QUARTERLY DATA SUMMARY REPORT

SOIL VAPOR INTRUSION MONITORING

(MAY – AUGUST 2010)

NWIRP Bethpage

Bethpage, New York

Naval Facilities Engineering Command
Mid-Atlantic

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

November 2010

TETRA TECH

QUARTERLY DATA SUMMARY REPORT
SOIL VAPOR INTRUSION MONITORING

(May - August 2010)

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Naval Facilities Engineering Command
Mid-Atlantic
9742 Maryland Avenue
Norfolk, Virginia 23511-3095

Prepared and Submitted by:
Tetra Tech NUS, Inc.
234 Mall Boulevard, Suite 260
King of Prussia, Pennsylvania 19406

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

November 2010

PREPARED UNDER THE DIRECTION OF:

DAVE BRAYACK
PROJECT MANAGER
TETRA TECH NUS, INC.
NORFOLK, VIRGINIA

APPROVED FOR SUBMISSION BY:

JOHN J. TREPANOWSKI, P.E.
PROGRAM MANAGER
TETRA TECH NUS, INC.
KING OF PRUSSIA, PENNSYLVANIA

TABLE OF CONTENTS

ACRONYMS

APU	Air Purification Unit
AS/SVE	Air Sparging/Soil Vapor Extraction
bgs	Below Ground Surface
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
IS	Initial Sampling
mL	Milliliter
mL/min	Milliliter per Minute
ND	Non Detect
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ODA	Outdoor air
PCE	Tetrachloroethene
PID	Photoionization Detector
ppm	Parts Per Million
PSSD	Post Sub-Slab Depressurization
PSVE	Post Soil Vapor Extraction system startup
PUS	Post Air Purification Unit Installation Sampling
PVC	Polyvinyl Chloride
SSB	Sub-Slab
SSD	Sub-Slab Depressurization
ST	Stack
SVPM	Soil Vapor Pressure Monitor
TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
Tetra Tech	Tetra Tech NUS, Inc.
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 during the months of May, June, July, and August 2010. These activities included indoor air, outdoor air, and sub-slab vapor sampling conducted at Home #3, sub-slab depressurization (SSD) system stack monitoring and Soil Vapor Pressure Monitor (SVPM) soil gas sampling on Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York and in the residential neighborhood east of Site 1 at NWIRP Bethpage, Long Island (Figures 1 and 2).

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. Due to the sub-slab vapor and indoor air sampling results, SSDs were installed in six residential homes in May 2009. A total of ten homes were sampled in June 2009 to monitor and evaluate mitigation measures installed in homes with APUs, including the six 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 collected at all ten homes, while six homes with a SSD system had samples collected 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 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 SVE Containment System is currently in operation at Site 1.

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.

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

This section summarizes the field events that have taken place during July 2010 and August 2010.

2.1 July 2010 – Home #3

In July 2010, air-monitoring activities were conducted at home #3. The home was not occupied at the time of the sampling event. The two APUs located in the basement and living space were removed and the SSD System was shut off two weeks prior to the indoor air-monitoring event.

A sub-slab (SSB) soil vapor sample, indoor air (basement and living space) sample, and outdoor air sample was collected at Home #3 on July 28, 2010. The outdoor air sample was collected along with an indoor air sample to evaluate potential influence of ambient air on indoor air quality. The field activities for this sampling event are summarized as follows:

- Scheduled sampling with homeowner
- Re-established previous sampling location
- Collected a SSB vapor, indoor air, and outdoor air sample
- Shipped and analyzed samples for the modified TO-15 VOCs

SSB soil vapor, indoor air, and outdoor air samples were collected using SUMMA® canisters (6 liter) with pre-set regulators. The temporary SSB soil vapor sample location was installed approximately 10 inches from previous sample locations. The indoor air sample was collected at the center of the basement. The outdoor air sample was placed in an upwind direction, at the South East corner of the back yard. The SSB soil vapor sample, and the indoor and outdoor air samples were obtained over a 24-hour time period.

The average temperature during the July 2010 sampling event was 85 degrees Fahrenheit (°F). The predominant wind direction ranged from south to southeast, while the wind speed was 0 to 5 miles per hour. There was no precipitation during this two-day event.

2.2 August 2010 – SSD Stack and SVPM Soil Gas

In August 2010, the Sub-Slab Depressurization System stacks and the Soil Vapor Pressure Monitors (SVPM) were sampled for the modified TO-15 VOC analysis. Prior to the sampling activities, SVPMs were retrofitted with Geoprobe® stainless steel implants to minimize potential surface air infiltration and purge time. SVPM implant retrofit construction logs are located in Appendix A. Tubing (1/4 inch) with a six inch long stainless steel screen was placed in the one inch Polyvinyl Chloride (PVC) casing, down to

the screened interval in each SVPM. Annular space inside the PVC casing was filled with #1 Silica Quartz filter sand and a bentonite seal (approximately two foot thick) was installed approximately two or three feet above the screen. The annular space above the bentonite seal was filled with #1 Silica Quartz filter sand to approximately two feet below the top of casing. A cement and bentonite mix was installed in the remaining two feet of space to the top of casing. The polyethylene tubing was fixed with barbed fittings to a PVC cap and sampling port.

SSD System stack sampling activities began on August 24, 2010, after the completion of Geoprobe implant installation at the SVPMs. A photoionization detector (PID) measurement was collected from the SSD system stack sampling port prior to sample collection. PID measurements ranged between no detection and 1.8 parts per million (ppm) and were recorded on the air sampling log sheets (Appendix B). 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. The SSD stack samples were obtained over a 30-minute time period. Once the sample was collected, the SSD System exhaust sampling port was sealed using a brass plug.

The SVE Containment System was shutdown at the completion of the SSD System stack sampling (August 24, 2010) and prior to SVPM soil gas sampling to avoid potential interferences and ensure collection of a representative soil gas sample. SVPM soil gas sampling was conducted on August 25, 2010 to August 26, 2010. The soil gas sampling procedures for each SVPM are as follows:

- Connect a tee and valve assembly to the sampling port of the SVPM
- Connect the vacuum pump to the tee and valve assembly
- Purge 2,500 to 3,000 milliliter (mL) of air from the soil gas point and sampling line using the vacuum pump at a rate of approximately 100 to 200 milliliter per minute (mL/min).
- Record the flow controller and SUMMA® canister number on the Soil Gas Sample Log Sheet
- Collect soil gas sample with SUMMA® Canister
- Ship and analyzed samples for the modified TO-15 VOCs

The SVE Containment System was re-started upon completion of SVPM sampling.

The average temperature during the August 2010 sampling event was 75 °F. The predominant wind direction was northerly and ranged from northwest to east northeast, while the wind speed was variable averaging 5 to 15 miles per hour during the sampling event. There was no precipitation during this four-day event.

2.3 Sample Management

The air and soil vapor samples collected during this quarter 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, outdoor air, sub slab samples, SSD system exhaust stack samples, and SVPM samples 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, SSB soil vapor, SSD system exhaust stack, and SVPM soil gas samples collected. 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 B. Chain of Custody (COC) Forms are provided in Appendix C.

2.4 Deviation from Work Plan

The August 2010 Soil Gas Sampling Work Plan Addendum for Site 1 identified additional samples to be collected to evaluate the effectiveness of the SVE Containment System. There were four deviations from the work plan during this quarter. Home #3 was not scheduled to be sampled during the month of July. However, the homeowner is planning to sell the home and requested the removal of the two APUs located in the basement and living space of the home. The NYSDOH and NYSDEC concurred that

indoor air quality samples should be collected from the home without the operation of the mitigation system in order to mimic natural conditions.

Three SVPMs, (SVPM-2007I, SVPM-11, and SVPM-12) were not sampled as scheduled during the August 2010 event. SVPM-2007I was retrofitted with a Geoprobe® implant on August 24, 2010 and was scheduled to be sampled on August 26, 2010. Field crews were unable to purge air from the poly tubing attached to the implant. An air compressor was used in an attempt to clear possible obstructions. The attempt was unsuccessful and the options for repair of the SVPM will be further evaluated. If a repair is not possible, SVPM-2007I will be abandoned and a new point will be installed to the same depth.

SVPM-11 and SVPM-12 were retrofitted with a stainless steel implant in January 2008. Field crews attempted to collect a soil vapor sample from both points during the August 2010 event and were unsuccessful. The implants would not provide a sustained flow of gas. Since the field crew could not increase the flow rate on SVPM-11 or SVPM-12, a sample could not be collected at either location. The repair of SVPM-11 and SVPM-12 will also be further evaluated. If the repairs are not possible, then SVPM-11 and SVPM-12 will be abandoned.

3.0 ANALYTICAL RESULTS

This section summarizes the analytical results from the indoor air, outdoor air, SSB soil vapor, SSD system stack, and SVPM soil gas sampling event conducted during July and August 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. All reported results are presented in Appendix D. The sample results for Home #3 are summarized in Table 3-1. Details for each of the air and soil gas samples that were collected from Home #3, SSD stacks, and SVPMs are on the air sample log sheets provided in Appendix B. COC forms and the laboratory analytical reports are in Appendix C and D, respectively. Data validation summaries are presented in Appendix E.

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

Air Guideline Values for Indoor Air and Sub-Slab Values

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

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

3.1 Home #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.

During the July 2010 sampling event, a SSB soil vapor sample, indoor air sample (basement and living space), and outdoor air sample were collected at Home #3. At the request of the homeowner, the APUs located in the basement and living space were permanently removed. In order to mimic natural conditions in the house, the SSD system was shut off two weeks prior to the sampling event. Sample results from each event are summarized on Table 3-1.

The results of the July 2010 sampling of SSB soil vapor gas indicate that the concentrations of TCE, PCE, and TCA were below the NYSDOH air guideline sub-slab guidance values. In addition, concentrations of TCE, PCE, and TCA in sub slab soil gas have been reduced at an average of 99.9% since the initial sampling event in January 2009. Also, the living space indoor air concentrations and the basement indoor air concentrations, without the operation of the APUs or the SSD system, are below the NYSDOH indoor air guideline values. TCE concentrations decreased by approximately 99.9% in the basement indoor air sample and living space indoor air sample since the initial sampling in January 2009. PCE and TCA have also shown significant decreases in concentrations.

By comparing the SSD System stack sample result collected in August 2010 to the initial stack sample results collected in June 2009 at Home #3, the TCE and TCA concentrations in the soil vapor underneath the home has decreased by approximately 98% and 94%, respectively. PCE had an initial concentration that was significantly lower than the other chemicals of concern, and experienced a 35% reduction.

3.2 SSD Stack Sampling Summary

Five SSD system stack samples were collected during the August 2010 sampling event. TCE concentrations in the five SSD stack samples have been reduced on average by 99.2% since the first sampling event in June 2009. PCE and TCA have similar decreases in concentrations at each SSD stack with TCA decreasing by 98.6% and PCE decreasing by 61.7%. The initial PCE contamination was lower than that of the other chemicals of concern, therefore the reduction of PCE was not as significant as TCE and TCA. Table 3-2 provides an analytical summary of the SSD system stack samples.

3.3 SVPM Sampling Summary

Ten SVPMs were sampled in August 2010 (see table 3-3). Samples were collected 8 feet below ground surface (bgs) (shallow points), 20 to 25 feet bgs (intermediate depth points), and 44 to 49 feet bgs (deep points). An evaluation of chemical constituents over time indicates that TCE, PCE, and TCA concentrations have been reduced since the initial sampling events conducted in 2008. TCA concentrations were reduced approximately 99.9% at all three depths. TCE concentrations at the deep and intermediate depth were reduced approximately 99.6%. The average reduction of TCE at the

shallow depth was 78.5%. PCE had the highest reduction (88%) at the intermediate depth. PCE has decreased at the deep and shallow depth at an average of 89.4% and 49.6%, respectively. Table 3-3 provides an analytical summary of the soil gas sampling.

3.4 Outdoor Air Sampling Summary

During the July 2010 and August 2010 sampling event, outdoor air samples were collected to evaluate potential influence of outdoor air on indoor air quality and to establish ambient outdoor quality. The outdoor air samples are used to represent upwind ambient air data at the time of indoor air sampling and soil vapor sampling. One outdoor air sample was collected during the July 2010 sampling event and four outdoor air samples were collected during the sampling event in August 2010. Table 3-4 provides an analytical summary of the outdoor air sampling conducted during the indoor air sampling events in July 2010 and August 2010. Although TCE, PCE, and PCA were detected in each of the samples, none of the detections were greater than NYSDOH air guideline values.

3.5 Sampling Summary

An SVE Containment System was constructed along 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 July 2010 sampling results at Home #3, the indoor air concentrations of targeted VOC's are below the NYSDOH air guideline values even without the APU and SSD mitigation systems operating. Also, sample results from the August 2010 event, shows that the SSD system stack concentrations and SVPM soil vapor concentrations have continued to decrease since June 2009, especially after the start up of the SVE Containment System in January 2010.

In November 2010, another round of indoor air monitoring will be conducted in the residential homes to evaluate the effectiveness of the mitigation systems both in the houses and on the Navy property. Off site soil gas testing will continue to be conducted in the residential neighborhood to confirm the effectiveness of the SVE Containment System to prevent further off-site migration.

REFERENCES

New York State Department of Health (NYSDOH), 2006. Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October.

Tetra Tech NUS, Inc. (Tetra Tech), 2008a. Site 1-Soil Vapor Investigation. Naval Weapons Industrial Reserve Plant, Bethpage, New York. April.

Tetra Tech NUS, Inc. (Tetra Tech), 2008b. Letter Work Plan-Site 1-Phase II Soil Vapor Investigation. Naval Weapons Industrial Reserve Plant, Bethpage, New York. September.

Tetra Tech NUS, Inc. (Tetra Tech), 2008c. Letter Work Plan-Site 1-Indoor Air Sampling. Naval Weapons Industrial Reserve Plant, Bethpage, New York. December.

Tetra Tech NUS, Inc. (Tetra Tech), 2009a. Site 1 – Phase II Soil Vapor Report, Site 1 – Former Drum Marshalling Area. Naval Weapons Industrial Reserve Plant, Bethpage, New York. August.

Tetra Tech NUS, Inc. (Tetra Tech), 2009b. Data Summary Report Soil Vapor Intrusion Investigation, Site 1 – Former Drum Marshalling Area. Naval Weapons Industrial Reserve Plant, Bethpage, New York. August.

Tetra Tech NUS, Inc. (Tetra Tech), 2009c. Quarterly Data Summary Report Indoor Air and SSD Monitoring (May, June, and July 2009). Naval Weapons Industrial Reserve Plant, Bethpage, New York. October.

Tetra Tech NUS, Inc. (Tetra Tech), 2009d. Quarterly Data Summary Report Indoor Air and SSD Monitoring (August, September, and October 2009). Naval Weapons Industrial Reserve Plant, Bethpage, New York. December.

Tetra Tech NUS, Inc. (Tetra Tech), 2010. Quarterly Data Summary Report Soil Vapor Intrusion Monitoring (November and December 2009, and January 2010). Naval Weapons Industrial Reserve Plant, Bethpage, New York. February.

United States Environmental Protection Agency (USEPA), 1999. Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air Second Edition Compendium Method TO-15 Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially- Prepared Canisters And Analyzed By Gas Chromatography/ Mass Spectrometry (GC/MS). January.

TABLES

Table 2-1
Sample Summary
July 2010 and August 2010
Site 1 - Former Drum Marshaling Area
NWIRP Bethpage, New York

Sample ID	Date(s) Collected	Duration of Sample	Sample Location	Event Type
BPS1-AR003-INDL-5	7/27/2010 - 7/28/2010	24 Hours	Living Space	PUS/PSSD/PSVE*
BPS1-AR003-INDL-5 DUP	7/27/2010 - 7/28/2010	24 Hours	Living Space	PUS/PSSD/PSVE*
BPS1-AR003-INDB-5	7/27/2010 - 7/28/2010	24 Hours	Basement	PUS/PSSD/PSVE*
BPS1-AR003-SSB3	7/27/2010 - 7/28/2010	24 Hours	Subslab	PUS/PSSD/PSVE*
BPS1-AR003-ODA3	7/27/2010 - 7/28/2010	24 Hours	ODA	PUS/PSSD/PSVE*
BPSI-AR002-ST05	8/24/2010	30 Minutes	SSD Stack	PSSD/PSVE**
BPS1-AR003-ST05	8/24/2010	30 Minutes	SSD Stack	PSSD/PSVE**
BPS1-AR004-ST05	8/24/2010	30 Minutes	SSD Stack	PSSD/PSVE**
BPS1-AR013-ST05	8/24/2010	30 Minutes	SSD Stack	PSSD/PSVE**
BPS1-AR013-ST05 DUP	8/24/2010	30 Minutes	SSD Stack	PSSD/PSVE**
BPS1-AR014-ST05	8/24/2010	30 Minutes	SSD Stack	PSSD/PSVE**
BPS1-AR002-ODA4	8/24/2010	8 Hours	ODA	PSSD/PSVE**
BPS1-SVPM-2002S	8/25/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPS1-SVPM-2002I	8/25/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPS1-SVPM-2002D	8/25/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPS1-SVPM-2003D	8/25/2010	30 Minutes	Basement	PSSD/PSVE**
BPS1-SVPM-ODA	8/25/2010	8 Hours	ODA	PSSD/PSVE**
BPSI-SVPM-2003I	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-2004I	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-2004I DUP	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-2004D	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-2007D	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-11S	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-12S	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-12S DUP	8/26/2010	30 Minutes	Soil Gas	PSSD/PSVE**
BPSI-SVPM-ODA	8/26/2010	8 Hours	ODA	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 Containment System startup
SSD = Sub-slab Depressurization System
ST = Stack
*Air purification units were permanently removed and the SSD system was temporarily shut down on 7/13/10. Sample collection was completed on 7/28/2010 and the SSD was restarted shortly after the last sample was collected.
**SVE Contanment system was shut down approximately 24 hours prior to PSVE sampling

Table 3-1
Analytical Summary
Home #3
Site 1 - Former Drum Marshaling Area
NWIRP Bethpage, New York

Sample ID	Date Collected	Sample Type	Event Type	TCE ($\mu g/m^3$)	PCE ($\mu g/m^3$)	TCA ($\mu g/m^3$)
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
BPSI-AR003-INDL-5	7/28/2010	Living Space	PSVE[(2)]	0.16 J	0.28 J	3.3
BPSI-AR003-INDL-5 DUP	7/28/2010	Living Space	PSVE[(2)]	0.15 J	0.28 J	2.9
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
BPSI-AR003-INDB-5	7/28/2010	Basement	PSVE[(2)]	0.27 J	0.28 J	1.9
SUB-SLAB SOIL VAPOR SAMPLES		**NYSDOH Sub-Slab Guideline**		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
BPSI-AR003-SSB3	7/28/2010	Subslab	PSVE[(2)]	14	0.96	2.3
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
BPS1-AR003-ST05	8/24/2010	SSD Stack	PSSD/PSVE[(2)]	4.3	2.4	2.4

Notes:
Highlighted rows show analytical results for this reporting period.
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
$\mu g/m^3$ = 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 Containment 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.

(2) Air purification units were removed and the SSD system was temporarily shut down on 7/13/10. Sample collection was completed on 7/28/2010 and the SSD was restarted shortly after the last sample was collected.

