9 µg/m^3 and TCA at 0.21 J µg/m^3. The indoor air results indicated basement air concentrations were below the NYSDOH air guideline values. Sample results from each event are summarized on Table 3-5.

3.6 Home #7

The home was initially sampled on February 20, 2009. After sampling, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement.

An indoor air sample was collected in the basement of Home #7 on March 3, 2010. The sampling results indicated basement air concentrations of PCE at 0.28 J µg/m^3, while neither TCE nor TCA were detected in the basement air sample. The air concentrations were below the NYSDOH air guideline values. Sample results from each event are summarized on Table 3-6. The APU installed in the basement remains in operation.

3.7 Home #10

The home was initially sampled on February 25, 2009. After sampling, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement of Home #10.

An indoor air sample was collected in the basement of Home #10 on March 3, 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. Sample results from each event are summarized on Table 3-7. The filters were replaced on the APU in March after sample collection and the unit remains in operation.

3.8 Home #12

The home was initially sampled on February 26, 2009. After sampling, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement of Home #12.

An indoor air sample was collected on March 3, 2010. The sampling results indicated basement air concentrations of PCE at 25 µg/m^3, TCA at 1 µg/m^3. TCE was not detected in the basement air sample. These indoor air concentrations are below their respective NYSDOH air guideline values. During the initial indoor air sampling in February 2009, a workshop used for woodworking and boat repair was identified in the basement of Home #12. Several containers of paint, stain, thinner, resin, adhesive, and other chemicals were observed in the workshop. The elevated concentration of PCE may be attributable to chemical storage in the workshop or other background source in the home. Chemical storage and other potential background sources will be evaluated during the next sampling event at Home #12. Sample results from each event are summarized on Table 3-8. The APU installed in the basement remains in operation.

3.9 Home #13

The home was initially sampled on February 26, 2009. After sampling, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Since the sub-slab

concentration of TCE was above the NYSDOH air guideline value, an SSD system was installed on May 20, 2009 as a supplemental mitigation measure.

Indoor air and stack samples were collected on March 2 and 3, 2010. The sampling results indicated no detections of TCE, PCE, or TCA in basement air.

SSD system stack results included concentrations of TCE at 1.1 µg/m^3, PCE at 1.3 µg/m^3 and TCA at 1.8 µg/m^3. Comparing the March 2010 SSD system stack sample result to the initial stack sample result in June 2009, TCE concentrations have decreased by approximately 98.5% and both PCE and TCA have shown similar decreases in concentrations. Sample results from each event are summarized on Table 3-9. The SSD system and the APU installed in the basement remain in operation.

3.10 Home #14

The home was initially sampled on March 11, 2009. After sampling, as an interim mitigation measure for potential exposure to soil vapor intrusion, an APU was installed in the basement. Since the sub-slab concentration of TCE was above the NYSDOH air guideline value, an SSD system was installed on May 20, 2009 as a supplemental mitigation measure.

Indoor air and SSD system stack samples were collected on March 1 and 2, 2010. The sample results indicated a basement air concentration of PCE at 0.94 µg/m^3; TCE and TCA were not detected in the basement air sample. The indoor air results indicated basement air concentrations were below the NYSDOH air guideline values.

SSD system stack results indicated concentrations of TCE at 1.0 µg/m^3, PCE at 1.6 µg/m^3 and TCA at 0.95 µg/m^3. Comparing the SSD system stack sample results to the initial stack sample result in June 2009, TCE and TCA concentrations have decreased by approximately 99% and the PCE concentrations have decreased approximately 88%. Sample results from each event are summarized on Table 3-10. The SSD system and the APU installed in the basement remain in operation.

3.11 Outdoor Air Sampling Summary

During the 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. Five outdoor air samples were collected during the sampling event in March 2010. None of the targeted VOC's was detected in these outdoor air samples.

Table 3-11 provides an analytical summary of the outdoor air sampling conducted during the indoor air sampling event in March 2010.

3.12 Sampling Summary

The SVECS was constructed at the eastern boundary of Site 1 and began full time operation in January 2010. This system is currently operating to prevent further off site migration of contaminated soil vapor and to the extent practical, remediate contaminated soil vapor located off site. Based on the March 2010 sampling results, concentrations of targeted VOC's are below the NYSDOH air guideline values in all ten homes and the five SSD system stack samples have shown an average decrease of approximately 98% since June 2009.

Indoor air monitoring will continue in the residential homes to evaluate the effectiveness of the mitigation systems and off site soil gas testing will be conducted in the residential neighborhood to confirm the effectiveness of the SVECS.

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TABLES

Table 2-1
Sample Summary
Indoor/Outdoor/SSD Stack Sampling - March 2010
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type
BPS1-AR001-INDL-3	3/4/2010	Living Space	PUS/PSVE
BPS1-AR002-INDL-4	3/2/2010	Living Space	PSSD/PSVE
BPS1-AR002-INDB-4	3/2/2010	Basement	PSSD/PSVE
BPS1-AR002-ST04	3/1/2010	SSD Stack	PSSD/PSVE
BPS1-AR002-ST04 DUP	3/1/2010	SSD Stack	PSSD/PSVE
BPS1-AR003-INDL-4	3/3/2010	Living Space	PSSD/PSVE
BPS1-AR003-INDB-4	3/3/2010	Basement	PSSD/PSVE
BPS1-AR003-ST04	3/2/2010	SSD Stack	PSSD/PSVE
BPS1-AR004-INDB-4	3/3/2010	Basement	PSSD/PSVE
BPS1-AR004-INDB-4 DUP	3/3/2010	Basement	PSSD/PSVE
BPS1-AR004-ST04	3/2/2010	SSD Stack	PSSD/PSVE
BPS1-AR006-INDB-4	3/4/2010	Basement	PSSD/PSVE
BPS1-AR007-INDB-3	3/3/2010	Basement	PUS/PSVE
BPS1-AR010-INDB-3	3/3/2010	Basement	PUS/PSVE
BPS1-AR012-INDB-3	3/3/2010	Basement	PUS/PSVE
BPS1-AR013-INDB-4	3/3/2010	Basement	PSSD/PSVE
BPS1-AR013-ST04	3/2/2010	SSD Stack	PSSD/PSVE
BPS1-AR014-INDB-2	3/2/2010	Basement	PSSD/PSVE
BPS1-AR014-ST04	3/1/2010	SSD Stack	PSSD/PSVE

Notes:
DUP = Duplicate Sample
INDB = Basement Indoor Air
INDL = Living Space Indoor Air
ODA = Outdoor Air
PUS : Post Air Purification Unit Installation Sampling
PSSD = Post SSD Startup Sampling
PSVE = Post Soil Vapor Extraction system startup
SSD = Sub-slab Depressurization System
ST = Stack

Table 3-1
Analytical Summary - Home #1
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR001-IND	1/20/2009	Living Space	IS	2.2	10.0	2.1
BPS1-AR001-IND2	2/24/2009	Living Space	PUS	0.44	2.2	0.87
BPS1-AR001-INDL-01	6/24/2009	Living Space	PUS	0.93	2.4	0.38 J
BPS1-AR001-INDL-02	11/19/2009	Living Space	PUS	ND	0.77	ND
BPS1-AR001-INDL-02 DUP	11/19/2009	Living Space	PUS	ND	0.72	ND
BPS1-AR001-INDL-3	3/4/2010	Living Space	PUS/PSVE	ND	0.22 J	ND
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR001-SSB	1/20/2009	Subslab	IS	160	520	660
BPS1-AR001-SSB DUP	1/20/2009	Subslab	IS	160	550	690

Notes:
TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J : Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2

Table 3-2
Analytical Summary - Home #2
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR002-IND2	2/19/2009	Living Space	IS	**100**	4.9	73
BPS1-AR002-IND4	3/24/2009	Living Space	PUS	3.1	0.91	4.8
BPS1-AR002-INDL	6/23/2009	Living Space	PSSD	**9.2**	0.34 J	25
BPS1-AR002-INDL-02	8/26/2009	Living Space	PSSD	3.4	0.41 J	0.87
BPS1-AR002-INDL-03	11/17/2009	Living Space	PSSD	2.7	ND	ND
BPS1-AR002-INDL-4	3/2/2010	Living Space	PSSD/PSVE	1.4	ND	1.3
BPS1-AR002-IND	1/21/2009	Basement	IS	**140**	7.6	92
BPS1-AR002-IND3	2/24/2009	Basement	PUS	**46**	2.1	42
BPS1-AR002-IND5	3/24/2009	Basement	PUS	4.2	ND	11
BPS1-AR002-INDB	6/23/2009	Basement	PSSD	**61**	0.96	77
BPS1-AR002-INDB-02	8/26/2009	Basement	PSSD	**41**	1.6	4.2
BPS1-AR002-INDB-03[(1)]	11/17/2009	Basement	PSSD[(2)]	ND	ND	2.5
BPS1-AR002-INDB-03 DUP	11/17/2009	Basement	PSSD	0.24 J	0.41 J	2
BPS1-AR002-INDB-4	3/2/2010	Basement	PSSD/PSVE	0.20 J	ND	2.9
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR002-SSB	1/21/2009	Subslab	IS	**16,000**	310	**15,000**
SSD STACK SAMPLES						
BPS1-AR002-ST01	6/22/2009	SSD Stack	PSSD	**11,000**	280	**5,900**
BPS1-AR002-ST02	8/25/2009	SSD Stack	PSSD	**12,000**	460	**5,300**
BPS1-AR002-ST02 DUP	8/25/2009	SSD Stack	PSSD	**12,000**	500	**5,400**
BPS1-AR002-ST03	11/16/2009	SSD Stack	PSSD	**9,900**	330	**3,800**
BPS1-AR002-ST04	3/1/2010	SSD Stack	PSSD/PSVE	11	2.4	1.7
BPS1-AR002-ST04 DUP	3/1/2010	SSD Stack	PSSD/PSVE	12	2.4	1.9

Notes:

TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
SSB = Sub-slab Sample
ST = SSD Stack sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
PSSD = Post Sub-slab Depressurization (SSD) System Startup Sampling, APU also operating
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)
(1) In September 2009, basement APU was moved from western portion of basement to a more central location in basement to facilitate better air circulation and filtration of basement air.
(2) After sample collection in November 2009, the SSD system fan was upgraded to increase the vacuum under the sub-slab of Home #2.

