
Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation, February 2014 Monitoring Report Lockheed Martin Middle River Complex 2323 Eastern Boulevard Middle River, Maryland

Prepared for:

Lockheed Martin Corporation

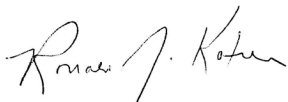
Prepared by:

Tetra Tech, Inc.

October 2014



Michael Martin, P.G.
Regional Manager



Ronald Kotun
Project Manager

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
ACRONYMS	vii
1 INTRODUCTION.....	1-1
2 SITE BACKGROUND	2-1
2.1 SITE HISTORY	2-1
2.2 HISTORICAL INDOOR AIR QUALITY RESULTS.....	2-1
3 INDOOR AIR QUALITY AND VAPOR INTRUSION INVESTIGATION, ROUND 16	3-1
3.1 INVESTIGATION APPROACH AND GUIDANCE	3-1
3.2 INSPECTION AND MAINTENANCE OF VAPOR MONITORING POINTS	3-2
3.3 IAQ AND SUB-SLAB-VAPOR SAMPLING LOCATIONS	3-2
3.4 IAQ AND SUB-SLAB SAMPLING.....	3-7
3.4.1 Collection of IAQ Samples	3-8
3.4.2 Collection of Sub-Slab-Vapor Samples	3-9
3.5 SAMPLING ANALYSIS	3-9
3.6 RESAMPLING OF TCE-EXCEEDANCE LOCATIONS (APRIL 2014)	3-11
3.7 PORTABLE GAS-CHROMATOGRAPH/MASS-SPECTROMETER SURVEY	3-11
3.8 RESULTS	3-13
3.8.1 Round 16 Data Analysis.....	3-14
3.8.2 Round 16 Summary	3-27
4 SUB-SLAB-DEPRESSURIZATION-SYSTEM DATA ANALYSIS	4-1
4.1 SUB-SLAB-VAPOR MONITORING POINTS.....	4-1
4.1.1 Building A.....	4-1
4.1.2 Building C	4-3

TABLE OF CONTENTS (continued)

<u>Section</u>	<u>Page</u>
4.2 SUB-SLAB-VAPOR EXTRACTION POINTS.....	4-5
4.3 VACUUM INFLUENCE.....	4-6
4.4 SUB-SLAB-DEPRESSURIZATION-SYSTEM INFLUENT-VAPOR SAMPLES.....	4-6
4.5 SUB-SLAB-DEPRESSURIZATION-SYSTEM CONCLUSIONS.....	4-8
5 CONCLUSIONS AND RECOMMENDATIONS	5-1
5.1 CONCLUSIONS	5-1
5.2 RECOMMENDATIONS.....	5-6
6 REFERENCES.....	6-1

APPENDICES

APPENDIX A—FEBRUARY 2014 SAMPLE LOG SHEETS/CHAIN OF CUSTODY

APPENDIX B—METHOD DETECTION LIMITS

APPENDIX C—LABORATORY ANALYTICAL REPORTS

APPENDIX D—DATA VALIDATION REPORTS

APPENDIX E—COMPARISON TO BACKGROUND

APPENDIX F—HISTORICAL DATA TABLES AND PLOTS

APPENDIX G—SSD-SYSTEM REMEDIAL ACTION PROGRESS REPORT #20

LIST OF FIGURES

	<u>Page</u>
Figure 3-1 IAQ Background Sampling Locations, Round 16 February 2014.....	3-69
Figure 3-2 Indoor Air and Sub-Slab Vapor Monitoring Locations for Building A, Round 16, February 2014	3-70
Figure 3-3 Indoor Air and Sub-Slab Vapor Monitoring Locations for Building B, Round 16, February 2014	3-71

TABLE OF CONTENTS (continued)

LIST OF FIGURES (continued)

	<u>Page</u>
Figure 3-4	Indoor Air and Sub-Slab Vapor Monitoring Locations for Building C, Round 16, February 2014 3-72
Figure 3-5	Sample Locations – ER, PB, and VLS Buildings 3-73
Figure 3-6	Portable GC/MS Grid Sample Locations for Building A Basement 3-74
Figure 3-7	Portable GC/MS Grid Sample Locations for Building C Machine Shop 3-75
Figure 3-8	Round 16 Indoor Air and Sub-Slab Vapor Results Greater than Screening Levels, Building A 3-76
Figure 3-9	Round 16 Indoor Air and Sub-Slab Vapor Results Greater than Screening Levels, Building B 3-77
Figure 3-10	Round 16 Indoor Air and Sub-Slab Vapor Results Greater than Screening Levels, Building C 3-78
Figure 3-11	Round 16 Indoor Air Sampling Results Greater than Screening Levels—ER, PB, and VLS Buildings 3-79
Figure 3-12	Trichloroethene Sample Results, Round 16, Buildings A, B, and C 3-80
Figure 3-13A	Concentrations of Select Chemicals from Round 16, Building A—Soil Vapor 3-81
Figure 3-13B	Concentrations of Select Chemicals from Round 16, Building A—Indoor Air: Basement 3-82
Figure 3-13C	Concentrations of Select Chemicals from Round 16, Building A—Indoor Air: First Floor 3-83
Figure 3-14A	Building A Historical Maximum IAQ TCE Concentrations 3-84
Figure 3-14B	Building A Historical Maximum SV TCE Concentrations 3-85
Figure 3-14C	TCE Results Indoor Air Monitoring Locations for Building A, Round 16, February 2014 3-86
Figure 3-14D	TCE Results Sub-Slab Vapor Monitoring Locations for Building A, Round 16, February 2014 3-87
Figure 3-15A	Concentrations of Select Chemicals from Round 16, Building B—Soil Vapor 3-88
Figure 3-15B	Concentrations of Select Chemicals from Round 16, Building B—Indoor Air: Basement 3-89
Figure 3-15C	Concentrations of Select Chemicals from Round 16, Building B—Indoor Air: First Floor 3-90

TABLE OF CONTENTS (continued)

LIST OF FIGURES (continued)

	<u>Page</u>
Figure 3-16A	Building B Historical Maximum IAQ TCE Concentrations..... 3-91
Figure 3-16B	Building B Historical Maximum SV TCE Concentrations..... 3-92
Figure 3-16C	TCE Results for Indoor Air Monitoring Locations for Building B, Round 16, February 2014 3-93
Figure 3-16D	TCE Results for Sub-Slab Vapor Monitoring Locations for Building B, Round 16, February 2014 3-94
Figure 3-17A	Concentrations of Select Chemicals from Round 16, Building C—Soil Vapor 3-95
Figure 3-17B	Concentrations of Select Chemicals from Round 16, Building C—Indoor Air: Basement 3-96
Figure 3-18A	Building C Historical Maximum IAQ TCE Concentrations..... 3-97
Figure 3-18B	Building C Historical Maximum SV TCE Concentrations..... 3-98
Figure 3-18C	TCE Results for Indoor Air Monitoring Locations for Building C, Round 16, February 2014 3-99
Figure 3-18D	TCE Results for Sub-Slab Monitoring Locations for Building C, Round 16, February 2014 3-100
Figure 3-19	Graphical Display of Trichloroethene Indoor Air Concentrations from All Buildings (All Rounds)..... 3-101
Figure 3-20	Graphical Display of Naphthalene Indoor Air Concentrations from All Buildings (All Rounds)..... 3-102
Figure 3-21	Graphical Display of Benzene Indoor Air Concentrations from All Buildings (All Rounds)..... 3-103
Figure 3-22	Graphical Display of 1,2-Dichloroethane Indoor Air Concentrations from All Buildings (All Rounds) 3-104
Figure 3-23	Graphical Display of Ethylbenzene Indoor Air Concentrations from All Buildings (All Rounds)..... 3-105
Figure 3-24	Graphical Display of Total Xylenes Indoor Air Concentrations from All Buildings (All Rounds)..... 3-106
Figure 4-1	Volatile Organic Compound Concentrations at 015-A (Building A)..... 4-26
Figure 4-2	Volatile Organic Compound Concentrations at 018-A (Building A Basement) 4-27
Figure 4-3	Volatile Organic Compound Concentrations at 001-C (Building C Basement) 4-28

TABLE OF CONTENTS (continued)

LIST OF TABLES

	<u>Page</u>
Table 3-1	Descriptive Statistics of Indoor Air Quality Results, All Buildings, February/April 2014 3-32
Table 3-2	Descriptive Statistics of Sub-Slab Vapor Results, All Buildings, February 2014 3-33
Table 3-3	Summary Statistics for Trichloroethene Concentrations in Indoor Air 3-34
Table 3-4	Summary Statistics for Naphthalene Concentrations in Indoor Air 3-35
Table 3-5	Ambient Air (Background) Sampling Results, February 2014..... 3-36
Table 3-6	Indoor Air Quality Sampling Results, Building A, February 2014 3-37
Table 3-7	Sub-Slab-Vapor Sampling Results, Building A, February 2014..... 3-39
Table 3-8	Co-Located Sub-Slab-Vapor and Indoor Air Quality Sampling Results, Building A, February 2014 3-41
Table 3-9	Indoor Air Quality Sampling Results, Building B, February 2014..... 3-48
Table 3-10	Sub-Slab-Vapor Sampling Results, Building B, February 2014..... 3-49
Table 3-11	Co-Located Sub-Slab Vapor and Indoor Air Quality Sampling Results, Building B, February 2014 3-50
Table 3-12	Indoor Air Quality Sampling Results, Building C, February 2014..... 3-53
Table 3-13	Sub-Slab-Vapor Sampling Results, Building C, February 2014..... 3-56
Table 3-14	Co-Located Sub-Slab-Vapor and IAQ Sampling Results, Building C, February 2014 3-58
Table 3-15	Indoor Air Quality Sampling Results, Vertical-Launch System (VLS) Building, February 2014..... 3-65
Table 3-16	Indoor Air Quality Sampling Results, Engineering Research (ER) Building, February 2014 3-66
Table 3-17	Indoor Air Quality Sampling Results, Program Building (PB), February 2014 3-67
Table 3-18	Analyte Concentrations in Background Air Samples Compared to Indoor Air Samples—February 2014 3-68
Table 4-1	Summary of Positive Detects for Vapor Samples, Building A Plating Shop 4-9
Table 4-2	Summary of Positive Detects for Vapor Samples, Building C Basement Area 4-14

TABLE OF CONTENTS (continued)

LIST OF TABLES (continued)

		<u>Page</u>
Table 4-3A	Summary of Positive Detects for Vapor Samples, Building A SSD-System	4-22
Table 4-3B	Summary of Positive Detects for Vapor Samples, Building C SSD-System	4-24

ACRONYMS

2-D	two-dimensional
3-D	three-dimensional
ABC	Building A basement, center
ABN	Building A basement, north
ABS	Building A basement, south
AC	Building A, central
AF	attenuation factor
AN	Building A, north
APS	Building A plating shop
AS	Building A, south
BBN	Building B basement, north
BC	Building B, central
BN	Building B, north
BS	Building B south
BTEX	benzene, toluene, ethylbenzene, xylenes
BUC	Building B utility tunnel, center
BUN	Building B utility tunnel, north
BUS	Building B utility tunnel, south
<i>ca</i>	carcinogenic
CBS	Building C basement machining area
CBC	Building C basement, center
CBN	Building C basement, north
CBS	Building C basement, south
CC	Building C, central
CN	Building C, north
COC	chemical(s) of concern
CS	Building C, south
DCA	dichloroethane
DCE	dichloroethene
DUP	duplicate
ER	engineering research (building)

°F	degrees Fahrenheit
FC	Fire Coat building
Freon 22	chlorodifluoromethane
GAC	granular activated-carbon
GC/MS	gas chromatograph/mass spectrometer
HAPSITE	<i>hazardous air pollutants on site</i>
HVAC	heating, ventilation, and air conditioning
in. Hg	inch(es) of mercury
IA	indoor air
IAQ	indoor air quality
<i>J</i>	compound positively identified, but quantitation is estimated
lb(s)	pound(s)
lbs/day	pound(s) per day
LMCPI	LMC Properties, Inc.
Lockheed Martin	Lockheed Martin Corporation
MDE	Maryland Department of the Environment
µg/m ³	microgram(s) per cubic meter
mph	mile(s) per hour
MPL	mechanical prototype lab
MRC	Middle River Complex
MST	Mission Systems & Training
MTBE	methyl-tertiary-butyl ether
nc	noncarcinogenic
OSHA	Occupational Safety and Health Administration
Pace	Pace Analytical Laboratories
PB	program building
PCE	tetrachloroethene
PEL	permissible exposure limit
ppb	part(s) per billion
psi	pound(s) per square inch
RSL	regional screening level
SSD	sub-slab depressurization
SSDS	sub-slab-depressurization system
SV	sub-slab vapor
TestAmerica	TestAmerica Laboratories
Tetra Tech	Tetra Tech, Inc.
TCA	trichloroethane

TCE	trichloroethene
TMB	trimethylbenzene
<i>U</i>	not detected
UCL	upper confidence limit
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VC	vinyl chloride
VI	vapor intrusion
VCP	Voluntary Cleanup Program
VLS	vertical-launch system
VMP	vapor monitoring point
VOC	volatile organic compound

This page intentionally left blank.

Section 1

Introduction

Tetra Tech, Inc. (Tetra Tech) has prepared this report on behalf of Lockheed Martin Corporation (Lockheed Martin) to document the first round of indoor air quality (IAQ) and sub-slab-vapor (SV) monitoring for calendar year 2014 at Lockheed Martin's Middle River Complex (MRC) in Middle River, Maryland. This report contains the initial Round 16 (February 2014) monitoring results for Buildings A, B, and C; results from follow-up samples collected in April 2014 at two locations initially sampled in February 2014; sampling results collected from the Vertical-Launch System (VLS), Program Building (PB), and Engineering Research (ER) buildings; and sampling results from background locations. This report also includes a status update of two sub-slab-depressurization (SSD) vapor-intrusion-mitigation systems installed at Middle River Complex in 2008: one beneath the Building A plating shop, and the other beneath the south end of the Building C basement.

This monitoring is part of an ongoing investigation to evaluate whether volatile organic compounds (VOCs) in sub-slab vapors (which are associated with soil and groundwater chemicals of concern [COC] at the site) might be moving into indoor air at Middle River Complex facilities. The first monitoring round for calendar year 2014 continues investigations previously described in the following reports:

- *Indoor-Air-Quality Investigation of Buildings A, B, C, and the (Vertical-Launch System) VLS (Facility), Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland* (Tetra Tech, 2007)
- *Indoor-Air-Quality Investigation Round 3, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland* (Tetra Tech, 2008a)
- *Indoor-Air-Quality Investigation 2008 Summary Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland* (Tetra Tech, 2008b)
- *November 2008 Sub-Slab Sampling Report, Sub-Slab-Depressurization Systems, Buildings A and C, Lockheed Martin Corporation Middle River Complex, Middle River, Maryland* (Tetra Tech, 2008c)

-
- *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation 2009 Summary Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2010a)*
 - *Indoor-Air-Quality Investigation August 2010 Summary Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2010b)*
 - *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation August 2010 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2011a)*
 - *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation February 2011 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2011b)*
 - *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation February 2012 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2012a)*
 - *Vapor-Intrusion Management Plan, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2012b)*
 - *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation August 2012 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2013a)*
 - *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation February 2013 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2013c)*
 - *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation August 2013 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland (Tetra Tech, 2014a)*

This report is organized as follows:

Section 2—Site Background: Briefly describes the site history, condition, and previous investigations.