Table 3-2
Analytical Summary
SSD System Stack Samples
Site 1 - Former Drum Marshaling Area
NWIRP Bethpage, New York

Home #	Mitigation Type	Date Collected	Sample ID	Sample Type	Event Type	TCE ($\mu g/m^3$)	PCE ($\mu g/m^3$)	TCA ($\mu g/m^3$)
2	APU/SSD	1/21/2009	BPS1-AR002-SSB	Subslab	IS	**16,000**	310	**15,000**
		6/22/2009	BPS1-AR002-ST01	SSD Stack	PSSD	**11,000**	280	5,900
		8/25/2009	BPS1-AR002-ST02	SSD Stack	PSSD	**12,000**	460	**5,300**
		8/25/2009	BPS1-AR002-ST02 DUP	SSD Stack	PSSD	**12,000**	500	**5,400**
		11/16/2009	BPS1-AR002-ST03	SSD Stack	PSSD	**9,900**	330	**3,800**
		3/1/2010	BPS1-AR002-ST04 *	SSD Stack	PSSD/PSVE	11	2.4	1.7
		3/1/2010	BPS1-AR002-ST04-DUP *	SSD Stack	PSSD/PSVE	12	2.4	1.9
		8/24/2010	BPSI-AR002-ST05*(1)	SSD Stack	PSSD/PSVE	9.6 J	3.9 J	1.2 J
3	APU/SSD	1/22/2009	BPS1-AR003-SSB	Subslab	IS	**13,000**	130	**10,000**
		8/26/2009	BPS1-AR003-SSB2	Subslab	PSSD	**260**	3.7	38
		7/28/2010	BPS1-AR003-SSB3	Subslab	PSVE only	25	2.0 J	3.6 J
		6/22/2009	BPS1-AR003-ST01	SSD Stack	PSSD	**7,700**	92	**3,600**
		8/25/2009	BPS1-AR003-ST02	SSD Stack	PSSD	**10,000**	170	**4,200**
		11/16/2009	BPS1-AR003-ST03	SSD Stack	PSSD	**6,200**	64	**2,900**
		11/16/2009	BPS1-AR003-ST03 DUP	SSD Stack	PSSD	**5,400**	61	**2,200**
		3/2/2010	BPS1-AR003-ST04 *	SSD Stack	PSSD/PSVE	3.8	0.82	0.98
		8/24/2010	BPSI-AR003-ST05*	SSD Stack	PSSD/PSVE	4.3	2.4	2.4
4	APU/SSD	1/21/2009	BPS1-AR004-SSB	Subslab	IS	**1,400**	42	**2,100**
		6/25/2009	BPS1-AR004-ST01	SSD Stack	PSSD	160	2	190
		6/25/2009	BPS1-AR004-ST01 DUP	SSD Stack	PSSD	160	1.7	180
		8/25/2009	BPS1-AR004-ST02	SSD Stack	PSSD	**360**	31	210
		11/17/2009	BPS1-AR004-ST03	SSD Stack	PSSD	**300**	17	140
		3/2/2010	BPS1-AR004-ST04 *	SSD Stack	PSSD/PSVE	1.8	1.5	0.21 J
		8/24/10	BPSI-AR004-ST05*	SSD Stack	PSSD/PSVE	2.3 J	1.9 J	0.17 J
13	APU/SSD	2/26/2009	BPS1-AR013-SSB	Subslab	IS	230	11	420
		2/26/2009	BPS1-AR013-SSB DUP	Subslab	IS	**250**	12	440
		6/24/2009	BPS1-AR013-ST01	SSD Stack	PSSD	70	68	84
		8/25/2009	BPS1-AR013-ST02	SSD Stack	PSSD	48	8.6	58
		11/16/2009	BPS1-AR013-ST03	SSD Stack	PSSD	29	4.8	30
		3/2/2010	BPS1-AR013-ST04 *	SSD Stack	PSSD/PSVE	1.1	1.3	1.8
		8/24/2010	BPSI-AR013-ST05*	SSD Stack	PSSD/PSVE	0.87	2.20	0.31 J
		8/24/2010	BPSI-AR013-ST05 DUP*	SSD Stack	PSSD/PSVE	0.94	2.50	0.34 J
14	APU/SSD	3/11/2009	BPS1-AR014-SSB	Subslab	IS	**290**	15	970
		6/24/2009	BPS1-AR014-ST01	SSD Stack	PSSD	88	13	110
		8/26/2009	BPS1-AR014-ST02	SSD Stack	PSSD	30	10	43
		11/17/2009	BPS1-AR014-ST03	SSD Stack	PSSD	12	5.3	13
		3/1/2010	BPS1-AR014-ST04 *	SSD Stack	PSSD/PSVE	1	1.6	0.95
		8/24/2010	BPSI-AR014-ST05*	SSD Stack	PSSD/PSVE	0.55	2.90	0.34 J

NOTES:
Bold values indicate exceedance of NYSDOH guideline values
Highlighted rows show analytical results for this reporting period.
* Sample collected after SVE Containment System began operation in January 2010
IS = Initial Sampling
PSSD = Post SSD Installation Sampling
PSVE = Post Soil Vapor Extraction Containment system start up
(1) APUs were removed from the home on 7/13/10.

TABLE 3-3
Analytical Comparison of Detections
Soil Vapor Pressure Monitors
Site 1 - Former Drum Marshalling Area
NWIRP Bethpage, New York

	SVPM 11		SVPM 12			SVPM 2002						SVPM 2003				SVPM 2004					SVPM 2007	
Depth - bgs	**24 Feet**		**25 Feet**			**8 Feet**		**20 Feet**		**44 Feet**		**20 Feet**		**49 Feet**		**20 Feet**			**49 Feet**		**49 Feet**	
Sample ID	**SVPM11S-24**	**BPSI - SVPM-11S**	**SVPM12S-25**	**BPSI - SVPM-12S**	**BPSI - SVPM-12S DUP**	**BPSI - SG2002-08**	**BPSI - SVPM-2002S**	**BPSI - SG2002-20**	**BPSI - SVPM-2002I**	**BPSI - SG2002-44**	**BPSI - SVPM-2002D**	**BPSI - SG2003-20**	**BPSI - SVPM-2003I**	**BPSI - SG2003-49**	**BPSI - SVPM-2003D**	**BPSI - SG2004-20**	**BPSI - SVPM-2004I**	**BPSI - SVPM-2004I DUP**	**BPSI - SG2004-49**	**BPSI - SVPM-2004D**	**BPSI - SG2007-49**	**BPSI - SVPM-2007D**
Date	January-08	August-10	January-08	August-10	August-10	October-08	August-10	October-08	August-10	October-08	August-10	October-08	August-10	October-08	August-10	October-08	August-10	August-10	October-08	August-10	October-08	August-10
VOCs (µg/m3)																						
Trichloroethene	7,200	3,100	73,000	1,200	1,200	34,000	17	89,000	8	26,000	10	82	0.36 J	710	5.2	550	0.28 J	0.26 J	600	0.47	400	1.5
Tetrachloroethene	5,300	330	ND	55	53	420	3	740	1.8	48 J	4	14	5	8.9	2.5	1,000	1.8	2.1	580	2.9	5.3 J	2.7
1,1,1-Trichloroethane	2,400	16	36,000	71	74	21,000	1.2	52,000	0.68	27,000	1	170J	0.23 J	720J	1.2	460	0.20 J	0.17 J	480	0.33 J	870	1.5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.028 J	ND	ND	ND	0.022 J	ND	ND	ND	ND	ND	0.016 J	0.028 J	ND	0.042 J	ND	0.036 J
1,1-Dichloroethane	63	ND	710	1.2 J	1.3 J	170	0.017 J	680	0.014 J	490	0.027 J	0.49 J	ND	8.6	0.026 J	44	0.072 J	0.079 J	74	0.030 J	3.0 J	0.041 J
1,1-Dichloroethene	ND	ND	1,700	ND	ND	220	0.071 J	890	0.037 J	480	ND	2	ND	23	ND	7.1	0.043 J	ND	ND	ND	13	ND
cis-1,2-Dichloroethene	860	38	200J	140	150	49 J	ND	170	ND	130	0.022 J	ND	ND	1.6	ND	4.6	ND	ND	ND	ND	ND	0.95
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	0.076 J	ND	0.087 J	ND	0.054 J	ND	ND	ND	0.063 J	ND	0.065 J	0.056 J	ND	0.078 J	ND	0.11 J
trans-1,2-Dichloroethene	64	4.1 J	ND	2.2 J	2.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.9	0.015 J	ND	ND	ND	ND	0.054 J

bgs - Below Ground Surface
µg/m^3 = micrograms per cubic meter
J = estimated value
ND = No Detect

Table 3-4
Analytical Summary
Outdoor Air Sampling
Site 1 - Former Drum Marshalling Area
NWIRP Bethpage, New York

Sample ID Sample Collection Date	**BPS1-AR003-ODA-3** 7/28/2010	**BPS1-AR002-ODA-4** 8/24/2010	**BPS1-SVPM-ODA** 8/25/2010	**BPS1-SVPM-ODA** 8/26/2010	**Frequency of Detections**
Volatile Organics (ug/m^3)					
1,1,1-TRICHLOROETHANE	0.07 J	0.062 J	0.036 J	0.037 J	4 of 4
1,1-DICHLOROETHANE	ND	ND	ND	ND	0 of 4
1,1-DICHLOROETHENE	ND	ND	ND	ND	0 of 4
1,2-DICHLOROETHANE	0.27 J	0.076 J	0.082 J	0.10 J	4 of 4
CIS-1,2-DICHLOROETHENE	ND	ND	ND	0.026 J	1 of 4
TETRACHLOROETHENE	0.16 J	0.16 J	0.27 J	0.24 J	4 of 4
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	0 of 4
TRICHLOROETHENE	0.22 J	0.048 J	0.044 J	0.040 J	4 of 4
VINYL CHLORIDE	ND	ND	ND	ND	0 of 4

Notes:

Sample collection date indicates the day of collection. Samples ran for 24 hours prior to collection.

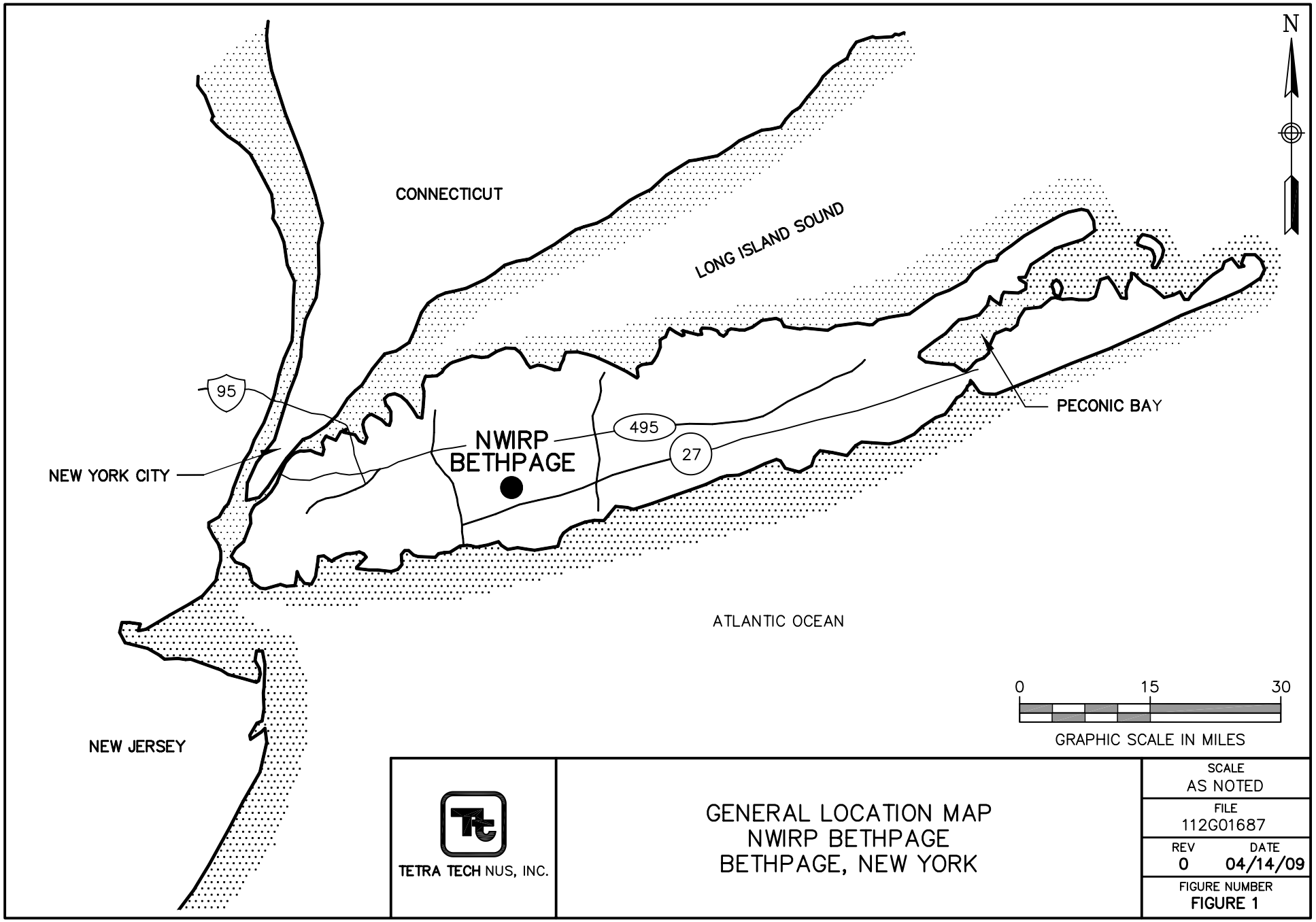
µg/m^3 = micrograms per cubic meter

ND = Non-Detect Value

J = Estimated Value

FIGURES

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

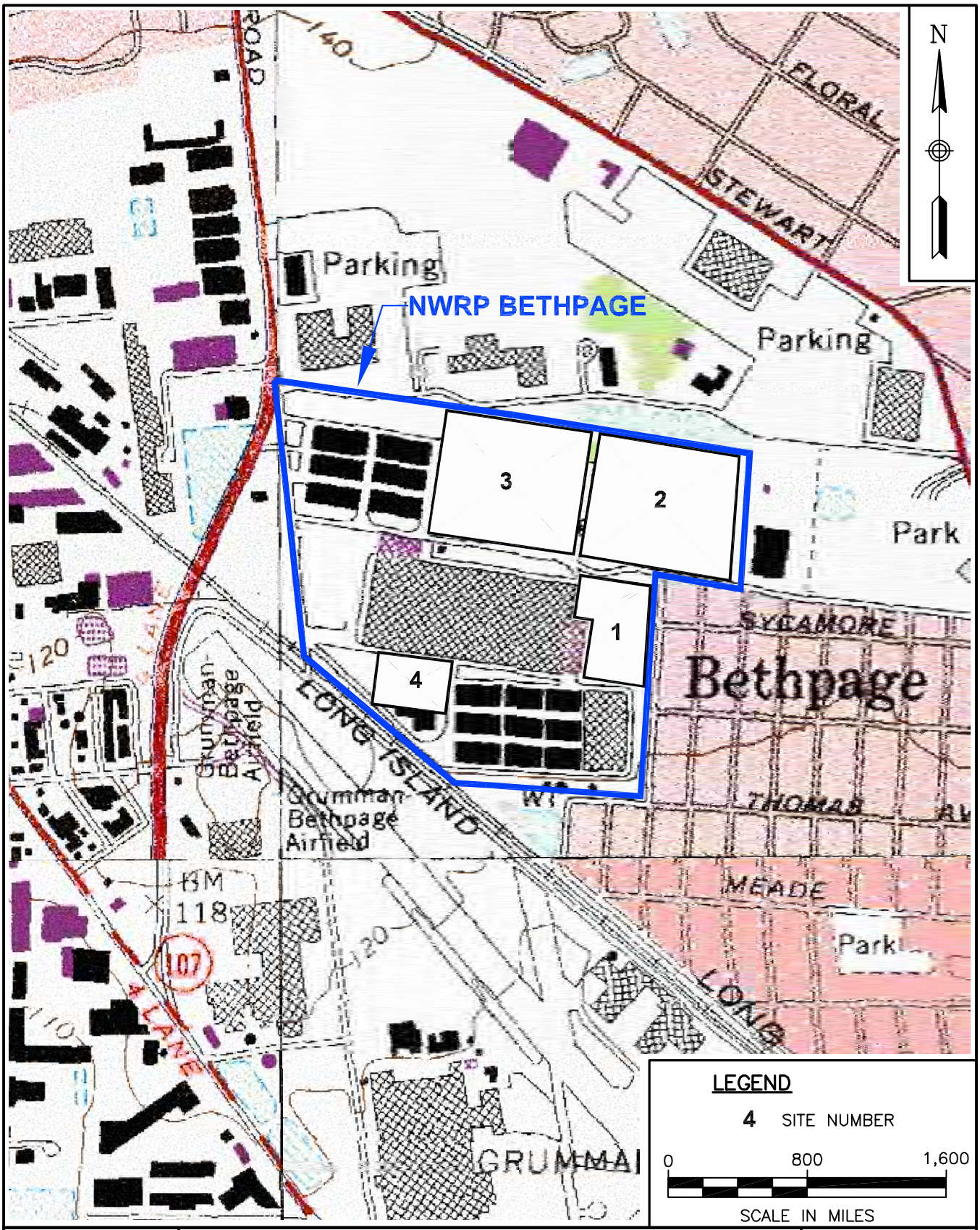


TETRA TECH NUS, INC.

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

112G02019/0810/112G02019GM02.DWG 11/08/10 MKB

N

AOC 30
AOC 35
AOC 23
SETTLING TANK
BPS1-SG1004
BPS1-SG1005
BPS1-SG1006
BPS1-SG1003
BPS1-SG1002
BPS1-SG1001
SITE 1
ETAL STORAGE BUILDINGS
PAD
PLANT 17 SOUTH
BPSI-SG2004
BPSI-SG2005
BPSI-SG2006
BPSI-SG2007
BPSI-SG2008
BPSI-SG2009
BPSI-SG2010
BPSI-SG2011
BPSI-SG2001
BPSI-SG2002
BPSI-SG2003
SVPM2004D
SVPM2004I
SVPM11
SVPM11S
SVPM2007I
SVPM2007D
SVPM2002S
SVPM2002I
SVPM2002D
SVPM12
SVPM12S
SVPM2003D
SVPM2003I
SYCAMORE AVENUE
MAPLE AVENUE
11TH STREET
10TH STREET
9TH STREET
8TH STREET

BPSI-SG2004	8 ft bgs	20 ft bgs	49 ft bgs
Oct 2008			
Compound	ug/m³	ug/m³	ug/m³
PCE	1.8	1,000	580
TCE	1.0	550	600
TCA	1.4	460	480

BPSI-SVPM	2004I	2004I DUP	2004D
Aug 2010			
Compound	ug/m³	ug/m³	ug/m³
PCE	1.8	2.1	2.9
TCE	0.28 J	0.26 J	0.47
TCA	0.2 J	0.17 J	0.33 J

SVPM11S	24 ft bgs
Jan 2008	
Compound	ug/m³
PCE	5,300
TCE	7,200
TCA	ND

SVPM11S	24 ft bgs
Aug 2010	
Compound	ug/m³
PCE	330
TCE	3,100
TCA	16

BPSI-SG2007	8 ft bgs	20 ft bgs	49 ft bgs
Oct 2008			
Compound	ug/m³	ug/m³	ug/m³
PCE	13	25	5.3 J
TCE	29	87	400
TCA	150	260	870

BPSI-SVPM	2007D
Aug 2010	
Compound	ug/m³
PCE	2.7
TCE	1.5
TCA	1.5

SVPM12S	25 ft bgs
Jan 2008	
Compound	ug/m³
PCE	ND
TCE	73,000
TCA	36,000

SVPM	12S	12S DUP
Aug 2010		
Compound	ug/m³	ug/m³
PCE	55	53
TCE	1,200	1,200
TCA	71	74

BPSI-SG2002	8 ft bgs	20 ft bgs	44 ft bgs
Oct 2008			
Compound	ug/m³	ug/m³	ug/m³
PCE	420	740	48 J
TCE	34,000	89,000	26,000
TCA	21,000	52,000	27,000

BPSI-SVPM	2002S	2002I	2002D
Aug 2010			
Compound	ug/m³	ug/m³	ug/m³
PCE	3	1.8	4
TCE	17	8.0	10
TCA	1.2	0.68	1

BPSI-SG2003	8 ft bgs	20 ft bgs	49 ft bgs
Oct 2008			
Compound	ug/m³	ug/m³	ug/m³
PCE	19	14	8.9
TCE	20	82	710
TCA	66	170	720

BPSI-SVPM	2003I	2003D
Aug 2010		
Compound	ug/m³	ug/m³
PCE	5	2.5
TCE	0.36 J	5.2
TCA	0.23 J	1.2

LEGEND

- OFFSITE SOIL GAS SAMPLE LOCATION
- ONSITE SOIL GAS SAMPLE LOCATION
- SOIL VAPOR PRESSURE MONITORING POINT (SVPM)
- *420* SOIL GAS VALUE in ug/m 3
- *J* ESTIMATED VALUE
- bgs BELOW GROUND SURFACE
- PCE TETRACHLOROETHENE
- TCE TRICHLOROETHENE
- TCA 1,1,1 - TRICHLOROETHANE
- PROPERTY LINE
- FENCE LINE
- SITE BOUNDARY

GUIDANCE	NYSDOH SUBSLAB VALUE	NYSDOH INDOOR AIR VALUE
COMPOUND	ug/m³	ug/m³
PCE	1,000[2]	100[1]
TCE	250[2]	5[1]
TCA	1,000[2]	100[2]

NOTE:
[1] VALUE DERIVED FROM NYSDOH GUIDANCE (2006), TABLE 3.1
[2] VALUE DERIVED FROM NYSDOH GUIDANCE (2006), TABLE 3.3 (MATRIX 1 AND 2)
µg/m³ = MICROGRAMS PER CUBIC METER OF AIR

0 100 200
SCALE IN FEET

TETRA TECH NUS, INC.