Table 3-3
Analytical Summary - Home #3
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR003-IND2	2/18/2009	Living Space	IS	**110**	3.1	74
BPS1-AR003-IND5	3/12/2009	Living Space	PUS	2.8	ND	5.2
BPS1-AR003-IND5 DUP	3/12/2009	Living Space	PUS	3.0	ND	5.5
BPS1-AR003-INDL-01	6/23/2009	Living Space	PSSD	**16**	2.4	30
BPS1-AR003-INDL-02	8/26/2009	Living Space	PSSD	**10**	0.43 J	5.2
BPS1-AR003-INDL-03	11/17/2009	Living Space	PSSD	1.1	ND	5.2
BPS1-AR003-INDL-4	3/3/2010	Living Space	PSSD/PSVE	0.64	ND	3.7
BPS1-AR003-IND	1/22/2009	Basement	IS	**180**	4.3	95
BPS1-AR003-IND DUP	1/22/2009	Basement	IS	**180**	4.2	98
BPS1-AR003-IND3	2/26/2009	Basement	PUS	**34**	0.75	27
BPS1-AR003-IND3 DUP	2/26/2009	Basement	PUS	**31**	0.72	27
BPS1-AR003-IND4	3/12/2009	Basement	PUS	**32**	0.49 J	41
BPS1-AR003-INDB	4/30/2009	Basement	PUS	**52**	0.38 J	65
BPS1-AR003-INDB DUP	4/30/2009	Basement	PUS	**50**	0.54	64
BPS1-AR003-INDB-01	6/23/2009	Basement	PSSD	**79**	1.1	19
BPS1-AR003-INDB-02	8/26/2009	Basement	PSSD	**27**	1.3	4
BPS1-AR003-INDB-03	11/17/2009	Basement	PSSD [(1)]	**5.1**	0.58	0.78
BPS1-AR003-INDB-4	3/3/2010	Basement	PSSD/PSVE	ND	ND	ND
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR003-SSB	1/22/2009	Subslab	IS	**13,000**	130	**10,000**
BPS1-AR003-SSB2	8/26/2009	Subslab	PSSD	**260**	3.7	38
SSD STACK SAMPLES						
BPS1-AR003-ST01	6/22/2009	SSD Stack	PSSD	**7,700**	92	**3,600**
BPS1-AR003-ST02	8/25/2009	SSD Stack	PSSD	**10,000**	170	**4,200**
BPS1-AR003-ST03	11/16/2009	SSD Stack	PSSD	**6,200**	64	**2,900**
BPS1-AR003-DUP02	11/16/2009	SSD Stack	PSSD	**5,400**	61	**2,200**
BPS1-AR003-ST04	3/2/2010	SSD Stack	PSSD/PSVE	3.8	0.82	0.98

Notes:

TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
ST = SSD Stack sample
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
PSSD = Post Sub-slab Depressurization (SSD) System Startup Sampling, APU also operating
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)
[(1)] After sample collection in November 2009, the SSD system fan was upgraded to increase the vacuum under the sub-slab of Home #3.

Table 3-4
Analytical Summary - Home #4
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR004-IND2	1/21/2009	Basement-APT	IS	2.9	2.2	2.7
BPS1-AR004-IND3	2/18/2009	Living Space	IS	**6.1**	0.82 J	6.2
BPS1-AR004-IND5	3/24/2009	Living Space	PUS	1.1	ND	1.2
BPS1-AR004-IND	1/21/2009	Basement	IS	**6.8**	ND	6.4
BPS1-AR004-IND4	2/26/2009	Basement	PUS	1.2	ND	1.6
BPS1-AR004-INDB-01	6/26/2009	Basement	PSSD	3	0.43 J	4.3
BPS1-AR004-INDB-01 DUP	6/26/2009	Basement	PSSD	3.3	ND	4.7
BPS1-AR004-INDB-02	8/26/2009	Basement	PSSD	1.5	ND	0.55
BPS1-AR004-INDB-03**	11/18/2009	Basement	PSSD	0.93	ND	ND
BPS1-AR004-INDB-4	3/3/2010	Basement	PSSD/PSVE	0.40 J	ND	ND
BPS1-AR004-INDB-4 DUP	3/3/2010	Basement	PSSD/PSVE	0.38 J	ND	ND
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR004-SSB	1/21/2009	Subslab	IS	**1,400**	42	**2,100**
SSD STACK SAMPLES						
BPS1-AR004-ST01	6/25/2009	SSD Stack	PSSD	160	2	190
BPS1-AR004-ST01 DUP	6/25/2009	SSD Stack	PSSD	160	1.7	180
BPS1-AR004-ST02	8/25/2009	SSD Stack	PSSD	**360**	31	210
BPS1-AR004-ST03	11/17/2009	SSD Stack	PSSD	**300**	17	140
BPS1-AR004-ST04	3/2/2010	SSD Stack	PSSD/PSVE	1.8	1.5	0.21 J

Notes:

TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PSSD = Post Sub-slab Depressurization (SSD) System Startup Sampling, APU also operating
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)
** Indoor air sample may have been influenced by outdoor air concentrations detected in BPS1-AR012-ODA-2

ST = SSD Stack sample
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J : Estimated Value

Table 3-5
Analytical Summary - Home #6
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR006-IND2	2/19/2009	Living Space	IS	**6.6**	8.8	8.8
BPS1-AR006-IND4	3/24/2009	Living Space	PUS	1.2	1.6	7.0
BPS1-AR006-IND	2/19/2009	Basement	IS	**43**	56	40
BPS1-AR006-IND3	2/26/2009	Basement	PUS	2.1	2.4	2.4
BPS1-AR006-INDB-01	6/25/2009	Basement	PSSD	**13**	2.7	50
BPS1-AR006-INDB-02	8/27/2009	Basement	PSSD	**13**	6.8	2.6
BPS1-AR006-INDB-02 DUP	8/27/2009	Basement	PSSD	**14**	7.7	2.8
BPS1-AR006-INDB-03	11/17/2009	Basement	PSSD[(1)]	ND	0.35 J	1.3
BPS1-AR006-INDB-4	3/4/2010	Basement	PSVE[(2)]	0.48 J	1.9	0.21 J
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR006-SSB	2/19/2009	Subslab	IS	**740**	650	**1,600**
SSD STACK SAMPLES						
BPS1-AR006-ST01	6/24/2009	SSD Stack	PSSD	**600**	890	490
BPS1-AR006-ST02	8/26/2009	SSD Stack	PSSD	**720**	**1,600**	550
BPS1-AR006-ST03	11/17/2009	SSD Stack	PSSD	**520**	**1,200**	320

Notes:
TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PSSD = Post Sub-slab Depressurization (SSD) System Startup Sampling, APU also operating
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
ST = SSD Stack sample
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)
(1) APU in basement of Home #6 was removed at the homeowner's request after sample collection in November 2009.
(2) At the homeowner's request, and with NYSDEC and NYSDOH concurrence, the SSD system at Home #6 was removed in January 2010.

Table 3-6
Analytical Summary - Home #7
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR007-IND2	2/20/2009	Living Space	IS	0.40	1.6	0.51
BPS1-AR007-IND	2/20/2009	Basement	IS	0.75	3.2	1.0
BPS1-AR007-IND3	3/25/2009	Basement	PUS	0.2 J	0.90	0.47
BPS1-AR007-INDB-01	6/24/2009	Basement	PUS	0.4 J	1.20	0.29 J
BPS1-AR007-INDB-02	11/18/2009	Basement	PUS	ND	0.55 J	ND
BPS1-AR007-INDB-3	3/3/2010	Basement	PUS/PSVE	ND	0.28 J	ND
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR007-SSB	2/20/2009	Subslab	IS	170	310	370

Notes:
TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)

Table 3-7
Analytical Summary - Home #10
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR010-IND2	2/25/2009	Living Space	IS	ND	2.1	0.58 J
BPS1-AR010-IND	2/25/2009	Basement	IS	2.9	16	3.9
BPS1-AR010-IND3	3/24/2009	Basement	PUS	1.5	7.4	2.2
BPS1-AR010-IND3 DUP	3/24/2009	Basement	PUS	1.2	6.60	2.2
BPS1-AR010-INDB-01	6/24/2009	Basement	PUS	2.1	4.1	4.8
BPS1-AR010-INDB-02	11/17/2009	Basement	PUS	0.57	2.5	0.44 J
BPS1-AR010-INDB-3	3/3/2010	Basement	PUS/PSVE	ND	ND	ND
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR010-SSB2	2/26/2009	Subslab	IS	**300**	670	590

Notes:
TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)

Table 3-8
Analytical Summary - Home #12
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR012-IND2	2/26/2009	Living Space	IS	ND	0.83 J	0.81 J
BPS1-AR012-IND	2/26/2009	Basement	IS	0.55	0.85	2.2
BPS1-AR012-IND3	3/25/2009	Basement	PUS	0.21 J	ND	1.0
BPS1-AR012-INDB-01	6/24/2009	Basement	PUS	0.22 J	0.72	3.0
BPS1-AR012-INDB-02	11/18/2009	Basement	PUS	ND	0.49 J	0.69
BPS1-AR012-INDB-3	3/3/2010	Basement	PUS/PSVE	ND	25[(1)]	1.0
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR012-SSB	2/26/2009	Subslab	IS	94	19	330

Notes:
TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup system startup
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)
[(1)] Elevated concentration of PCE may be due to chemical storage in the basement of Home #12 or other background source in the home. Chemical storage and other potential background sources will be evaluated during the next sampling event at Home #12.