Section 3—Indoor Air Quality and Vapor Intrusion Investigation, Round 16: Presents the technical approach to the 2014 investigation, describes the sampling and analyses performed, discusses the Round 16 results, and reviews the data collected to evaluate sub-slab-depressurization-system operation.

Section 4—Sub-Slab-Depressurization-System Data Analysis: Analyzes relevant data and evaluates sub-slab-depressurization-system performance.

Section 5—Conclusions and Recommendations: Presents conclusions based on the Round 16 sampling results and recommends future work at the site related to vapor intrusion.

Section 6—References: Lists the references used in this report.

Section 2

Site Background

2.1 SITE HISTORY

The Middle River Complex (MRC) land parcels owned by LMC Properties, Inc. (LMCPI) are undergoing extensive site characterization studies to support remedial decisions. An agreement between the Maryland Department of the Environment (MDE) and Lockheed Martin Corporation (Lockheed Martin) is currently being negotiated to address the cleanup at the Middle River Complex. Ongoing environmental characterization of the site has identified subsurface soil and groundwater contamination from volatile organic compounds (VOCs) under or near occupied workspaces (Tetra Tech, Inc. [Tetra Tech], 2006a). If a complete transport pathway exists from the subsurface into a building, these compounds could potentially volatilize and move into the workspace. Other non-subsurface sources could also potentially affect indoor-air contaminant concentrations, including indoor sources (e.g., emissions from process chemicals and building materials) and ambient (outdoor) air contributions (i.e., confounding sources).

In August 2006, Lockheed Martin sampled sub-slab vapor (SV) beneath the Building A basement and plating shop and beneath the southern section of the Building C basement (Tetra Tech, 2006a). These locations were selected because VOC contamination had been observed in groundwater monitoring wells nearby. Analytical results from the SV sampling, as well as other site-specific information, were used as inputs for a human health risk assessment model (Johnson and Ettinger model). The model estimated that these risks are equal to or below MDE and United States Environmental Protection Agency (USEPA) threshold values (Tetra Tech, 2006a). However, because modeling is inherently uncertain, a supplemental indoor air quality (IAQ) investigation was proposed.

2.2 HISTORICAL INDOOR AIR QUALITY RESULTS

Fifteen rounds of previous IAQ monitoring have been completed for Buildings A, B, and C: December 2006, April 2007, October 2007, March 2008, August 2008, July 2009, October 2009,

February 2010, August 2010, February 2011, August 2011, February 2012, August 2012, February 2013, and August 2013. Results from the first monitoring round (in December 2006) for the vertical-launch system (VLS) facility indicated no need for additional sampling, as no analyzed constituents in indoor air (IA) were detected above their respective screening levels (Tetra Tech, 2007). Subsequent analytical results from other locations at Buildings A, B, and C (see Appendix F) indicate that some (but not all) chemicals of concern (COC) identified in the subsurface have also been detected in background and IAQ samples. Background (outdoor air) samples collected at the four corners of the facility property measure on-site concentrations of chemicals that could be attributable to non-MRC/non-subsurface sources, including other industry, Martin State Airport, vehicular traffic, and other urban sources.

IAQ data for COC were compared to risk-based screening levels derived using conservative (i.e., most protective of human health and the environment) USEPA default exposure-assumptions and toxicity values. Screening-level concentrations are based on the risk levels (i.e., 10^{-5} , or a one-in-100,000 excess lifetime cancer-risk) described in MDE Voluntary Cleanup Program (VCP) guidance (MDE, 2006). The comparison with background, spatial analyses, and assessments of chemicals currently and historically used at the MRC indicate that most VOCs detected in IAQ samples are probably *not* associated with SV intrusion. However, movement of SV into IA may be occurring at limited locations. TCE in IAQ samples may be associated with SV movement at the Building A plating shop and in the Building C basement. TCE has been detected in IA, along with a marker chemical (*cis*-1,2-dichloroethene) normally found only in SV samples.

The results of the first three rounds of monitoring led the project team to recommend mitigation for locations where chemicals in SV were known to be at concentrations above risk-based screening levels. The project team also recommended additional IAQ and SV sampling to address areas of uncertainty. Two SV-mitigation systems were installed in March 2008: one beneath the Building A plating shop, and one beneath the south end of the Building C basement, with full system startup on March 31, 2008. Biannual combined IAQ and SV monitoring rounds continue to investigate possible SV sources at the site, evaluate the performance of the sub-slab-depressurization (SSD) systems, and provide ongoing protection of worker health and safety with respect to potential vapor intrusion.

Elevated COC concentrations in SV samples were detected during multiple sampling events near sampling location 018-A. Therefore, the Building A system was expanded by adding extraction laterals in the basement. Elevated COC concentrations in SV samples were also detected in August 2010 in the east-central part of the Building C basement, near the former Patriot plating line. This area was further delineated in 2011 and 2012, which led to expansion of the Building C SSD system to cover the central part of the building. The expansion began in October 2012 and was completed in May 2013; it included the installation of 11 extraction points in the central-target influence area, increased blower capacity, an additional piping network, and the addition of a potassium permanganate vessel to treat vinyl chloride.

This page intentionally left blank.

Section 3

Indoor Air Quality and Vapor Intrusion Investigation, Round 16

3.1 INVESTIGATION APPROACH AND GUIDANCE

The indoor air quality (IAQ) and sub-slab-vapor (SV) investigation described herein is designed to evaluate whether volatile organic compounds (VOCs) associated with soil and groundwater contamination at the site might be moving into indoor air (IA) at Middle River Complex (MRC) facilities. During the Round 16 sampling, IA and SV samples were collected from Buildings A, B, and C; IA samples were also collected in the Vertical-Launch Systems (VLS) building, the Program Building (PB), and the Engineering Research (ER) building to investigate their potential for vapor intrusion. Initial sampling locations for Buildings A, B and C were chosen during a 2006 site reconnaissance by Tetra Tech industrial hygienists. Sampling locations in the VLS building were also established during the 2006 sampling. Sampling locations for the PB and ER building were established before the Round 16 sampling, as these locations had not previously been sampled. The sampling plan is based on information obtained during site reconnaissance, on historical detections, and on the review of historical information and reports. A sampling and analytical method designed to measure low VOC concentrations in air was used to assess their presence or absence. Key aspects of the investigation methodology include:

- development of a site-specific and monitoring-round-specific sampling plan, based on site reconnaissance and reviews of historical information and reports
- inspection of sampling locations before fieldwork to assess the condition of proposed sampling points and identify changes in operations or building conditions
- sampling in areas previously identified as having SV and/or IAQ concentrations above screening values; in areas that had not been recently investigated (VLS) or not investigated at all (PB and the ER building); and in areas to evaluate the efficiency of the

operating sub-slab-depressurization systems at the facility, including the Building C system expansion

- sampling and analysis using methods designed to measure low VOC concentrations in air
- conducting a survey using a portable gas chromatograph/mass spectrometer (GC/MS) unit to provide real-time analysis of VOCs in IA
- resampling of two locations (in April 2014) where results had exceeded the trichloroethene (TCE) screening criterion during the initial Round 16 event in February 2014
- interpretation of analytical results

Relevant guidance used to develop and perform this investigation includes:

- *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils* (United States Environmental Protection Agency [USEPA], 2002)
- *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition*. “Compendium Method TO-15: Determination of VOCs in Air Collected in Specially Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)” (USEPA, 1999)
- Maryland Department of the Environment (MDE) *Voluntary Cleanup Program (VCP) Guidance Document* (MDE, 2006)

3.2 INSPECTION AND MAINTENANCE OF VAPOR MONITORING POINTS

Tetra Tech attempts to place vapor monitoring points (VMPs) at locations where they are least subject to damage. However, due to the dynamic nature of the MRC, site operations may change, and VMPs may become inaccessible or damaged. Historical damage has occurred to some VMPs due to forklift traffic, subsidence, and heavy stored materials. Before the Round 16 sampling, Tetra Tech inspected all existing VMPs proposed for sampling in Block I. All VMPs were found to be in good condition; no repairs were required before the Round 16 sampling.

3.3 IAQ AND SUB-SLAB-VAPOR SAMPLING LOCATIONS

The MRC locations originally selected for indoor air quality sampling are presented in Table 3-1 of the *Indoor Air Quality Assessment Work Plan for Buildings A, B, C, and Vertical-Launch System (VLS)* (Tetra Tech, 2006b). These sampling locations have shifted over time based on the results obtained and due to changes in the facility layout and operations. In January 2013, before

the Round 14 sampling, seven new SV monitoring points were installed to further delineate the extent of SV and IA contamination that had been detected in previous monitoring rounds; locations for these vapor monitoring points are identified in the *Work Plan Addendum Indoor-Air and Sub-Slab Monitoring Round 14* (Tetra Tech, 2013b). No additional VMPs were installed at the site after January 2013.

Figure 3-1 illustrates the locations for background outdoor air samples collected during Round 16 (February 2014); all locations have been used historically for background (ambient air) sampling at MRC, except for location BCK-3. After the July 2013 discovery of an underground storage tank (UST) containing trichloroethene (TCE), location BCK-3 was moved approximately 700 feet northwest of its historical location to the southeast corner of the VLS parking lot. This location was chosen to reduce the possibility of contamination from the open UST excavation.

Not all existing monitoring points inside Buildings A, B, and C were sampled during Round 16. As in previous rounds, samples were collected selectively, in or adjacent to areas where contaminants previously had been detected or are currently suspected of being present, while attempting to maintain adequate overall coverage (approximately 200 feet by 200 feet in a regular sampling grid) across the building footprints. TCE has been targeted as a primary chemical of concern (COC); it has a history of use at the site, and may be toxic and mobile in the environment. The VMPs sampled during this round in Buildings A, B, and C are shown on Figures 3-2, 3-3, and 3-4, respectively, along with historical sampling locations.

IAQ sampling locations were co-located with most monitored VMP locations to evaluate possible relationships between SV and IAQ results. For data organization and interpretation, each building is divided into areas encompassing multiple sampling locations. A table identifying which sampling locations are in each area is included with the historical data tables in Appendix F. These areas are as follows:

Building A	Building B	Building C
<ul style="list-style-type: none"> • Building A north (AN) • Building A central (AC) • Building A south (AS) • Building A plating shop (APS) • Building A basement north (ABN) • Building A basement center (ABC) • Building A basement south (ABS) 	<ul style="list-style-type: none"> • Building B north (BN) • Building B central (BC) • Building B south (BS) • Building B basement north (BBN) • Building B utility tunnel north (BUN) • Building B utility tunnel center (BUC) • Building B utility tunnel south (BUS) • Fire Coat building (FC) 	<ul style="list-style-type: none"> • Building C north (CN) • Building C central (CC) • Building C south (CS) • Building C basement north (CBN) • Building C basement center (CBC) • Building C basement south (CBS)

Round 16 sampling was performed on February 24–26, 2014. Ninety-eight samples were collected and submitted for analysis during this round:

- four background samples (from the same background locations used in the previous round)
- 40 IAQ samples (and three duplicates) from Buildings A, B, C and the Fire Coat building
- 32 SV samples (and four duplicates) from Buildings A, B, C and the Fire Coat building
- 12 IAQ samples (and three duplicates) from the VLS, PB, and ER buildings

Five IAQ samples from Building C (144-C through 148-C) were collected in the Lockheed Martin Mission Systems & Training (MST) mechanical prototype laboratory (MPL) machine shop. These sampling locations, in particular, provide data for possible worker exposure areas within the MPL:

- 144-C: machine shop area
- 145-C: cubicle area
- 146-C: kitchen area
- 147-C: machine shop southeast corner workspace
- 148-C: machine shop northwest corner near the office

Three IAQ samples were collected from locations within Buildings A and C where TCE concentrations exceeding the indoor air industrial screening level (8.8 microgram(s) per cubic meter [$\mu\text{g}/\text{m}^3$]) were detected during the August 2013 sampling round (Round 15):

- 144-C ($20 \mu\text{g}/\text{m}^3$), in the Lockheed Martin MST MPL machine shop, located on the northeastern side of the Building C basement
- 093-A ($13 \mu\text{g}/\text{m}^3$), in the southern portion of Building A
- 117-A ($34 \mu\text{g}/\text{m}^3$), in the southern portion of Building A

IAQ samples were also collected at offset locations 093X-A and 117X-A, because IAQ samples collected at the original locations (093-A and 117-A) exceeded the TCE screening level. An SV sample was not collected at VMP location 140-B because water was in the VMP, apparently from a nearby leaking piece of equipment.

As noted above, IAQ samples were collected from 12 locations inside other buildings: VLS (seven locations), PB (two locations), and ER (three locations) during Round 16 sampling. These sampling locations are shown in Figure 3-5. One quality-control duplicate sample was also collected in each of these buildings (three duplicate samples).

The same VLS locations previously sampled in 2006 (Round 1) were again sampled during Round 16, except for an additional sampling location in the detached training trailer on the western side of the VLS. Samples from all seven locations were collected at ground level; in contrast, some Round 1 samples had been collected at elevated positions. As shown on Figure 3-5, sampling locations are in a grid-like pattern with approximately 200 feet or less between points, to provide coverage across the VLS footprint.

To identify possible sampling locations within the PB and ER buildings, Tetra Tech visited the site on October 30, 2013 to identify accessible locations considered most likely to be subject to possible SV intrusion. Two samples (and one duplicate) were collected at the PB. The first sample was collected in the shipping and receiving area on the east side of the building in a storage area with supplies on shelves; four to five people were observed working in the area. This area has ceiling fans/vents, so the sample was collected at a location that minimized their possible influence. The second PB sample was collected subgrade, downstairs in the missile test area; this area has broken tile floors and a shaft housing a testing apparatus that extends upward

three floors. Three samples (and one duplicate) were collected inside the ER building. The first sample was collected in the engineering prototype lab, a large research laboratory area consisting of one big room plus offices. Ceiling vents and fans are present, so a sampling location was selected that minimized their possible influence. The remaining two samples were collected in work/storage type areas. These three locations are in the northeast, northwest, and southwest corners of the building (Figure 3-5).

The sub-slab-depressurization (SSD) systems were shut down 24 hours before sampling began and restarted within one hour after sampling was completed; this is consistent with previous monitoring events. The following observations were recorded during the February 2014 sampling event:

- Mean outdoor ambient temperature on February 24–26, 2014 was 33 degrees Fahrenheit (°F). Barometric pressure ranged from 29.94 inches of mercury (in. Hg) to 30.16 in. Hg. Wind direction was mostly from the west–southwest, and wind speeds averaged eight miles per hour (mph), with gusts up to 27 mph. All three days were clear to partly cloudy; no precipitation was recorded.
- The highest number of personnel and greatest activity observed at the MRC was in Building B, in locations from the thrust-reverser assembly area in the southern portion of the building (BS) to the machining area in the central portion (BC). Less activity was observed in Building A; activity was generally focused in the plating shop (APS), in bonding lay-up and autoclave areas (AC and AS, respectively), and in the parts and assembly areas (AN). Similar to observations during previous rounds, a lower level of activity was observed in the Building C basement machining and storage operations areas (CBS and CBC).
- Building A is a one-story building, except for a basement corridor under an open air loading dock on its western side. Roof vents approximately 50 feet above the work floor were closed in Building A during Round 16 sampling. The large doors at the loading docks on the west side of the building were only opened periodically for movement of carts, forklifts, personnel, and equipment. No personnel or other activities were observed in the Building A basement.
- IA and SV samples from location 118-A were collected in the bond layup room, where a positive-pressure air-conditioning system was operating.
- Sampling location IA-081-A was moved approximately five feet north of its co-located SV sampling location (SV-081-A), due to site operations.
- Offset sample IA-093X-A was collected halfway between IA-093-A and IA-138-A in the Building A basement.