SOIL GAS SAMPLING RESULTS
AUGUST 2010
SITE 1
NWIRP BETHPAGE
BETHPAGE, NEW YORK

FILE	SCALE
112G02019GM02	AS NOTED
FIGURE NUMBER	REV / DATE
FIGURE 3	0 / 11/08/10

APPENDICES

APPENDIX A

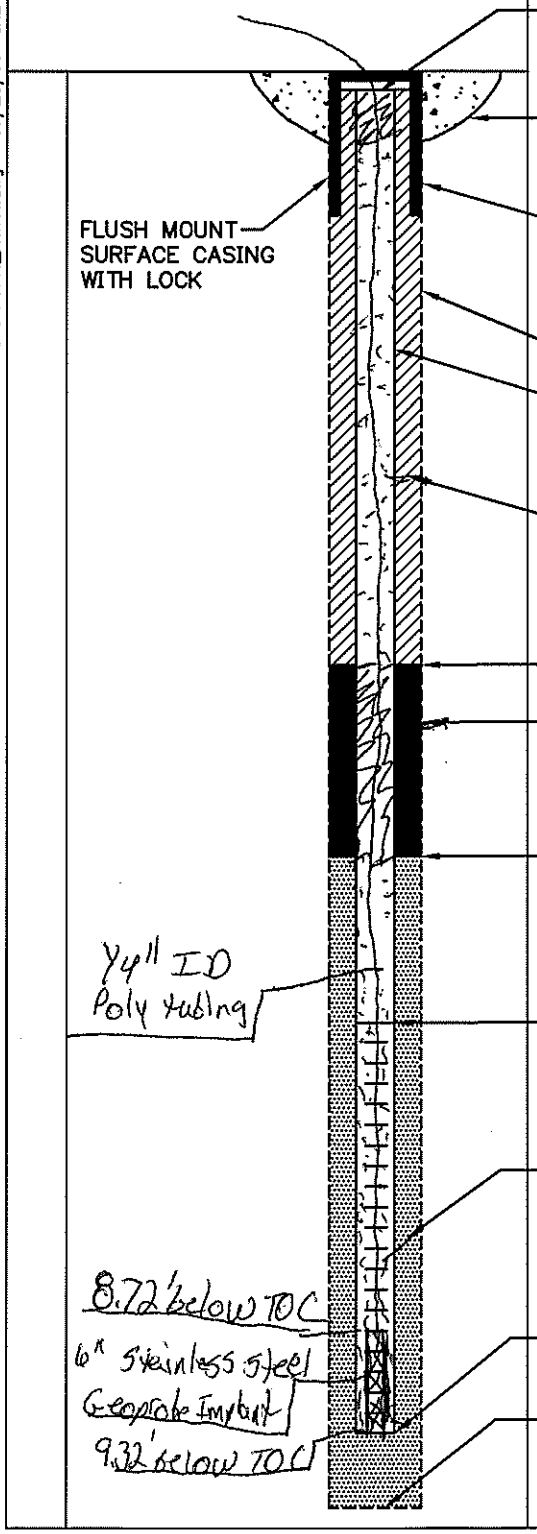
SVPM Implant Retrofit Log Sheets

WELL NO.: SUPM-20025

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT Naval Weapons Station Yorktown	LOCATION Site 1	DRILLER SUPM previously	
PROJECT NO. 112G02019	BORING 8123M0	DRILLING METHOD installed January 2009. This document implant construction only	
DATE BEGUN 8/23/10	DATE COMPLETED 8/23/10		
FIELD GEOLOGIST R. Sok			
GROUND ELEVATION	DATUM	DEVELOPMENT METHOD	



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around implant: cement/bentonite plug. 0.2' to top of casing

TYPE OF PROTECTIVE CASING: Flush mount cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing: #1 silica Quartz to 0.2' below TOC ~~Hole~~

ELEVATION/DEPTH TOP OF SEAL around implant: 7.00' TOC

TYPE OF SEAL: around poly tubing: 3/8" Bentonite Hole Plug

ELEVATION/DEPTH TOP OF SAND: inside casing: 6.20' TOC

ELEVATION/DEPTH TOP OF SCREEN: 7.32' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot x 2'

TYPE OF SAND PACK: around implant: #1 silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 9.32' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 9.32' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 9.32' TOC

BACKFILL MATERIAL BELOW SAND: NA

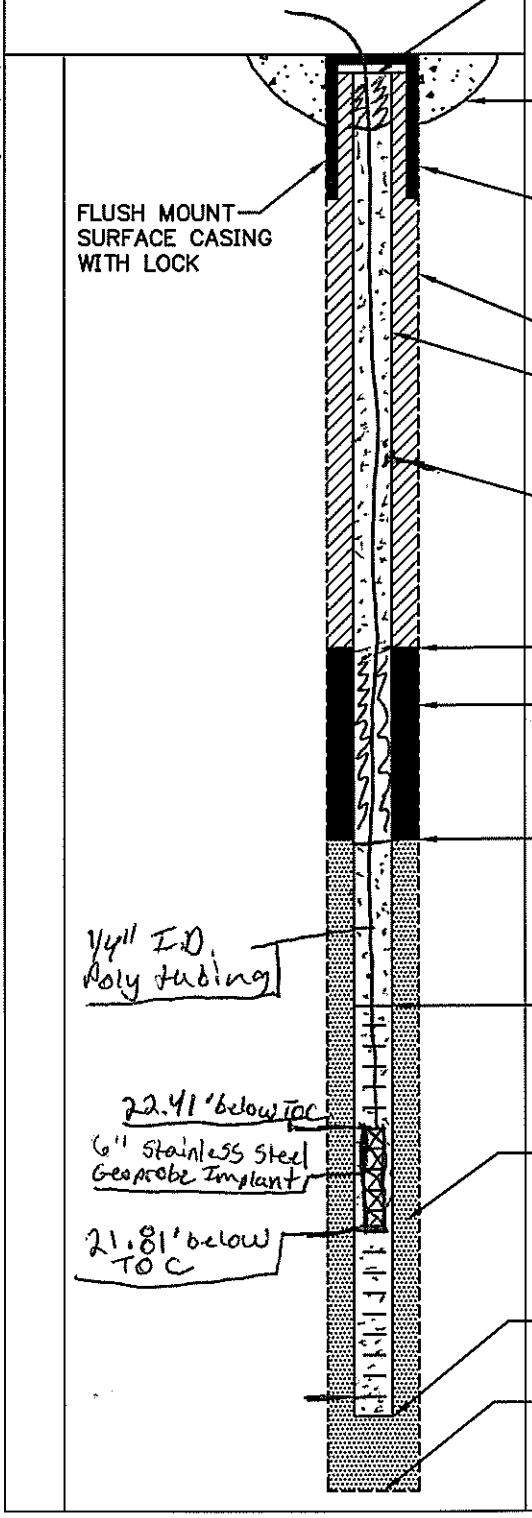
ACAD: FORM_MWFM.dwg 07/20/99 INL

WELL NO.: SVPM-2002Z

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NIWIRP-Bethpage	LOCATION Site 1	DRILLER SVPM previously	
PROJECT NO. 112G02019	BORING NA	DRILLING METHOD Installed January 2009. This documents implant construction only	
DATE BEGUN 8/23/10	DATE COMPLETED 8/23/10		
FIELD GEOLOGIST R. Soh			
GROUND ELEVATION	DATUM	DEVELOPMENT METHOD	



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around implant: cement/Bentonite plug - 0.2' to top of casing

TYPE OF PROTECTIVE CASING: Flush mount cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing: #1 Silica Quartz to 0.2' from TOC ~~to TOC~~ PLS

ELEVATION/DEPTH TOP OF SEAL: 16.00' TOC

TYPE OF SEAL: around poly tubing: 3/8" Bentonite Hole Plug

ELEVATION/DEPTH TOP OF SAND: inside casing: 19.51' TOC

ELEVATION/DEPTH TOP OF SCREEN: 20.71' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot X 2'

TYPE OF SAND PACK: around Implant: #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 22.71' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 22.71' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 22.71' TOC

BACKFILL MATERIAL BELOW SAND: NA

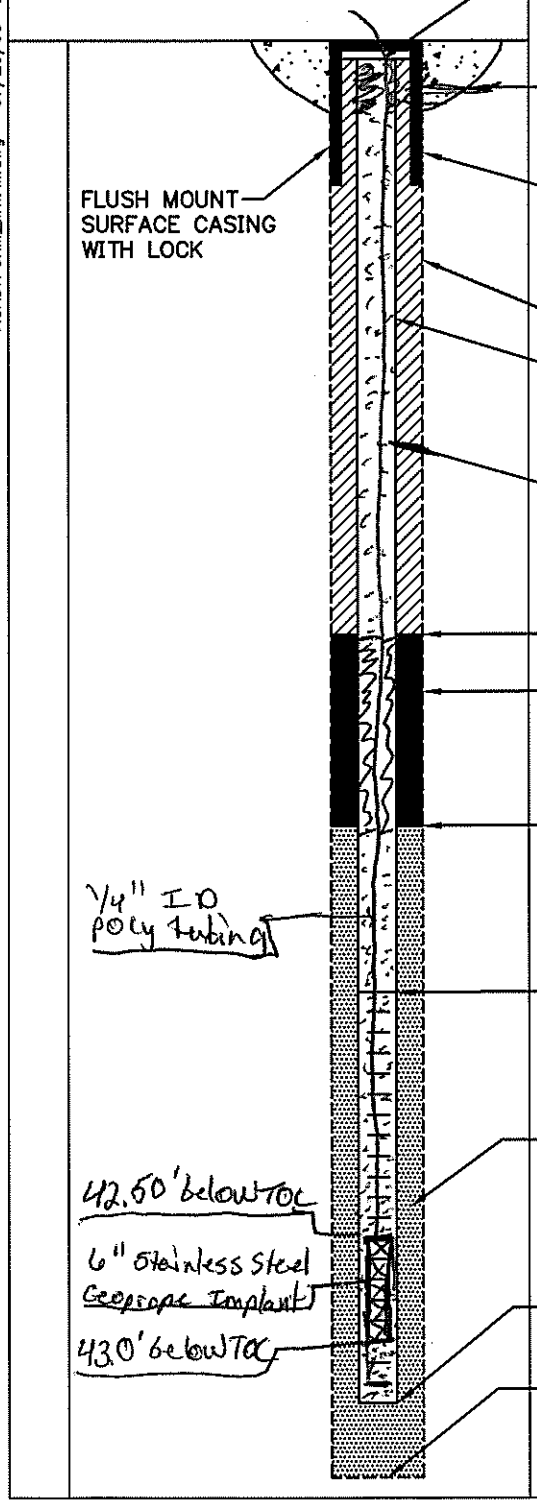
ACAD:FORM_MWFM.dwg 07/20/99 INL

WELL NO.: SVPM-2002D

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NWIRP Bethpage	LOCATION Site 1	DRILLER SVPM previously	
PROJECT NO. 112G02019	BORING NA	DRILLING METHOD Installed January 2009. This documents implant construction only.	
DATE BEGUN 8/23/10	DATE COMPLETED 8/23/10		
FIELD GEOLOGIST R. Sokk			
GROUND ELEVATION	DATUM	DEVELOPMENT METHOD	



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around implant: Cement/Bentonite plug - 0.2' below TOC to TOC

TYPE OF PROTECTIVE CASING: Flush mount cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing: #1 Silica Quartz to 0.2' below ~~to~~ TOC

ELEVATION/DEPTH TOP OF SEAL: 36.0' TOC

TYPE OF SEAL around poly tubing: 3/8" Bentonite Hole Plug

ELEVATION/DEPTH TOP OF SAND inside casing: 40.00' TOC

ELEVATION/DEPTH TOP OF SCREEN: 41.34' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot x 2'

TYPE OF SAND PACK: around Implant: #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 43.34' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 43.34' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 43.34' TOC

BACKFILL MATERIAL BELOW SAND: NA

ACAD: FORM_MWFM.dwg 07/20/99 INL

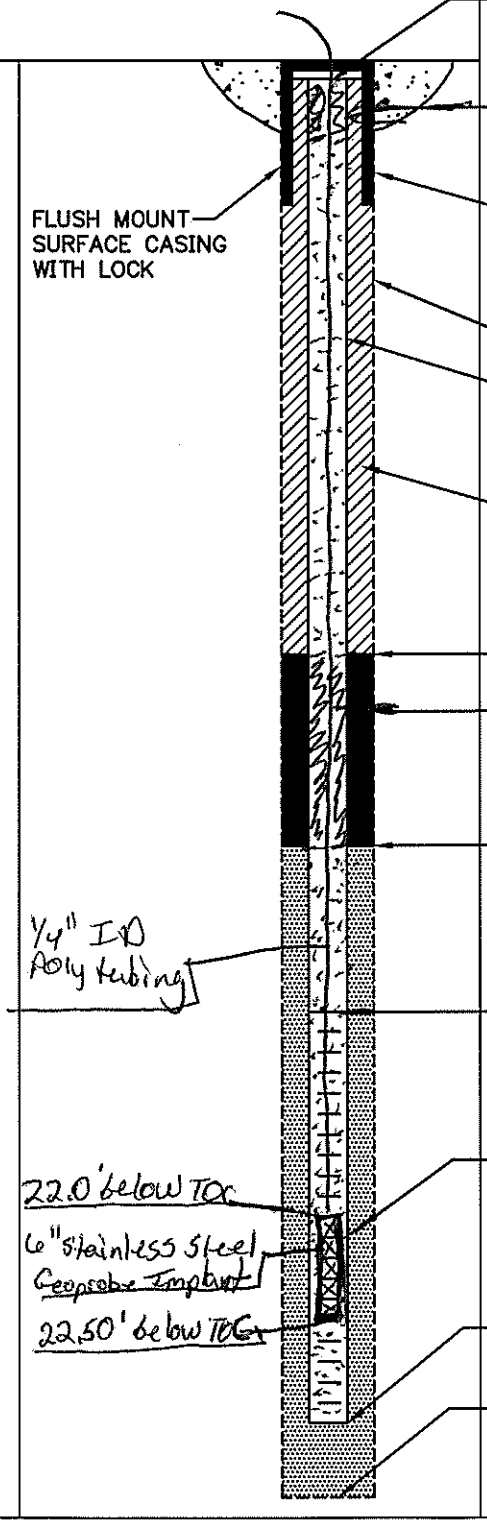
WELL NO.: SVPM-2003I

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NIWTAP Bethpage | LOCATION Site 1 | DRILLER SVPM previously
PROJECT NO. 112G02019 | BORING NA | DRILLING METHOD Installed January 2009. This documents implant construction only
DATE BEGUN 8/23/10 | DATE COMPLETED 8/23/10
FIELD GEOLOGIST P. Sok
GROUND ELEVATION _____ | DATUM _____ | DEVELOPMENT METHOD _____

ACAD:FORM_MWFM.dwg 07/20/99 INL



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around implant: Cement/ Bentonite Plug - 0.2' below TOC to TOC

TYPE OF PROTECTIVE CASING: Flush mount cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing: #1 Silica Quartz to 0.2' below TOC

ELEVATION/DEPTH TOP OF SEAL: 15.00' TOC

TYPE OF SEAL: around poly tubing: 3/8" Bentonite Hole Plug

ELEVATION/DEPTH TOP OF SAND: inside casing: 19.05' TOC

ELEVATION/DEPTH TOP OF SCREEN: 20.58' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 Slot X 2'

TYPE OF SAND PACK: around implant: #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 22.58' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 22.58' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 22.58' TOC

BACKFILL MATERIAL BELOW SAND: NA

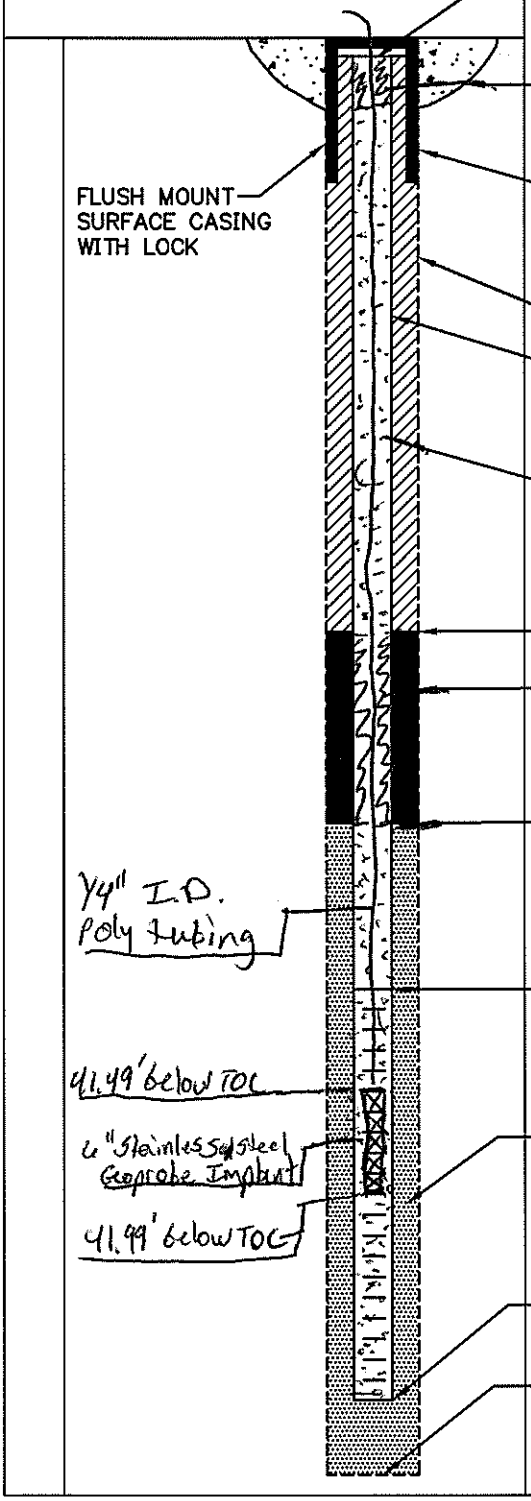
WELL NO.: SVPM-20030

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NWIRP Bethpage LOCATION Sump 1
PROJECT NO. 112G02019 BORING NA
DATE BEGUN 8/23/10 DATE COMPLETED 8/23/10
FIELD GEOLOGIST R. Sokk
GROUND ELEVATION _____ DATUM _____

DRILLER SVPM previously
DRILLING METHOD installed January 2009. This document
DEVELOPMENT METHOD implant construction only



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around Implant: Cement/Bentonite Plug - 0.2' below TOC to TOC

TYPE OF PROTECTIVE CASING: Flushmount Cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL around tubing: #1 Silica Quartz to 0.2' below TOC ~~to TOC~~ KLF

ELEVATION/DEPTH TOP OF SEAL: 34.0' TOC

TYPE OF SEAL around poly tubing: 3/8" Bentonite Hole plug

ELEVATION/DEPTH TOP OF SAND inside casing: 38.30' TOC

ELEVATION/DEPTH TOP OF SCREEN: 40.99' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot x 2'