Table 3-9
Analytical Summary - Home #13
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR013-IND2	2/26/2009	Living Space	IS	ND	0.58 J	0.9 J
BPS1-AR013-IND	2/26/2009	Basement	IS	1.5	0.56	2.3
BPS1-AR013-IND3	3/24/2009	Basement	PUS	0.50	ND	1.2
BPS1-AR013-INDB-01	6/25/2009	Basement	PSSD	1.9	0.28 J	0.32 J
BPS1-AR013-INDB-02	8/26/2009	Basement	PSSD	0.67	0.43 J	ND
BPS1-AR013-INDB-03**	11/17/2009	Basement	PSSD	0.63	ND	ND
BPS1-AR013-INDB-4	3/3/2010	Basement	PSSD/PSVE	ND	ND	ND
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR013-SSB	2/26/2009	Subslab	IS	230	11	420
BPS1-AR013-SSB DUP	2/26/2009	Subslab	IS	250	12	440
SSD STACK SAMPLES						
BPS1-AR013-ST01	6/24/2009	SSD Stack	PSSD	70	68	84
BPS1-AR013-ST02	8/25/2009	SSD Stack	PSSD	48	8.6	58
BPS1-AR013-ST03	11/16/2009	SSD Stack	PSSD	29	4.8	30
BPS1-AR013-ST04	3/2/2010	SSD Stack	PSSD/PSVE	1.1	1.3	1.8

Notes:
TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PSSD = Post Sub-slab Depressurization (SSD) System Startup Sampling, APU also operating
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
ST = SSD Stack sample
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)
** Indoor air sample may have been influenced by outdoor air concentrations detected in BPS1-AR012-ODA-2

Table 3-10
Analytical Summary - Home #14
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE (µg/m^3)	PCE (µg/m^3)	TCA (µg/m^3)
INDOOR AIR SAMPLES		**NYSDOH Air Guideline Value**		5	100	100*
BPS1-AR014-IND2	3/11/2009	Living Space	IS	0.73	0.36 J	1.3
BPS1-AR014-IND	3/11/2009	Basement	IS	1.9	0.46 J	2.6
BPS1-AR014-IND3	3/25/2009	Basement	PUS	ND	ND	0.41 J
BPS1-AR014-INDB-1**	11/18/2009	Basement	PSSD	0.37 J	0.34 J	ND
BPS1-AR014-INDB-2	3/2/2010	Basement	PSSD/PSVE	ND	0.94	ND
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline Value**		250*	1,000*	1,000*
BPS1-AR014-SSB	3/11/2009	Subslab	IS	**290**	15	970
SSD STACK SAMPLES						
BPS1-AR014-ST01	6/24/2009	SSD Stack	PSSD	88	13	110
BPS1-AR014-ST02	8/26/2009	SSD Stack	PSSD	30	10	43
BPS1-AR014-ST03	11/17/2009	SSD Stack	PSSD	12	5.3	13
BPS1-AR014-ST04	3/1/2010	SSD Stack	PSSD/PSVE	1	1.6	0.95

Notes:
TCE = Trichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
INDB = Basement indoor air sample
INDL = Living Space indoor air sample
IS = Initial Sampling
PSSD = Post Sub-slab Depressurization (SSD) System Startup Sampling, APU also operating
PUS = Post Air Purification Unit (APU) Installation Sampling
PSVE = Post Soil Vapor Extraction system startup
ST = SSD Stack sample
SSB = Sub-slab Sample
ND = not detected
µg/m^3 = micrograms per cubic meter
J = Estimated Value
BOLD = Concentration exceeds NYSDOH Guideline value
* Value derived from Table 3.3 (Matrix 1 and 2), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)
**Indoor air sample may have been influenced by outdoor air concentrations detected in BPS1-AR012-ODA-2

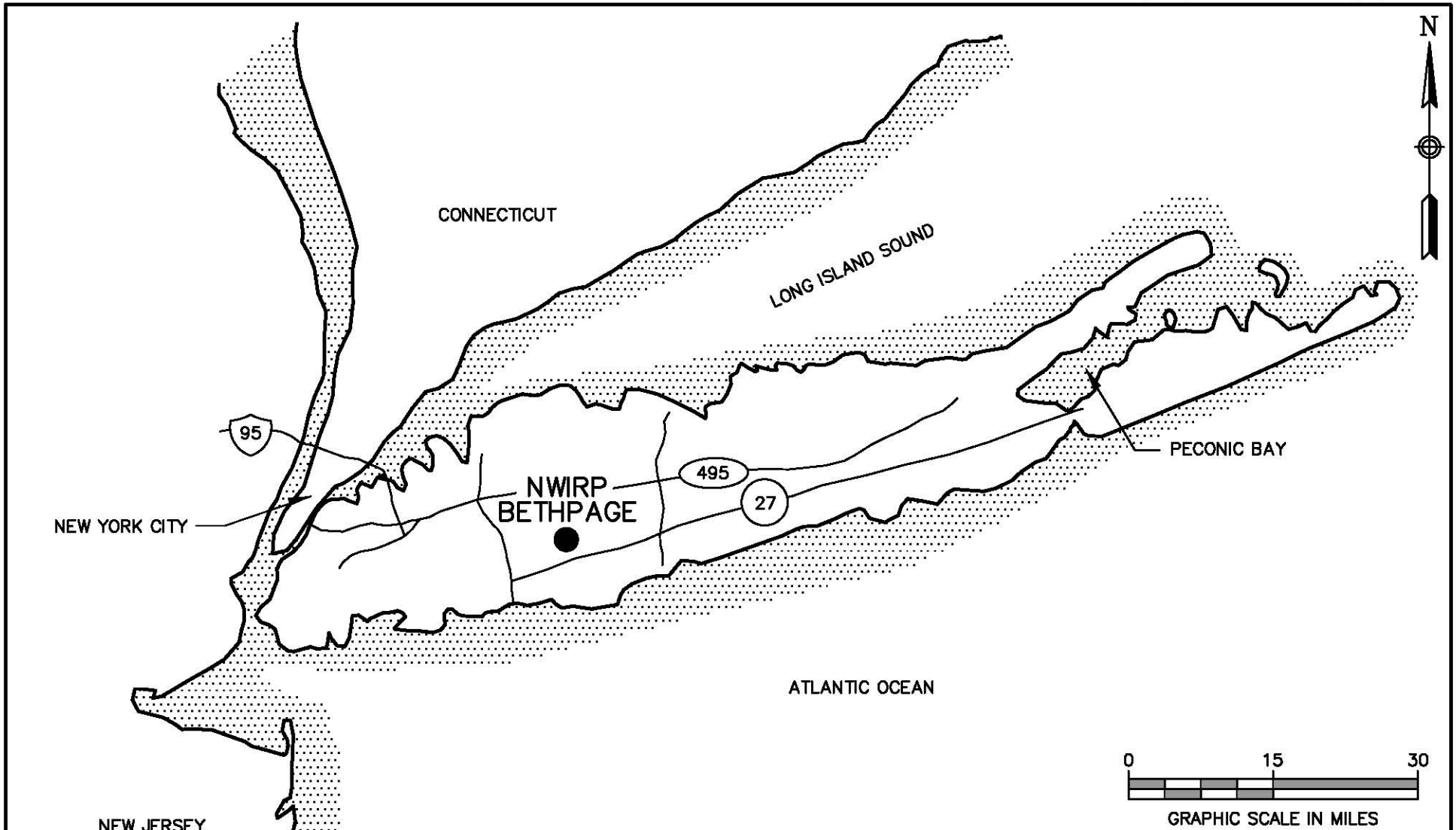
Table 3-11
Analytical Summary - Outdoor Air Sampling
NWIRP Bethpage, New York

Sample ID Sample Collection Date	**BPS1-AR002-ODA-4** 20100302	**BPS1-AR007-ODA-3** 20100303	**BPS1-AR013-ODA-4** 20100303	**BPS1-AR001-ODA-3** 20100304	**BPS1-AR006-ODA-4** 20100304	**Frequency of Detections**	**Range of Detections**
Volatile Organics (ug/m^3)							
1,1,1-TRICHLOROETHANE	0.4 U	0.59 U	0.56 U	0.38 U	0.43 U	0 of 5	ND
1,1-DICHLOROETHANE	0.59 U	0.88 U	0.83 U	0.56 U	0.64 U	0 of 5	ND
1,1-DICHLOROETHENE	0.58 U	0.86 U	0.82 U	0.55 U	0.63 U	0 of 5	ND
1,2-DICHLOROETHANE	0.59 U	0.88 U	0.83 U	0.56 U	0.64 U	0 of 5	ND
CIS-1,2-DICHLOROETHENE	0.58 U	0.86 U	0.82 U	0.55 U	0.63 U	0 of 5	ND
TETRACHLOROETHENE	0.5 U	0.74 U	0.7 U	0.47 U	0.54 U	0 of 5	ND
TRANS-1,2-DICHLOROETHENE	0.58 U	0.86 U	0.82 U	0.55 U	0.63 U	0 of 5	ND
TRICHLOROETHENE	0.39 U	0.58 U	0.55 U	0.37 U	0.42 U	0 of 5	ND
VINYL CHLORIDE	0.37 U	0.55 U	0.53 U	0.36 U	0.4 U	0 of 5	ND

Notes:
Sample collection date indicates the day of collection. Samples ran for 24 hours prior to collection.
µg/m^3 = micrograms per cubic meter
U = Non-Detect (ND) Value
J = Estimated Value