-
- Offset sample IA-117X-A was collected approximately 40 feet south of sampling location IA-117-A on the Building A main floor.
 - The bay doors across the southern end of Building B were closed during sampling. Only one automatic bay door at the southeastern corner of Building B was opened and closed quickly for the passage of carts and equipment. Open roof vents were not observed in Building B during sampling.
 - The IA sample from 063-B was collected within 15 feet of a closed door leading to the outside.
 - An oily stain was noted on the floor next to sampling location 063-B in the north-central part of the Building B basement. An oily liquid has been observed dripping from the ceiling or somewhere above the sampling location in the past.
 - Sampling location SV-140-B had water in the vault, which appeared to be from an aboveground source.
 - Fire Coat building samples IA/SV-105-Z and IA/SV-123-Z were collected in a room containing fire coat paint products. The room was equipped with overhead fans that were operating during sampling, and treated parts were observed on a table.
 - The Building C basement is generally accessed via two doors on the eastern side and one door on the southern side. These are automatic rolling doors that open and close quickly for the passage of carts and forklifts. The automatic rolling door approximately 40 feet east of sampling location 141-C was observed opening and closing intermittently during the day.
 - Samples IA-144-C and IA-128-C were collected in a positive pressure, air-controlled room.
 - The regulator for sample IA-135-C had a stop pressure of -18 pounds per square inch (psi) (i.e., higher than the recommended minimum of -15 psi).
 - Most of the pressure gauges on the Summa[®] canisters responded instantaneously upon opening the valve by dropping to -30 in. Hg. However, the pressure gauge on SV-081-A lowered very slowly, to -8 in. Hg over one hour of sampling. Similarly, the pressure gauge on SV-143-C lowered very slowly, to only -23 in. Hg over the one-hour sampling period. Typically, remaining pressure in the canister is between -1 and -5 in. Hg at the end of sampling.
 - Very few personnel and little site activity were observed in the VLS, PB, and ER during sampling.

3.4 IAQ AND SUB-SLAB SAMPLING

Sampling was performed according to the methods described in the *Indoor-Air-Quality Assessment Work Plan for Buildings A, B, C and VLS* (Tetra Tech, 2006b); *Work Plan Addendum*,

Indoor Air and Sub-Slab Sampling Round 16 (Tetra Tech, 2014b); and *Work Plan Addendum for Indoor Air and Sub-Slab-Vapor Sampling Round 16—Letter* (Tetra Tech, 2014c). IAQ and background samples were collected over approximately eight hours; each SV sample was collected over one hour. All samples were collected via pre-conditioned Summa[®] canisters. IAQ and background samples were collected following procedures for USEPA Method Toxic Organic 15 (TO-15) for the collection and analysis of VOCs (USEPA, 1999). SV samples were collected in accordance with standard operating procedures developed by the USEPA Environmental Response Team for soil vapor sampling (USEPA, 1996) and methodologies developed by the USEPA Office of Research and Development (USEPA, 2004).

After sampling was complete, each canister was closed and sent to an off-site laboratory (Pace Analytical, Minneapolis, Minnesota) under proper chain of custody procedures. Each sample was submitted for analysis by USEPA Method TO-15. The team used the current analytical-parameter list for indoor-air, sub-slab-vapor, and background monitoring that was agreed upon in 2013 (see Section 3.5). A more detailed description of the IAQ and SV sampling activities follows.

3.4.1 Collection of IAQ Samples

Individual evacuated Summa[®] canisters were used to collect all IAQ samples, in accordance with USEPA Method TO-15. These canisters are specially treated stainless-steel evacuated canisters typically used for VOC sampling. One-liter (1L) Summa[®] canisters equipped with in-line particulate filters and integral controllers (to set the rate of filling during sampling) were used.

Samples were collected by opening the canister valve and allowing outside air to enter the canister at the rate set by the controller. The controllers were calibrated in the laboratory and shipped to the field with a sufficient flow rate to maintain the necessary vacuum pressure in the Summa[®] canister for the entire eight-hour sampling interval. Summa[®] canisters were certified clean (less than 0.2 parts per billion [ppb], by volume, of targeted compounds) by the laboratory before being sent to the field, in accordance with Section 8.4 of the TO-15 methodology (USEPA, 1999).

Each canister collected an indoor air sample over an uninterrupted eight-hour period. Each sampling location was routinely inspected during sampling to ensure sample integrity, appropriate operation of sampling devices, and to document conditions within the sampled area

that might affect the results. The four background samples were collected in the same manner as the IAQ samples. Because background samples are collected outdoors, site conditions (e.g., weather, temperature, barometric pressure, humidity and any possible air pollution) that might affect the integrity of the background samples were noted while sampling. Summa[®] canisters were placed in areas away from vehicle traffic and other site operations.

3.4.2 Collection of Sub-Slab-Vapor Samples

Sub-slab soil-vapor samples were collected according to the same protocols discussed in Section 3.4.1. Soil vapor samples were collected through Teflon[®] tubing attached to the stainless steel vapor probes that were installed in the MRC flooring during site characterization studies. Before sampling, the Teflon[®] tubing was purged of atmospheric air to allow any subsurface vapor to enter the probe and tubing. Purging was performed by attaching the Teflon[®] sample tubing to a low-flow sampling pump set at a flow rate of up to approximately 200 cubic centimeters per minute to minimize the potential for mobilizing subsurface vapor and biasing the sample. One to three volumes (i.e., the volume of the sampling probe and tube) were purged to ensure that collected samples were representative of sub-slab conditions.

As with the IAQ samples, sampling was performed using USEPA Method Toxic Organic 15 (TO-15) for the collection and analysis of VOCs (USEPA, 1999). To collect the sample, a clean Summa[®] canister was attached to the Teflon[®] tubing, and the valve on the canister's flow controller opened to allow soil vapor to be drawn into the evacuated canister. The controllers were calibrated by the laboratory and shipped to the field. Soil vapor samples were collected at a low flow rate for one hour to ensure subsurface equilibration and to avoid high negative pressure that might mobilize subsurface vapor and bias the results.

3.5 SAMPLE ANALYSIS

IAQ and SV samples collected during earlier sampling rounds were analyzed for VOCs that had been detected in other MRC investigations. These target compounds, identified in groundwater and sub-slab-vapor samples, may have been historically used and released at the MRC, and could potentially affect IA via subsurface migration. Additional chemicals have been added to this list as they have been detected during facility-wide characterization. Groundwater data collected at the site are reviewed annually to identify possible new COC to be included in the vapor intrusion

(VI) investigation, and the analytical list is amended as needed. A review of 2012 and 2013 groundwater data did not indicate the need to add COC to the 2014 list of analytes. The current list, last amended on February 12, 2012, is below:

- benzene
- carbon tetrachloride
- chlorodifluoromethane (Freon 22)
- chloroform
- dichlorodifluoromethane
- 1,1-dichloroethane (1,1-DCA)
- 1,2-dichloroethane (1,2-DCA)
- 1,1-dichloroethene (1,1-DCE)
- *cis*-1,2-dichloroethene (*cis*-1,2-DCE)
- *trans*-1,2-dichloroethene (*trans*-1,2-DCE)
- ethylbenzene
- methyl-tertiary-butyl ether (MTBE)
- methylene chloride
- naphthalene
- tetrachloroethene (PCE)
- toluene
- 1,2,4-trichlorobenzene
- 1,1,1-trichloroethane (1,1,1-TCA)
- 1,2,3-trimethylbenzene (1,2,3-TMB)
- 1,2,4-trimethylbenzene (1,2,4-TMB)
- 1,3,5-trimethylbenzene (1,3,5-TMB)
- trichloroethene (TCE)
- 1,1,2-trichloroethane (1,1,2-TCA)
- vinyl chloride (VC)
- xylenes (total)

All samples collected during Round 16 were submitted to Pace for analysis by GC/MS using cryogenic concentration (as described in Sections 9 and 10 of USEPA Method TO-15 [USEPA, 1999]). This method was used because of its low detection limit (in the parts per billion by volume range) and because it can quantify all VOCs of concern. Pace is certified in USEPA Method TO-15 analysis, and meets all quality assurance/quality control requirements specified in the TO-15 methodology.

All samples were stored at ambient temperatures and shipped to the laboratory via overnight carrier. All samples were submitted and analyzed within the method's specified 30-day holding time. All appropriate chain of custody documentation was completed for each sample (see Appendix A). A table of Pace's method detection limits is in Appendix B; Appendix C contains the laboratory analytical reports. Data validation reports and supporting documentation are in Appendix D.

Analytical data were qualified in accordance with USEPA *Contract Laboratory Program National Functional Guidelines* (USEPA, 2008). Attaching data qualifiers to analytical results signifies a quality control non-compliance. During Round 16, the following data qualifiers were applicable for the non-conforming data (i.e., data affected by technical limitations during laboratory analysis) after validation:

- *J* indicates an estimated result where the result was less than the reporting limit
- *J+* indicates an estimated result where the result was less than the reporting limit and biased high
- *U* indicates the chemical was not detected at the numerical detection limit (i.e., the sample-specific quantitation limit)
- *UJ* indicates the chemical was not detected at the numerical detection limit (i.e., the sample-specific quantitation limit), which was estimated

3.6 RESAMPLING OF TCE-EXCEEDANCE LOCATIONS (APRIL 2014)

Tetra Tech resampled IAQ locations with a TCE concentration above its screening criterion. TCE exceeded its industrial screening level ($8.8 \mu\text{g}/\text{m}^3$) at two locations (IA-081-A-16 and IA-113-C-16) in February 2014 (Round 16). IA-081A is in the southeastern corner of Building A and IA-113C is in the central portion of Building C basement. Both locations were resampled on April 17, 2014 to evaluate the reproducibility of the February 2014 exceedance. As summarized below, the April 2014 data indicate that the initial February 2014 concentrations reflect the transient nature of IA concentrations:

Location	February 2014 results ($\mu\text{g}/\text{m}^3$)	April 2014 results ($\mu\text{g}/\text{m}^3$)
IA-081A	19.2	4.1
IA-113C	20	0.89 <i>U</i> (not detected)

3.7 PORTABLE GAS CHROMATOGRAPH/MASS SPECTROMETER SURVEY

On February 27–28, 2014, immediately following the Summa[®] canister sampling program, Tetra Tech conducted a survey using a HAPSITE (*hazardous air pollutants on site*) field-portable gas-phase GC/MS to locate indoor sources of VOCs and possible sub-slab conduits. Conventional

indoor air sampling using Summa[®] canisters and analysis of samples using USEPA Method TO-15 meet the necessary data requirements for the monitoring program, but the approach has limitations when investigating the source of volatile contaminants. For example, the number of samples collected in a conventional sampling program is often constrained by both time and budget. A portable GC/MS provides real-time analysis of VOCs in IA, which allows for a quick and efficient screening of large building areas for VOCs.

The HAPSITE field-portable GC/MS is a commercial field instrument that is sufficiently sensitive and selective for use in VI applications. The February 2014 HAPSITE survey was conducted in the southern portion of Building A basement and in the MST MPL machine shop on the northeastern side of the Building C basement. TCE was the target analyte, and the instrument was pre-calibrated to identify an ion specifically characteristic of TCE, thus removing interference from other VOCs. The HAPSITE GC/MS provided real-time analysis of TCE in air, the primary contaminant in the subsurface that might also have indoor sources. The instrument was used to scan the two general areas for possible physical sources of TCE, such as tanks, utility corridors, floor grates/drains, storage cabinets, machines, and commercial products.

The survey of the southern portion of the Building A basement started at the southernmost wall and ended near column D18 (Figure 3-6). Twenty-eight sampling locations were surveyed, with many near physical features that could be VOC sources (e.g., utility corridors, floor grates/drains, tanks and storage cabinets). Thirty-six sampling locations were surveyed in the machine shop area of the Building C basement (Figure 3-7), also near physical features that could be VOC sources (e.g., drums, various cutting machines, chemical storage cabinets, flammable cabinets, and worker stations). The HAPSITE GC/MS was calibrated daily before use and transported to each individual sampling location using a pushcart. The unit was connected to a laptop that enabled real-time data processing.

TCE was not detected at concentrations greater than background at locations tested in the Building C basement machine shop area. However, TCE was detected at 16.24 ppb (equivalent to 87 $\mu\text{g}/\text{m}^3$) at one floor-level location directly above a floor grate near column D26 in the Building A basement. The floor grate is suspected of being part of the storm sewer system. Note that TCE concentrations detected near the grate were below the screening level using conventional sampling methods. Sampling locations 093-A and 138-A are nearby; reported TCE

concentrations at those locations were $5.9 \mu\text{g}/\text{m}^3$ and $1.6 \mu\text{g}/\text{m}^3$, respectively. The storm sewer might be a preferential pathway to this area of Building A. Historical exceedances of the TCE screening level in soil vapor have been reported at location 093-A. While this exceedance at the floor grate was noted, no worker is present in this basement area for any continuous period of time. The Building A basement contains pumps, sumps, collection tanks, boiler room equipment, utility corridors, and electrical panels.

3.8 RESULTS

All analytical results for indoor-air-quality and background (ambient air) samples were compared to screening levels for industrial air that are based on those in USEPA's *Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites* (USEPA, 2014). COC screening uses the lower of the carcinogenic or noncarcinogenic values. The carcinogenic values are based on a 1×10^{-5} (i.e., a one-in-100,000 probability) cancer risk, and the noncarcinogenic values are based on a hazard index of 1 (i.e., the no-adverse-effect level). These risk benchmarks were selected in accordance with MDE requirements. The screening level available for 1,2,3-trimethylbenzene was used as a surrogate level for 1,3,5-trimethylbenzene, because USEPA has not published an RSL for this chemical in air. Analytical results were also compared to (federal) Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs).

SV sampling results were compared to SV screening values derived in accordance with methods discussed in Appendix D of USEPA's guidance for evaluating vapor intrusion (USEPA, 2002), and were calculated by dividing IA screening levels by a conservative attenuation factor (AF) of 0.03¹. The attenuation factor represents the adjustment applied to IA screening levels to account for reductions in concentration as vapor migrates from sub-slab to indoor air, due to diffusive, advective, and/or other attenuating mechanisms. Simply stated, SV is expected to dilute upon movement into IA; the AF is the ratio of the IA concentration of the COC to its SV concentration, under a conservative VI scenario. The most recent USEPA guidance (USEPA, 2013b) confirms that an AF of 0.03 is appropriate; this value results in higher SV screening values when compared to those used in pre-August 2012 sampling rounds (based on an AF of 0.1).

¹ An AF of 0.1 was used in data analyses before August 2012. This factor has since been updated based on USEPA research. USEPA's *Vapor Intrusion Database: Evaluation and Characterization of Attenuation Factors for Chlorinated Volatile Organic Compounds and Residential Building* (USEPA, 2012b) recommends the new AF of 0.03, as recent data indicate a building contributes a greater degree of attenuation than originally had been believed.

3.8.1 Round 16 Data Analysis

In this section, because all data discussed are from Round 16, and because the sampling medium (i.e., IA or SV) is identified at the start of each subsection, the sampling medium and round designation (R16) are not included when identifying samples or sampling locations in text or tables. For example, under the subheading “Building A Indoor Air Quality (IAQ) Samples,” the sampling medium (IA) is identified in the subheading title, so an IAQ sample collected from VMP 076 (e.g., sample 076-A-IA-R16) is referred to as “076-A.” If comparisons are made to specific samples from previous sampling rounds, the sample will be identified as such in the text or by using the round-designation suffix (e.g., R06 for Round 6).