TYPE OF SAND PACK: around implant: #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 42.99' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 42.99' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 42.99' TOC

BACKFILL MATERIAL BELOW SAND: NA

ACAD:FORM_MWFM.dwg 07/28/99 INL

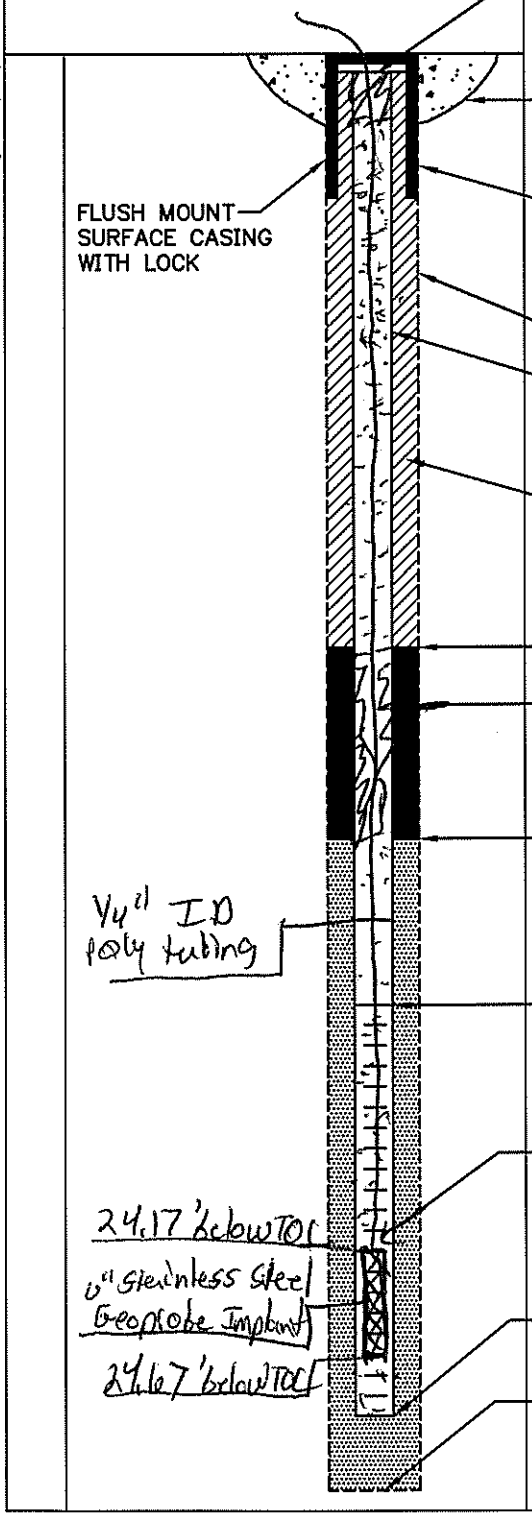
WELL NO.: SVPM-2004I

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NWIRP Bethpage	LOCATION Site 1	DRILLER SVPM previously	
PROJECT NO. 112G02019	BORING VA	DRILLING METHOD installed - October 2009 This document is implant construction only	
DATE BEGUN 8/24/10	DATE COMPLETED 8/24/10		
FIELD GEOLOGIST R. Sorn			
GROUND ELEVATION	DATUM	DEVELOPMENT METHOD	

ACAD:FORM_MWFM.dwg 07/20/99 INL



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around implant: Cement/Bentonite plug - 0.3' below TOC to TOC

TYPE OF PROTECTIVE CASING: Flush Mount Cover

I.D. OF PROTECTIVE CASING: 10"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing: #1 Silica Quartz to 0.3' below TOC

ELEVATION/DEPTH TOP OF SEAL: 17.80' TOC

TYPE OF SEAL: around poly tubing: 3/8" Bentonite Hole plug

ELEVATION/DEPTH TOP OF SAND: inside casing: 21.40' TOC

ELEVATION/DEPTH TOP OF SCREEN: 22.97' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot x 2'

TYPE OF SAND PACK: around implant: #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 24.97' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 24.97' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 24.97' TOC

BACKFILL MATERIAL BELOW SAND: NA

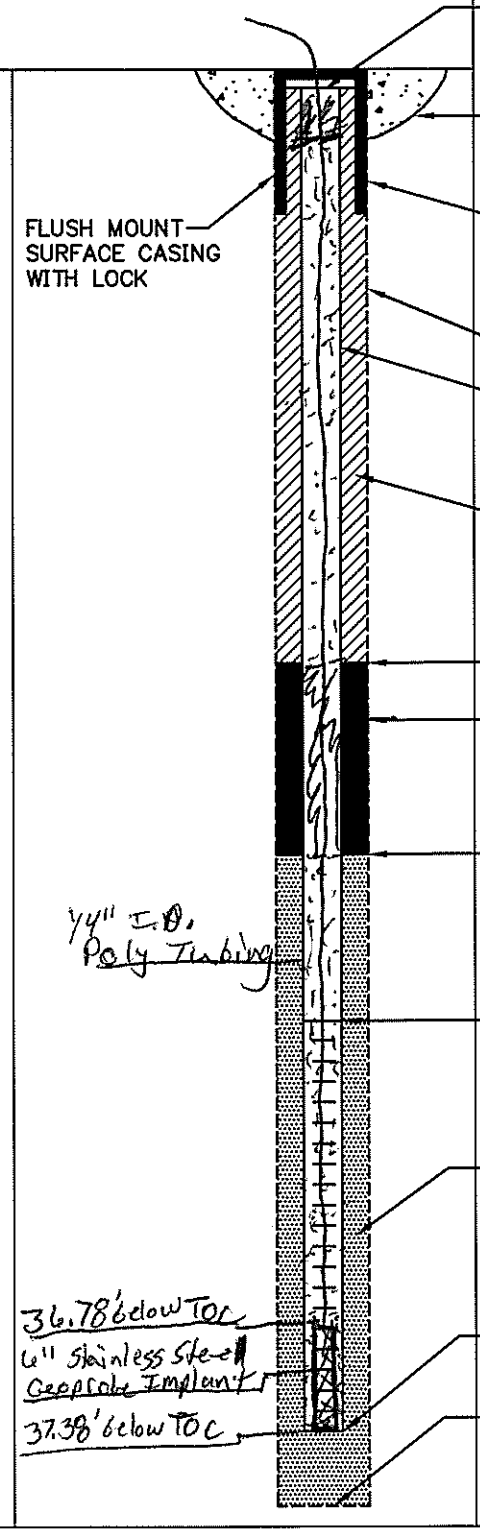
WELL NO.: SVPM-2004D

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NWIRP Bethpage	LOCATION Site 1	DRILLER SVPM previously	
PROJECT NO. 112G0209	BORING NA	DRILLING METHOD installed - October 2009. This documents	
DATE BEGUN 8/24/10	DATE COMPLETED 8/24/10		
FIELD GEOLOGIST R. Sok		DEVELOPMENT METHOD implant construction only.	
GROUND ELEVATION	DATUM		

ACAD: FORM_MWFM.dwg 07/20/99 INL



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around implant: cement Bentonite plug 0.2 below TOC to TOC

TYPE OF PROTECTIVE CASING: Flush mount Cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing: #1 Silica Quartz to 0.2 below TOC

ELEVATION/DEPTH TOP OF SEAL: 31.02' TOC

TYPE OF SEAL: around tubing: 3/8" Bentonite Hole plug

ELEVATION/DEPTH TOP OF SAND (inside casing): 34.78' TOC

ELEVATION/DEPTH TOP OF SCREEN: 35.38' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot x 2'

TYPE OF SAND PACK: around implant: #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 37.38' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 37.38' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 37.38' TOC

BACKFILL MATERIAL BELOW SAND: N/A

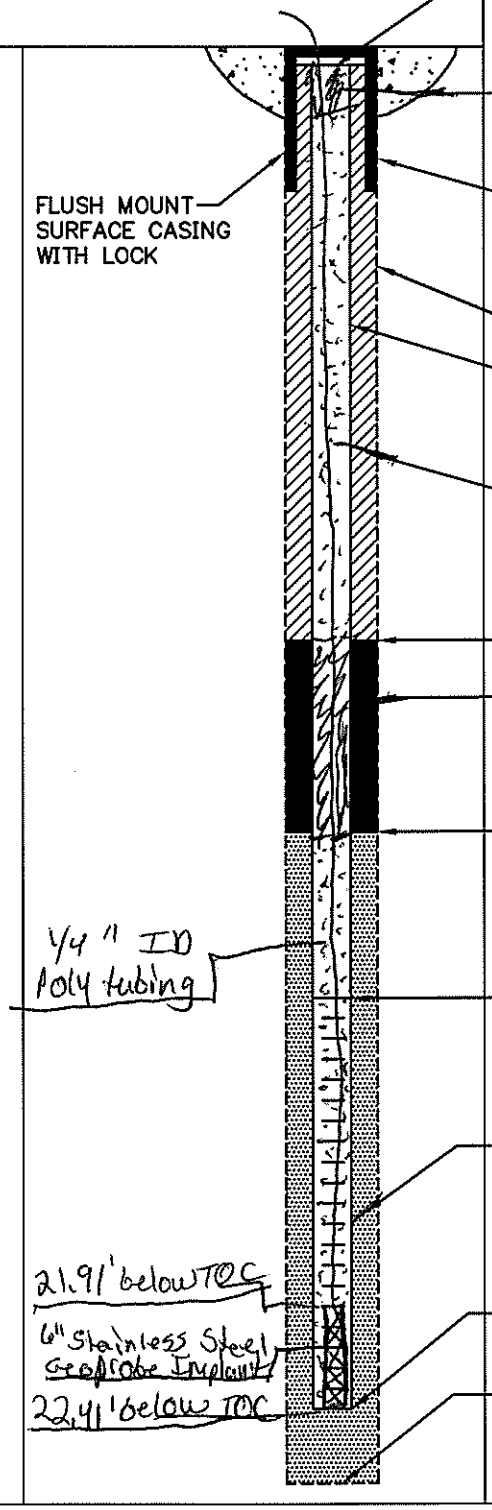
WELL NO.: SVPM-2007I

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NWIRP Bethpage	LOCATION Site 1	DRILLER SVPM previously	
PROJECT NO. 112G02019	BORING NA	DRILLING METHOD installed - January 2009. This document	
DATE BEGUN 8/24/10	DATE COMPLETED 8/24/10		
FIELD GEOLOGIST R. Sok		DEVELOPMENT METHOD implant construction only.	
GROUND ELEVATION	DATUM		

ACAD: FORM_MWFM.dwg 07/20/99 INL



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL: around implant: cement Bentonite plug 0.2 below TOC to TOC

TYPE OF PROTECTIVE CASING: Flush mount Cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.25"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing: #1 Silica Quartz to 0.2 below TOC

ELEVATION/DEPTH TOP OF SEAL: 15.70' TOC

TYPE OF SEAL: around tubing: 3/8" Bentonite Hole Plug

ELEVATION/DEPTH TOP OF SAND: inside casing: 19.04' TOC

ELEVATION/DEPTH TOP OF SCREEN: 20.41' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot X 2'

TYPE OF SAND PACK: around implant: #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 22.41' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 22.41' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 22.41' TOC

BACKFILL MATERIAL BELOW SAND: NA

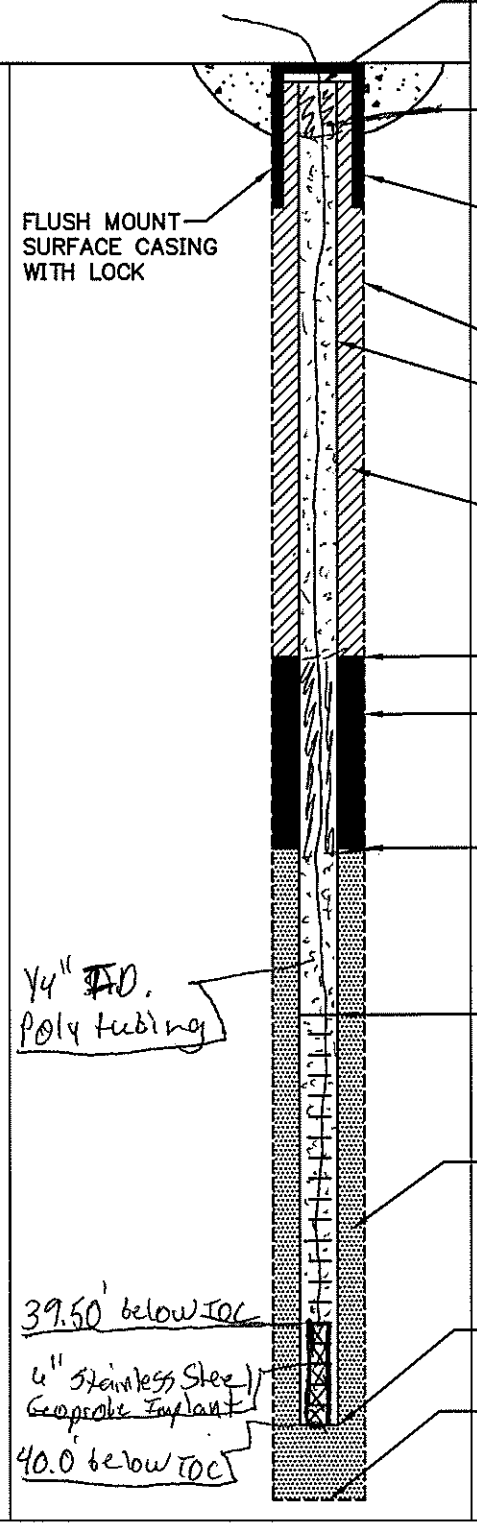
WELL NO.: SWM-2007D

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

Tetra Tech NUS, Inc. Geoprobe Implant Retrofit for Soil Vapor Pressure Monitor

PROJECT NWIRP Bethpage
PROJECT NO. 112G02019
DATE BEGUN 8/24/10
FIELD GEOLOGIST R. Sork
GROUND ELEVATION _____
LOCATION Site 1
BORING N/A
DATE COMPLETED 8/24/10
DATUM _____
DRILLER SWM Previously
DRILLING METHOD installed January 2009. This document, implant construction only.
DEVELOPMENT METHOD _____

ACAD: FORM_MWFM.dwg 07/20/99 INL



ELEVATION TOP OF RISER: _____

TYPE OF SURFACE SEAL around implant Cement Bentonite plug 0.2 below TOC to TOC

TYPE OF PROTECTIVE CASING: Flush mount cover

I.D. OF PROTECTIVE CASING: 6"

DIAMETER OF HOLE: 2.75"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 1"

TYPE OF BACKFILL/SEAL: around tubing, #1 Silica Quartz to 0.2 below TOC

ELEVATION/DEPTH TOP OF SEAL: 33.20' TOC

TYPE OF SEAL around tubing 3/8" bentonite Hole plug

ELEVATION/DEPTH TOP OF SAND inside casing: 37.50' TOC

ELEVATION/DEPTH TOP OF SCREEN: 38.0' TOC

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 0.010 slot X 2'

TYPE OF SAND PACK around implant #1 Silica Quartz

DIAMETER OF HOLE IN BEDROCK: N/A

ELEVATION / DEPTH BOTTOM OF SCREEN: 40.0' TOC

ELEVATION / DEPTH BOTTOM OF SAND: 40.0' TOC

ELEVATION/DEPTH BOTTOM OF HOLE: 40.0' TOC

BACKFILL MATERIAL BELOW SAND: N/A

APPENDIX B

AIR SAMPLING LOG SHEETS

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR003-SSB3
Sample Location: Home # 3
Sampled By: RMS

SAMPLING DATA:

Date: 7/28/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1609						
Method: 6L Summa	0-5 mph	SE-SW	~85°F			

Summa Canister #	33323
Filter Type/Flow	24 hr

Duplicate (if collected)

Start Time Vacuum	7/27 1604	in Hg -30
End Time Vacuum	7/28 1609	in Hg -5

	in Hg
	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	

Readings: BKG- 1.8ppm
Liters/minute
60ml @ 3.8
120ml @ 3.7
180ml @ 4.3
240ml @ 4.4ppm

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

Notes:

Subslab location placed adjacent to former locations SSB & SSB2.
* APUs removed permanently from home on 7/13/10. SSD was shut off on 7/13/10. KLF

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR003-INOB-5
Sample Location: Home # 3
Sampled By: RMS

SAMPLING DATA:

Date: 7/28/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1622						
Method: 6L Summa						

Summa Canister #	34348	**Duplicate** (if collected)	
Filter Type/Flow	24hr		

Start Time Vacuum	~~7/27~~ 1608	in Hg -31		in Hg
End Time Vacuum	~~7/28~~ 1622	in Hg -7.5		in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	

Readings:
Liters/minute
— @ —
— @ —
— @ —

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

Notes:

Indoor air sample collected in middle of basement, near former basement air samples
* APUs removed permanently from home on 7/13/10. SSD was shut off on 7/13/10 KLF

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BP51-AR003-INDL-S
Sample Location: Home # 3
Sampled By: RMS

SAMPLING DATA:

Date: 7/28/10 Time: 1625 Method: 6L Summa	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other

Summa Canister #	12086	**Duplicate** (if collected)	94602	(Used 1200 for blind dup time)
Filter Type/Flow	24hr		24hr	

Start Time Vacuum	7/27 1615	in Hg -30	7/27 1615	in Hg -32
End Time Vacuum	7/28 1625	in Hg -6.5	7/28 1626	in Hg -19.5

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	

Readings:
Liters/minute
— @ —
— @ —
— @ —

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

Notes:

Sample collected in between living room and dining room (1st floor) were former INDL samples were collected
*APUs were removed permanently from home on 7/13/10. SSD was shut off on 7/13/10. KLF

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR003-0DA3
Sample Location: Home #3
Sampled By: RMS

SAMPLING DATA:

Date: 7/28/10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1635						
Method: 6L Summa	0-5mph	SE-SW (variable direction)	~85°F			

Summa Canister #	10791
Filter Type/Flow	24hr

Duplicate (if collected)

Start Time Vacuum	7/27 1628	in Hg -30
End Time Vacuum	7/28 1635	in Hg -10.5

	in Hg
	in Hg

He check	Start	Stop	Reading
—	—	—	—

Purge Data	Start	Stop	Notes:
—	—	—	

Readings:
Liters/minute
— @ —
— @ —
— @ —

APU	Reading		SSD	Reading		7/28/10 1638
E-Meter	NA	Kwh	E-Meter	NA	Kwh	738
HEPA Life		hours	Flow rate		cfm	NA
Carbon Life		hours				

Notes:

Outdoor Air sample collected from SE corner of backyard
* APUs removed permanently from home on 7/13/10. SSD was shut off on 7/13/10. KLF

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR003-ST05
Sample Location: Home # 3
Sampled By: Vince

SAMPLING DATA:

Date: 8-24-10 / Time: 1454 / Method: Summa Canister	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
	NA →					→

Summa Canister #	5739
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-30	in Hg
End Time Vacuum	-4.5	in Hg

1412 hours
1454 hours

	in Hg
↓	in Hg

He check	Start	Stop	Reading
NA →			→

Purge Data	Start	Stop	Notes:
NA →		→	

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

Notes:

- Stack PID reading range 0.0 to 0.6 ppm prior to sampling
- Meter reading → 789 KW

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-AR004-ST05
Sample Location: Home # 4
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-24-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1500						
Method: Summa Canister	NA →					→

Summa Canister #	33989
Filter Type/Flow	30 minute

Duplicate (if collected)

Start Time Vacuum	-31	in Hg	1420 hours
End Time Vacuum	-5.0	in Hg	1500 hours

	in Hg
	in Hg

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

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

Notes:

Stack PID readings range 0.0 ppm to 0.3 ppm prior to sampling

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-AR002-ST05
Sample Location: Home # 2
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-24-10 / Time: / Method: Summa Canister	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
	NA →					→

Summa Canister #	1566
Filter Type/Flow	30 minute

Duplicate (if collected)

Start Time Vacuum	-31	in Hg	1403 hours
End Time Vacuum		in Hg	

	in Hg
	in Hg

He check	Start	Stop	Reading
NA →			→

Purge Data	Start	Stop	Notes:
NA →		→	

Void → Bad regulator

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

Notes:

- Stack PID reading range from 1.0 to 1.8 ppm prior to sampling
- Meter reading → 729 Kw

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

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

Sample ID No.: BPS1-AR002-STO5
Sample Location: Home # 2
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-24-10 Time: 1544 Method: Summa Canister	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
	NA →					→

Summa Canister #	34260
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-31	in Hg (1511 hours)
End Time Vacuum	-6.5	in Hg (1544 hours)

	in Hg
↓	in Hg

He check	Start	Stop	Reading
NA →			→

Purge Data	Start	Stop	Notes:
NA →		→	

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

Notes:
- Stack PID readings range from 0.0 to 1.8 ppm prior to sampling
- Meter reading → 729 KW

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

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

Sample ID No.: BPS1-AR013-ST05
Sample Location: Home # 13
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-24-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1641						
Method: Summa Canister	NA →					→

Summa Canister #	9920
Filter Type/Flow	30 minute

Duplicate (if collected)

9423	
30 minute	

Start Time Vacuum	-31	in Hg	1556 hours
End Time Vacuum	-7.5	in Hg	1641

-31	in Hg	1556 hours
-4.5	in Hg	1641

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

Dup # → BPS1-Dup01-20100824

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

Notes:

- Stack PID reading range from 0.0 to 0.6 ppm prior to sampling

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1 - AR014 - ST05
Sample Location: Home # 14
Sampled By: RMG/VAS

SAMPLING DATA:

Date: 8/24/10 Time: 1647 Method: Summa 6L canister	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other

Summa Canister #	12013
Filter Type/Flow	30 min

Duplicate (if collected)

Start Time Vacuum	-31	in Hg 1607
End Time Vacuum	-3	in Hg 1647

	in Hg
	in Hg

He check	Start	Stop	Reading

Purge Data	Start	Stop	Notes:

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

Notes:

PID Reading 0.6 ppm prior to start

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BP51-AR002-0DA4
Sample Location: Home # 2
Sampled By: Vinie Shickora / Rob Sok

SAMPLING DATA:

Date: 9-24-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1814						
Method: Summa Canister	~10 to 15 mph	N-NE	~75°F			

Summa Canister #	9910
Filter Type/Flow	8 hour

Duplicate (if collected)

Start Time Vacuum	-28.5 in Hg
End Time Vacuum	-11.0 in Hg

1355 hours
1814 hours

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

Notes:

Initial PID readings 0.0 ppm Ambient
-Sample located near NE corner of back yard

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-2002D-082510
Sample Location: Home # NA
Sampled By: Vince Stuckert / Rob Sok

SAMPLING DATA:

Date: 8-25-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1458						
Method: Summa Canister	NA					

Summa Canister #	5761
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-31	in Hg
End Time Vacuum	-4.5	in Hg

1418 hours
1458

		in Hg
		in Hg

He check	Start	Stop	Initial Reading	Final Reading
	1400	1415	75 ppm	75 ppm
Purge Data	**Start**	**Stop**	**Notes:** Purge rate ~ 200 mL/min	
	1400	1415		

(*) Concentration of Helium in Test Chamber → 100,000 ppm or greater to ~ 53% Helium

Readings:
Liters/minute
5 min @ 1000 mL/min
10 min @ 2000 mL
15 min @ 3000 mL

Notes:

- Helium detector used → Dielectric (model MGD 2002)
- Pump used → SKC (model 224-PCXR8)
- Flow gauge → Bios-Dry Cal® - DC lite primary flow meter (1 mL to 5 mL range)

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

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

Sample ID No.: BPS1-SVPM-2003I-082610
Sample Location: Home # NA
Sampled By: RMS/UAS

SAMPLING DATA:

Date: 8/26/10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 1501	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa 6L	NA					

Summa Canister #	5625
Filter Type/Flow	30 min

Duplicate (if collected)

Start Time Vacuum	-31	in Hg
End Time Vacuum	-4.5	in Hg

1424 hours
1501 hours

	in Hg
	in Hg

He check	Start	Stop	Reading
NA			

Purge Data	Start	Stop	Notes:
NA			

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

Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-2002I-082510
Sample Location: Home # NA
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-25-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1528						
Method: Summa Canister	NA	→	→	→	→	→

Summa Canister #	34458
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-29.5	in Hg
End Time Vacuum	-4.5	in Hg

1447 hours
1528 hours

	in Hg
↓	in Hg

He check	Start	Stop	Initial Reading	Final Reading
	1430	1445	0.0 ppm	0.0 ppm
Purge Data	**Start**	**Stop**	**Notes:** Purge rate ~ 200 mL/min	
	1430	1445		

* Concentration of Helium in Test Chamber → 100,000 ppm or greater to ~ 53% Helium

Readings:
Liters/minute
5 min @ 1000 mL
10 min @ 2000 mL
15 min @ 2000 mL
Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-20025-082510
Sample Location: Home # NA
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-25-10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 1625	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa Canister	NA →					→

Summa Canister #	25303
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-31	in Hg
End Time Vacuum	-4.5	in Hg

1535 hours
1625 hours

			Initial Reading	Final Reading
He check	Start	Stop		
	1518	1533	125 ppm	150 ppm
Purge Data	Start	Stop	Notes: purge rate ~ 200 mL/min	
	1518	1533		

(*) Concentration in Helium Test chamber → 100,000 ppm or greater → to ~ 53% Helium

Readings:
Liters/minute
5 min @ 1000 mL
10 min @ 2000 mL
15 min @ 3000 mL

Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-20031-082510
Sample Location: Home # NA
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-25-10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 1800	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa Canister	NA					

Summa Canister #	34349
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-30	in Hg
End Time Vacuum	-4.0	in Hg

1726 hours
1800

	in Hg
	in Hg

He check	Start	Stop	Initial Reading	Final Reading
	1710	1725	50 ppm	0.0 ppm
Purge Data	**Start**	**Stop**	**Notes:** purge rate ~ 200 mL/min	
	1710	1725		

* Concentration of Helion in Test chamber → 100,000 ppm TO 53%

Readings:
Liters/minute
5 min @ 1000 mL
10 min @ 2000 mL
15 min @ 3000 mL
Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-ODA-082510
Sample Location: Home # NA
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-25-10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 1803	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa canister	~5 mph	west	~75°F			

Summa Canister #	20944		Duplicate (if collected)	NA	
Filter Type/Flow	8 hour				
Start Time Vacuum	-31	in Hg	1333 hours		in Hg
End Time Vacuum	-15	in Hg	1803		in Hg

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

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

Notes:
- Outdoor air sample applicable to the following locations: SVPM-2002I, SVPM 2002S, SVPM-2003D and SVPM-ODA-082510 (All samples collected on 8/25/10). KLF

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-2004I-082610
Sample Location: Home # NA
Sampled By: Rob Sok / Vince Shickora

SAMPLING DATA:

Date: 8-26-10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 0918	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa Canister	NA					

Summa Canister #	12021	Duplicate (if collected)	33800
Filter Type/Flow	30 minute		30 minute

DUP #2

Start Time Vacuum	-28.0	in Hg	0844 hours	-31.0	in Hg
End Time Vacuum	-3.5	in Hg	0918	-5.0	in Hg

0844 hours
1200 hour Sample Time For Chain-of-custody

He check	Start	Stop	Initial Reading	Final Reading
	0825	0842	75 ppm	0 ppm
Purge Data	**Start**	**Stop**	**Notes:** Flow rate ~ 200 mL/min	
	0825	0842		

* Concentration of Helium in Test Chamber → 100,000 ppm To 53% Helium

Readings:
Liters/minute
5 min @ 1000 mL
10 min @ 2000 mL
15 min @ 3000 mL
Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-20040-082610
Sample Location: Home # NA
Sampled By: Rob Sok / Mike Shickora

SAMPLING DATA:

Date: 8-26-10	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time: 0920	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method: Summa 6L	NA					

Summa Canister #	33572
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-30.0	in Hg
End Time Vacuum	-4.5	in Hg

0829 hours
0920

	in Hg
	in Hg

He check	Start	Stop	Initial Reading	Final Reading
	0813		50 ppm	25 ppm
Purge Data	**Start**	**Stop**	**Notes:** Flow rate ~ 200 ML/min	
	0813			

* Concentration of Helium in Test Chamber → 100,000 ppm To 53% Helium

Readings:
Liters/minute
5 Min @ 1000 ML
10 Min @ 2000 ML
15 Min @ 3000 ML

Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-SVPM-2007-0-082610
Sample Location: Home # NA
Sampled By: Rob Sak / Vince Shickora

SAMPLING DATA:

Date: 8-26-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1040						
Method: Summa canister	NA →					→

Summa Canister #	33915		Duplicate (if collected)	NA
Filter Type/Flow	30 minute			
Start Time Vacuum	-31.0	in Hg	1003 hours	in Hg
End Time Vacuum	-3.5	in Hg	1040 hours	in Hg

He check	Start	Stop	Initial Reading	Final Reading
	0946	1001	0.0 ppm	0.0 ppm
Purge Data	**Start**	**Stop**	**Notes:** Flow rate ~ 200 ML/min	
	0946	1001		

* Concentration of Helium in Test Chamber → 100,000 ppm To 50% Helium

Readings:
Liters/minute
5 min @ 1000 ML
10 min @ 2000 ML
15 min @ 3000 ML
Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPS1-SVPM-12$-082610
Sample Location: Home # NA
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-26-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1238						
Method: Summa cannister	NA →					→

Summa Canister #	12679		Duplicate (if collected)	14006	Dup #3*
Filter Type/Flow	30 minute			30 minute	
Start Time Vacuum	-31.0	in Hg	1159 hours	-30.0	in Hg	1159 hours
End Time Vacuum	-3.5	in Hg	1238 hours	-5.0	in Hg	1238 hours

④ 1600 hours recorded on chain of custody

He check	Start	Stop	Reading
NA →			→
Purge Data	**Start**	**Stop**	**Notes:** Flow rate ~ 200 ml/min
	1143	1158	

Readings:
Liters/minute
5 min @ 1000 mL
10 min @ 2000 mL
15 min @ 3000 mL

Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-115-082616
Sample Location: Home # NA
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-26-10	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Time: 1257						
Method: Summa canister	NA →					

Summa Canister #	33886
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum	-31.0	in Hg	1219 hours
End Time Vacuum	-5.0	in Hg	1257 hours

	in Hg
↓	in Hg

He check	Start	Stop	Reading
NA →			

Purge Data	Start	Stop	Notes: Flow rate ~ 200 mL/min
	1203	1218	

Readings:
Liters/minute
5 min @ 1000 mL
10 min @ 2000 mL
15 min @ 3000 mL
Notes:

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-0-0A-082610
Sample Location: Home # NA
Sampled By: Vince Shickora / Rob Sok

SAMPLING DATA:

Date: 8-26-10 / Time: 1510	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
Method: Summa canister	~ 5 mph	west	~ 75° F			

Summa Canister #	5727
Filter Type/Flow	8 hour

Duplicate (if collected): NA

Start Time Vacuum	-29.0	in Hg (0818)
End Time Vacuum	-10.5	in Hg (1510)

		in Hg
		in Hg

He check	Start	Stop	Reading
NA →			

Purge Data	Start	Stop	Notes:
NA →			

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

Notes:

Outdoor air sample applicable to all samples collected on 8-26-10

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

Project Site Name: NWIRP Bethpage
Project No.: 112G02019
Sample ID No.: BPSI-SVPM-2007I-082610
Sample Location: Home # NA
Sampled By: Rob Sak / Vince Shickora

SAMPLING DATA:

Date: 8-26-10 / Time: / Method: Summa Canister	Wind speed (Visual)	Wind Direction (estimated)	Ambient temperature (°F)	Barometric Pressure (in.)	Relative Humidity (%)	Other
	NA					

Summa Canister #	5602
Filter Type/Flow	30 minute

Duplicate (if collected): NA

Start Time Vacuum		in Hg
End Time Vacuum		in Hg

			Initial	Final
He check	Start	Stop	Reading	Reading
	0942		2650 ppm	
Purge Data	Start	Stop	Notes: Flow rate ~ 200 mL/min	
	0942			

(+) Concentration of Helium in Test chamber → 100,000 ppm To 53% Helium

Readings:
Liters/minute
5 min @ 1000 mL
10 min @ 2000 mL
15 min @ 3000 mL

Notes:

No sample - cannot purge line (air will not pull from tubing.) Well needs repair. KLR

APPENDIX C

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 TetraTech NUS Email rob.sok@tetratech.com

Address 5700 Lake Wright Dr City Norfolk State VA Zip 23502

Phone (757) 618-2104 (cell) Fax

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

Turn Around Time:
☐ Normal
☒ Rush
7day TAT
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-AR003-SSB3	33323	7/28/10	1609	TO-15	-30	-5		
02A	BPS1-AR003-INDB-5	34348	7/28/10	1622	TO-15	-31	-7.5		
03A	BPS1-AR003-INDL-5	12086	7/28/10	1625	TO-15	-30	-6.5		
04A	BPS1-AR003-00A3	10791	7/28/10	1635	TO-15	-30	-10.5		
05A	BPS1-DUP01	94602	7/28/10	1200	TO-15	-32	-19.5		

* Please note vacuum reading on duplicate and check can for enough volume

☆ Quick 7-day TAT

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	7/29 1000	Monica Gillespen AIR	
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
			7/30/10 915
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
Please call Rob Sok regarding Duplicate sample and volume.
(757) 466-4904

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes / No / None	100700

Form 1293 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 757-466-4904 Fax

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

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-AR003-STO5	5739	8/24/10	1454	TO-15 (shortlist)	-30	-4.5		
02A	BPS1-AR004-STO5	33989	8/24/10	1500		-31	-5		
03A	BPS1-AR002-STO5	34260	8/24/10	1544		-31	-6.5		
04A	BPS2-AR013-STO5	9920	8/24/10	1641		-31	-7.5		
05A	BPS1-AR014-STO5	12013	8/24/10	1647		-31	-3		
06A	BPS1-AR002-0DA4	9910	8/24/10	1814		-28.5	-11		
07A	BPS1-DUP01-20100824	9423	8/24/10	2400		-31	-4.5		
08A	BPS1-SVPM-2002D-082510	5761	8/25/10	1458		-31	-4.5		
09A	BPS1-SVPM-2002I-082510	34458	8/25/10	~~1444~~ 1528		-29.5	-4.5		
10A	BPS1-SVPM-2002S-082510	25303	8/25/10	1625		-31	-4.5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
~~Relinquished by: (signature)~~	8/26/10 1800	Monica Gregson AL	8/27/10 915
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes: Please use site specific compound list and detection limits

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	(Yes) No None	008666

@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 Bmyack
Collected by: (Print and Sign) Robert Sok
Company SAME Email
Address ~~City~~ State Zip
Phone Fax

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

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)
11A	BPS1-SVPM-2003D-082510	34349	8/25/10	1800	TO-15	-30	-4		
12A	BPS1-SVPM-DPA-082510	20944	8/25/10	1803		-31	-15		
13A	BPS1-SVPM-2004I-082610	12021	8/26/10	0918		-28	-3.5		
14A	BPS1-SVPM-2004D-082610	33572	8/26/10	0920		-30	-4.5		
15A	BPS1-SVPM-DUP02-082610	33800	8/26/10	1200		-31	-5		
16A	BPS1-SVPM-2007D-082610	33915	8/26/10	1040		-31	-3.5		
17A	BPS1-SVPM-12$-082610	12679	8/26/10	1238		-31	-3.5		
18A	BPS1-SVPM-11$-082610	33886	8/26/10	1257		-31	-5		
19A	BPS1-SVPM-2003I-082610	5625	8/26/10	1501		-31	-4.5		
20A	BPS1-DUP03-082610	14006	8/26/10	1600		-30	-5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	8/26/10 1800	Monica Gregson AIR	8/27/10 915
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes: Please use site specific compound list and detection limits

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes / No / None	1008666

Form 1293 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 SAMF Email

Address City State Zip

Phone Fax

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

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)
2A	BPS1-5UPm-ODA-082610	5727	8/26/10	1510	TO-15	-29	-10.5		

Relinquished by: (signature) Date/Time 8/26/10 1800
Received by: (signature) Monica Gregson ATL Date/Time 8/27/10 915

Relinquished by: (signature) Date/Time
Received by: (signature) Date/Time

Relinquished by: (signature) Date/Time
Received by: (signature) Date/Time

Notes: Please use site specific Compound list and detection limits

Lab Use Only

Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
Fed Ex		NA	Good	(Yes) No None	1008666

Form 1293 rev.11

APPENDIX D

DATA ANALYTICAL REPORTS

Air Toxics LTD.
Laboratory Services Since 1989

8/23/2010
Mr. David Brayack
Tetra Tech
Twin Oaks I, Suite 309
5700 Lake Wright Drive
Norfolk VA 23502

Project Name: NWIRP Bethpage
Project #: 112G02019
Workorder #: 1007700B

Dear Mr. David Brayack

The following report includes the data for the above referenced project for sample(s) received on 7/30/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1007700B

Work Order Summary

CLIENT:	Mr. David Brayack Tetra Tech Twin Oaks I, Suite 309 5700 Lake Wright Drive Norfolk, VA 23502	**BILL TO:**	Accounts Payable/Pittsburg Tetra Tech EC, Inc. Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220-2745
PHONE:	(757) 461-3824	**P.O. #**	
FAX:	(757) 461-4148	**PROJECT #**	112G02019 NWIRP Bethpage
DATE RECEIVED:	07/30/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	08/20/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BPS1-AR003-SSB3	Modified TO-15	5.0 "Hg	5 psi
02A	BPS1-AR003-INDB-5	Modified TO-15	0.6 "Hg	5 psi
03A	BPS1-AR003-INDL-5	Modified TO-15	5.0 "Hg	5 psi
04A	BPS1-AR003-ODA3	Modified TO-15	11.0 "Hg	5 psi
05A	BPS1-DUP01	Modified TO-15	17.2 "Hg	5 psi
06A	Lab Blank	Modified TO-15	NA	NA
07A	CCV	Modified TO-15	NA	NA
08A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 08/23/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
Tetra Tech
Workorder# 1007700B

Five 6 Liter Summa Canister (100% Certified) samples were received on July 30, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	+- 30% RSD with 2 compounds allowed out to < 40% RSD	30% RSD with 4 compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	</= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A year was not provided by the field sampler.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified may be false positives.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-AR003-SSB3

Lab ID#: 1007700B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.43	0.44	2.3
Trichloroethene	0.080	2.7	0.43	14
Tetrachloroethene	0.080	0.14	0.55	0.96
cis-1,2-Dichloroethene	0.16	0.0061 J	0.64	0.024 J
1,2-Dichloroethane	0.16	0.34	0.65	1.4

Client Sample ID: BPS1-AR003-INDB-5

Lab ID#: 1007700B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.068	0.34	0.37	1.9
Trichloroethene	0.068	0.050 J	0.37	0.27 J
Tetrachloroethene	0.068	0.040 J	0.46	0.28 J
1,2-Dichloroethane	0.14	0.70	0.55	2.8

Client Sample ID: BPS1-AR003-INDL-5

Lab ID#: 1007700B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.60	0.44	3.3
Trichloroethene	0.080	0.030 J	0.43	0.16 J
Tetrachloroethene	0.080	0.042 J	0.55	0.28 J
1,2-Dichloroethane	0.16	0.41	0.65	1.6

Client Sample ID: BPS1-AR003-ODA3

Lab ID#: 1007700B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.11	0.013 J	0.58	0.070 J
Trichloroethene	0.11	0.040 J	0.57	0.22 J
Tetrachloroethene	0.11	0.023 J	0.72	0.16 J

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-AR003-ODA3

Lab ID#: 1007700B-04A

1,2-Dichloroethane	0.21	0.068 J	0.86	0.27 J

Client Sample ID: BPS1-DUP01

Lab ID#: 1007700B-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.16	0.53	0.86	2.9
Trichloroethene	0.16	0.028 J	0.84	0.15 J
Tetrachloroethene	0.16	0.041 J	1.1	0.28 J
1,2-Dichloroethane	0.31	0.37	1.3	1.5

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-SSB3

Lab ID#: 1007700B-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081919**	**Date of Collection: 7/28/10 4:09:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 8/20/10 09:16 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.43	0.44	2.3
Trichloroethene	0.080	2.7	0.43	14
Tetrachloroethene	0.080	0.14	0.55	0.96
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
cis-1,2-Dichloroethene	0.16	0.0061 J	0.64	0.024 J
1,2-Dichloroethane	0.16	0.34	0.65	1.4
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	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	109	70-130
Toluene-d8	110	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-INDB-5

Lab ID#: 1007700B-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081920**	**Date of Collection: 7/28/10 4:22:00 PM**	
Dil. Factor:	**1.37**	**Date of Analysis: 8/20/10 09:56 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.068	0.34	0.37	1.9
Trichloroethene	0.068	0.050 J	0.37	0.27 J
Tetrachloroethene	0.068	0.040 J	0.46	0.28 J
Vinyl Chloride	0.14	Not Detected	0.35	Not Detected
1,1-Dichloroethene	0.14	Not Detected	0.54	Not Detected
1,1-Dichloroethane	0.14	Not Detected	0.55	Not Detected
cis-1,2-Dichloroethene	0.14	Not Detected	0.54	Not Detected
1,2-Dichloroethane	0.14	0.70	0.55	2.8
trans-1,2-Dichloroethene	0.14	Not Detected	0.54	Not Detected

J = Estimated value.