FIGURES

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

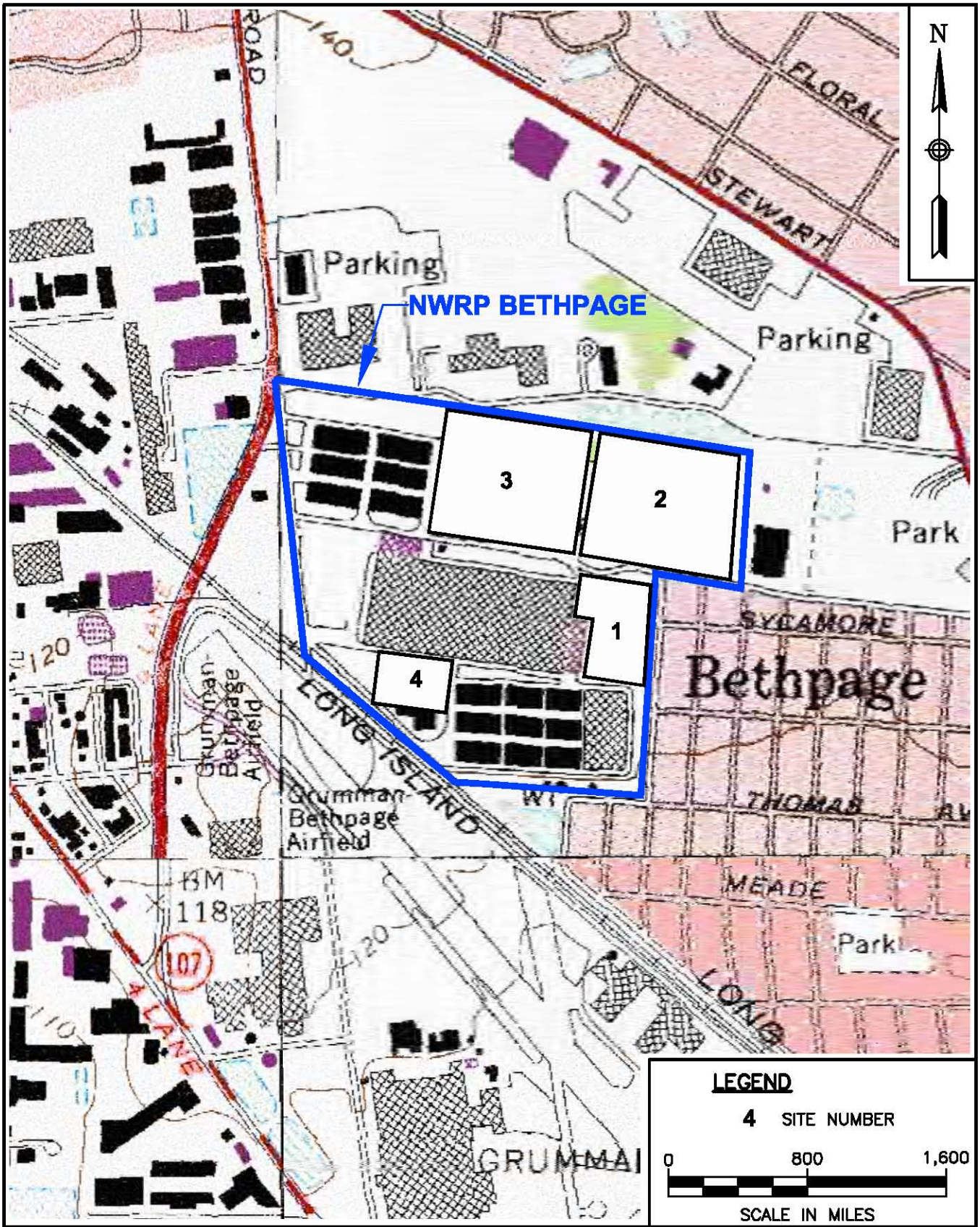


TETRA TECH NUS, INC.

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

APPENDICES

APPENDIX A

AIR SAMPLING LOG SHEETS

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

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

Sample ID No.: BPS1-AR001-INDL-3
Sample Location: Home # 1
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-4-10						
Time: 1720						
Method: Summa Canister	—	—	—	—	—	—

Summa Canister #	1620
Filter Type/Flow	24 hour

Duplicate (if collected)

NA	

Start Time Vacuum	1725	in Hg -33	3-3-10
End Time Vacuum	1720	in Hg -9	3-4-10

		in Hg
		in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading	
E-Meter	NA	Kwh
HEPA Life	2654	hours
Carbon Life	3904	hours

Speed #2

SSD	Reading	
E-Meter	NA	Kwh
Flow rate	NA	cfm

Notes:

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

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

Sample ID No.: BPS1-AR002-INDB-4
Sample Location: Home # 2
Sampled By: RS / VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-2-10						
Time: 1703						
Method: Summa canister	—	—	—	—	—	—

Summa Canister #	34006
Filter Type/Flow	24-hour

Duplicate (if collected)

NA	

Start Time Vacuum	1643	in Hg -29
End Time Vacuum	1703	in Hg -8.0

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading	
E-Meter	B- 686	Kwh
HEPA Life	3190	hours
Carbon Life	9491	hours
	14857 (Post)	

SSD	Reading	
E-Meter	NA	Kwh
Flow rate	NA	cfm

Notes:

Resident states that basement APU unit is rattling. Checked out, tightened screws, Seems quiet after Fix.

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

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

Sample ID No.: BPS1-AR002-INDL-4
Sample Location: Home # 2
Sampled By: RS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-2-10						
Time: 1655						
Method: Somma canister	—	—	—	—	—	—

Summa Canister #	35287	
Filter Type/Flow	24-hour	
Start Time Vacuum	~~-32~~ 1650 VAS	in Hg -32
End Time Vacuum	1655	in Hg -7.5

Duplicate (if collected)

NA	
	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading		SSD	Reading	
E-Meter	NA	Kwh	E-Meter	NA	Kwh
HEPA Life	2312	hours	Flow rate	NA	cfm
Carbon Life	4532	hours			

Notes:
upstairs sample

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

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

Sample ID No.: BPS1-AR002-ST04
Sample Location: Home #2
Sampled By: VAS / RS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-1-10						
Time: 1705						
Method: Summa Canister	—	—	—	—	—	—

Summa Canister #	3750	
Filter Type/Flow	½ hour	
	1630 (3-1-10)	
Start Time Vacuum	~~30~~ VAS	in Hg - 30
End Time Vacuum	1705	in Hg - 5.5

Duplicate (if collected)

BPS1-DUP-01	
Canister # 34321	
1630 (3-1-10)	
~~30~~ VAS	in Hg - 30
1705	in Hg - 5.5

Dup-01 Time marked as 1600 hours on sample Tag.

He check	Start	Stop	Reading
NA →			→

Purge Data	Start	Stop	Notes:
NA →		→	

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

APU	Reading		SSD	Reading	
E-Meter	NA	Kwh	E-Meter	393	Kwh
HEPA Life	↓	hours	Flow rate	179 - 235	~~cfm~~ feet/min
Carbon Life		hours			

Notes:

Stack PID reading prior to sample collection → 0.0 ppm

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

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

Sample ID No.: BPS1-AR003-INDB-4
Sample Location: Home # 3
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1159						
Method: Summa	—	—	—	—	—	—

Summa Canister #	94603
Filter Type/Flow	24hr

Duplicate (if collected)

NA	

Start Time Vacuum	1245	in Hg -30	3-2-10
End Time Vacuum	1159	in Hg -6.5	3-3-10

		in Hg
		in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

Readings:
Liters/minute

@
NA @
@

*See APU Log for details on HEPA & Carbon change out 3-2-10

Notes:

Basement Sample

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

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

Sample ID No.: BPS1-AR603-TN064
Sample Location: Home # 3
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3/3/10						
Time: 1157						
Method: Summa	—	—	—	—	—	—

Summa Canister #	10771	
Filter Type/Flow	24 hr	
	3/2/10	
Start Time Vacuum	1230	in Hg - 28.5
End Time Vacuum	1157	in Hg - 8.5

Duplicate (if collected)

NA	
↓	
	in Hg
↓	in Hg

He check	Start	Stop	Reading
NA →			→

Purge Data	Start	Stop	Notes:
NA →		→	

Readings:

Liters/minute

NA @ _____
_____ @ _____
_____ @ _____

HEPA replaced

APU	Reading		SSD	Reading	
E-Meter	698	Kwh	E-Meter	NA	Kwh
HEPA Life	3100	hours	Flow rate	NA	cfm
Carbon Life	6590	hours			

Notes:

upstairs sample

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

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

Sample ID No.: BPS1- AR003 - SJ04
Sample Location: Home # 3
Sampled By: VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-2-10						
Time: 1333						
Method: Summa	—	—	—	—	—	—

Summa Canister #	946
Filter Type/Flow	30min

Duplicate (if collected)

NA	

Start Time Vacuum	1256	in Hg -32
End Time Vacuum	1333	in Hg - 6.0

3-2-10

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading	
E-Meter	NA	Kwh
HEPA Life	NA	hours
Carbon Life	NA	hours

SSD	Reading	
E-Meter	470	Kwh
Flow rate	See below	~~cfm~~ ft/min

289, 294, 314, 321, 344, 306, 348, 335, 325, 317

Notes:

PID reading 0.0 ppm on stack prior to sample collection

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

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

Sample ID No.: BPS7-AR004-INDB-4
Sample Location: Home # 4
Sampled By: RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1702						
Method: Summa	—	—	—	—	—	—

Summa Canister #	35972
Filter Type/Flow	24hr

Duplicate (if collected)

12017	
24hr	

BPS1-DUP-02
2400 time on Summa

Start Time Vacuum	1658	in Hg -29
End Time Vacuum	1702	in Hg -7

3-2-10

1658	in Hg -32
1702	in Hg -11

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading		SSD	Reading	
E-Meter	NA	Kwh	E-Meter	NA	Kwh
HEPA Life	580	hours	Flow rate	NA	cfm
Carbon Life	990	hours			