Figures 3-2, 3-3, and 3-4 show Round 16 sampling locations in Buildings A, B, and C, respectively, and Figure 3-5 shows sampling locations for the VLS, PB, and ER buildings. Descriptive statistics for Round 16 IAQ and SV samples are in Tables 3-1 and 3-2, respectively. (As a point of comparison, descriptive statistics for all IAQ and SV samples collected during the VI program are also in Appendix F.) Additional summary statistics for IA TCE and naphthalene over time are in Tables 3-3 and 3-4, respectively.

The following chemicals were detected in Round 16 IAQ and SV samples at concentrations exceeding their respective MDE risk-management benchmarks:

- **IA**—ethylbenzene, *meta*-+*para*-xylenes, naphthalene, and TCE
- **SV**—TCE, naphthalene, 1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, chloroform, ethylbenzene, total xylenes, 1,1-dichloroethane, and vinyl chloride

Figures 3-8 through 3-11 show IA and SV sampling locations with exceedances. Concentrations of TCE in IA and SV throughout Buildings A, B, and C are shown on Figure 3-12.

3.8.1.1 Background Ambient Air Samples

Analytical results for the Round 16 ambient air samples collected at the MRC background locations are in Table 3-5. Background sampling locations are far enough away from site operations to avoid any possible site influence (see Figure 3-1). As discussed in Section 3.3, southeastern background location BCK-3 was moved approximately 700 feet northwest of its historical location to the southeast corner of the VLS parking lot, to reduce possible

contamination from an open underground storage tank excavation in Block E. The remaining three background samples were collected from the same locations used in the previous round (the northeastern, northwestern, and southwestern fence lines).

The following 15 chemicals were detected in the background samples, but none were detected at concentrations greater than their corresponding indoor air screening levels:

- | | | |
|---|---|---|
| • benzene
(four of four samples) | • chlorodifluoromethane
(four of four samples) | • dichlorodifluoromethane
(four of four samples) |
| • ethylbenzene
(two of four samples) | • methylene chloride
(four of four samples) | • naphthalene
(three of four samples) |
| • tetrachloroethene
(one of four samples) | • toluene
(four of four samples) | • trichloroethene
(one of four samples) |
| • 1,2,3-trimethylbenzene
(two of four samples) | • 1,2,4-trimethylbenzene
(three of four samples) | • 1,3,5-trimethylbenzene
(one of four samples) |
| • xylenes
(three of four samples) | | |

All of these chemicals have also been detected in IA or SV samples. The maximum detected background concentrations were at least one order of magnitude (10 times) less than screening levels, with only a few exceptions. Two of these exceptions are TCE and naphthalene: the maximum Round 16 background concentrations of TCE ($4.2 \mu\text{g}/\text{m}^3$) and naphthalene ($3.5 \mu\text{g}/\text{m}^3$) are within one order of magnitude of the screening levels ($8.8 \mu\text{g}/\text{m}^3$ and $3.6 \mu\text{g}/\text{m}^3$, respectively). The maximum detected background TCE concentration from Round 16 ($4.2 \mu\text{g}/\text{m}^3$) exceeds the historical maximum for background samples ($1.7 \mu\text{g}/\text{m}^3$). However, the maximum naphthalene concentration ($3.5 \mu\text{g}/\text{m}^3$) during Round 16 is less than the maximum reported in historical background samples ($8.1 \mu\text{g}/\text{m}^3$).

3.8.1.2 Building A Indoor Air Quality (IAQ) Samples

Round 16 IAQ results for Building A are in Table 3-6; exceedances are displayed on Figure 3-8. Fifteen indoor air samples (plus one duplicate: IA-DUP-3 [a duplicate of 015-A] and one resample: IA-081-A-16R) were collected. IAQ data for Building A indicate the following:

- TCE and naphthalene are the only target analytes detected at concentrations exceeding their respective MDE screening levels (Figure 3-8).

- TCE was detected in nine of 15 IA samples (not including the duplicate or resample). The only sample with a TCE exceedance ($19.2 \mu\text{g}/\text{m}^3$) of the screening level ($8.8 \mu\text{g}/\text{m}^3$) was from location 081-A, collected in February 2014, in the southern end of the first floor. This location was resampled in April 2014; TCE in the April sample did not exceed the screening level.
- Historically, the highest IA TCE concentrations in Building A have been detected in the basement and near the plating shop. Comparing the mean and concentration range of samples collected on the first floor to the mean of those collected in the basement indicates that IA concentrations for these two areas are similar (Table 3-3).
- Potential TCE-degradation products (1,1-DCE, *cis*-1,2-DCE, and *trans*-1,2-DCE) were not detected in the sample collected from location 081-A, where the only TCE exceedance was observed. 1,1-DCE and *cis*-1,2-DCE were detected at only one IA location (093X-A), in the southwestern portion of the Building A basement; the detected concentrations do not exceed screening levels. Location 093X-A is an offset sampling location tested in Round 16 because of the TCE concentrations detected at Location 093-A during Round 15. *trans*-1,2-DCE was not detected in Round 16 samples collected from Building A.
- Naphthalene ($3.7 \mu\text{g}/\text{m}^3$) slightly exceeded its IA screening level ($3.6 \mu\text{g}/\text{m}^3$) at the same location (081-A) as the TCE exceedance. The highest historical naphthalene concentrations have been found along the eastern wall of the Building A basement and on the first floor in the east-central portion of the building, east of the plating shop. The locations of these exceedances follow historical trends. The mean concentrations of naphthalene in samples collected on the first floor and the mean of those collected in the basement are similar (Table 3-4).
- The highest concentrations of several other VOCs, including ethylbenzene ($36.6 \mu\text{g}/\text{m}^3$) and total xylenes ($209.5 \mu\text{g}/\text{m}^3$), were also detected at 081-A, but none were detected at concentrations above their respective screening levels.
- Comparing the mean concentrations of TCE in samples collected on the first floor and in the basement to the mean of the background concentrations indicates that IA concentrations are slightly greater than background concentrations (Table 3-3). Naphthalene IA concentrations in the basement and on the first floor are also slightly greater than the background concentrations (Table 3-4).

3.8.1.3 Building A Sub-Slab-Vapor (SV) Samples

Round 16 results for sub-slab-vapor (SV) samples collected in Building A are in Table 3-7. Fifteen SV samples (Figure 3-2) were collected from beneath the Building A slab, including two duplicates: SV-DUP-3 (duplicate of 015-A) and SV-DUP-4 (duplicate of 018-A). Figure 3-8 shows SV exceedances by location. Table 3-8 contains a parallel listing of SV and co-located IAQ results for samples collected in Building A. TCE, selected TCE-degradation products, and

naphthalene concentrations detected in Building A are shown graphically on Figures 3-13A–C. Historical maximum IAQ and SV concentrations for TCE in Building A are mapped on 3-D representations on Figures 3-14A and 3-14B, respectively. For purposes of comparison, TCE results for Round 16 are also displayed in 3-D on Figures 3-14C (IAQ data) and 3-14D (SV data). These data indicate the following:

- TCE, chloroform, the trimethylbenzene group of compounds (1,2,3-, 1,2,4-, and 1,3,5-trimethylbenzene [1,2,3-TMB, 1,2,4-TMB, and 1,3,5-TMB, respectively]), and naphthalene were detected at concentrations exceeding screening levels.
- Exceedances of SV TCE screening level ($293 \mu\text{g}/\text{m}^3$) were observed at 079-A ($6,090 \mu\text{g}/\text{m}^3$), approximately 120 feet south of 117-A, at 015-A ($564 \mu\text{g}/\text{m}^3$ and $619 \mu\text{g}/\text{m}^3$ in the duplicate sample) and 118-A ($5,860 \mu\text{g}/\text{m}^3$) in the east–central portion of Building A, and at 136-A ($91,000 \mu\text{g}/\text{m}^3$), approximately 200 feet south of 075-A. TCE exceedances were also reported for several of these locations in Round 15. However, although TCE concentrations at locations 018-A and 108-A exceeded the screening level in Round 15, Round 16 concentrations do not. SV TCE exceedances were detected at:
 - 015-A: within the Building A SSD-system radius of influence, this VMP has historically had SV concentrations of VOCs exceeding screening levels
 - 118-A: in an environmentally controlled area under positive pressure, less than 50 feet southeast of 108-A, in the bond lay-up room. This location is not within the SSD system radius of influence
 - 079-A: east of the bond lay-up room, on the east–central side of Building A, north of the autoclaves, near column B-24 (AC). TCE exceedances have been detected at this VMP since its installation in 2009 (Round 6).
 - 136-A: on the eastern side of Building A, near its junction with Building B. The highest TCE concentrations during Rounds 15 and 16 were detected here. This VMP was installed before Round 14.
- Naphthalene exceeded its SV screening level ($120 \mu\text{g}/\text{m}^3$) only at 075-A ($259 \mu\text{g}/\text{m}^3$) in the northeastern section of Building A (Table 3-7 and Figure 3-8).
- Chloroform was detected at seven of 13 SV locations, but exceeded its screening level ($177 \mu\text{g}/\text{m}^3$) only at 136-A ($217 \mu\text{g}/\text{m}^3$), on the east side of Building A near its junction with Building B. The maximum TCE detection ($91,000 \mu\text{g}/\text{m}^3$) was also reported for this location.

- Exceedances of trimethylbenzenes (1,2,3-TMB, 1,2,4-TMB, and 1,3,5-TMB) were observed at 081-A, in the far southern end of the building. Exceedances of all three trimethylbenzene isomers were also observed at this location during Round 15. A 1,2,3-TMB exceedance also occurred at 081-A in Round 13, but not during Round 14. In Round 15, naphthalene also exceeded its SV screening level at this location, indicating possible impact from a hydrocarbon fuel.
- Relatively high concentrations (but no exceedances) of 1,1-DCE, *cis*-1,2-DCE and/or *trans*-1,2-DCE were detected at all VMPs exhibiting TCE exceedances.
- Elevated TCE concentrations in SV generally do not correspond with elevated concentrations in IA. TCE concentrations in IA were below screening levels at the same locations where SV exceedances occurred. SV TCE did not exceed its screening criterion at the only location with an IA TCE exceedance (081-A).
- 1,1-DCE and *cis*-1,2-DCE were detected in only one IA sample (093X-A), collected in the Building A basement. Detections of these degradation compounds of TCE in the basement are most likely associated with the former use of TCE in the plating shop.
- *trans*-1,2-DCE was not detected in any IA sample.
- Naphthalene was detected in all but three SV-IA co-located sample pairs. Where the SV naphthalene concentration exceeded its screening level (075-A), the corresponding IA concentration did not. Likewise, where IA naphthalene exceeded its screening level (081-A), the SV concentration did not. This suggests possible IA sources of naphthalene.
- Chloroform was detected in both IA and SV in co-located samples at only one location (018-A), but concentrations are less than screening values. Chloroform in SV at 136-A exceeded the screening level, but was not detected in the associated IA sample.

3.8.1.4 Building B Indoor Air Quality (IAQ) Samples

Round 16 IAQ sampling results for Building B are in Table 3-9. Five IAQ samples were collected from interior locations in Building B. Two additional IA samples (105-Z and 123-Z) were collected from the Fire Coat building, approximately 55 feet south of Building B. Building B exceedances are shown on Figure 3-9. Building B indoor-air-quality data indicate the following:

- Naphthalene is the only COC that exceeded its IA screening level ($3.6 \mu\text{g}/\text{m}^3$) within Building B.
- Ethylbenzene and xylenes concentrations exceed their respective screening criteria ($49\text{-}\mu\text{g}/\text{m}^3$ and $440 \mu\text{g}/\text{m}^3$, respectively) in both samples collected in the Fire Coat building.

- TCE was detected in only one of five IA samples collected inside Building B, at a concentration ($1.1 \mu\text{g}/\text{m}^3$) below its screening level ($8.8 \mu\text{g}/\text{m}^3$). TCE has never been detected in indoor air at the Fire Coat building.
- The mean concentration of TCE in samples collected from the first floor of Building B is less than the mean background concentration (Table 3-3). TCE was not detected in Building B basement samples during Round 16.
- Naphthalene was detected in four of five samples collected in Building B, and in one of the two samples collected from the Fire Coat building. The two exceedances ($4J \mu\text{g}/\text{m}^3$ at 033-B and $6.5J \mu\text{g}/\text{m}^3$ at 140-B) are from the northwestern side of Building B in a machining area (033-B) and from the west-central portion of Building B (140-B). Round 16 results are typical of the historical data reported for Building B.
- The only detection of naphthalene in the Building B basement approximates the maximum 2014 background detection (only two samples were collected). Although the maximum detection from Building B first-floor samples during Round 16 exceeds the maximum background concentration from 2014, all detected naphthalene results from Round 16 are within the historical background range (Table 3-4).

3.8.1.5 Building B Sub-Slab Vapor Samples

Round 16 SV sampling results for Building B are in Table 3-10. Four SV samples were collected from beneath the Building B slab. Two additional SV samples (105-Z and 123-Z) were collected from the Fire Coat building. VOC concentrations above screening levels are shown on Figure 3-9. Table 3-11 contains a parallel listing of the SV and co-located IAQ sampling results for Building B. Round 16 TCE, selected TCE-degradation products, and naphthalene concentrations detected in Building B SV, basement IA, and first-floor IA are shown graphically on Figures 3-15A–C. Historical maximum TCE concentrations in IAQ and SV are mapped on a 3-D Building B representation in Figures 3-16A and 3-16B, respectively, while Round 16 data are displayed on a 3-D Building B representation in Figures 3-16C (IAQ data) and 3-16D (SV data). These data indicate the following:

- No SV concentrations exceed screening levels.
- TCE and naphthalene were detected in all SV samples, but TCE degradation products were detected infrequently.
- SV ethylbenzene and xylenes concentrations detected in the Fire Coat building are somewhat higher than those noted in Building B.
- TCE was detected in co-located IA and SV samples at only one location (121-B). TCE was detected in SV, but not in co-located IA samples, at other locations.

- Naphthalene was detected in four of six co-located IA and SV samples, but the only exceedances were in IA at locations 140-B and 033-B. Note the absence of a co-located SV sample for location 140-B. However, the IA and SV naphthalene concentrations at 121-B (between those two locations) were below screening levels. Generally, higher concentrations of naphthalene in IA do not correlate with higher concentrations in SV.

3.8.1.6 Building C Indoor Air Quality (IAQ) Samples

Round 16 IAQ sampling results for Building C are in Table 3-12. Eighteen indoor-air-quality samples (plus two duplicates: IA-DUP-1 [a duplicate of 133-C] and IA-DUP-2 [a duplicate of 113-C] and one resample [IA-113-C-16R]) were collected from interior locations in the Building C basement (Figure 3-4). Figure 3-10 displays exceedances of screening levels by location. IAQ data for Building C indicate the following:

- TCE (at one location) and naphthalene (at seven locations) are the only target analytes exceeding screening levels (based on MDE risk-management benchmarks).
- TCE was detected at only two Round 16 IA sampling locations (113-C and 133-C), with an exceedance of the IA screening level ($8.8 \mu\text{g}/\text{m}^3$) at 113-C ($20 \mu\text{g}/\text{m}^3$) in the original sample, but not its duplicate. IA at 113-C was resampled in April 2014 because of this earlier exceedance. TCE in the April sample did not exceed the screening level. TCE was not detected at location 144-C, where an exceedance was reported in Round 15. The mean TCE concentration for Building C IA basement samples is approximately equal to the mean of Round 16 background samples (Table 3-3); no first-floor samples were collected in Building C.
- TCE-degradation products *cis*-1,2-DCE, *trans*-1,2-DCE, and VC were not detected in Round 16 IA samples, but 1,1-DCE (another TCE degradation product) was detected at a concentration less than its screening level at one location (113-C, in the original but not in the duplicate).
- Naphthalene marginally exceeded ($3.7\text{--}5.1 \mu\text{g}/\text{m}^3$) its indoor-air screening level ($3.6 \mu\text{g}/\text{m}^3$) at seven locations during Round 16. In contrast, three naphthalene exceedances occurred in Round 15 IA samples, zero exceedances in Round 14 IA samples, and only one exceedance in Round 13 samples. Most locations with exceedances during Round 16 are in the east-central portion of Building C; however, the highest Round 16 naphthalene concentration was in the northern part of Building C (065-C). Four of seven IA naphthalene exceedances were in the MST MPL area, suggesting a possible indoor air source.
- The mean of Round 16 IA naphthalene concentrations in Building C is greater than the mean of background concentrations. However, historical results indicate IA naphthalene concentrations are generally similar to background concentrations (Table 3-4).