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

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

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-INDL-5

Lab ID#: 1007700B-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081921**	**Date of Collection: 7/28/10 4:25:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 8/20/10 10:39 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.60	0.44	3.3
Trichloroethene	0.080	0.030 J	0.43	0.16 J
Tetrachloroethene	0.080	0.042 J	0.55	0.28 J
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,2-Dichloroethane	0.16	0.41	0.65	1.6
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	94	70-130
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-ODA3

Lab ID#: 1007700B-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081922**	**Date of Collection: 7/28/10 4:35:00 PM**	
Dil. Factor:	**2.12**	**Date of Analysis: 8/20/10 11:19 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.11	0.013 J	0.58	0.070 J
Trichloroethene	0.11	0.040 J	0.57	0.22 J
Tetrachloroethene	0.11	0.023 J	0.72	0.16 J
Vinyl Chloride	0.21	Not Detected	0.54	Not Detected
1,1-Dichloroethene	0.21	Not Detected	0.84	Not Detected
1,1-Dichloroethane	0.21	Not Detected	0.86	Not Detected
cis-1,2-Dichloroethene	0.21	Not Detected	0.84	Not Detected
1,2-Dichloroethane	0.21	0.068 J	0.86	0.27 J
trans-1,2-Dichloroethene	0.21	Not Detected	0.84	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	89	70-130
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-DUP01

Lab ID#: 1007700B-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081923**	**Date of Collection: 7/28/10 12:00:00 PM**	
Dil. Factor:	**3.14**	**Date of Analysis: 8/20/10 12:01 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.16	0.53	0.86	2.9
Trichloroethene	0.16	0.028 J	0.84	0.15 J
Tetrachloroethene	0.16	0.041 J	1.1	0.28 J
Vinyl Chloride	0.31	Not Detected	0.80	Not Detected
1,1-Dichloroethene	0.31	Not Detected	1.2	Not Detected
1,1-Dichloroethane	0.31	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.31	Not Detected	1.2	Not Detected
1,2-Dichloroethane	0.31	0.37	1.3	1.5
trans-1,2-Dichloroethene	0.31	Not Detected	1.2	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	87	70-130
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1007700B-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081906a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/19/10 10:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.050	Not Detected	0.27	Not Detected
Trichloroethene	0.050	Not Detected	0.27	Not Detected
Tetrachloroethene	0.050	Not Detected	0.34	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	89	70-130
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1007700B-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/19/10 07:08 PM**	

Compound	%Recovery
1,1,1-Trichloroethane	90
Trichloroethene	91
Tetrachloroethene	89
Vinyl Chloride	84
1,1-Dichloroethene	105
1,1-Dichloroethane	91
cis-1,2-Dichloroethene	90
1,2-Dichloroethane	88
trans-1,2-Dichloroethene	92

Container Type: NA - Not Applicable

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

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1007700B-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c081903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/19/10 08:17 PM**	

Compound	%Recovery
1,1,1-Trichloroethane	83
Trichloroethene	84
Tetrachloroethene	84
Vinyl Chloride	87
1,1-Dichloroethene	82
1,1-Dichloroethane	80
cis-1,2-Dichloroethene	80
1,2-Dichloroethane	76
trans-1,2-Dichloroethene	84

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

9/9/2010
Mr. David Brayack
Tetra Tech
Twin Oaks I, Suite 309
5700 Lake Wright Drive
Norfolk VA 23502

Project Name: CTO-WE06
Project #: 112G02019
Workorder #: 1008666A

Dear Mr. David Brayack

The following report includes the data for the above referenced project for sample(s) received on 8/27/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

WORK ORDER #: 1008666A

Work Order Summary

CLIENT: Mr. David Brayack
Tetra Tech
Twin Oaks I, Suite 309
5700 Lake Wright Drive
Norfolk, VA 23502

PHONE: (757) 461-3824

FAX: (757) 461-4148

DATE RECEIVED: 08/27/2010

DATE COMPLETED: 09/09/2010

BILL TO: Accounts Payable/Pittsburg
Tetra Tech EC, Inc.
Foster Plaza 7
661 Anderson Drive
Pittsburgh, PA 15220-2745

P.O. #

PROJECT # 112G02019 CTO-WE06

CONTACT: Ausha Scott

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BPS1-AR003-ST05	Modified TO-15	4.0 "Hg	5 psi
02A	BPS1-AR004-ST05	Modified TO-15	4.0 "Hg	5 psi
03A	BPS1-AR002-ST05	Modified TO-15	5.0 "Hg	5 psi
04A	BPS1-AR013-ST05	Modified TO-15	5.2 "Hg	5 psi
05A	BPS1-AR014-ST05	Modified TO-15	1.8 "Hg	5 psi
06A	BPS1-AR002-ODA4	Modified TO-15	11.0 "Hg	5 psi
07A	BPS1-DUP01-20100824	Modified TO-15	2.6 "Hg	5 psi
08A	BPS1-SVPM-2002D-082510	Modified TO-15	2.6 "Hg	5 psi
09A	BPS1-SVPM-2002I-082510	Modified TO-15	5.0 "Hg	5 psi
10A	BPS1-SVPM-2002S-082510	Modified TO-15	2.6 "Hg	5 psi
11A	Lab Blank	Modified TO-15	NA	NA
11B	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA
12B	CCV	Modified TO-15	NA	NA
13A	LCS	Modified TO-15	NA	NA
13AA	LCSD	Modified TO-15	NA	NA
13B	LCS	Modified TO-15	NA	NA

Continued on next page

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1008666A

Work Order Summary

CLIENT:	Mr. David Brayack Tetra Tech Twin Oaks I, Suite 309 5700 Lake Wright Drive Norfolk, VA 23502	**BILL TO:**	Accounts Payable/Pittsburg Tetra Tech EC, Inc. Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220-2745
PHONE:	(757) 461-3824	**P.O. #**	
FAX:	(757) 461-4148	**PROJECT #**	112G02019 CTO-WE06
DATE RECEIVED:	08/27/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	09/09/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
13BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 09/09/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
Tetra Tech
Workorder# 1008666A

Ten 6 Liter Summa Canister (100% Certified) samples were received on August 27, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	+- 30% RSD with 2 compounds allowed out to < 40% RSD	30% RSD with 4 compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	</= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

The recovery of surrogate 4-Bromofluorobenzene in samples BPS1-AR004-ST05 and BPS1-AR002-ST05 was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-AR003-ST05

Lab ID#: 1008666A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.43	0.42	2.4
Trichloroethene	0.078	0.81	0.42	4.3
Tetrachloroethene	0.078	0.36	0.52	2.4
1,1-Dichloroethene	0.16	0.038 J	0.61	0.15 J
1,1-Dichloroethane	0.16	0.013 J	0.63	0.053 J
1,2-Dichloroethane	0.16	0.42	0.63	1.7

Client Sample ID: BPS1-AR004-ST05

Lab ID#: 1008666A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.032 J	0.42	0.17 J
Trichloroethene	0.078	0.43	0.42	2.3 J
Tetrachloroethene	0.078	0.28	0.52	1.9 J
Vinyl Chloride	0.16	0.018 J	0.40	0.047 J
1,1-Dichloroethane	0.16	0.015 J	0.63	0.061 J
cis-1,2-Dichloroethene	0.16	0.0060 J	0.61	0.024 J
1,2-Dichloroethane	0.16	0.038 J	0.63	0.15 J

Changes from data validation
KLF 10/25/10
KLF 10/25/10

Client Sample ID: BPS1-AR002-ST05

Lab ID#: 1008666A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.22	0.44	1.2 J
Trichloroethene	0.080	1.8	0.43	9.6 J
Tetrachloroethene	0.080	0.57	0.55	3.9 J
1,1-Dichloroethene	0.16	0.012 J	0.64	0.048 J
1,2-Dichloroethane	0.16	0.014 J	0.65	0.056 J

Changes from data validation
KLF - 10/25/10
KLF - 10/25/10
KLF - 10/25/10

Client Sample ID: BPS1-AR013-ST05

Lab ID#: 1008666A-04A

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-AR013-ST05

Lab ID#: 1008666A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.081	0.057 J	0.44	0.31 J
Trichloroethene	0.081	0.16	0.44	0.87
Tetrachloroethene	0.081	0.33	0.55	2.2
1,2-Dichloroethane	0.16	0.020 J	0.66	0.082 J

Client Sample ID: BPS1-AR014-ST05

Lab ID#: 1008666A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.071	0.063 J	0.39	0.34 J
Trichloroethene	0.071	0.10	0.38	0.55
Tetrachloroethene	0.071	0.43	0.48	2.9
cis-1,2-Dichloroethene	0.14	0.0030 J	0.56	0.012 J
1,2-Dichloroethane	0.14	0.017 J	0.57	0.068 J

Client Sample ID: BPS1-AR002-ODA4

Lab ID#: 1008666A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.11	0.011 J	0.58	0.062 J
Trichloroethene	0.11	0.0090 J	0.57	0.048 J
Tetrachloroethene	0.11	0.024 J	0.72	0.16 J
1,2-Dichloroethane	0.21	0.019 J	0.86	0.076 J

Client Sample ID: BPS1-DUP01-20100824

Lab ID#: 1008666A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.062 J	0.40	0.34 J
Trichloroethene	0.074	0.18	0.40	0.94
Tetrachloroethene	0.074	0.37	0.50	2.5

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-DUP01-20100824

Lab ID#: 1008666A-07A

1,1-Dichloroethane	0.15	0.0022 J	0.60	0.0088 J
1,2-Dichloroethane	0.15	0.0097 J	0.59	0.039 J

Client Sample ID: BPS1-SVPM-2002D-082510

Lab ID#: 1008666A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.19	0.40	1.0
Trichloroethene	0.074	1.9	0.40	10
Tetrachloroethene	0.074	0.60	0.50	4.0
Vinyl Chloride	0.15	0.0085 J	0.38	0.022 J
1,1-Dichloroethane	0.15	0.0066 J	0.60	0.027 J
cis-1,2-Dichloroethene	0.15	0.0055 J	0.58	0.022 J
1,2-Dichloroethane	0.15	0.013 J	0.59	0.054 J

Client Sample ID: BPS1-SVPM-2002I-082510

Lab ID#: 1008666A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.12	0.44	0.68
Trichloroethene	0.080	1.5	0.43	8.0
Tetrachloroethene	0.080	0.27	0.55	1.8
1,1-Dichloroethene	0.16	0.0093 J	0.64	0.037 J
1,1-Dichloroethane	0.16	0.0035 J	0.65	0.014 J
1,2-Dichloroethane	0.16	0.021 J	0.65	0.087 J

Client Sample ID: BPS1-SVPM-2002S-082510

Lab ID#: 1008666A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.22	0.40	1.2
Trichloroethene	0.074	3.1	0.40	17
Tetrachloroethene	0.074	0.44	0.50	3.0

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-SVPM-2002S-082510

Lab ID#: 1008666A-10A

Vinyl Chloride	0.15	0.011 J	0.38	0.028 J
1,1-Dichloroethene	0.15	0.018 J	0.58	0.071 J
1,1-Dichloroethane	0.15	0.0043 J	0.60	0.017 J
1,2-Dichloroethane	0.15	0.019 J	0.59	0.076 J

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR003-ST05

Lab ID#: 1008666A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090813**	**Date of Collection: 8/24/10 2:54:00 PM**	
Dil. Factor:	**1.55**	**Date of Analysis: 9/8/10 06:12 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.43	0.42	2.4
Trichloroethene	0.078	0.81	0.42	4.3
Tetrachloroethene	0.078	0.36	0.52	2.4
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,1-Dichloroethene	0.16	0.038 J	0.61	0.15 J
1,1-Dichloroethane	0.16	0.013 J	0.63	0.053 J
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,2-Dichloroethane	0.16	0.42	0.63	1.7
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	130	70-130
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	91	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR004-ST05

Lab ID#: 1008666A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090812**	**Date of Collection: 8/24/10 3:00:00 PM**	
Dil. Factor:	**1.55**	**Date of Analysis: 9/8/10 05:25 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.032 J	0.42	0.17 J
Trichloroethene	0.078	0.43	0.42	2.3 J KLF 10/25/10
Tetrachloroethene	0.078	0.28	0.52	1.9 J KLF 10/25/10
Vinyl Chloride	0.16	0.018 J	0.40	0.047 J
1,1-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.16	0.015 J	0.63	0.061 J
cis-1,2-Dichloroethene	0.16	0.0060 J	0.61	0.024 J
1,2-Dichloroethane	0.16	0.038 J	0.63	0.15 J
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected

Changes from data validation

J = Estimated value.
Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.
Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	135 Q	70-130
1,2-Dichloroethane-d4	87	70-130
Toluene-d8	87	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR002-ST05

Lab ID#: 1008666A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090814**	**Date of Collection: 8/24/10 3:44:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 9/8/10 07:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.22	0.44	1.2 J KLF-101210
Trichloroethene	0.080	1.8	0.43	9.6 J KLF-101210
Tetrachloroethene	0.080	0.57	0.55	3.9 J KLF-101210
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	0.012 J	0.64	0.048 J
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,2-Dichloroethane	0.16	0.014 J	0.65	0.056 J
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected

Changes from data validation

J = Estimated value.
Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.
Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	138 Q	70-130
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	88	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR013-ST05

Lab ID#: 1008666A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090816**	**Date of Collection: 8/24/10 4:41:00 PM**	
Dil. Factor:	**1.62**	**Date of Analysis: 9/8/10 08:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.081	0.057 J	0.44	0.31 J
Trichloroethene	0.081	0.16	0.44	0.87
Tetrachloroethene	0.081	0.33	0.55	2.2
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.66	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,2-Dichloroethane	0.16	0.020 J	0.66	0.082 J
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	127	70-130
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	91	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR014-ST05

Lab ID#: 1008666A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090817**	**Date of Collection: 8/24/10 4:47:00 PM**	
Dil. Factor:	**1.42**	**Date of Analysis: 9/8/10 09:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.071	0.063 J	0.39	0.34 J
Trichloroethene	0.071	0.10	0.38	0.55
Tetrachloroethene	0.071	0.43	0.48	2.9
Vinyl Chloride	0.14	Not Detected	0.36	Not Detected
1,1-Dichloroethene	0.14	Not Detected	0.56	Not Detected
1,1-Dichloroethane	0.14	Not Detected	0.57	Not Detected
cis-1,2-Dichloroethene	0.14	0.0030 J	0.56	0.012 J
1,2-Dichloroethane	0.14	0.017 J	0.57	0.068 J
trans-1,2-Dichloroethene	0.14	Not Detected	0.56	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	125	70-130
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	86	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-AR002-ODA4

Lab ID#: 1008666A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090818**	**Date of Collection: 8/24/10 6:14:00 PM**	
Dil. Factor:	**2.12**	**Date of Analysis: 9/8/10 10:13 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.11	0.011 J	0.58	0.062 J
Trichloroethene	0.11	0.0090 J	0.57	0.048 J
Tetrachloroethene	0.11	0.024 J	0.72	0.16 J
Vinyl Chloride	0.21	Not Detected	0.54	Not Detected
1,1-Dichloroethene	0.21	Not Detected	0.84	Not Detected
1,1-Dichloroethane	0.21	Not Detected	0.86	Not Detected
cis-1,2-Dichloroethene	0.21	Not Detected	0.84	Not Detected
1,2-Dichloroethane	0.21	0.019 J	0.86	0.076 J
trans-1,2-Dichloroethene	0.21	Not Detected	0.84	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	109	70-130
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	85	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-DUP01-20100824

Lab ID#: 1008666A-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090819**	**Date of Collection: 8/24/10**	
Dil. Factor:	**1.47**	**Date of Analysis: 9/8/10 10:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.062 J	0.40	0.34 J
Trichloroethene	0.074	0.18	0.40	0.94
Tetrachloroethene	0.074	0.37	0.50	2.5
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected
1,1-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,1-Dichloroethane	0.15	0.0022 J	0.60	0.0088 J
cis-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,2-Dichloroethane	0.15	0.0097 J	0.59	0.039 J
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	125	70-130
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	91	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2002D-082510

Lab ID#: 1008666A-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090820**	**Date of Collection: 8/25/10 2:58:00 PM**	
Dil. Factor:	**1.47**	**Date of Analysis: 9/9/10 07:38 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.19	0.40	1.0
Trichloroethene	0.074	1.9	0.40	10
Tetrachloroethene	0.074	0.60	0.50	4.0
Vinyl Chloride	0.15	0.0085 J	0.38	0.022 J
1,1-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,1-Dichloroethane	0.15	0.0066 J	0.60	0.027 J
cis-1,2-Dichloroethene	0.15	0.0055 J	0.58	0.022 J
1,2-Dichloroethane	0.15	0.013 J	0.59	0.054 J
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	120	70-130
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	105	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2002I-082510

Lab ID#: 1008666A-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090821**	**Date of Collection: 8/25/10 3:28:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 9/9/10 08:23 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.080	0.12	0.44	0.68
Trichloroethene	0.080	1.5	0.43	8.0
Tetrachloroethene	0.080	0.27	0.55	1.8
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	0.0093 J	0.64	0.037 J
1,1-Dichloroethane	0.16	0.0035 J	0.65	0.014 J
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,2-Dichloroethane	0.16	0.021 J	0.65	0.087 J
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	118	70-130
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	103	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2002S-082510

Lab ID#: 1008666A-10A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090908**	**Date of Collection: 8/25/10 4:25:00 PM**	
Dil. Factor:	**1.47**	**Date of Analysis: 9/9/10 03:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.074	0.22	0.40	1.2
Trichloroethene	0.074	3.1	0.40	17
Tetrachloroethene	0.074	0.44	0.50	3.0
Vinyl Chloride	0.15	0.011 J	0.38	0.028 J
1,1-Dichloroethene	0.15	0.018 J	0.58	0.071 J
1,1-Dichloroethane	0.15	0.0043 J	0.60	0.017 J
cis-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,2-Dichloroethane	0.15	0.019 J	0.59	0.076 J
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	129	70-130
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1008666A-11A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090809a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/10 02:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.050	Not Detected	0.27	Not Detected
Trichloroethene	0.050	Not Detected	0.27	Not Detected
Tetrachloroethene	0.050	Not Detected	0.34	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	103	70-130
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	85	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1008666A-11B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090907a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 01:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.050	Not Detected	0.27	Not Detected
Trichloroethene	0.050	Not Detected	0.27	Not Detected
Tetrachloroethene	0.050	Not Detected	0.34	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	105	70-130
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	87	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1008666A-12A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/10 09:23 AM**	

Compound	%Recovery
1,1,1-Trichloroethane	91
Trichloroethene	99
Tetrachloroethene	113
Vinyl Chloride	75
1,1-Dichloroethene	88
1,1-Dichloroethane	85
cis-1,2-Dichloroethene	83
1,2-Dichloroethane	97
trans-1,2-Dichloroethene	86