HEPA Life → 3100
Carbon Life → 10800
Speed #3

3/2/10 Speed #3 @1650 *Changed HEPA & Carbon on 3-3-10

Notes:
Located samples in south central portion of the basement

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

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

Sample ID No.: BPS1-AR004-ST04
Sample Location: Home # 4
Sampled By: VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-2-10						
Time: 1645						
Method: Summa cannister	—	—	—	—	—	—

Summa Canister #	5760
Filter Type/Flow	30 minute

Duplicate (if collected)

NA	
↓	

Start Time Vacuum	1614	in Hg - 30
End Time Vacuum	1645	in Hg - 5.0

	in Hg
↓	in Hg

He check	Start	Stop	Reading
NA →			

Purge Data	Start	Stop	Notes:
NA →			

Readings:

Liters/minute

NA @ _____
_____ @ _____
_____ @ _____

APU	Reading	
E-Meter	NA	Kwh
HEPA Life	↓	hours
Carbon Life	↓	hours

SSD	Reading	
E-Meter	NA	Kwh
Flow rate	175, 197, 209, 217, 222, 224, 218, 230, 233.	cfm

Notes:

Stack PID reading → 0.0 ppm prior to sampling

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

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

Sample ID No.: BPS1-AR006-INDB-4
Sample Location: Home # 6
Sampled By: RS / VAS

SAMPLING DATA:

Date: 3-4-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 0857						
Method: Summa Canister	–	–	–	–	–	–

Summa Canister #	5713
Filter Type/Flow	24 hour

Duplicate (if collected)

NA	

Start Time Vacuum	0900	in Hg -30
End Time Vacuum	0857	in Hg -8

		in Hg
		in Hg

He check	Start	Stop	Reading
NA →		→	

Purge Data	Start	Stop	Notes:
NA →		→	

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

APU	Reading		SSD	Reading	
E-Meter	NA	Kwh	E-Meter	NA	Kwh
HEPA Life	↓	hours	Flow rate	↓	cfm
Carbon Life	↓	hours			

Notes:

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

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

Sample ID No.: BPS7-AR007-INAB-3
Sample Location: Home # 7
Sampled By: RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1310						
Method: Summa	—	—	—	—	—	—

Summa Canister #	34502
Filter Type/Flow	24hr

Duplicate (if collected)

NA	
↓	

Start Time Vacuum	1312	in Hg-31	3-2-10
End Time Vacuum	1310	in Hg-8.5	3-3-10

		in Hg
↓		in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

Readings:
Liters/minute
NA
@
@
@

Notes:

	APU	Reading		SSD	Reading	
	E-Meter	712	Kwh	E-Meter	NA	Kwh
(New)	HEPA Life	3100	hours	Flow rate	NA	cfm
	Carbon Life	8244	hours			
	speed #3					

Basement sample

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

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

Sample ID No.: BP51-AR010-INDB-3
Sample Location: Home # 10
Sampled By: RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1805						
Method: Summa	—	—	—	—	—	—

Summa Canister #	4248
Filter Type/Flow	24hr

Duplicate (if collected)

NA	

Start Time Vacuum	1810	in Hg ~30	3-2-10
End Time Vacuum	1805	in Hg - 8	3-3-10

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading 3-2-10	
E-Meter	NA	Kwh
HEPA Life	1249	hours
Carbon Life	632	hours

* HEPA & Carbon replaced on 3-3-10

SSD	Reading	
E-Meter	NA	Kwh
Flow rate	NA	cfm

HEPA Life = 3100
Carbon Life = 10800
Speed #3

Notes:

Resident has had APU off since ~2/12/10

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

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

Sample ID No.: BPS1-AR012-IND8-3
Sample Location: Home # 12
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1330						
Method: Summa	—	—	—	—	—	—

Summa Canister #	5621
Filter Type/Flow	24hr

Duplicate (if collected): NA

Start Time Vacuum	1402	in Hg -30	3-2-10
End Time Vacuum	1330	in Hg -8.5	3-3-10

		in Hg
		in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

Readings:
Liters/minute
@
NA @
@

APU	Reading	
E-Meter	NA	Kwh
HEPA Life	2339	hours
Carbon Life	7184	hours

Speed #3

SSD	Reading	
E-Meter	NA	Kwh
Flow rate	NA	cfm

Notes:

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

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

Sample ID No.: BP57-AR013-INDB-4
Sample Location: Home # 13
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1605						
Method: Summa	—	—	—	—	—	—

Summa Canister #	35167
Filter Type/Flow	24 hr

Duplicate (if collected)

NA	

Start Time Vacuum	1547	in Hg -30
End Time Vacuum	1605	in Hg -7

3-2-10

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading		SSD	Reading	
E-Meter	NA	Kwh	E-Meter	NA	Kwh
HEPA Life	3100	hours	Flow rate	NA	cfm
Carbon Life	10800	hours			

changed on 3-3-10

Notes:

APU has not been in use full time. Resident remodeling basement and new walls have been installed partitioning the basement. Indoor air sample was collected in northern portion of basement.

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

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

Sample ID No.: BPS1-AR013-ST04
Sample Location: Home # 13
Sampled By:

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1550						
Method: Summa canister	—	—	—	—	—	—

Summa Canister #	13865
Filter Type/Flow	30 minute

Duplicate (if collected)

NA	

Start Time Vacuum	1516	in Hg - 30
End Time Vacuum	1550	in Hg - 6.0

	in Hg
	in Hg

He check	Start	Stop	Reading
NA →			

Purge Data	Start	Stop	Notes:
NA →			

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

APU	Reading	
E-Meter	NA	Kwh
HEPA Life	↓	hours
Carbon Life		hours

SSD	Reading	
E-Meter	NA	Kwh
Flow rate	269, 284, 292, 307, 325, 329, 321, 330, 326	cfm

Notes:

PID reading on stack → 0.0 ppm prior to sampling

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

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

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

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-2-10						
Time: 1505						
Method: Summa Canister	—	—	—	—	—	—

Summa Canister #	9557	
Filter Type/Flow	24-hour (3-1-10)	
Start Time Vacuum	1505	in Hg -28.5
End Time Vacuum	1505	in Hg -4

Duplicate (if collected)

NA	
	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

Readings:
Liters/minute
NA @
@
@

HEPA 1702 hrs remaining life (settings on speed #4)
Carbon/Post 1704 hrs remaining life

Notes:

*APU in basement was turned off on arrival. (Unknown how long it has been off)

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

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

Sample ID No.: BPS1-AR014-ST04
Sample Location: Home # 14
Sampled By: VAS / RS

SAMPLING DATA:

Date: 3-1-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1547						
Method: Summa Canister	—	—	—	—	—	—

Summa Canister #	34031
Filter Type/Flow	½ hour

Start Time Vacuum	1509 (3-1-10) ~~3.3~~ VAS	in Hg - 3.3
End Time Vacuum	1547	in Hg -- 6

Duplicate (if collected)

NA	

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading	
E-Meter	NA	Kwh
HEPA Life		hours
Carbon Life		hours

SSD	Reading	
E-Meter	377 kwH	Kwh
Flow rate	270-315	~~cfm~~ Feet/min

Notes:

Stack PID reading prior to sample collection → 0.0 ppm

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

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

Sample ID No.: BPSI-AR001-ODA-3
Sample Location: Home # 1
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-4-10						
Time: 1725						
Method: Summa Cannister	0-5mph ~15mph gusts	South+West	~36°F	29.7	21	overcast

Summa Canister #	34729
Filter Type/Flow	24 hour

Duplicate (if collected)

	NA

Start Time Vacuum	1730	in Hg -31	3-3-10
End Time Vacuum	1725	in Hg -3.5	3-4-10

		in Hg
		in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading		SSD	Reading	
E-Meter	NA	Kwh	E-Meter	NA	Kwh
HEPA Life		hours	Flow rate		cfm
Carbon Life		hours			

Notes:

Outdoor air sample was collected in the northwest portion of the backyard.

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

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

Sample ID No.: BPS1-AR002-00A-4
Sample Location: Home # 2
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-2-10						
Time: 1711						
Method: Summa Canister	~10 to 20 mph	NW	~40°F	29.85	65	clear

Summa Canister #	4199	
Filter Type/Flow	24-hour (3-1-10)	
Start Time Vacuum	1645	in Hg - 30
End Time Vacuum	1711	in Hg - 4.0

Duplicate (if collected)

NA	
	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading	
E-Meter		Kwh
HEPA Life		hours
Carbon Life		hours

SSD	Reading	
E-Meter		Kwh
Flow rate		cfm

Notes:

Out door PID reading → 0.0 ppm
- Sampler placed at North Central portion of backyard (Home #2)

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

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

Sample ID No.: BPS1-AR006-QDA-4
Sample Location: Home # 6
Sampled By: RS / VAS

SAMPLING DATA:

Date: 3-4-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 0855						
Method: Somma Canister	North	~15 mph	30°F	29.62	55	light snow

Summa Canister #	94944
Filter Type/Flow	24 hour

Duplicate (if collected)

NA	

Start Time Vacuum	0905	in Hg -31
End Time Vacuum	0855	in Hg -7

		in Hg
		in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

APU	Reading		SSD	Reading	
E-Meter	NA	Kwh	E-Meter	NA	Kwh
HEPA Life		hours	Flow rate		cfm
Carbon Life		hours			

Notes:

- Sample placed at North central section of back yard.

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

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

Sample ID No.: BP51-AR007-OAA-3
Sample Location: Home # 7
Sampled By: RMS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1315						
Method: Summa	Calm to 5mph	SE	~50°F	29.51	76	light rain

Summa Canister #	5628
Filter Type/Flow	24hr

Duplicate (if collected)

NA	

Start Time Vacuum	1333	in Hg -29.5	3-2-10
End Time Vacuum	1315	in Hg -13	3-3-10

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

Readings:
Liters/minute
NA @
@
@

Notes:
- Sample located in Southeast corner of back yard.