3.8.1.7 Building C Sub-Slab-Vapor (SV) Samples

Fifteen SV samples, including two duplicates (SV-DUP-1 [a duplicate of 133-C] and SV-DUP-2 [a duplicate of 113-C]), were collected from beneath the Building C basement slab (Figure 3-4). Note that while IA samples were collected at locations 144-C through 148-C during Round 16, no corresponding SV samples were collected because no sub-slab VMPs are installed at these locations. Table 3-13 shows Round 16 SV sampling results for Building C, and exceedances are in Figure 3-10. Co-located sampling results for Building C are in Table 3-14. TCE, select TCE-degradation products, and naphthalene concentrations are shown graphically in Figures 3-17A–B. Historical maximum IAQ and SV concentrations for TCE are mapped in 3-D on Figures 3-18A and 3-18B, respectively. IA and SV TCE results for Round 16 are also displayed in 3-D on Figures 3-18C and 3-18D, respectively. These data indicate the following:

- Chloroform, naphthalene, 1,1-DCA, ethylbenzene, TCE, vinyl chloride, and xylenes were detected in SV samples at concentrations exceeding their respective screening levels.
- TCE was detected in all but one of 15 (including two duplicates) SV samples collected beneath Building C, but only two locations had TCE exceedances of the SV screening level ($293 \mu\text{g}/\text{m}^3$): 102-C ($2,740 \mu\text{g}/\text{m}^3$) and 133-C ($10,700 \mu\text{g}/\text{m}^3$ and $8,630 \mu\text{g}/\text{m}^3$ in the duplicate sample).
- The highest TCE concentrations were found in the central portion of the Building C basement (Figure 3-10). The maximum TCE concentration was at 133-C, near the center of the Building C basement (CBC) and west of the former Patriot plating line. This location also had the highest TCE concentrations in Rounds 13, 14, and 15. Location 133-C is within the radius of influence of the Building C SSD-system expansion; TCE concentrations at 133-C have decreased since the SSD system expansion was activated.
- TCE and several other contaminants (1,1-DCA, ethylbenzene, and xylenes) were detected at concentrations greater than their screening levels at location 102-C, which is due west and nearly adjacent to the location of the former Patriot plating line.
- TCE exceedances were also detected in areas outside the observed radius of influence of the Building C SSD system.
- In most cases, TCE was not detected in both IA and SV samples collected from the same locations. Exceptions are locations 113-C and 133-C. The only IA TCE exceedance of the IA screening level ($8.8 \mu\text{g}/\text{m}^3$) was at 113-C ($20 \mu\text{g}/\text{m}^3$), whereas the maximum SV TCE detection was at 133-C. TCE was not detected in IA at location 102-C, where the only other SV TCE exceedance was detected (Figure 3-18A–B).

- 1,1-DCE, *cis*-1,2-DCE, and *trans*-1,2-DCE, potential TCE breakdown products, were generally found in SV samples that also had TCE concentrations greater than its SV screening level, but this correlation is not completely consistent.
- VC (a breakdown product of TCE and DCE) exceeded its screening level ($933 \mu\text{g}/\text{m}^3$) at 126-C ($11,900 \mu\text{g}/\text{m}^3$), collected from beneath the southern portion of the Martin Museum on the eastern side of the Building C basement and north of the former Patriot plating line. VC has always exceeded the SV screening level at this location since the VMP was first installed and sampled in February 2012. The last time VC was detected in IA samples was in August 2011 (Round 11) at three CBC locations and at one location each in CBS and CBN. All reported concentrations marginally exceeded the detection level, were *J*-qualified (estimated), and did not exceed the IA screening level ($28 \mu\text{g}/\text{m}^3$).
- Naphthalene was detected during Round 16 at 12 of 13 sampling locations and exceeded ($157 \mu\text{g}/\text{m}^3$) its screening level ($120 \mu\text{g}/\text{m}^3$) at only one location (142-C). This location is not within the SSD-system radius of influence.
 - Naphthalene did not exceed its screening level at 102-C, which had the highest naphthalene concentration during Rounds 13, 14, and 15. Naphthalene at 102-C has historically exceeded its SV screening level. However, other exceedances (1,1-DCA, ethylbenzene, TCE, and total xylenes) were detected here during Round 16. Location 102-C is just west of the former Patriot plating line.
 - Comparison of the Round 15 and 16 naphthalene exceedances shows a decrease in concentration (from Round 15 to 16) at locations 102-C, 130-C, and 142-C. No naphthalene exceedances were observed at 102-C and 130-C in Round 16, but naphthalene exceeded its screening level in both rounds at 142-C. These locations are all outside the SSD-system radius of influence.
 - Naphthalene was detected in the co-located IA sample at the location with the SV exceedance (142-C); however, the IA naphthalene concentration does not exceed its screening level.
- SV concentrations of xylenes, ethylbenzene, and 1,1-DCA exceeded their respective screening levels during Round 16 at 102-C, but no exceedances were detected in IA at 102-C.
- The SV concentration of chloroform exceeded its screening level at 143-C during Round 16, but was not detected in IA at the same location.

3.8.1.8 Indoor-Air-Quality Sampling Results from Additional Buildings

Round 16 IAQ sampling results for the VLS, ER, and PB buildings are in Tables 3-15, 3-16, and 3-17, respectively; VOC concentrations above screening levels are shown on Figure 3-11. Eight IAQ samples (including one duplicate) were collected in the VLS building, four IAQ samples (including one duplicate) were collected from the ER building, and three (including one

duplicate) were collected from the PB. No SV samples were collected, because VMPs are not installed in these buildings.

TCE was not detected in any IAQ sample collected from the VLS, PB, or ER buildings. The sole exceedance ($71\text{J}\mu\text{g}/\text{m}^3$) is naphthalene at 147-VLS, collected on the first floor at the northwestern corner of the VLS building. Naphthalene was detected in four of eight samples collected in the VLS building, in one of four samples from the ER building, and in two of three samples from the PB building. Naphthalene was not detected in the duplicate sample collected from the same location as the exceedance (147-VLS). This suggests that the concentration reported for the original sample was anomalous or transient in nature.

3.8.1.9 Comparison of Round 16 Results to Background Ambient-Air Samples

Outdoor air quality (i.e., background) provides baseline COC concentrations to which concentrations from interior and sub-slab sources can be compared. Comparison to background provides a line of evidence to demonstrate whether chemicals detected in IA are more likely associated with an exterior (i.e., background) or interior source (e.g., chemicals used in the workplace, past spills of chemicals absorbed to above-slab building materials, or sub-slab sources). A comparison of Round 16 IA concentrations (from 58 samples, including duplicates) to the maximum background concentrations for Round 16 is in Appendix E.

Table 3-18 lists the chemicals detected in both background and indoor air samples, and indicates the number of IA samples less than, equal to, and greater than the maximum background concentration. These tables support the evaluation of whether or not chemical concentrations detected in indoor air samples indicate sub-slab or other interior contaminant sources, or simply reflect background conditions:

- When IA concentrations are equal to or less than background concentrations, IA concentrations likely reflect background conditions.
- When IA concentrations are greater than background concentrations, sub-slab or other interior contaminant sources are possibly contributing to the IA concentrations.
- When SV concentrations are less than IA concentrations, and IA concentrations are greater than background, other interior sources are possibly contributing to IA concentrations.

-
- The presence of chlorinated degradation-products in IA samples (at concentrations less than those detected in SV samples), but not in the background samples, suggests that sub-slab sources possibly contribute to IA concentrations.

IA chemicals exceeding screening criteria based on MDE risk-management benchmarks (i.e., ethylbenzene, xylenes, naphthalene, and TCE) exceed maximum background values in 30% or fewer samples. TCE exceeded background in fewer than 10% of samples. In general, IA VOCs at concentrations less than screening criteria also exceed background maximum concentrations in 30% or fewer samples. These results suggest that most detections of these chemicals likely reflect background conditions. Overall, Round 16 maximum background concentrations are generally greater than Round 15 maximum background concentrations. A comparison of TCE and naphthalene (the two most significant IA chemicals) data from Round 16 to historical background data suggests that IA concentrations might result from vapor intrusion or interior sources, but could also be due to background sources, as mean TCE and naphthalene results from Round 16 are generally within the range of historical background concentrations.

3.8.1.10 Comparison of Round 16 Results to Historical Data Set

The historical data set for the VI sampling program (Table F-1 in Appendix F) shows that exceedances in IA occurred for only six target analytes: 1,2-DCA, benzene, ethylbenzene, naphthalene, xylenes, and TCE. Figures 3-19 through 3-24 summarize all data collected throughout the VI monitoring program in frequency-of-concentration histograms. As annotated on these figures, very few exceedances of these screening levels have been identified over time.

Graphical techniques were used to compare IA and SV concentrations of select chemicals at Buildings A, B, and C. The following chemicals were included in the comparisons:

- **Building A:** TCE, naphthalene, 1,1-DCE, total 1,2-DCE, chloroform, and total TMB
- **Building B:** TCE, naphthalene, ethylbenzene, toluene, and total xylenes
- **Building C:** TCE, naphthalene, 1,1,1-TCA, 1,1-DCA, chloroform, ethylbenzene, total xylenes, and vinyl chloride

These chemicals were selected because they have been detected at concentrations exceeding screening levels or at particularly noteworthy concentrations (e.g., greater than 1000 µg/m³ in SV).

Figures illustrating the spatial distribution of TCE and *cis*-1,2-DCE concentrations in indoor air and sub-slab vapor for Round 16 are in Appendix F (Figures F-1 through F-4). These figures provide two-dimensional (2-D) portrayals of sub-slab concentrations of TCE and *cis*-1,2-DCE that are color-coded and mapped according to concentration trends. Three-dimensional (3-D) figures illustrating maximum historical TCE concentrations at Buildings A, B, and C, including Round 16 sampling locations, are in Figures F-5 through F-10 of Appendix F.

Two figures are presented for each building: one illustrating IA results and one depicting SV results. Each figure has a color-coded scale corresponding to the highest observed historical TCE concentrations at each sampling location. Note that maximum indoor air and SV concentrations on Figures F-5 through F-10 may have occurred in separate rounds. For example, an elevated IA concentration might have been found during one round, whereas the maximum SV concentration at the same location may have been detected during another sampling round. A review of these figures and historical data indicates the following:

- ***Building A, first floor***—Elevated SV TCE does not appear spatially correlated to elevated IA TCE in Round 16. However, elevated SV TCE historically has appeared to be spatially correlated to elevated IA levels near the plating shop.
- ***Building A basement***—Elevated SV TCE does not appear spatially correlated to elevated IA TCE concentrations in Round 16. However, elevated IA TCE in the southern half of the basement may be correlated to elevated SV TCE at or near the plating shop.
- ***Building B***—No apparent correlations exist between SV and IA; however, COC concentrations are lower overall.
- ***Building C basement***—Historical elevated TCE in SV appears spatially correlated to elevated IA TCE at the building's southern end and central portion. During Round 16, IA TCE concentrations were less than the screening level at and near locations with SV TCE exceedances.

Three-dimensional (3-D) figures illustrating historical maximum naphthalene concentrations at Buildings A, B, and C (including Round 16 sampling locations) are shown in Appendix F as Figures F-11 through F-16. Two figures are presented for each building: one illustrating IA results and one depicting SV results. Each figure has a color-coded scale corresponding to the highest observed historical naphthalene concentrations at each location. Note that maximum IA and SV concentrations on Figures F-11 through F-16 may have occurred in separate rounds. For example, an elevated IA concentration might have been found during one round, whereas the

maximum SV concentration at the same location may have been detected during another sampling round.

These figures and historical naphthalene data show no temporal correlations between increased concentrations in soil gas and IA. However, historical data do indicate that IA concentrations greater than the screening level may be near VMPs with soil vapor concentrations greater than screening levels. Not all areas with SV concentrations greater than screening levels have a proximate IA exceedance; however, naphthalene is typically detected in IA with greater than 50% frequency. Hence, a VI pathway might not exist at every observed location with elevated SV naphthalene concentrations, but such a pathway could be present for a subset of these locations.

Many factors can affect the distribution of and temporal changes in IA and SV data. Some significant factors affecting results include complex building-envelope interactions, such as stack effects and the influence of heating, ventilation, and air conditioning (HVAC) systems; weather effects, such as fluctuations in temperature, barometric pressure and precipitation; and laboratory variation. Building-envelope factors at the MRC include roof vents, fans, large doors (often open in the summer), and the use of a forced air heating system in the winter. Personnel and vehicles are also continuously moving through most parts of the building, with the possible exception of the Building A basement. VOCs are also sometimes used at various locations within these buildings.

IA and SV results, in conjunction with observations recorded during Round 16 (previously discussed in Section 3.3), indicate the following:

- Contaminant concentrations in IA sample 118-A from the positive pressure, air-conditioned bond layup room are similar to concentrations detected in other areas. IA concentrations in this sample are more similar than the corresponding SV samples. These similarities could be due to air mixing by the HVAC system. TCE in SV beneath the bond layup room exceeded its screening level (Figure 3-8). The HVAC system might help reduce possible vapor intrusion into IA, but it does not appear to affect SV concentrations.
- IA sample 063-B was collected near a door open to the outside. IA results for this location are generally equal to or less than background results, indicating some contribution from background (as seen at other locations), but also contributions from interior sources.

- Samples IA-144-C and IA-128-C were collected in a positive pressure, air-conditioned room that should reduce possible vapor intrusion. IA TCE was not detected at these sampling locations, or at any nearby sampling locations (IA-145-C, IA-146-C, IA-147-C, and IA-148-C) during Round 16. TCE was detected in all IA samples collected in Building C during Round 15, with an exceedance occurring IA-144-C during Round 15.
- Samples IA/SV-105-Z and IA/SV-123-Z were collected in a room containing fire-coat paint products, operating overhead fans, and with treated parts on a table. Ethylbenzene and xylenes exceedances in IA were detected at these locations during Round 16. Ethylbenzene and xylenes last exceeded their IA screening levels at these locations during Round 11. These exceedances may be attributable to painting done within this building. Strong paint odors are noticeable during sampling.
- Building A is a one-story building except for a basement corridor under an open air loading dock on its western side. Roof vents approximately 50 feet above the work floor were closed in Building A during Round 16 sampling. The large doors at the loading docks on the western side of the building were opened periodically. The increased ventilation associated with open doors might have affected sample concentrations on the first floor of Building A. However, IA naphthalene and TCE detections in the basement suggest that VI might be occurring. Moreover, the detection of TCE ($87 \mu\text{g}/\text{m}^3$) measured near IA-093-A and IA-138-A (which are directly above a floor grate) via the portable GC/MS (HAPSITE) suggests that the drain might serve as a preferential pathway to IA in Building A. TCE was detected at both IA-093-A and IA-138-A during Round 16. Historical exceedances of the TCE screening level in SV have been reported at 093-A. No personnel or other activities were observed in the Building A basement.