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	107	70-130
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1008666A-12B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 09:32 AM**	

Compound	%Recovery
1,1,1-Trichloroethane	95
Trichloroethene	98
Tetrachloroethene	107
Vinyl Chloride	84
1,1-Dichloroethene	94
1,1-Dichloroethane	90
cis-1,2-Dichloroethene	86
1,2-Dichloroethane	101
trans-1,2-Dichloroethene	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	105	70-130
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1008666A-13A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/10 10:59 AM**	

Compound	%Recovery
1,1,1-Trichloroethane	89
Trichloroethene	93
Tetrachloroethene	104
Vinyl Chloride	74
1,1-Dichloroethene	77
1,1-Dichloroethane	80
cis-1,2-Dichloroethene	80
1,2-Dichloroethane	90
trans-1,2-Dichloroethene	83

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	109	70-130
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1008666A-13AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/10 11:42 AM**	

Compound	%Recovery
1,1,1-Trichloroethane	89
Trichloroethene	92
Tetrachloroethene	103
Vinyl Chloride	76
1,1-Dichloroethene	78
1,1-Dichloroethane	81
cis-1,2-Dichloroethene	80
1,2-Dichloroethane	89
trans-1,2-Dichloroethene	82

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	105	70-130
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1008666A-13B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 11:39 AM**	

Compound	%Recovery
1,1,1-Trichloroethane	90
Trichloroethene	93
Tetrachloroethene	101
Vinyl Chloride	77
1,1-Dichloroethene	82
1,1-Dichloroethane	82
cis-1,2-Dichloroethene	81
1,2-Dichloroethane	96
trans-1,2-Dichloroethene	84

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	108	70-130
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1008666A-13BB

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 12:22 PM**	

Compound	%Recovery
1,1,1-Trichloroethane	88
Trichloroethene	94
Tetrachloroethene	101
Vinyl Chloride	75
1,1-Dichloroethene	81
1,1-Dichloroethane	82
cis-1,2-Dichloroethene	81
1,2-Dichloroethane	97
trans-1,2-Dichloroethene	83

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	110	70-130
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

9/16/2010
Mr. David Brayack
Tetra Tech
Twin Oaks I, Suite 309
5700 Lake Wright Drive
Norfolk VA 23502

Project Name: CTO-WE06
Project #: 112G02019
Workorder #: 1008666B

Dear Mr. David Brayack

The following report includes the data for the above referenced project for sample(s) received on 8/27/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

WORK ORDER #: 1008666B

Work Order Summary

CLIENT: Mr. David Brayack
Tetra Tech
Twin Oaks I, Suite 309
5700 Lake Wright Drive
Norfolk, VA 23502

PHONE: (757) 461-3824

FAX: (757) 461-4148

DATE RECEIVED: 08/27/2010

DATE COMPLETED: 09/16/2010

BILL TO: Accounts Payable/Pittsburg
Tetra Tech EC, Inc.
Foster Plaza 7
661 Anderson Drive
Pittsburgh, PA 15220-2745

P.O. #

PROJECT # 112G02019 CTO-WE06

CONTACT: Ausha Scott

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
11A	BPS1-SVPM-2003D-082510	Modified TO-15	2.5 "Hg	5 psi
12A	BPS1-SVPM-ODA-082510	Modified TO-15	13.0 "Hg	5 psi
13A	BPS1-SVPM-2004I-082610	Modified TO-15	4.0 "Hg	5 psi
14A	BPS1-SVPM-2004D-082610	Modified TO-15	4.5 "Hg	5 psi
15A	BPS1-SVPM-DUP02-082610	Modified TO-15	4.5 "Hg	5 psi
16A	BPS1-SVPM-2007D-082610	Modified TO-15	2.5 "Hg	5 psi
17A	BPS1-SVPM-12S-082610	Modified TO-15	3.5 "Hg	5 psi
18A	BPS1-SVPM-11S-082610	Modified TO-15	4.0 "Hg	5 psi
19A	BPS1-SVPM-2003I-082610	Modified TO-15	4.5 "Hg	5 psi
20A	BPS1-DUP03-082610	Modified TO-15	6.5 "Hg	5 psi
21A	BPS1-SVPM-ODA-082610	Modified TO-15	10.0 "Hg	5 psi
22A	Lab Blank	Modified TO-15	NA	NA
22B	Lab Blank	Modified TO-15	NA	NA
23A	CCV	Modified TO-15	NA	NA
23B	CCV	Modified TO-15	NA	NA
24A	LCS	Modified TO-15	NA	NA
24AA	LCSD	Modified TO-15	NA	NA

Continued on next page

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1008666B

Work Order Summary

CLIENT:	Mr. David Brayack Tetra Tech Twin Oaks I, Suite 309 5700 Lake Wright Drive Norfolk, VA 23502	**BILL TO:**	Accounts Payable/Pittsburg Tetra Tech EC, Inc. Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220-2745
PHONE:	(757) 461-3824	**P.O. #**	
FAX:	(757) 461-4148	**PROJECT #**	112G02019 CTO-WE06
DATE RECEIVED:	08/27/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	09/16/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
24B	LCS	Modified TO-15	NA	NA
24BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarx DATE: 09/16/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Std & LL Full Scan
Tetra Tech
Workorder# 1008666B

Eleven 6 Liter Summa Canister (100% Certified) samples were received on August 27, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan mode. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-14A***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to </= 40% RSD	For LL Full Scan only: </= 30% RSD with 4 compounds allowed out to </= 40% RSD
Daily Calibration	+- 30% Difference	For Std. Full Scan: </= 30% Difference with two allowed out up to </=40%.; flag and narrate outliers For LL Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	For LL Full Scan only: Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

Receiving Notes

The Chain of Custody (COC) information for sample BPS1-DUP03-082610 did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Samples BPS1-SVPM-12S-082610, BPS1-SVPM-11S-082610 and BPS1-DUP03-082610 were transferred from Low Level analysis to full scan TO-15 due to high levels of target compounds.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-SVPM-2003D-082510

Lab ID#: 1008666B-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.073	0.21	0.40	1.2
Trichloroethene	0.073	0.96	0.39	5.2
Tetrachloroethene	0.073	0.37	0.50	2.5
1,1-Dichloroethane	0.15	0.0065 J	0.59	0.026 J
1,2-Dichloroethane	0.15	0.016 J	0.59	0.063 J

Client Sample ID: BPS1-SVPM-ODA-082510

Lab ID#: 1008666B-12A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.12	0.0066 J	0.64	0.036 J
Trichloroethene	0.12	0.0082 J	0.63	0.044 J
Tetrachloroethene	0.12	0.040 J	0.80	0.27 J
1,2-Dichloroethane	0.24	0.020 J	0.96	0.082 J

Client Sample ID: BPS1-SVPM-2004I-082610

Lab ID#: 1008666B-13A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.037 J	0.42	0.20 J
Trichloroethene	0.078	0.053 J	0.42	0.28 J
Tetrachloroethene	0.078	0.27	0.52	1.8
Vinyl Chloride	0.16	0.0062 J	0.40	0.016 J
1,1-Dichloroethene	0.16	0.011 J	0.61	0.043 J
1,1-Dichloroethane	0.16	0.018 J	0.63	0.072 J
1,2-Dichloroethane	0.16	0.016 J	0.63	0.065 J
trans-1,2-Dichloroethene	0.16	0.0037 J	0.61	0.015 J

Client Sample ID: BPS1-SVPM-2004D-082610

Lab ID#: 1008666B-14A

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-SVPM-2004D-082610

Lab ID#: 1008666B-14A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.079	0.061 J	0.43	0.33 J
Trichloroethene	0.079	0.087	0.42	0.47
Tetrachloroethene	0.079	0.43	0.54	2.9
Vinyl Chloride	0.16	0.016 J	0.40	0.042 J
1,1-Dichloroethane	0.16	0.0074 J	0.64	0.030 J
1,2-Dichloroethane	0.16	0.019 J	0.64	0.078 J

Client Sample ID: BPS1-SVPM-DUP02-082610

Lab ID#: 1008666B-15A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.079	0.030 J	0.43	0.17 J
Trichloroethene	0.079	0.049 J	0.42	0.26 J
Tetrachloroethene	0.079	0.31	0.54	2.1
Vinyl Chloride	0.16	0.011 J	0.40	0.028 J
1,1-Dichloroethane	0.16	0.020 J	0.64	0.079 J
1,2-Dichloroethane	0.16	0.014 J	0.64	0.056 J

Client Sample ID: BPS1-SVPM-2007D-082610

Lab ID#: 1008666B-16A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.073	0.27	0.40	1.5
Trichloroethene	0.073	0.29	0.39	1.5
Tetrachloroethene	0.073	0.40	0.50	2.7
Vinyl Chloride	0.15	0.014 J	0.37	0.036 J
1,1-Dichloroethane	0.15	0.010 J	0.59	0.041 J
cis-1,2-Dichloroethene	0.15	0.24	0.58	0.95
1,2-Dichloroethane	0.15	0.027 J	0.59	0.11 J
trans-1,2-Dichloroethene	0.15	0.014 J	0.58	0.054 J

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-SVPM-12S-082610

Lab ID#: 1008666B-17A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	0.76	0.29 J	3.1	1.2 J
cis-1,2-Dichloroethene	0.76	36	3.0	140
1,1,1-Trichloroethane	0.76	13	4.1	71
Trichloroethene	0.76	220	4.1	1200
trans-1,2-Dichloroethene	0.76	0.57 J	3.0	2.2 J
1,2-Dichloroethane	0.76	0.58 J	3.1	~~2.3 J~~ not Detected KLC-10/25/10
Tetrachloroethene	0.76	8.1	5.2	55 Blank Contamination

Client Sample ID: BPS1-SVPM-11S-082610

Lab ID#: 1008666B-18A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	2.1	9.7	8.2	38
1,1,1-Trichloroethane	2.1	3.0	11	16
Trichloroethene	2.1	570	11	3100
trans-1,2-Dichloroethene	2.1	1.0 J	8.2	4.1 J
Tetrachloroethene	2.1	49	14	330

Client Sample ID: BPS1-SVPM-2003I-082610

Lab ID#: 1008666B-19A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.079	0.043 J	0.43	0.23 J
Trichloroethene	0.079	0.066 J	0.42	0.36 J
Tetrachloroethene	0.079	0.74	0.54	5.0

Client Sample ID: BPS1-DUP03-082610

Lab ID#: 1008666B-20A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	0.86	0.32 J	3.5	1.3 J

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BPS1-DUP03-082610

Lab ID#: 1008666B-20A

cis-1,2-Dichloroethene	0.86	39	3.4	150
1,1,1-Trichloroethane	0.86	14	4.7	74
Trichloroethene	0.86	220	4.6	1200
trans-1,2-Dichloroethene	0.86	0.63 J	3.4	2.5 J
1,2-Dichloroethane	0.86	0.16 J	3.5	~~0.65 J~~ not detected KLF 10/25/10
Tetrachloroethene	0.86	7.8	5.8	53 blank contamination

Client Sample ID: BPS1-SVPM-ODA-082610

Lab ID#: 1008666B-21A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.10	0.0068 J	0.55	0.037 J
Trichloroethene	0.10	0.0074 J	0.54	0.040 J
Tetrachloroethene	0.10	0.036 J	0.68	0.24 J
cis-1,2-Dichloroethene	0.20	0.0064 J	0.80	0.026 J
1,2-Dichloroethane	0.20	0.025 J	0.81	0.10 J

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2003D-082510

Lab ID#: 1008666B-11A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090909**	**Date of Collection: 8/25/10 6:00:00 PM**	
Dil. Factor:	**1.46**	**Date of Analysis: 9/9/10 03:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.073	0.21	0.40	1.2
Trichloroethene	0.073	0.96	0.39	5.2
Tetrachloroethene	0.073	0.37	0.50	2.5
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	0.0065 J	0.59	0.026 J
cis-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,2-Dichloroethane	0.15	0.016 J	0.59	0.063 J
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	124	70-130
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	103	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-ODA-082510

Lab ID#: 1008666B-12A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090910**	**Date of Collection: 8/25/10 6:03:00 PM**	
Dil. Factor:	**2.36**	**Date of Analysis: 9/9/10 05:15 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.12	0.0066 J	0.64	0.036 J
Trichloroethene	0.12	0.0082 J	0.63	0.044 J
Tetrachloroethene	0.12	0.040 J	0.80	0.27 J
Vinyl Chloride	0.24	Not Detected	0.60	Not Detected
1,1-Dichloroethene	0.24	Not Detected	0.94	Not Detected
1,1-Dichloroethane	0.24	Not Detected	0.96	Not Detected
cis-1,2-Dichloroethene	0.24	Not Detected	0.94	Not Detected
1,2-Dichloroethane	0.24	0.020 J	0.96	0.082 J
trans-1,2-Dichloroethene	0.24	Not Detected	0.94	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	115	70-130
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	86	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2004I-082610

Lab ID#: 1008666B-13A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090911**	**Date of Collection: 8/26/10 9:18:00 AM**	
Dil. Factor:	**1.55**	**Date of Analysis: 9/9/10 06:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.078	0.037 J	0.42	0.20 J
Trichloroethene	0.078	0.053 J	0.42	0.28 J
Tetrachloroethene	0.078	0.27	0.52	1.8
Vinyl Chloride	0.16	0.0062 J	0.40	0.016 J
1,1-Dichloroethene	0.16	0.011 J	0.61	0.043 J
1,1-Dichloroethane	0.16	0.018 J	0.63	0.072 J
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,2-Dichloroethane	0.16	0.016 J	0.63	0.065 J
trans-1,2-Dichloroethene	0.16	0.0037 J	0.61	0.015 J

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	121	70-130
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2004D-082610

Lab ID#: 1008666B-14A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090912**	**Date of Collection: 8/26/10 9:20:00 AM**	
Dil. Factor:	**1.58**	**Date of Analysis: 9/9/10 06:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.079	0.061 J	0.43	0.33 J
Trichloroethene	0.079	0.087	0.42	0.47
Tetrachloroethene	0.079	0.43	0.54	2.9
Vinyl Chloride	0.16	0.016 J	0.40	0.042 J
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1-Dichloroethane	0.16	0.0074 J	0.64	0.030 J
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,2-Dichloroethane	0.16	0.019 J	0.64	0.078 J
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	126	70-130
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	106	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-DUP02-082610

Lab ID#: 1008666B-15A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090913**	**Date of Collection: 8/26/10 12:00:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 9/9/10 07:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.079	0.030 J	0.43	0.17 J
Trichloroethene	0.079	0.049 J	0.42	0.26 J
Tetrachloroethene	0.079	0.31	0.54	2.1
Vinyl Chloride	0.16	0.011 J	0.40	0.028 J
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1-Dichloroethane	0.16	0.020 J	0.64	0.079 J
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,2-Dichloroethane	0.16	0.014 J	0.64	0.056 J
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	124	70-130
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2007D-082610

Lab ID#: 1008666B-16A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090914**	**Date of Collection: 8/26/10 10:40:00 AM**	
Dil. Factor:	**1.46**	**Date of Analysis: 9/9/10 08:55 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.073	0.27	0.40	1.5
Trichloroethene	0.073	0.29	0.39	1.5
Tetrachloroethene	0.073	0.40	0.50	2.7
Vinyl Chloride	0.15	0.014 J	0.37	0.036 J
1,1-Dichloroethene	0.15	Not Detected	0.58	Not Detected
1,1-Dichloroethane	0.15	0.010 J	0.59	0.041 J
cis-1,2-Dichloroethene	0.15	0.24	0.58	0.95
1,2-Dichloroethane	0.15	0.027 J	0.59	0.11 J
trans-1,2-Dichloroethene	0.15	0.014 J	0.58	0.054 J

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	122	70-130
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	109	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-12S-082610

Lab ID#: 1008666B-17A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p091411**	**Date of Collection: 8/26/10 12:38:00 PM**	
Dil. Factor:	**1.52**	**Date of Analysis: 9/14/10 04:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.76	Not Detected	1.9	Not Detected
1,1-Dichloroethene	0.76	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.76	0.29 J	3.1	1.2 J
cis-1,2-Dichloroethene	0.76	36	3.0	140
1,1,1-Trichloroethane	0.76	13	4.1	71
Trichloroethene	0.76	220	4.1	1200
trans-1,2-Dichloroethene	0.76	0.57 J	3.0	2.2 J
1,2-Dichloroethane	0.76	0.58 J	3.1	~~2.3 J~~ not detected KLF 10/25/10
Tetrachloroethene	0.76	8.1	5.2	55 Blank contamination

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-11S-082610

Lab ID#: 1008666B-18A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p091416**	**Date of Collection: 8/26/10 12:57:00 PM**	
Dil. Factor:	**4.13**	**Date of Analysis: 9/14/10 06:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	2.1	Not Detected	5.3	Not Detected
1,1-Dichloroethene	2.1	Not Detected	8.2	Not Detected
1,1-Dichloroethane	2.1	Not Detected	8.4	Not Detected
cis-1,2-Dichloroethene	2.1	9.7	8.2	38
1,1,1-Trichloroethane	2.1	3.0	11	16
Trichloroethene	2.1	570	11	3100
trans-1,2-Dichloroethene	2.1	1.0 J	8.2	4.1 J
1,2-Dichloroethane	2.1	Not Detected	8.4	Not Detected
Tetrachloroethene	2.1	49	14	330

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-2003I-082610

Lab ID#: 1008666B-19A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090915**	**Date of Collection: 8/26/10 3:01:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 9/9/10 09:36 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.079	0.043 J	0.43	0.23 J
Trichloroethene	0.079	0.066 J	0.42	0.36 J
Tetrachloroethene	0.079	0.74	0.54	5.0
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

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	117	70-130
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	114	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-DUP03-082610

Lab ID#: 1008666B-20A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p091415**	**Date of Collection: 8/26/10 4:00:00 PM**	
Dil. Factor:	**1.71**	**Date of Analysis: 9/14/10 05:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.86	Not Detected	2.2	Not Detected
1,1-Dichloroethene	0.86	Not Detected	3.4	Not Detected
1,1-Dichloroethane	0.86	0.32 J	3.5	1.3 J
cis-1,2-Dichloroethene	0.86	39	3.4	150
1,1,1-Trichloroethane	0.86	14	4.7	74
Trichloroethene	0.86	220	4.6	1200
trans-1,2-Dichloroethene	0.86	0.63 J	3.4	2.5 J
1,2-Dichloroethane	0.86	0.16 J	3.5	~~0.65 J~~ Not Detected -KLF
Tetrachloroethene	0.86	7.8	5.8	53 10/25/10 -Blank Contamination

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BPS1-SVPM-ODA-082610

Lab ID#: 1008666B-21A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090916**	**Date of Collection: 8/26/10 3:10:00 PM**	
Dil. Factor:	**2.01**	**Date of Analysis: 9/9/10 10:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.10	0.0068 J	0.55	0.037 J
Trichloroethene	0.10	0.0074 J	0.54	0.040 J
Tetrachloroethene	0.10	0.036 J	0.68	0.24 J
Vinyl Chloride	0.20	Not Detected	0.51	Not Detected
1,1-Dichloroethene	0.20	Not Detected	0.80	Not Detected
1,1-Dichloroethane	0.20	Not Detected	0.81	Not Detected
cis-1,2-Dichloroethene	0.20	0.0064 J	0.80	0.026 J
1,2-Dichloroethane	0.20	0.025 J	0.81	0.10 J
trans-1,2-Dichloroethene	0.20	Not Detected	0.80	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	111	70-130
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	89	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1008666B-22A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090907a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 01:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.050	Not Detected	0.27	Not Detected
Trichloroethene	0.050	Not Detected	0.27	Not Detected
Tetrachloroethene	0.050	Not Detected	0.34	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	105	70-130
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	87	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1008666B-22B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p091406c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/14/10 12:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Trichloroethene	0.50	0.15 J	2.7	0.82 J
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,2-Dichloroethane	0.50	0.10 J	2.0	0.42 J
Tetrachloroethene	0.50	0.20 J	3.4	1.3 J

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1008666B-23A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 09:32 AM**	