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

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

Sample ID No.: BPS7 - AR013 - ~~00~~A - 4
Sample Location: Home # 13
Sampled By: RMS/VAS

SAMPLING DATA:

	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Date: 3-3-10						
Time: 1628						
Method: Summa	Fairly Calm slight SE	~SSE	~35°F	29.5	68	light rain

Summa Canister #	05713	
Filter Type/Flow	24hr	
Start Time Vacuum	1530	in Hg – 30.5 3-2-10
End Time Vacuum	1628	in Hg. – 12 3-3-11

Duplicate (if collected)

NA	
	in Hg
↓	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

Readings:
Liters/minute

NA @ ___
@ ___
@ ___

Notes:

SW corner of backyard

APPENDIX B

CHAIN OF CUSTODY RECORDS

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

Project Manager: Dave Brayack
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: 757-466-4904 Fax:

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

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)
01A	BPS1-AR014-ST04	34031	3-1-10	1547	TO-15 (short list)	-33	-6		
02A	BPS1-AR002-ST04	3750	3-1-10	1705		-30	-5.5		
03A	BPS1-DUP01	34321	3-1-10	1600		-30	-5.5		
04A	BPS1-AR003-ST04	946	3-2-10	1333		-32	-6		
05A	BPS1-AR014-INDR-2	9557	3-2-10	1505		-28.5	-4		
06A	BPS1-AR013-ST04	13865	3-2-10	1550		-30	-6		
07A	BPS1-AR004-ST04	5760	3-2-10	1645		-30	-5		
08A	BPS1-AR002-INDL-4	35287	3-2-10	1655		-32	-7.5		
09A	BPS1-AR002-INDR-4	34006	3-2-10	1703		-29	-8		
10A	BPS1-AR002-OPA-4	4199	3-2-10	1711		-30	-4		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
3-9-10 1100	Monica Gaggen ATL 3/5/10 900
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:
*use short list of Nine compounds
Note that One canister received with pressure and not vacuum
(Do not charge for prep)

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes / No / None	1003142

Form 1293 rev. 1

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
Company: Tetra Tech Email: robsok@
Address: 5700 Lake Wright Dr City: Norfolk State: VA Zip: 23502
Phone: 757-466-4904 Fax:

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

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	Receip.	Final (psi)
11A	BPS1-AR003-INDL-4	10771	3-3-10	1157	TO-15 (shortlist)	-28.5	-8.5		
12A	BPS1-AR003-INDB-4	94603	3-3-10	1159		-30	-6.5		
13A	BPS1-AR007-INDB-3	34502	3-3-10	1310		-31	-8.5		
14A	BPS1-AR007-ODA-3	5628	3-3-10	1315		-29.5	-13		
15A	BPS1-AR012-INDB-3	5621	3-3-10	1330		-30	-8.5		
16A	BPS1-DUP-02	12017	3-3-10	2400		-32	-11		
17A	BPS1-AR013-INDB-4	35167	3-3-10	1605		-30	-7		
18A	BPS1-AR013-DOA-4	05713	3-3-10	1628		-30.5	-12		
19A	BPS1-AR004-INDB-4	35972	3-3-10	1702		-29	-7		
20A	BPS1-AR010-INDB-3	4248	3-3-10	1805		-30	-7		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
3-4-10 1100	Monica Gregory AIR
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time 3/5/10 900
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:
* Use shortlist of Nine compounds

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes No None	1003142

Form 1593 rev.11

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

Project Manager: Dave Brayack
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: 757-466-9904 Fax:

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

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)
01A	BPS1-AR006-INDB-4	5713	3-4-10	0857	TO-15 (short list)	-30	-8		
02A	BPS1-AR006-ODA-4	94944	3-4-10	0855		-31	-7		
03A	BPS1-AR001-INDL-3	1620	3-4-10	1720		-33	-9		
04A	BPS1-AR001-ODA-3	34729	3-4-10	1725		-31	-3.5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	3-5-10 0800		3/6/10 900
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
* Use Nine compound shortlist

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		na	good	Yes No None	1003157

Form 1293 rev.11

APPENDIX C

DATA ANALYTICAL REPORTS

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR001-INDL-3

Lab ID#: 1003157-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s031120**	**Date of Collection:**	**3/4/10 5:20:00 PM**
Dil. Factor:	**1.68**	**Date of Analysis:**	**3/12/10 11:19 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.084	Not Detected	0.46	Not Detected
Trichloroethene	0.084	Not Detected	0.45	Not Detected
Tetrachloroethene	0.084	0.033 J	0.57	0.22 J
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR002-INDB-4

Lab ID#: 1003142-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030915**	**Date of Collection:**	**3/2/10 5:03:00 PM**
Dil. Factor:	**1.83**	**Date of Analysis:**	**3/9/10 08:12 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.092	0.53	0.50	2.9
Trichloroethene	0.092	0.037 J	0.49	0.20 J
Tetrachloroethene	0.092	Not Detected	0.62	Not Detected
Vinyl Chloride	0.18	Not Detected	0.47	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.72	Not Detected
1,1-Dichloroethane	0.18	Not Detected	0.74	Not Detected
cis-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected
1,2-Dichloroethane	0.18	Not Detected	0.74	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR002-INDL-4

Lab ID#: 1003142-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030914**	**Date of Collection:**	**3/2/10 4:55:00 PM**
Dil. Factor:	**3.42**	**Date of Analysis:**	**3/9/10 07:15 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.17	0.24	0.93	1.3
Trichloroethene	0.17	0.26	0.92	1.4
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
Vinyl Chloride	0.34	Not Detected	0.87	Not Detected
1,1-Dichloroethene	0.34	Not Detected	1.4	Not Detected
1,1-Dichloroethane	0.34	Not Detected	1.4	Not Detected
cis-1,2-Dichloroethene	0.34	Not Detected	1.4	Not Detected
1,2-Dichloroethane	0.34	Not Detected	1.4	Not Detected
trans-1,2-Dichloroethene	0.34	Not Detected	1.4	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	95	70-130
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR002-ST04

Lab ID#: 1003142-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030908**	**Date of Collection:**	**3/1/10 5:05:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**3/9/10 03:30 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.31	0.42	1.7
Trichloroethene	0.078	2.0	0.42	11
Tetrachloroethene	0.078	0.36	0.52	2.4
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	97	70-130
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-DUP01

Lab ID#: 1003142-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030909**	**Date of Collection:**	**3/1/10 4:00:00 PM**
Dil. Factor:	**1.49**	**Date of Analysis:**	**3/9/10 04:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.35	0.41	1.9
Trichloroethene	0.074	2.2	0.40	12
Tetrachloroethene	0.074	0.35	0.50	2.4
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected
1,1-Dichloroethene	0.15	0.035 J	0.59	0.14 J
1,1-Dichloroethane	0.15	Not Detected	0.60	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected
1,2-Dichloroethane	0.15	Not Detected	0.60	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	98	70-130
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-INDB-4

Lab ID#: 1003142-12A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030919**	**Date of Collection:**	**3/3/10 11:59:00 AM**
Dil. Factor:	**1.71**	**Date of Analysis:**	**3/9/10 10:52 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.086	Not Detected	0.47	Not Detected
Trichloroethene	0.086	Not Detected	0.46	Not Detected
Tetrachloroethene	0.086	Not Detected	0.58	Not Detected
Vinyl Chloride	0.17	Not Detected	0.44	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.69	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	97	70-130
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-INDL-4

Lab ID#: 1003142-11A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030917**	**Date of Collection:**	**3/3/10 11:57:00 AM**
Dil. Factor:	**1.96**	**Date of Analysis:**	**3/9/10 09:29 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.098	0.69	0.53	3.7
Trichloroethene	0.098	0.12	0.53	0.64
Tetrachloroethene	0.098	Not Detected	0.66	Not Detected
Vinyl Chloride	0.20	Not Detected	0.50	Not Detected
1,1-Dichloroethene	0.20	Not Detected	0.78	Not Detected
1,1-Dichloroethane	0.20	Not Detected	0.79	Not Detected
cis-1,2-Dichloroethene	0.20	Not Detected	0.78	Not Detected
1,2-Dichloroethane	0.20	0.070 J	0.79	0.28 J
trans-1,2-Dichloroethene	0.20	Not Detected	0.78	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	97	70-130
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-ST04

Lab ID#: 1003142-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030910**	**Date of Collection:**	**3/2/10 1:33:00 PM**
Dil. Factor:	**1.49**	**Date of Analysis:**	**3/9/10 04:36 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.18	0.41	0.98
Trichloroethene	0.074	0.71	0.40	3.8
Tetrachloroethene	0.074	0.12	0.50	0.82
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected
1,1-Dichloroethene	0.15	Not Detected	0.59	Not Detected
1,1-Dichloroethane	0.15	Not Detected	0.60	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected
1,2-Dichloroethane	0.15	0.027 J	0.60	0.11 J
trans-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR004-INDB-4

Lab ID#: 1003142-19A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s031008**	**Date of Collection:**	**3/3/10 5:02:00 PM**
Dil. Factor:	**1.75**	**Date of Analysis:**	**3/10/10 04:35 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.088	Not Detected	0.48	Not Detected
Trichloroethene	0.088	0.075 J	0.47	0.40 J
Tetrachloroethene	0.088	Not Detected	0.59	Not Detected
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.69	Not Detected
1,1-Dichloroethane	0.18	Not Detected	0.71	Not Detected
cis-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
1,2-Dichloroethane	0.18	0.036 J	0.71	0.14 J
trans-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	98	70-130
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-DUP-02