Laboratory variation may contribute to some data variability, as various labs have been used over the last eight years (16 rounds) of sampling. In addition, more advanced laboratory instrumentation has recently been implemented to analyze samples collected at the site. These changes in instrumentation have improved laboratory accuracy and precision by lowering detection limits, thus complicating direct comparison of older results with more recent data.

3.8.2 Round 16 Summary

Round 16 data support the ongoing MRC VI investigation. The primary chemicals of concern at this site (and discussed below) include TCE and its breakdown products, naphthalene, chloroform, xylene, ethylbenzene, and the TMB group of compounds; all had SV exceedances in at least one sample during Round 16. All COC have been associated with possible vapor intrusion, are toxic at sufficient doses, and are known to have been used historically at the site. In the following discussion, elevated SV or IA concentrations are compared to medium- and COC-specific screening levels. Note that for some COC, Buildings A and B are discussed together because of the possible SV connection between location 136-A at the eastern side of

Building A and monitoring points at the western side of Building B (e.g., locations 101-B, 121-B, and 140-B).

3.8.2.1 Distribution of Trichloroethene and Its Breakdown Products in Sub-Slab Vapor and Indoor Air

- **Buildings A and B**—Locations in Building A with SV TCE exceedances during Round 16 are mapped in orange and red on Figure F-3 in Appendix F. Elevated TCE levels are on the first floor in the southeastern section of the building near 079-A, near the plating area, and in the north-central/northeastern section of Building A near 136-A. Lower SV TCE concentrations (green and blue areas on Figure F-3) were observed in the southern quarter of Building A.
 - Positive correlations between *cis*- and *trans*-1,2-DCE in SV and TCE in SV were found at some locations. Higher SV TCE concentrations (orange and red shading, Figure F-3) correlate well with higher *cis*-1,2-DCE concentrations (orange, yellow and green shading, Figure F-4). Dechlorination breakdown-products were detected in the same samples with elevated TCE concentrations, indicating that TCE degradation is most likely occurring. A positive correlation between breakdown product 1,1-DCE and TCE concentrations in SV was not observed in all samples. The presence of *cis*-1,2-DCE, but not 1,1-DCE, suggests that anaerobic biodegradation of TCE is the dominant breakdown pathway.
 - TCE in IA was low at most VMPs in and near the plating shop area (e.g., 015-A and 108-A), where SV TCE was relatively high. No concentration exceeded screening levels. This indicates that the SSD system is reducing the potential for vapor intrusion to occur.
 - Elevated SV TCE was detected at 136-A. Concentrations decreased moving east from 136-A to 101-B. Chloroform showed similar behavior. A sewer or other subsurface chase might act as a conduit between these locations.
 - The resampled results for location 081-A in April appear to indicate that the IA TCE exceedance reported in the original (February 2014) sample was transient or anomalous.
 - Neither *cis*-1,2-DCE nor *trans*-1,2-DCE were detected in IA in Buildings A and B.
- **Fire Coat building**—TCE and its degradation products were not detected in IA samples collected within the Fire Coat building. Both TCE and *cis*-1,2-DCE were detected below screening levels in SV samples, suggesting a possible correlation between these compounds in the subsurface.
- **Building C**—Two areas of elevated TCE (or TCE degradation products) in SV were observed in Building C (yellow shading, Figure F-3). One is near 126-C, and the other extends southeast to northwest between locations 102-C and 133-C. During Round 14, these two areas were mapped together as a single northeast-southwest trending area of TCE in SV. TCE concentrations within these two areas are substantially lower than those observed during Round 14.

- With the possible exception of location 126-C, SV concentrations of 1,1-DCE, *cis*-1,2-DCE, *trans*-1,2-DCE, and VC (TCE-degradation products) do not strongly correlate with SV TCE. An exception is the vinyl chloride detection at 126-C (11,900 $\mu\text{g}/\text{m}^3$), which suggests that TCE degradation has occurred there in the past.
- The resampled results for location 113-C in April appear to indicate that the IA TCE exceedance reported in the original (February 2014) sample was transient or anomalous.
- **VLS, PB, and ER buildings**—TCE was not detected in IA in the VLS, PB, or ER buildings, nor were degradation products detected, except for a single detection of *trans*-1,2-DCE in the ER building.

3.8.2.2 Distribution of Naphthalene in Sub-Slab Vapor and Indoor Air

- **Buildings A and B**—The SV naphthalene concentration at 075-A in the northern portion of Building A is the only Round 16 SV naphthalene result in Building A to exceed the screening level. The maximum naphthalene concentration in SV samples collected from Building B (location 121-B, at the western edge of Building B [85.8 $\mu\text{g}/\text{m}^3$]) does not exceed screening levels. SV sample concentrations from Building B are generally lower than those detected in Building A. Naphthalene detections in SV are widely dispersed in Buildings A and B, and, in many cases, the detected SV concentrations are similar to concentrations detected in IA. Elevated SV concentrations are not detected at IA locations with naphthalene exceedances (081-A, 033-B, and 140-B). Although vapor intrusion might contribute to the IA naphthalene concentrations detected at some locations (e.g., at location 140-B in the central western portion of Building B), the spatial distribution of the IA/SV data and the comparison of these data to background results suggest that other factors (e.g., background, other indoor air sources) are also likely affecting the IA naphthalene concentrations detected in Buildings A and B.
- **Fire Coat building**—Naphthalene concentrations reported for SV and IA samples collected from the Fire Coat building are not noteworthy. No exceedances were observed; the maximum SV and IA concentrations are 10.9 and 3.2 $\mu\text{g}/\text{m}^3$, respectively. The maximum detected background concentration in Round 16 is 3.5 $\mu\text{g}/\text{m}^3$.
- **Building C**—Seven IA naphthalene concentrations exceeded the screening level: three locations outside the machine shop (065-C, 133-C, 143-C), and four locations inside the machine shop area (128-C, 145-C, 146-C, and 147-C). Only the SV (not IA) concentration at 142-C (also outside the machine shop) was an exceedance. These sampling locations are dispersed throughout Building C. The maximum IA concentration (5.1 $\mu\text{g}/\text{m}^3$ at location 065-C in the northern part of the building) marginally exceeds the maximum detected background concentration (3.5 $\mu\text{g}/\text{m}^3$) for Round 16. A strong correlation was not observed between the SV and IA concentrations in Building C.
- **VLS, PB, and ER buildings**—Naphthalene was detected in almost half of IA samples collected in these buildings, but only one sample in the VLS building (147-VLS) had naphthalene concentrations exceeding the screening level. Naphthalene was not detected in the duplicate sample from this location. The presence of naphthalene suggests a possible indoor air source.

3.8.2.3 Distribution of Chloroform in Sub-Slab Vapor and Indoor Air

Chloroform is a common industrial solvent and a potential degradation product of carbon tetrachloride.

- **Building A**—a chloroform exceedance ($217 \mu\text{g}/\text{m}^3$) was observed at a single SV monitoring location (136-A), but did not exceed its screening level in any IA sample. The maximum detected concentration of IA chloroform in Round 16 samples is $1.4 \mu\text{g}/\text{m}^3$. These results are similar to those reported in Rounds 14 and 15.
- **Building B and the Fire Coat, VLS, PB, and ER buildings**—Chloroform concentrations did not exceed IA or SV screening levels in any samples.
- **Building C**—Chloroform was detected at a single SV monitoring location (143-C) at a concentration ($194 \mu\text{g}/\text{m}^3$) exceeding its screening level, but was not detected in any Round 16 IA sample.

3.8.2.4 Distribution of Xylenes in Sub-Slab Vapor and Indoor Air

Xylene is a common industrial solvent and a component in gasoline.

- **Building A, Building B, Fire Coat building**—Exceedances of xylenes were not detected in Building A during Round 16. However, xylenes were detected in SV in Building A. These results correlate with TMB exceedances also detected in the SV. IA concentrations of xylenes in Fire Coat building samples (locations 105-Z and 123-Z) also exceed screening levels, but concentrations in SV samples do not.
- **Building C**—Only one SV exceedance ($15,540 \mu\text{g}/\text{m}^3$) of the screening level ($14,667 \mu\text{g}/\text{m}^3$) for total xylenes was identified, at location 102-C. However, the IA concentration for total xylenes at 102-C was only $1.9 \mu\text{g}/\text{m}^3$, a concentration well below its screening level ($440 \mu\text{g}/\text{m}^3$). IA concentrations of xylenes measured in Building C during Round 16 are below the screening level. These results are similar to those observed in Rounds 14 and 15.
- **VLS, PB, and ER buildings**—Xylenes were detected in most IA samples collected from these buildings, but no concentrations exceeded the screening level.

3.8.2.5 Distribution of Ethylbenzene in Sub-Slab Vapor and Indoor Air

Ethylbenzene is a component in gasoline.

- **Building A, Building B, and the VLS, PB, and ER buildings**—Ethylbenzene did not exceed its screening level in Round 16 IA/SV samples.
- **Fire Coat building**—Ethylbenzene exceedances were observed in both IA samples collected from this building. IA concentrations significantly exceed those detected in SV samples, suggesting a possible indoor source, rather than a vapor intrusion source. Numerous paints and solvents, possibly containing ethylbenzene, are used at this location.

-
- **Building C**—Ethylbenzene ($2,140 \mu\text{g}/\text{m}^3$) exceeded its SV screening level ($1,633 \mu\text{g}/\text{m}^3$) at one location (102-C); this is the same location where the only xylene and 1,1-DCA exceedances were detected in SV. TCE in SV at location 102-C also exceeded screening levels. Ethylbenzene was not detected in the IA sample from location 102-C. Results for location 102-C in Rounds 15 and 16 are similar.

3.8.2.6 **Distribution of Trimethylbenzene Compounds in Sub-Slab Vapor and Indoor Air**

TMB compounds are common components of gasoline and diesel fuel.

- **Building A**—TMB compounds were detected in the SV sample, but not in the IA sample, from VMP 081-A, at concentrations exceeding their respective screening levels. Several other fuel-related chemicals were also detected in this SV sample.
- **Building B, Building C, and the Fire Coat, VLS, PB, and ER buildings**—No exceedances of screening levels were detected.

TABLE 3-1

**DESCRIPTIVE STATISTICS OF INDOOR AIR QUALITY RESULTS, ALL BUILDINGS, FEBRUARY/APRIL 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

Parameter	Frequency of detection ⁽¹⁾	Minimum detected value ⁽¹⁾	Maximum detected value ⁽¹⁾	Location with maximum detected value	Sample with maximum detected value	Minimum non-detect value ⁽²⁾	Maximum non-detect value ⁽²⁾	Average of detected values ⁽¹⁾	Average of all values ⁽¹⁾	Standard deviation ⁽¹⁾	Average of detected background values	Maximum background value	Number of samples above maximum background value ⁽¹⁾	Adjusted USEPA RSL for industrial air ⁽³⁾	Number of samples above adjusted industrial RSL ⁽¹⁾	OSHA PEL ⁽⁴⁾	Number of samples above OSHA PEL ⁽¹⁾
Volatile organic compounds (µg/m³)																	
1,1,1-TRICHLOROETHANE	4/54	0.81	J	13.2	AIR-113-C	IA-113-C-16	1.8	40.4	2.5	1.5	2.7	ND	3	22000 N	0	1900000	0
1,1-DICHLOROETHANE	1/54	43.7		43.7	AIR-113-C	IA-113-C-16	1.1	29.8	22.2	1.4	3.5	ND	1	77 C	0	400000	0
1,1-DICHLOROETHENE	2/54	0.75	J	17.1	AIR-113-C	IA-113-C-16	1.1	29.5	4.8	1.2	2.2	ND	2	880 N	0	NC	--
1,2,3-TRIMETHYLBENZENE	8/54	0.88		3.6	AIR-081-A	IA-081-A-16	0.34	7.3	1.5	0.55	0.7	1.4	2	22 N	0	123000	0
1,2,4-TRIMETHYLBENZENE	18/54	0.94	J	11.7	AIR-081-A	IA-081-A-16	1.3	36.3	2.6	1.8	2.8	2.1	7	31 N	0	123000	0
1,3,5-TRIMETHYLBENZENE	9/54	1	J	4.9	AIR-081-A	IA-081-A-16	1.7	36.3	1.9	1.4	2.4	1.7	5	22 N ⁽⁵⁾	0	123000	0
BENZENE	50/54	0.44	J	15.9	AIR-075-A	IA-075-A-16	0.52	11.8	1.3	1.3	2.2	1.4	2	16 C	0	319	0
CARBON TETRACHLORIDE	1/54	1.4		1.4	AIR-145-C	IA-145-C-16	0.86	23.3	1.4	0.83	1.5	ND	1	20 C	0	62900	0
CHLORODIFLUOROMETHANE	53/54	1.3		54.2	AIR-146-C	IA-146-C-16	7.3	7.3	10.2	10.1	12.3	4.1	16	220000 N	0	3590000	0
CHLOROFORM	1/54	1.4	J	1.4	AIR-018-A	IA-018-A-16	1.3	36	1.4	1.3	2.3	ND	1	5.3 C	0	240000	0
CIS-1,2-DICHLOROETHENE	1/54	0.91	J	0.91	AIR-093X-A	IA-093X-A-16	1.1	29.5	0.91	1.0	1.9	ND	1	NC	--	790000	0
DICHLORODIFLUOROMETHANE	53/54	1.4	J	4.8	AIR-145-C	IA-145-C-16	1.7	36.7	2.4	2.7	2.2	2.6	2	440 N	0	4950000	0
ETHYLBENZENE	26/54	0.75	J	164	AIR-123-Z	IA-123-Z-16	1.5	32	16.2	8.5	26.9	1.9	13	49 C	2	435000	0
m+p-XYLENES	42/54	1.4	J	1030	AIR-123-Z	IA-123-Z-16	3	64	49.5	39.5	153.2	3	17	440 N ⁽⁶⁾	2	434000	0
METHYLENE CHLORIDE	54/54	1.9	J	1140	AIR-145-C	IA-145-C-16	--	--	44.5	44.5	160.8	159	2	2600 N ⁽⁷⁾	0	87000	0
NAPHTHALENE	43/54	1.1	J	71	AIR-147-VLS	IA-147-VLS-2	1.8	96.7	3.6	4.1	7.7	2.1	16	3.6 C	11	50000	0
O-XYLENE	36/54	0.74	J	210	AIR-123-Z	IA-123-Z-16	1.5	32	14.6	10.3	34.3	2.3	16	440 N	0	434000	0
TOLUENE	50/54	1.2	J	20000	AIR-123-Z	IA-123-Z-16	1.3	28	606	561	2976.5	8.8	14	22000 N	0	754000	0
TRANS-1,2-DICHLOROETHENE	2/54	17.4	J	70.1	AIR-003-ER	IA-003-ER-1-D	1.1	29.5	31.8	2.2	6.6	ND	3	NC	--	790000	0
TRICHLOROETHENE	13/54	1		20	AIR-113-C	IA-113-C-16	0.89	20	5.1	1.8	3.4	4.2	5	8.8 N ⁽⁷⁾	2	537000	0
TOTAL XYLENES⁽⁸⁾	42/54	1.4		1240	IA-123-Z	IA-123-Z-16	0	0	61.0	47.4	187	3.7	15	440 N	2	434000	0

A shaded maximum background value indicates that the maximum detected value from the site data exceeds the maximum background value.