Compound	%Recovery
1,1,1-Trichloroethane	95
Trichloroethene	98
Tetrachloroethene	107
Vinyl Chloride	84
1,1-Dichloroethene	94
1,1-Dichloroethane	90
cis-1,2-Dichloroethene	86
1,2-Dichloroethane	101
trans-1,2-Dichloroethene	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	105	70-130
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1008666B-23B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p091402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/14/10 09:34 AM**	

Compound	%Recovery
Vinyl Chloride	100
1,1-Dichloroethene	101
1,1-Dichloroethane	101
cis-1,2-Dichloroethene	101
1,1,1-Trichloroethane	102
Trichloroethene	101
trans-1,2-Dichloroethene	101
1,2-Dichloroethane	103
Tetrachloroethene	102

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1008666B-24A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 11:39 AM**	

Compound	%Recovery
1,1,1-Trichloroethane	90
Trichloroethene	93
Tetrachloroethene	101
Vinyl Chloride	77
1,1-Dichloroethene	82
1,1-Dichloroethane	82
cis-1,2-Dichloroethene	81
1,2-Dichloroethane	96
trans-1,2-Dichloroethene	84

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	108	70-130
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1008666B-24AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**c090905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/10 12:22 PM**	

Compound	%Recovery
1,1,1-Trichloroethane	88
Trichloroethene	94
Tetrachloroethene	101
Vinyl Chloride	75
1,1-Dichloroethene	81
1,1-Dichloroethane	82
cis-1,2-Dichloroethene	81
1,2-Dichloroethane	97
trans-1,2-Dichloroethene	83

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	110	70-130
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1008666B-24B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p091403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/14/10 10:18 AM**	

Compound	%Recovery
Vinyl Chloride	102
1,1-Dichloroethene	92
1,1-Dichloroethane	98
cis-1,2-Dichloroethene	100
1,1,1-Trichloroethane	102
Trichloroethene	101
trans-1,2-Dichloroethene	101
1,2-Dichloroethane	98
Tetrachloroethene	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	0-130
1,2-Dichloroethane-d4	100	0-130
4-Bromofluorobenzene	99	0-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1008666B-24BB

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p091404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/14/10 10:35 AM**	

Compound	%Recovery
Vinyl Chloride	104
1,1-Dichloroethene	93
1,1-Dichloroethane	99
cis-1,2-Dichloroethene	101
1,1,1-Trichloroethane	104
Trichloroethene	102
trans-1,2-Dichloroethene	103
1,2-Dichloroethane	100
Tetrachloroethene	104

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	0-130
1,2-Dichloroethane-d4	99	0-130
4-Bromofluorobenzene	101	0-130

APPENDIX E

DATA VALIDATION SUMMARIES

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**D. BRAYACK**	**DATE:**	**AUGUST 27, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION – VOC NWIRP BETHPAGE CTO WE06 SDG 1007700B**		
SAMPLES:	5 / Air / VOC		

BPS1-AR003-INDB-5 BPS1-AR003-INDL-5 BPS1-AR003-ODA3
BPS1-AR003-SSB3 BPS1-DUP01

Overview

The sample set for NWIRP Bethpage SDG 1007700B consisted of five (5) air environmental samples. The air samples were analyzed for a select list of volatile organic compounds (VOC). There was one field duplicate pair associated with this sample delivery group (SDG); BPS1-DUP01 / BPS1-AR003-INDL-5.

The samples were collected by Tetra Tech on July 28, 2010 and analyzed by Air Toxics LTD. The analysis was conducted in accordance with EPA Method TO-15 analytical and reporting protocols. The data contained in this SDG was validated with regard to the following parameters:

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

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

Volatile

No issues were identified.

Additional Comments

The initial sample analysis was performed on an instrument that yielded higher detection limits for the VOCs than previous analyses performed by the laboratory for this site. The laboratory was contacted on this issue

and was asked to re-analyze the samples on an instrument that would yield lower analyte detection limits with results similar to historical data for the sample site region. The re-analysis data set was validated in this report. Results were similar to original analyses and the detection limits were significantly improved.

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

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

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

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

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

TetraTech NUS
Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

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

Appendix A

Qualified Analytical Results

Value Qualifier Key (Val Qual)

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

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

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

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

DATA QUALIFICATION CODE (QUAL CODE)

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

PROJ_NO: 02019	NSAMPLE	BPS1-AR003-INDB-5			BPS1-AR003-INDL-5			BPS1-AR003-ODA3			BPS1-AR003-SSB3		
SDG: 1007700B	LAB_ID	1007700B-02A			1007700B-03A			1007700B-04A			1007700B-01A		
FRACTION: OV	SAMP_DATE	7/28/2010			7/28/2010			7/28/2010			7/28/2010		
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		1.9			3.3			0.07	J	P	2.3		
1,1-DICHLOROETHANE		0.55	U		0.65	U		0.86	U		0.65	U	
1,1-DICHLOROETHENE		0.54	U		0.64	U		0.84	U		0.64	U	
1,2-DICHLOROETHANE		2.8			1.6			0.27	J	P	1.4		
CIS-1,2-DICHLOROETHENE		0.54	U		0.64	U		0.84	U		0.024	J	P
TETRACHLOROETHENE		0.28	J	P	0.28	J	P	0.16	J	P	0.96		
TRANS-1,2-DICHLOROETHENE		0.54	U		0.64	U		0.84	U		0.64	U	
TRICHLOROETHENE		0.27	J	P	0.16	J	P	0.22	J	P	14		
VINYL CHLORIDE		0.35	U		0.41	U		0.54	U		0.41	U	

PROJ_NO: 02019	NSAMPLE	BPS1-DUP01		
SDG: 1007700B	LAB_ID	1007700B-05A		
FRACTION: OV	SAMP_DATE	7/28/2010		
MEDIA: AIR	QC_TYPE	NM		
	UNITS	UG/M3		
	PCT_SOLIDS			
	DUP_OF	BPS1-AR003-INDL-5		
PARAMETER		RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		2.9		
1,1-DICHLOROETHANE		1.3	U	
1,1-DICHLOROETHENE		1.2	U	
1,2-DICHLOROETHANE		1.5		
CIS-1,2-DICHLOROETHENE		1.2	U	
TETRACHLOROETHENE		0.28	J	P
TRANS-1,2-DICHLOROETHENE		1.2	U	
TRICHLOROETHENE		0.15	J	P
VINYL CHLORIDE		0.8	U	

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: D. BRAYACK **DATE:** OCTOBER 07, 2010

FROM: LEIGH A. CIOFANI **COPIES:** DV FILE

SUBJECT: **ORGANIC DATA VALIDATION – VOC**
CTO WE06, NWIRP BETHPAGE
SAMPLE DELIVERY GROUP (SDG) 1008666A

SAMPLES: 10 / Air /

BPS1-AR002-ODA4	BPS1-AR002-ST05	BPS1-AR003-ST05
BPS1-AR004-ST05	BPS1-AR013-ST05	BPS1-AR014-ST05
BPS1-DUP01-20100824	BPS1-SVPM-2002D-082510	BPS1-SVPM-2002I-082510
BPS1-SVPM-2002S-082510		

OVERVIEW

The sample set for CTO WE06, NWIRP Bethpage, SDG 1008666A, consists of ten (10) air environmental samples. There is one (1) field duplicate pair included in this SDG: BPS1-AR013-ST05 (original) / BPS1-DUP01-20100824 (duplicate).

Samples were analyzed for volatile organic compounds (VOC). The samples were collected by Tetra Tech NUS on August 24 and 25, 2010 and analyzed by Air Toxics, Ltd. All analyses were conducted in accordance with EPA Method TO-15 analysis and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
* • Initial/Continuing Calibrations
* • Laboratory Method/Field Blank Results
• Surrogate Recoveries
* • Laboratory Control Sample Results
* • Internal Standards
* • Field Duplicate Precision
* • Compound Quantitation
* • Compound Identification
* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region II worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. The attached Table summarizes the validation qualifications which are based on the following information:

Volatiles

The surrogate spike recoveries for 4-bromofluorobenzene in samples BPS1-AR002-ST05 and BPS1-AR004-ST05 were greater than the laboratory acceptance limits. Positive results in samples BPS1-AR002-ST05 and BPS1-AR004-ST05 were qualified as estimated (J) on this basis.

Additional Comments

The Chain of Custody (COC) information for sample BPS1-DUP03-082610 did not match the sample tag upon receipt. The information on the COC was used to process the sample.

Positive results less than the reporting limit and greater than the detection limit were qualified as estimated (J) due to uncertainty near the detection limit.

The laboratory reported the VOC air result concentrations in units of both ppbv and ug/m^3 on the sample forms. The results in the database and the qualified analytical results are reported in units of ug/m^3 only.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Some results were qualified as estimated due to surrogate recovery noncompliance.

Other Factors Affecting Data Quality: Some results were qualified 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," SOP# HW-31, Revision #4, October 2006, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS

Leigh A. Ciofani
Environmental Scientist/Data Validator

Tetra Tech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
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 be any number of issues; e.g. poor 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-ODA4			BPS1-AR002-ST05			BPS1-AR003-ST05			BPS1-AR004-ST05		
SDG: 1008666A	LAB_ID	1008666A-06A			1008666A-03A			1008666A-01A			1008666A-02A		
FRACTION: OV	SAMP_DATE	8/24/2010			8/24/2010			8/24/2010			8/24/2010		
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		0.062	J	P	1.2	J	R	2.4			0.17	J	PR
1,1-DICHLOROETHANE		0.86	U		0.65	U		0.053	J	P	0.061	J	PR
1,1-DICHLOROETHENE		0.84	U		0.048	J	PR	0.15	J	P	0.61	U	
1,2-DICHLOROETHANE		0.076	J	P	0.056	J	PR	1.7			0.15	J	PR
CIS-1,2-DICHLOROETHENE		0.84	U		0.64	U		0.61	U		0.024	J	PR
TETRACHLOROETHENE		0.16	J	P	3.9	J	R	2.4			1.9	J	R
TRANS-1,2-DICHLOROETHENE		0.84	U		0.64	U		0.61	U		0.61	U	
TRICHLOROETHENE		0.048	J	P	9.6	J	R	4.3			2.3	J	R
VINYL CHLORIDE		0.54	U		0.41	U		0.4	U		0.047	J	PR

PROJ_NO: 02019	NSAMPLE	BPS1-AR013-ST05			BPS1-AR014-ST05			BPS1-DUP01-20100824			BPS1-SVPM-2002D-082510		
SDG: 1008666A	LAB_ID	1008666A-04A			1008666A-05A			1008666A-07A			1008666A-08A		
FRACTION: OV	SAMP_DATE	8/24/2010			8/24/2010			8/24/2010			8/25/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS										0.0		
	DUP_OF							BPS1-AR013-ST05					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.31	J	P	0.34	J	P	0.34	J	P	1		
1,1-DICHLOROETHANE		0.66	U		0.57	U		0.0088	J	P	0.027	J	P
1,1-DICHLOROETHENE		0.64	U		0.56	U		0.58	U		0.58	U	
1,2-DICHLOROETHANE		0.082	J	P	0.068	J	P	0.039	J	P	0.054	J	P
CIS-1,2-DICHLOROETHENE		0.64	U		0.012	J	P	0.58	U		0.022	J	P
TETRACHLOROETHENE		2.2			2.9			2.5			4		
TRANS-1,2-DICHLOROETHENE		0.64	U		0.56	U		0.58	U		0.58	U	
TRICHLOROETHENE		0.87			0.55			0.94			10		
VINYL CHLORIDE		0.41	U		0.36	U		0.38	U		0.022	J	P

PROJ_NO: 02019	NSAMPLE	BPS1-SVPM-2002I-082510			BPS1-SVPM-2002S-082510		
SDG: 1008666A	LAB_ID	1008666A-09A			1008666A-10A		
FRACTION: OV	SAMP_DATE	8/25/2010			8/25/2010		
MEDIA: AIR	QC_TYPE	NM			NM		
	UNITS	UG/M3			UG/M3		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.68			1.2		
1,1-DICHLOROETHANE		0.014	J	P	0.017	J	P
1,1-DICHLOROETHENE		0.037	J	P	0.071	J	P
1,2-DICHLOROETHANE		0.087	J	P	0.076	J	P
CIS-1,2-DICHLOROETHENE		0.64	U		0.58	U	
TETRACHLOROETHENE		1.8			3		
TRANS-1,2-DICHLOROETHENE		0.64	U		0.58	U	
TRICHLOROETHENE		8			17		
VINYL CHLORIDE		0.41	U		0.028	J	P

Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: D. BRAYACK **DATE:** OCTOBER 07, 2010

FROM: LEIGH A. CIOFANI **COPIES:** DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC
CTO WE06, NWIRP BETHPAGE
SAMPLE DELIVERY GROUP (SDG) 1008666B

SAMPLES: 11 / Air /

BPS1-DUP03-082610	BPS1-SVPM-11S-082610	BPS1-SVPM-12S-082610
BPS1-SVPM-2003D-082510	BPS1-SVPM-2003I-082610	BPS1-SVPM-2004D-082610
BPS1-SVPM-2004I-082610	BPS1-SVPM-2007D-082610	BPS1-SVPM-DUP02-082610
BPS1-SVPM-ODA-082510	BPS1-SVPM-ODA-082610	

OVERVIEW

The sample set for CTO WE06, NWIRP Bethpage, SDG 1008666B, consists of eleven (11) air environmental samples. There are two (2) field duplicate pairs included in this SDG: BPS1-SVPM-2004I-082610 (original) / BPS1-SVPM-DUP02-082610 (duplicate) and BPS1-SVPM-12S-082610 / BPS1-DUP03-082610 (duplicate).

Samples were analyzed for volatile organic compounds (VOC). The samples were collected by Tetra Tech NUS on August 25 and 26, 2010 and analyzed by Air Toxics, Ltd. All analyses were conducted in accordance with EPA Method TO-15 analysis and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
* • Initial/Continuing Calibrations
• Laboratory Method/Field Blank Results
* • Surrogate Recoveries
* • Laboratory Control Sample Results
* • Internal Standards
* • Field Duplicate Precision
* • Compound Quantitation
* • Compound Identification
* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region II worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. The attached Table summarizes the validation qualifications which are based on the following information:

Volatiles

The following compounds were detected in method blank 1008666B-22B affecting samples BPS1-DUP03-082610, BPS1-SVPM-11S-082610, and BPS1-SVPM-12S-082610 in Preparation Batch P100914A:

Compound	Maximum Concentration	Action Level
1,2-Dichloroethane	0.42 ug/m^3	2.1 ug/m^3
Tetrachloroethene	1.3 ug/m^3	6.5 ug/m^3
Trichloroethene	0.82 ug/m^3	4.1 ug/m^3

Action levels of 5x the maximum concentrations were used to evaluate sample concentrations for blank contamination. Sample aliquot and dilution factors were considered in evaluating for blank contamination. No action was necessary because all positive results for these compounds were greater than the corresponding action levels. Positive results for 1,2-dichloroethane less than the associated action level were qualified as non-detected due to blank contamination (U). Positive results less than the reporting limit that were qualified due to blank contamination were raised to the reporting limit.

Additional Comments

The Chain of Custody (COC) information for sample BPS1-DUP03-082610 did not match the sample tag upon receipt. The information on the COC was used to process the sample.

Positive results less than the reporting limit and greater than the detection limit were qualified as estimated (J) due to uncertainty near the detection limit.

The laboratory reported the VOC air result concentrations in units of both ppbv and ug/m^3 on the sample forms. The results in the database and the qualified analytical results are reported in units of ug/m^3 only.

Samples prepared on 09/09/10 (BPS1-SVPM-12S-082610, BPS1-SVPM-11S-082610, and BPS1-DUP03-082610) had reporting limits of 0.5 ppbv, which is greater than the reporting limits specified in the statement of work, which listed reporting limits of 0.05 ppbv or 0.1 ppbv for all analytes. According to the laboratory narrative, samples BPS1-SVPM-12S-082610, BPS1-SVPM-11S-082610, and BPS1-DUP03-082610 were transferred from Low Level analysis to full scan TO-15 due to high levels of target compounds.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Two sample results were qualified as non-detected due to laboratory method blank contamination.

Other Factors Affecting Data Quality: Some results were qualified 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," SOP# HW-31, Revision #4, October 2006, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS

Leigh A. Ciofani
Environmental Scientist/Data Validator

Tetra Tech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
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 be any number of issues; e.g. poor 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-DUP03-082610			BPS1-SVPM-11S-082610			BPS1-SVPM-12S-082610			BPS1-SVPM-2003D-082510		
SDG: 1008666B	LAB_ID	1008666B-20A			1008666B-18A			1008666B-17A			1008666B-11A		
FRACTION: OV	SAMP_DATE	8/26/2010			8/26/2010			8/26/2010			8/25/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS												
	DUP_OF	BPS1-SVPM-12S-082610											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		74			16			71			1.2		
1,1-DICHLOROETHANE		1.3	J	P	8.4	U		1.2	J	P	0.026	J	P
1,1-DICHLOROETHENE		3.4	U		8.2	U		3	U		0.58	U	
1,2-DICHLOROETHANE		3.5	U	A	8.4	U		3.1	U	A	0.063	J	P
CIS-1,2-DICHLOROETHENE		150			38			140			0.58	U	
TETRACHLOROETHENE		53			330			55			2.5		
TRANS-1,2-DICHLOROETHENE		2.5	J	P	4.1	J	P	2.2	J	P	0.58	U	
TRICHLOROETHENE		1200			3100			1200			5.2		
VINYL CHLORIDE		2.2	U		5.3	U		1.9	U		0.37	U	

PROJ_NO: 02019	NSAMPLE	BPS1-SVPM-2003I-082610			BPS1-SVPM-2004D-082610			BPS1-SVPM-2004I-082610			BPS1-SVPM-2007D-082610		
SDG: 1008666B	LAB_ID	1008666B-19A			1008666B-14A			1008666B-13A			1008666B-16A		
FRACTION: OV	SAMP_DATE	8/26/2010			8/26/2010			8/26/2010			8/26/2010		
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		0.23	J	P	0.33	J	P	0.2	J	P	1.5		
1,1-DICHLOROETHANE		0.64	U		0.03	J	P	0.072	J	P	0.041	J	P
1,1-DICHLOROETHENE		0.63	U		0.63	U		0.043	J	P	0.58	U	
1,2-DICHLOROETHANE		0.64	U		0.078	J	P	0.065	J	P	0.11	J	P
CIS-1,2-DICHLOROETHENE		0.63	U		0.63	U		0.61	U		0.95		
TETRACHLOROETHENE		5			2.9			1.8			2.7		
TRANS-1,2-DICHLOROETHENE		0.63	U		0.63	U		0.015	J	P	0.054	J	P
TRICHLOROETHENE		0.36	J	P	0.47			0.28	J	P	1.5		
VINYL CHLORIDE		0.4	U		0.042	J	P	0.016	J	P	0.036	J	P

PROJ_NO: 02019	NSAMPLE	BPS1-SVPM-DUP02-082610			BPS1-SVPM-ODA-082510			BPS1-SVPM-ODA-082610		
SDG: 1008666B	LAB_ID	1008666B-15A			1008666B-12A			1008666B-21A		
FRACTION: OV	SAMP_DATE	8/26/2010			8/25/2010			8/26/2010		
MEDIA: AIR	QC_TYPE	NM			NM			NM		
	UNITS	UG/M3			UG/M3			UG/M3		
	PCT_SOLIDS									
	DUP_OF	BPS1-SVPM-2004I-082610								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.17	J	P	0.036	J	P	0.037	J	P
1,1-DICHLOROETHANE		0.079	J	P	0.96	U		0.81	U	
1,1-DICHLOROETHENE		0.63	U		0.94	U		0.8	U	
1,2-DICHLOROETHANE		0.056	J	P	0.082	J	P	0.1	J	P
CIS-1,2-DICHLOROETHENE		0.63	U		0.94	U		0.026	J	P
TETRACHLOROETHENE		2.1			0.27	J	P	0.24	J	P
TRANS-1,2-DICHLOROETHENE		0.63	U		0.94	U		0.8	U	
TRICHLOROETHENE		0.26	J	P	0.044	J	P	0.04	J	P
VINYL CHLORIDE		0.028	J	P	0.6	U		0.51	U	