Lab ID#: 1003142-16A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030922**	**Date of Collection:**	**3/3/10**
Dil. Factor:	**1.96**	**Date of Analysis:**	**3/10/10 08:56 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.098	Not Detected	0.53	Not Detected
Trichloroethene	0.098	0.070 J	0.53	0.38 J
Tetrachloroethene	0.098	Not Detected	0.66	Not Detected
Vinyl Chloride	0.20	Not Detected	0.50	Not Detected
1,1-Dichloroethene	0.20	Not Detected	0.78	Not Detected
1,1-Dichloroethane	0.20	Not Detected	0.79	Not Detected
cis-1,2-Dichloroethene	0.20	Not Detected	0.78	Not Detected
1,2-Dichloroethane	0.20	Not Detected	0.79	Not Detected
trans-1,2-Dichloroethene	0.20	Not Detected	0.78	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	98	70-130
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR004-ST04

Lab ID#: 1003142-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030913**	**Date of Collection:**	**3/2/10 4:45:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**3/9/10 06:44 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.038 J	0.42	0.21 J
Trichloroethene	0.078	0.34	0.42	1.8
Tetrachloroethene	0.078	0.22	0.52	1.5
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR006-INDB-4

Lab ID#: 1003157-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s031113**	**Date of Collection:**	**3/4/10 8:57:00 AM**
Dil. Factor:	**1.83**	**Date of Analysis:**	**3/11/10 10:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.092	0.039 J	0.50	0.21 J
Trichloroethene	0.092	0.090 J	0.49	0.48 J
Tetrachloroethene	0.092	0.28	0.62	1.9
Vinyl Chloride	0.18	Not Detected	0.47	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.72	Not Detected
1,1-Dichloroethane	0.18	Not Detected	0.74	Not Detected
cis-1,2-Dichloroethene	0.18	0.55	0.72	2.2
1,2-Dichloroethane	0.18	Not Detected	0.74	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	107	70-130
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR007-INDB-3

Lab ID#: 1003142-13A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030918**	**Date of Collection:**	**3/3/10 1:10:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis:**	**3/9/10 10:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.094	Not Detected	0.51	Not Detected
Trichloroethene	0.094	Not Detected	0.50	Not Detected
Tetrachloroethene	0.094	0.042 J	0.63	0.28 J
Vinyl Chloride	0.19	Not Detected	0.48	Not Detected
1,1-Dichloroethene	0.19	Not Detected	0.74	Not Detected
1,1-Dichloroethane	0.19	Not Detected	0.76	Not Detected
cis-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
1,2-Dichloroethane	0.19	Not Detected	0.76	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	99	70-130
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR010-INDB-3

Lab ID#: 1003142-20A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s031009**	**Date of Collection:**	**3/3/10 6:05:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**3/10/10 05:18 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.090	Not Detected	0.49	Not Detected
Trichloroethene	0.090	Not Detected	0.48	Not Detected
Tetrachloroethene	0.090	Not Detected	0.61	Not Detected
Vinyl Chloride	0.18	Not Detected	0.46	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.71	Not Detected
1,1-Dichloroethane	0.18	Not Detected	0.72	Not Detected
cis-1,2-Dichloroethene	0.18	Not Detected	0.71	Not Detected
1,2-Dichloroethane	0.18	0.049 J	0.72	0.20 J
trans-1,2-Dichloroethene	0.18	Not Detected	0.71	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR012-INDB-3

Lab ID#: 1003142-15A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030921**	**Date of Collection:**	**3/3/10 1:30:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis:**	**3/10/10 08:25 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.094	0.18	0.51	1.0
Trichloroethene	0.094	Not Detected	0.50	Not Detected
Tetrachloroethene	0.094	3.7	0.63	25
Vinyl Chloride	0.19	Not Detected	0.48	Not Detected
1,1-Dichloroethene	0.19	Not Detected	0.74	Not Detected
1,1-Dichloroethane	0.19	Not Detected	0.76	Not Detected
cis-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
1,2-Dichloroethane	0.19	0.061 J	0.76	0.25 J
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	103	70-130
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	105	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR013-INDB-4

Lab ID#: 1003142-17A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030924**	**Date of Collection:**	**3/3/10 4:05:00 PM**
Dil. Factor:	**1.68**	**Date of Analysis:**	**3/10/10 10:02 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.084	Not Detected	0.46	Not Detected
Trichloroethene	0.084	Not Detected	0.45	Not Detected
Tetrachloroethene	0.084	Not Detected	0.57	Not Detected
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	104	70-130
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR013-ST04

Lab ID#: 1003142-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030912**	**Date of Collection:**	**3/2/10 3:50:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**3/9/10 06:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.34	0.42	1.8
Trichloroethene	0.078	0.20	0.42	1.1
Tetrachloroethene	0.078	0.19	0.52	1.3
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR014-INDB-2

Lab ID#: 1003142-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030911**	**Date of Collection:**	**3/2/10 3:05:00 PM**
Dil. Factor:	**1.71**	**Date of Analysis:**	**3/9/10 05:22 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.086	Not Detected	0.47	Not Detected
Trichloroethene	0.086	Not Detected	0.46	Not Detected
Tetrachloroethene	0.086	0.14	0.58	0.94
Vinyl Chloride	0.17	Not Detected	0.44	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
1,2-Dichloroethane	0.17	0.050 J	0.69	0.20 J
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR014-ST04

Lab ID#: 1003142-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030906**	**Date of Collection:**	**3/1/10 3:47:00 PM**
Dil. Factor:	**1.46**	**Date of Analysis:**	**3/9/10 02:27 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.073	0.17	0.40	0.95
Trichloroethene	0.073	0.19	0.39	1.0
Tetrachloroethene	0.073	0.23	0.50	1.6
Vinyl Chloride	0.15	Not Detected	0.37	Not Detected
1,1-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,1-Dichloroethane	0.15	Not Detected	0.59	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,2-Dichloroethane	0.15	Not Detected	0.59	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	108	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR001-ODA-3

Lab ID#: 1003157-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s031023**	**Date of Collection:**	**3/4/10 5:25:00 PM**
Dil. Factor:	**1.39**	**Date of Analysis:**	**3/11/10 10:06 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.070	Not Detected	0.38	Not Detected
Trichloroethene	0.070	Not Detected	0.37	Not Detected
Tetrachloroethene	0.070	Not Detected	0.47	Not Detected
Vinyl Chloride	0.14	Not Detected	0.36	Not Detected
1,1-Dichloroethene	0.14	Not Detected	0.55	Not Detected
1,1-Dichloroethane	0.14	Not Detected	0.56	Not Detected
cis-1,2-Dichloroethene	0.14	Not Detected	0.55	Not Detected
1,2-Dichloroethane	0.14	Not Detected	0.56	Not Detected
trans-1,2-Dichloroethene	0.14	Not Detected	0.55	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	102	70-130
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR002-ODA-4

Lab ID#: 1003142-10A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030916**	**Date of Collection:**	**3/2/10 5:11:00 PM**
Dil. Factor:	**1.46**	**Date of Analysis:**	**3/9/10 08:52 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.073	Not Detected	0.40	Not Detected
Trichloroethene	0.073	Not Detected	0.39	Not Detected
Tetrachloroethene	0.073	Not Detected	0.50	Not Detected
Vinyl Chloride	0.15	Not Detected	0.37	Not Detected
1,1-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,1-Dichloroethane	0.15	Not Detected	0.59	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,2-Dichloroethane	0.15	Not Detected	0.59	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR006-ODA-4

Lab ID#: 1003157-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s031021**	**Date of Collection:**	**3/4/10 8:55:00 AM**
Dil. Factor:	**1.58**	**Date of Analysis:**	**3/11/10 09:01 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.079	Not Detected	0.43	Not Detected
Trichloroethene	0.079	Not Detected	0.42	Not Detected
Tetrachloroethene	0.079	Not Detected	0.54	Not Detected
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.64	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	98	70-130
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR007-ODA-3

Lab ID#: 1003142-14A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030920**	**Date of Collection:**	**3/3/10 1:15:00 PM**
Dil. Factor:	**2.17**	**Date of Analysis:**	**3/10/10 07:54 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.11	Not Detected	0.59	Not Detected
Trichloroethene	0.11	Not Detected	0.58	Not Detected
Tetrachloroethene	0.11	Not Detected	0.74	Not Detected
Vinyl Chloride	0.22	Not Detected	0.55	Not Detected
1,1-Dichloroethene	0.22	Not Detected	0.86	Not Detected
1,1-Dichloroethane	0.22	Not Detected	0.88	Not Detected
cis-1,2-Dichloroethene	0.22	Not Detected	0.86	Not Detected
1,2-Dichloroethane	0.22	Not Detected	0.88	Not Detected
trans-1,2-Dichloroethene	0.22	Not Detected	0.86	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	97	70-130
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR013-ODA-4

Lab ID#: 1003142-18A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s030925**	**Date of Collection:**	**3/3/10 4:28:00 PM**
Dil. Factor:	**2.06**	**Date of Analysis:**	**3/10/10 10:33 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.10	Not Detected	0.56	Not Detected
Trichloroethene	0.10	Not Detected	0.55	Not Detected
Tetrachloroethene	0.10	Not Detected	0.70	Not Detected
Vinyl Chloride	0.21	Not Detected	0.53	Not Detected
1,1-Dichloroethene	0.21	Not Detected	0.82	Not Detected
1,1-Dichloroethane	0.21	Not Detected	0.83	Not Detected
cis-1,2-Dichloroethene	0.21	Not Detected	0.82	Not Detected
1,2-Dichloroethane	0.21	Not Detected	0.83	Not Detected
trans-1,2-Dichloroethene	0.21	Not Detected	0.82	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	99	70-130

APPENDIX D

DATA VALIDATION SUMMARIES

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**D. BRAYACK**	**DATE:**	**APRIL 29, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION – VOC NWIRP BETHPAGE CTO WE06 SDG 1003142**		
SAMPLES:	20 / Air / VOC		

BPS1-AR002-INDB-4	BPS1-AR002-INDL-4	BPS1-AR002-ODA-4
BPS1-AR002-ST04	BPS1-AR003-INDB-4	BPS1-AR003-INDL-4
BPS1-AR003-ST04	BPS1-AR004-INDB-4	BPS1-AR004-ST04
BPS1-AR007-INDB-3	BPS1-AR007-ODA-3	BPS1-AR010-INDB-3
BPS1-AR012-INDB-3	BPS1-AR013-INDB-4	BPS1-AR013-ODA-4
BPS1-AR013-ST04	BPS1-AR014-INDB-2	BPS1-AR014-ST04
BPS1-DUP-02	BPS1-DUP01	

Overview

The sample set for NWIRP Bethpage SDG 1003142 consisted of twenty (20) air environmental samples including two (2) field duplicate pair samples. The air samples were analyzed for volatile organic compounds (VOC). The two field duplicate pairs associated with this sample delivery group (SDG) were: BPS1-AR002-ST04 / BPS1-DUP01 and BPS1-AR004-INDB-4 / BPS1-DUP-02.