A bolded chemical name indicates that the chemical exceeds background and the industrial air RSL based on an HQ of 0.1 or an ILCR of 1E-06.

A bolded/shaded chemical name indicates the chemical exceeds background and the industrial air RSL based on an HQ of 1 or an ILCR of 1E-05.

Footnotes:

- 1 - Sample and duplicate are considered two separate samples when determining the minimum and maximum concentrations, but are considered one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
- 2 - Values presented are sample-specific quantitation limits.
- 3 - USEPA *Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites*, May 2014. RSLs for carcinogens were adjusted to be based on a lifetime cancer risk of 1E-05. RSLs for noncarcinogens were not adjusted and represent a hazard quotient (HQ) of 1.
- 4 - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL).
- 5 - The value for 1,2,3-trimethylbenzene is presented for 1,3,5-trimethylbenzene.
- 6 - The value for m-xylene and p-xylene is presented for m+p-xylenes.
- 7 - One tenth the noncarcinogenic value is less than the carcinogenic value; therefore, the noncarcinogenic value is presented.
- 8 - Total xylenes are calculated; a value of 0 is used for non-detects.

Note: Locations AIR-081-A and AIR-113-C were resampled in April 2014 (IA-081-A-16R and IA-113-C-16R). The February 2014 trichloroethene concentrations greater than screening criteria were not confirmed in the April 2014 resamples.

Definitions:

- C - carcinogen
- HQ - hazard quotient
- ILCR - incremental lifetime cancer risk
- J - estimated value
- µg/m³ - micrograms per cubic meter
- N - noncarcinogen
- NA - not applicable/not available
- NC - no criterion available
- ND - not detected
- OSHA - Occupational Safety and Health Administration
- PEL - permissible exposure limit
- RSL - regional screening level
- USEPA - United States Environmental Protection Agency

TABLE 3-2

**DESCRIPTIVE STATISTICS OF SUB-SLAB VAPOR RESULTS, ALL BUILDINGS, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

Parameter	Frequency of detection ⁽¹⁾	Minimum detected value ⁽¹⁾	Maximum detected value ⁽¹⁾	Location of maximum detected value	Sample with maximum detected value	Minimum non-detect value ⁽²⁾	Maximum non-detect value ⁽²⁾	Average of detected values ⁽¹⁾	Average of all values ⁽¹⁾	Standard deviation ⁽¹⁾	Adjusted USEPA RSL - industrial air [value divided by 0.03 ⁽³⁾]	Number of samples above adjusted industrial RSL ⁽¹⁾
Volatile organic compounds (µg/m³)												
1,1,1-TRICHLOROETHANE	11/32	1.5 J	2070	AIR-102-C	SV-102-C-16	1.9	4.7	224	77.6	365	733333 N	0
1,1-DICHLOROETHANE	12/32	1.3 J	6760	AIR-102-C	SV-102-C-16	1.4	2.3	574	216	1194	2567 C	1
1,1-DICHLOROETHENE	12/32	0.86 J	2530	AIR-102-C	SV-102-C-16	1.4	2.3	421	158	528	29333 N	0
1,2,3-TRIMETHYLBENZENE	20/32	0.71	4140	AIR-081-A	SV-081-A-16	0.34	1.9	220	138	731	733 N	1
1,2,4-TRIMETHYLBENZENE	22/32	1.3 J	6780	AIR-081-A	SV-081-A-16	1.7	4.2	330	227	1196	1033 N	1
1,2-DICHLOROETHANE	1/32	0.82	0.92	AIR-133-C	SV-133-C-16	0.69	1.7	0.87	0.41	0.13	157 C	0
1,3,5-TRIMETHYLBENZENE	11/32	1.1 J	3500	AIR-081-A	SV-081-A-16	1.7	4.2	336	116	618	733 N ⁽⁴⁾	1
BENZENE	23/32	0.33 J	88.4	AIR-126-C	SV-126-C-16	0.55	0.9	5.7	4.1	15.5	533 C	0
CARBON TETRACHLORIDE	6/32	0.825	133	AIR-143-C	SV-143-C-16	1.1	1.8	26.7	5.5	23.4	667 C	0
CHLORODIFLUOROMETHANE	29/32	0.8	32.6	AIR-033-B	SV-033-B-16	0.34	5.9	6.5	6.0	7.0	733333 N	0
CHLOROFORM	18/32	0.84 J	217	AIR-136-A	SV-136-A-16	1.7	2.8	41.3	23.6	54.1	177 C	2
CIS-1,2-DICHLOROETHENE	18/32	0.7 J	2620	AIR-079-A	SV-079-A-16	1.4	2.3	264	149	503	--	--
DICHLORODIFLUOROMETHANE	30/32	1.5 J	7.3	AIR-065-C	SV-065-C-16	1.7	1.9	2.8	2.7	1.3	14667 N	0
ETHYLBENZENE	20/32	0.87 J	2140	AIR-102-C	SV-102-C-16	1.5	3.7	118	74.1	377	1633 C	1
M+P-XYLENES	30/32	1.1 J	11500	AIR-102-C	SV-102-C-16	3.2	5	430	403	2029	14667 N ⁽⁵⁾	0
METHYLENE CHLORIDE	32/32	2.1 J	621 J	AIR-105-Z	SV-105-Z-16	--	--	60.8	60.8	132	86667 N ⁽⁶⁾	0
NAPHTHALENE	28/32	2.5	259	AIR-075-A	SV-075-A-16	1.8	4.5	40.0	35.1	56.5	120 C	2
O-XYLENE	26/32	0.81 J	4040	AIR-102-C	SV-102-C-16	1.5	3.7	179	146	713	14667 N	0
TETRACHLOROETHENE	16/32	1.6	169	AIR-133-C	SV-133-C-16	1.2	1.9	23.1	11.9	31.6	6000 N ⁽⁶⁾	0
TOLUENE	29/32	1.2 J	128	AIR-102-C	SV-102-C-16	1.3	1.3	16.2	14.8	24.7	733333 N	0
TRANS-1,2-DICHLOROETHENE	8/32	1.1 J	517	AIR-079-A	SV-079-A-16	1.4	3.4	75.7	19.5	91.1	--	--
TRICHLOROETHENE	30/32	0.94 J	91000	AIR-136-A	SV-136-A-16	0.92	0.99	3917	3673	16087	293 N ⁽⁶⁾	8
VINYL CHLORIDE	4/32	0.57	11900	AIR-126-C	SV-126-C-16	0.44	1.1	2978	372	2104	933 C	1
TOTAL XYLENES ⁽⁷⁾	30/32	1.1	15540	SV-102-C	SV-102-C-16	0	0	549	585	2740	14667 N	1

A bolded chemical name indicates that the chemical exceeds the industrial air RSL divided by 0.03 (based on an HQ of 0.1 or an ILCR of 1E-06).

A bolded/shaded chemical name indicates that the chemical exceeds the industrial air RSL divided by 0.03 (based on an HQ of 1 or an ILCR of 1E-05).

Footnotes:

- 1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations. Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
- 2 - Values presented are sample-specific quantitation limits.
- 3 - Screening values derived in accordance with Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (November 2002). Screening values are equal to United States Environmental Protection Agency (USEPA) Industrial Air Screening Values divided by an attenuation factor 0.03, and correspond to a target cancer risk level of 1.0E-05 or a hazard quotient (HQ) of 1.
- 4 - The value for 1,2,3-trimethylbenzene is presented for 1,3,5-trimethylbenzene.
- 5 - The value for m-xylene and p-xylene is presented for m+p-xylenes.
- 6 - One tenth the noncarcinogenic value is less than the carcinogenic value; therefore, the noncarcinogenic value is presented.
- 7 - Total xylenes are calculated; a value of 0 is used for non-detects.

Definitions:

-- = no criterion available
C = carcinogen

HQ = hazard quotient
ILCR = incremental lifetime cancer risk

J = estimated value
N = noncarcinogen

RSL = regional screening level

TABLE 3-3
SUMMARY STATISTICS FOR TRICHLOROETHENE CONCENTRATIONS IN INDOOR AIR
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Building level or background	Dataset	Minimum detected value ⁽¹⁾	Maximum detected value ⁽¹⁾	Minimum non-detect value ⁽¹⁾⁽²⁾	Maximum non-detect value ⁽¹⁾⁽²⁾	Average of all values ⁽³⁾	Average of detected values ⁽³⁾	Frequency of detection ⁽³⁾	Number of detections > 8.8 µg/m ³ ⁽⁴⁾⁽⁵⁾	95% UCL ⁽³⁾
Basement	All Buildings 2006-2014	0.077 J	36 ⁽⁶⁾	0.075	20	0.97	1.4	212/354	5	1.4
	All Buildings 2014	1	20	0.89	20	1.8	4.7	6/27	1	2.7
	Building A 2006-2014	0.15 J	13	0.36	0.96	2.3	2.5	45/50	1	3.8
	Building A 2014	1	8.4	0.96	0.96	3.5	4.2	4/5	0	6.9
	Building B 2006-2014	0.078 J	2.5	0.075	2.7	0.60	0.67	51/73	0	0.67
	Building C 2006-2014	0.077 J	36 ⁽⁶⁾	0.075	20	0.81	1.2	116/230	4	1.3
	Building C 2014	1.2	20	0.89	20	1.5	5.8	2/19	1	NA ⁽⁷⁾
First Floor	All Buildings 2006-2014	0.081 J	34	0.075	12	1.1	1.6	141/290	2	1.2
	All Buildings 2014	1.1	19.2	0.92	1.4	1.8	5.4	7/27	1	3.3
	Building A 2006-2014	0.086 J	34	0.075	12	1.3	1.9	102/176	2	2.2
	Building A 2014	1.6	19.2	0.92	1.4	3.6	6.1	6/11	1	10.1
	Building B 2006-2014	0.081 J	5.1	0.075	11	0.79	0.72	32/73	0	0.63
	Building B 2014	1.1	1.1	0.99	1	0.62	1.1	1/5	0	NA ⁽⁷⁾
	Building C 2006-2014	0.5 J	7.2	0.21	2.7	1.0	2.3	7/22	0	2.0
Background	2006-2014	0.45 J	4.2	0.075	2.7	0.45	1.6	5/52	0	0.41
	2014	4.2	4.2	0.92	1.4	1.5	4.2	1/4	0	NA ⁽⁸⁾

All results are in µg/m³.

(1) The original sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration.

(2) Values presented are sample-specific quantitation limits.

(3) The average of the original sample and duplicate is used for determining the mean, frequency of detection, and 95% UCL.

(4) Value is the non-carcinogenic industrial air regional screening level corresponding to HI = 1 (USEPA, May 2014).

(5) Field duplicate pair samples are counted as one sample in determining the number of samples exceeding the screening level. The field duplicate pair is considered to exceed the screening level if either the original or duplicate sample is greater than the screening level.

(6) The maximum detected concentration of 36 µg/m³ was detected in a duplicate sample, and the corresponding original sample concentration of 0.75 µg/m³ is considerably less than the maximum concentration. Resampling at the same location found concentrations that were closer to the original sample concentration.

(7) There are less than 4 detections; therefore, a UCL is not presented.

(8) There are less 5 samples; therefore, a UCL is not presented.

Definitions:

HI - hazard index

ILCR - incremental lifetime cancer risk

J - estimated value

µg/m³ - micrograms per cubic meter

NA - not applicable/not available

UCL - upper confidence limit

USEPA - United States Environmental Protection Agency

A benchmark of 8.8 µg/m³ corresponds to HI = 1.

Note: Locations AIR-081-A and AIR-113-C were resampled in April 2014 (IA-081-A-16R and IA-113-C-16R). The February 2014 trichloroethene exceedances were not confirmed in the April 2014 resamples.

TABLE 3-4
SUMMARY STATISTICS FOR NAPHTHALENE CONCENTRATIONS IN INDOOR AIR
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Building level or background	Dataset	Minimum detected value ⁽¹⁾	Maximum detected value ⁽¹⁾	Minimum non-detect value ⁽¹⁾⁽²⁾	Maximum non-detect value ⁽¹⁾⁽²⁾	Average of all values ⁽³⁾	Average of detected values ⁽³⁾	Frequency of detection ⁽³⁾	Number of detections > 3.6 µg/m ³ ⁽⁴⁾⁽⁵⁾	95% UCL ⁽³⁾
Basement	All Buildings 2006-2014	0.1775	12 J	0.19	96.7	1.4	1.8	182/289	26	1.4
	All Buildings 2014	1.1 J	5.1	4.6	96.7	4.8	3.2	23/27	8	3.5
	Building A 2006-2014	0.2825	12 J	0.19	1	1.9	2.7	32/45	9	2.6
	Building A 2014	1.7 J	3	--	--	2.5	2.5	5/5	0	3.0
	Building B 2006-2014	0.23 J	5	0.19	5.6	1.1	1.5	30/46	3	1.4
	Building B 2014	4 J	4 J	5.6	5.6	3.4	4.0	1/2	1	NA ⁽⁶⁾
	Building C 2006-2014	0.1775	5.1	0.19	96.7	1.4	1.6	119/197	14	1.2
	Building C 2014	1.1 J	5.1	4.6	96.7	5.7	3.4	16/19	7	4.6
	Building PB 2014	1.2 J	1.2 J	1.8	1.8	1.2	1.2	1/1	0	NA ⁽⁶⁾
First Floor	All Buildings 2006-2014	0.19 J	71 J	0.19	31	1.3	1.7	90/182	4	1.4
	All Buildings 2014	1.1 J	71 J	1.8	5	3.4	4.1	20/27	3	5.8
	Building A 2006-2014	0.19 J	4.8	0.19	31	0.93	1.2	60/125	2	0.89
	Building A 2014	1.3 J	3.7	1.8	3.6	2.5	2.5	10/11	1	3.0
	Building B 2006-2014	0.26 J	6.5 J	0.19	24	1.7	1.4	24/46	1	1.3
	Building B 2014	1.3 J	6.5 J	5	5	3.4	3.6	4/5	1	5.4
	Building ER 2014	1.1 J	1.1 J	1.8	2.5	1.1	1.1	1/3	0	NA ⁽⁶⁾
	Building PB 2014	1.3 J	1.3 J	--	--	1.3	1.3	1/1	0	NA ⁽⁶⁾
	Building VLS 2014	1.3 J	71 J	1.8	1.9	6.1	10.0	4/7	1	16.6
Background	2006-2014	0.2 J	8.1 J	0.19	2.7	0.8	1.4	18/36	1	1.4
	2014	1.3 J	3.5	2.7	2.7	1.9	2.1	3/4	0	NA ⁽⁶⁾

All results are in µg/m³.

A benchmark of 3.6 µg/m³ corresponds to HI = 1.

- (1) The original sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration.
- (2) Values presented are sample-specific quantitation limits.
- (3) The average of the original sample and duplicate is used for determining the mean, frequency of detection, and 95% UCL.
- (4) Value is the non-carcinogenic industrial air regional screening level corresponding to HI = 1 (USEPA, May 2014).
- (5) Field duplicate pair samples are counted as one sample in determining the number of samples exceeding the screening level. The field duplicate pair is considered to exceed the screening level if either the original or duplicate sample is greater than the screening level.
- (6) There are less than 5 samples; therefore, a UCL is not presented.