The samples were collected by Tetra Tech on March 1, 2, and 3, 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
* • Laboratory Duplicate Precision
* • Field Duplicate Precision
* • 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 significant issues were identified.

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 µg/m3 on the sample forms. The results in the database and the qualified analytical result concentrations are reported as µg/m3 only.

Per the laboratory narrative, the chain of custody (COC) information for sample BPS1-AR013-ODA-4 did not match the information on the canister. The lab indicated that the canister number was 05710. The number recorded on the COC (05713) was most likely a transcription error. No action was taken.

Per the laboratory narrative, a dilution was performed on sample BPS1-AR002-INDL-4 due to the presence of high level non-target species.

Laboratory duplicate analyses were performed on samples BPS1-AR014-ST04 and BPS1-DUP-02 with acceptable RPD results.

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

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-AR002-INDB-4			BPS1-AR002-INDL-4			BPS1-AR002-ODA-4			BPS1-AR002-ST04		
SDG: 1003142	LAB_ID	1003142-09A			1003142-08A			1003142-10A			1003142-02A		
FRACTION: OV	SAMP_DATE	3/2/2010			3/2/2010			3/2/2010			3/1/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		2.9			1.3			0.4	U		1.7		
1,1-DICHLOROETHANE		0.74	U		1.4	U		0.59	U		0.63	U	
1,1-DICHLOROETHENE		0.72	U		1.4	U		0.58	U		0.61	U	
1,2-DICHLOROETHANE		0.74	U		1.4	U		0.59	U		0.63	U	
CIS-1,2-DICHLOROETHENE		0.72	U		1.4	U		0.58	U		0.61	U	
TETRACHLOROETHENE		0.62	U		1.2	U		0.5	U		2.4		
TRANS-1,2-DICHLOROETHENE		0.72	U		1.4	U		0.58	U		0.61	U	
TRICHLOROETHENE		0.2	J	P	1.4			0.39	U		11		
VINYL CHLORIDE		0.47	U		0.87	U		0.37	U		0.4	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR003-INDB-4			BPS1-AR003-INDL-4			BPS1-AR003-ST04			BPS1-AR004-INDB-4		
SDG: 1003142	LAB_ID	1003142-12A			1003142-11A			1003142-04A			1003142-19A		
FRACTION: OV	SAMP_DATE	3/3/2010			3/3/2010			3/2/2010			3/3/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.47	U		3.7			0.98			0.48	U	
1,1-DICHLOROETHANE		0.69	U		0.79	U		0.6	U		0.71	U	
1,1-DICHLOROETHENE		0.68	U		0.78	U		0.59	U		0.69	U	
1,2-DICHLOROETHANE		0.69	U		0.28	J	P	0.11	J	P	0.14	J	P
CIS-1,2-DICHLOROETHENE		0.68	U		0.78	U		0.59	U		0.69	U	
TETRACHLOROETHENE		0.58	U		0.66	U		0.82			0.59	U	
TRANS-1,2-DICHLOROETHENE		0.68	U		0.78	U		0.59	U		0.69	U	
TRICHLOROETHENE		0.46	U		0.64			3.8			0.4	J	P
VINYL CHLORIDE		0.44	U		0.5	U		0.38	U		0.45	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR004-ST04			BPS1-AR007-INDB-3			BPS1-AR007-ODA-3			BPS1-AR010-INDB-3		
SDG: 1003142	LAB_ID	1003142-07A			1003142-13A			1003142-14A			1003142-20A		
FRACTION: OV	SAMP_DATE	3/2/2010			3/3/2010			3/3/2010			3/3/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.21	J	P	0.51	U		0.59	U		0.49	U	
1,1-DICHLOROETHANE		0.63	U		0.76	U		0.88	U		0.72	U	
1,1-DICHLOROETHENE		0.61	U		0.74	U		0.86	U		0.71	U	
1,2-DICHLOROETHANE		0.63	U		0.76	U		0.88	U		0.2	J	P
CIS-1,2-DICHLOROETHENE		0.61	U		0.74	U		0.86	U		0.71	U	
TETRACHLOROETHENE		1.5			0.28	J	P	0.74	U		0.61	U	
TRANS-1,2-DICHLOROETHENE		0.61	U		0.74	U		0.86	U		0.71	U	
TRICHLOROETHENE		1.8			0.5	U		0.58	U		0.48	U	
VINYL CHLORIDE		0.4	U		0.48	U		0.55	U		0.46	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR012-INDB-3			BPS1-AR013-INDB-4			BPS1-AR013-ODA-4			BPS1-AR013-ST04		
SDG: 1003142	LAB_ID	1003142-15A			1003142-17A			1003142-18A			1003142-06A		
FRACTION: OV	SAMP_DATE	3/3/2010			3/3/2010			3/3/2010			3/2/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1			0.46	U		0.56	U		1.8		
1,1-DICHLOROETHANE		0.76	U		0.68	U		0.83	U		0.63	U	
1,1-DICHLOROETHENE		0.74	U		0.67	U		0.82	U		0.61	U	
1,2-DICHLOROETHANE		0.25	J	P	0.68	U		0.83	U		0.63	U	
CIS-1,2-DICHLOROETHENE		0.74	U		0.67	U		0.82	U		0.61	U	
TETRACHLOROETHENE		25			0.57	U		0.7	U		1.3		
TRANS-1,2-DICHLOROETHENE		0.74	U		0.67	U		0.82	U		0.61	U	
TRICHLOROETHENE		0.5	U		0.45	U		0.55	U		1.1		
VINYL CHLORIDE		0.48	U		0.43	U		0.53	U		0.4	U	

PROJ_NO: 02019	NSAMPLE	BPS1-AR014-INDB-2			BPS1-AR014-ST04			BPS1-DUP01			BPS1-DUP-02		
SDG: 1003142	LAB_ID	1003142-05A			1003142-01A			1003142-03A			1003142-16A		
FRACTION: OV	SAMP_DATE	3/2/2010			3/1/2010			3/1/2010			3/3/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS												
	DUP_OF							BPS1-AR002-ST04			BPS1-AR004-INDB-4		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.47	U		0.95			1.9			0.53	U	
1,1-DICHLOROETHANE		0.69	U		0.59	U		0.6	U		0.79	U	
1,1-DICHLOROETHENE		0.68	U		0.58	U		0.14	J	P	0.78	U	
1,2-DICHLOROETHANE		0.2	J	P	0.59	U		0.6	U		0.79	U	
CIS-1,2-DICHLOROETHENE		0.68	U		0.58	U		0.59	U		0.78	U	
TETRACHLOROETHENE		0.94			1.6			2.4			0.66	U	
TRANS-1,2-DICHLOROETHENE		0.68	U		0.58	U		0.59	U		0.78	U	
TRICHLOROETHENE		0.46	U		1			12			0.38	J	P
VINYL CHLORIDE		0.44	U		0.37	U		0.38	U		0.5	U	

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**D. BRAYACK**	**DATE:**	**APRIL 12, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION – VOC** **NWIRP BETHPAGE CTO WE06** **SDG 1003157**		
SAMPLES:	4 / Air / VOC		

BPS1-AR001-INDL-3 BPS1-AR001-ODA-3 BPS1-AR006-INDB-4
BPS1-AR006-ODA-4

Overview

The sample set for NWIRP Bethpage SDG 1003157 consisted of four (4) air environmental samples. No field duplicate samples were included in this sample delivery group (SDG). The air samples were analyzed for volatile organic compounds (VOC).

The samples were collected by Tetra Tech on March 4, 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
* • 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 significant issues were identified.

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 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).

for

TetraTech NUS
Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
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Appendix A

Qualified Analytical Results

Value Qualifier Key (Val Qual)

J – Positive result is considered estimated, "J", as a result of technical non-compliances.

UJ – Non-detected result is considered estimated, "UJ", as a result of technical non-compliances.

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-3			BPS1-AR001-ODA-3			BPS1-AR006-INDB-4			BPS1-AR006-ODA-4		
SDG: 1003157	LAB_ID	1003157-03A			1003157-04A			1003157-01A			1003157-02A		
FRACTION: OV	SAMP_DATE	3/4/2010			3/4/2010			3/4/2010			3/4/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.46	U		0.38	U		0.21	J	P	0.43	U	
1,1-DICHLOROETHANE		0.68	U		0.56	U		0.74	U		0.64	U	
1,1-DICHLOROETHENE		0.67	U		0.55	U		0.72	U		0.63	U	
1,2-DICHLOROETHANE		0.68	U		0.56	U		0.74	U		0.64	U	
CIS-1,2-DICHLOROETHENE		0.67	U		0.55	U		2.2			0.63	U	
TETRACHLOROETHENE		0.22	J	P	0.47	U		1.9			0.54	U	
TRANS-1,2-DICHLOROETHENE		0.67	U		0.55	U		0.72	U		0.63	U	
TRICHLOROETHENE		0.45	U		0.37	U		0.48	J	P	0.42	U	
VINYL CHLORIDE		0.43	U		0.36	U		0.47	U		0.4	U	