Definitions:

HI - hazard index
ILCR - incremental lifetime cancer risk
J - estimated value
µg/m³ - micrograms per cubic meter
NA - not applicable/not available
UCL - upper confidence limit
USEPA - United States Environmental Protection Agency

TABLE 3-5

AMBIENT AIR (BACKGROUND) SAMPLING RESULTS, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX
MIDDLE RIVER, MARYLAND

SAMPLE ID SAMPLE DATE	OSHA PEL ($\mu\text{g}/\text{m}^3$)	Industrial air screening level ($\mu\text{g}/\text{m}^3$)	KEY	BCK-1 BCK-1-16 20140225	BCK-2 BCK-2-16 20140225	BCK-3 BCK-3-16 20140225	BCK-4 BCK-4-16 20140225
Volatile organic compounds ($\mu\text{g}/\text{m}^3$)							
BENZENE	319	16	ca	0.93	2.7	0.78	1.1
CARBON TETRACHLORIDE	62,900	20	ca	1.1 U	1.1 U	1.1 U	1.6 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	2.7	1.2	1.8
CHLOROFORM	240,000	5	ca	1.7 U	1.7 U	1.7 U	2.5 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	2.1	3.4	2.1	2.9
1,1-DICHLOROETHANE	400,000	77	ca	1.4 U	1.4 U	1.4 U	2 U
1,2-DICHLOROETHANE	400,000	5	ca	0.69 U	0.69 U	0.69 U	1 U
1,1-DICHLOROETHENE	--	880	nc	1.4 U	1.4 U	1.4 U	2 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	1.4 U	2 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	1.4 U	2 U
ETHYLBENZENE	435,000	49	ca	1.2 J	2.6	1.5 U	2.2 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.2 U	1.2 U	1.2 U	1.8 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	23.4	21.2	10
NAPHTHALENE	50,000	3.6	ca	1.3 J	3.5	1.4 J	2.7 U
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.9	1.2 U	1.7 U
TOLUENE	754,000	22,000	nc	8.3	24	1.3 J	1.6 J
1,2,4-TRICHLOROBENZENE	40,000 ^N	9	nc	2.5 U	2.5 U	2.5 U	3.8 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	1.9 U	1.9 U	1.9 U	2.8 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.92 U	0.92 U	0.92 U	1.4 U
TRICHLOROETHENE	537,000	8.8	nc	0.92 U	4.2	0.92 U	1.4 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	0.34 U	1.4	1.3	0.5 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.3 J	2.8	2.2	2.5 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽¹⁾	1.7 U	1.7 U	1.7	2.5 U
VINYL CHLORIDE	21,560	28	ca	0.44 U	0.44 U	0.44 U	0.65 U
M+P-XYLENES	434000	440	nc	1.7 J	5.8	1.5 J	4.4 U
O-XYLENE	434000	440	nc	1.5 U	2.3	1.5 U	2.2 U
TOTAL XYLENES	434000	440	nc	1.7 J	8.1	1.5 J	0

All concentrations are in micrograms per cubic meter air ($\mu\text{g}/\text{m}^3$)

Shaded cells indicate a concentration greater than the risk -based screening level

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites May-2014

TOTAL XYLENES values are calculated.

(1) Value is for 1,2,3-trimethylbenzene.

-- = not available

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

ca = screening value based on 1×10^{-6} carcinogenic risk

J = estimated value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

nc = screening value based on noncarcinogenic hazard index = 1

ND - calculated value is nondetect.

OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit

U = not detected

USEPA = United States Environmental Protection Agency

TABLE 3-6

**INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

PAGE 1 OF 2

LOCATION ⁽¹⁾	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	AIR-015-A		AIR-018-A	AIR-075-A	AIR-076-A	AIR-079-A	AIR-081-A	AIR-081-A	AIR-093-A
SAMPLE ID				IA-015-A-16	IA-015-A-16-D DUP	IA-018-A-16	IA-075-A-16	IA-076-A-16	IA-079-A-16	IA-081-A-16	IA-081-A-16R	IA-093-A-16
SAMPLE DATE				20140225	20140225	20140225	20140225	20140225	20140225	20140225	20140417	20140225
Volatile organic compounds (µg/m³)												
BENZENE	319	16	ca	1.2	1.2	0.75	15.9	0.96	0.88	1.4	0.44	0.98
CARBON TETRACHLORIDE	62,900	20	ca	1.1 U	1.6 U	1.1 U	1.2 U	1.2 U	1.2 U	1.7 U	0.86 U	1.7 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	7.5	8.2	2.6	3.9	2.9	4.8	36.6	28	4.4
CHLOROFORM	240,000	5.3	ca	1.7 U	2.5 U	1.4 J	1.9 U	1.9 U	1.9 U	2.6 U	1.3 U	2.6 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	2.9	3.2	2	2.2	2.1	2.4	2.9	2.1	3.1
1,1-DICHLOROETHANE	400,000	77	ca	1.4 U	2 U	1.4 U	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	2.1 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.69 U	1 U	0.71 U	0.77 U	0.77 U	0.77 U	1.1 U	0.55 U	1.1 U
1,1-DICHLOROETHENE	--	880	nc	1.4 U	2 U	1.4 U	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	2.1 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	2 U	1.4 U	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	2.1 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	2 U	1.4 U	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	2.1 U
ETHYLBENZENE	435,000	49	ca	0.77 J	2.2 U	1.5 U	0.87 J	0.83 J	1.6 U	36.6	8	2.3 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.2 U	1.8 U	1.3 U	1.4 U	1.4 U	1.4 U	1.9 U	0.98 U	1.9 U
METHYLENE CHLORIDE	87,000	2,600	nc	13.7 J	7.4 J	14.4	14.7	9.8	12.7	37	1.9 J	14
NAPHTHALENE	50,000	3.6	ca	1.8 UJ	2.1 J	2.8	3.6	3.6	2.1	3.7	3.6 U	2.8
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.7 U	1.2 U	1.3 U	1.3 U	1.3 U	1.8 U	1.6	1.8 U
TOLUENE	754,000	22,000	nc	15.6	16.9	1.7	49.3	54.5	41.8	163	20.4	3
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	2.5 UJ	3.8 U	2.6 U	2.8 U	2.8 U	2.8 U	4 U	5.1 U	3.9 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	1.9 U	2.8 U	1.9 U	2.1 U	2.1 U	2.1 U	3 U	0.81 J	2.9 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.92 U	1.4 U	0.96 U	1 U	1 U	1 U	1.5 U	0.74 U	1.4 U
TRICHLOROETHENE	537,000	8.8	nc	0.92 U	1.4 U	1	1.6	1.9	1 U	19.2	4.1	5.9
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.7 U	0.5 U	0.35 U	0.37 U	0.37 U	0.37 U	3.6	1.3 U	0.52 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.7 U	2.5 U	1.7 U	1.9 U	1.9 U	1.9 U	11.7	1.3 U	2.6 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.7 U	2.5 U	1.7 U	1.9 U	1.9 U	1.9 U	4.9	1.2 J	2.6 U
VINYL CHLORIDE	21,560	28	ca	0.44 U	0.65 U	0.45 U	0.49 U	0.49 U	0.49 U	0.69 U	0.35 U	0.67 U
M+P-XYLENES	434000	440	nc	3.3	3.4 J	3.1 U	3 J	2.9 J	2.6 J	161	38.2	4.5 U
O-XYLENE	434000	440	nc	1.3 J	1.4 J	1.5 U	1.1 J	1.2 J	0.9 J	48.5	11.6	2.3 U
TOTAL XYLENES	434000	440	nc	4.6 J	4.8 J	0	4.1 J	4.1 J	3.5 J	209.5	49.8	0

TABLE 3-6

**INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

PAGE 2 OF 2

LOCATION ⁽¹⁾	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	AIR-093X-A IA-093X-A-16	AIR-094-A IA-094-A-16	AIR-108-A IA-108-A-16	AIR-117-A IA-117-A-16	AIR-117X-A IA-117X-A-16	AIR-118-A IA-118-A-16	AIR-136-A IA-136-A-16	AIR-138-A IA-138-A-16
SAMPLE ID											
SAMPLE DATE				20140226	20140225	20140225	20140225	20140226	20140225	20140225	20140225
Volatile organic compounds (µg/m³)											
BENZENE	319	16	ca	0.58	0.93	0.9	0.89	0.44 J	1	0.94	1.1
CARBON TETRACHLORIDE	62,900	20	ca	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.7 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	1.4	1.7	4	3.5	1.5	12.4	3.3	4.8
CHLOROFORM	240,000	5.3	ca	1.7 U	1.7 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	2.6 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	1.9	2.2	2.2	2	1.4 J	1.9	2.2	3
1,1-DICHLOROETHANE	400,000	77	ca	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	2.1 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.71 U	0.71 U	0.74 U	0.77 U	0.74 U	0.74 U	0.74 U	1.1 U
1,1-DICHLOROETHENE	--	880	nc	0.75 J	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	2.1 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	0.91 J	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	2.1 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	2.1 U
ETHYLBENZENE	435,000	49	ca	1.1 J	1.5 U	0.94 J	0.84 J	1.3 J	1.4 J	0.75 J	2.3 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.3 U	1.3 U	1.3 U	1.4 U	1.3 U	1.3 U	1.3 U	1.9 U
METHYLENE CHLORIDE	87,000	2,600	nc	6.6	5	8.8	8.9	89.7	8.8	7.3	17.2
NAPHTHALENE	50,000	3.6	ca	1.7 J	2.2	2.2	2.2	1.3 J	2.2	2.9	3
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.2 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.8 U
TOLUENE	754,000	22,000	nc	1.2 J	1.6	43.8	67.5	15.7	16.5	53.6	2.5
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	2.6 U	2.6 U	2.7 U	2.8 U	2.7 U	2.7 U	2.7 U	3.9 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.87 J	1.9 U	2 U	2.1 U	2 U	1.2 J	2 U	2.9 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.96 U	0.96 U	0.99 U	1 U	0.99 U	0.99 U	0.99 U	1.4 U
TRICHLOROETHENE	537,000	8.8	nc	8.4	0.96 U	0.99 U	1 U	0.99 U	5.6	4.2	1.6
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	0.35 U	0.35 U	0.36 U	0.37 U	0.36 U	0.36 U	0.36 U	0.52 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.3 J	1.7 U	1.8 U	1.9 U	1.2 J	1.8 U	1.8 U	2.6 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.7 U	1.7 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	2.6 U
VINYL CHLORIDE	21,560	28	ca	0.45 U	0.45 U	0.47 U	0.49 U	0.47 U	0.47 U	0.47 U	0.67 U
M+P-XYLENES	434000	440	nc	1.4 J	3.1 U	3.4	2.7 J	1.9 J	5.6	2.6 J	4.5 U
O-XYLENE	434000	440	nc	1.5 U	1.5 U	1.3 J	0.92 J	0.74 J	2	0.99 J	2.3 U
TOTAL XYLENES	434000	440	nc	1.4 J	0	4.7 J	3.62 J	2.64 J	7.6	3.59 J	0

Shaded cells indicate a concentration greater than the risk-based screening level

TOTAL XYLENES values are calculated.

-- = not available

J = estimated value

ND - calculated value is nondetect.

U = not detected

USEPA = United States Environmental Protection Agency

ca = screening value based on 1×10^{-5} carcinogenic risk

nc = screening value based on noncarcinogenic hazard index = 1

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at

Superfund Sites May-2014

(1) Location AIR-081-A was resampled in April 2014 (IA-081-A-16R). The February 2014 trichloroethene concentration greater than screening criteria was not confirmed in this April 2014 resample.

(2) Value is for 1,2,3-trimethylbenzene.

TABLE 3-7

SUB-SLAB VAPOR SAMPLE RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

PAGE 1 OF 2

SAMPLE ID	Target shallow soil gas concentration (µg/m ³) ⁽¹⁾	KEY	AIR-015-A		AIR-018-A		AIR-075-A	AIR-076-A	AIR-079-A
			SV-015-A-16	SV-015-A-16-DUP	SV-018-A-16	SV-018-A-16-DUP	SV-075-A-16	SV-076-A-16	SV-079-A-16
SAMPLE DATE			20140225	20140225	20140225	20140225	20140225	20140225	20140225
Volatile Organic Compounds (µg/m³)									
BENZENE	533	ca	0.64	0.9 U	0.96	0.77	0.79	0.61 U	1.1
CARBON TETRACHLORIDE	667	ca	1.2 U	1.8 U	1.3 U	1.1 U	1.1 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	7,333,333	nc	5.8 J	2.6 J	8.9	7.1	4.1	1.6	2.7
CHLOROFORM	177	ca	64.7	93.6	1.7 J	1.4 J	1.7 U	1.7 J	9
DICHLORODIFLUOROMETHANE	14,667	nc	2.1	2.3 J	2.2	1.9	2.1	1.9	1.7 J
1,1-DICHLOROETHANE	2,567	ca	14.6	21.6	3.1	3.2	1.4 U	1.5 U	1.6
1,2-DICHLOROETHANE	157	ca	0.77 U	1.1 U	0.83 U	0.71 U	0.69 U	0.77 U	0.74 U
1,1-DICHLOROETHENE	29,333	nc	369	473	230	192	1.4 U	1.5 U	2.7
CIS-1,2-DICHLOROETHENE	--	--	1110	1260	16.3	13.7	1.4 U	1.5 U	2620
TRANS-1,2-DICHLOROETHENE	--	--	25	37.7	1.6 U	1.4 U	1.4 U	1.5 U	517
ETHYLBENZENE	1,633	ca	1.6 U	2.4 U	1.8 U	1.5 U	1.6	1.6 U	2.1
METHYL TERT-BUTYL ETHER	15,667	ca	1.4 U	2 U	1.5 U	1.3 U	1.2 U	1.4 U	1.3 U
METHYLENE CHLORIDE	86,667	nc	31.6 J	18.6 J	19.8	17.8	3.1	12.6	18.7
NAPHTHALENE	120	ca	2 UJ	3 U	2.8	3.1	259	94.9	27.9
TETRACHLOROETHENE	6,000	nc	1.3 U	1.9 U	1.4 U	1.2 U	1.2 U	1.3 U	14.1
TOLUENE	733,333	nc	7.1	4.6	2.6	2	7.8	3.8	5.9
1,2,4-TRICHLOROBENZENE	293	nc	2.8 UJ	4.2 U	3.1 U	2.6 U	2.5 U	2.8 U	2.7 U
1,1,1-TRICHLOROETHANE	733,333	nc	76.3	112	2.2 U	1.9 U	1.9 U	2.1 U	2.1
1,1,2-TRICHLOROETHANE	29	nc	1 U	1.5 U	1.1 U	0.96 U	0.92 U	1 U	0.99 U
TRICHLOROETHENE	293	nc	564	619	174	150	3.1	14	6090
1,2,3-TRIMETHYLBENZENE	733	nc	1.9 U	0.55 U	0.4 U	0.35 U	59.2	20.8	23.1
1,2,4-TRIMETHYLBENZENE	1,033	nc	1.9 U	2.8 U	1.7 J	1.5 J	205	40.2	12.3
1,3,5-TRIMETHYLBENZENE	733	nc ⁽²⁾	1.9 U	2.8 U	2 U	1.4 J	107	14	1.8 U
VINYL CHLORIDE	933	ca	0.49 UJ	1.5 J	0.57	0.59	0.44 U	0.49 U	0.47 U
M+P-XYLENES	14,667	nc	3.1 J	4.9 U	2 J	1.7 J	9	4.4	5.2
O-XYLENE	14,667	nc	1.6 J	1.4 J	1.8 U	1.5 U	19.7	2.9	5.3
TOTAL XYLENES	14,667	nc	4.7 J	1.4 J	2 J	1.7 J	28.7	7.3	10.5

TABLE 3-7

SUB-SLAB VAPOR SAMPLE RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 2

SAMPLE ID	Target shallow soil gas concentration (µg/m ³) ⁽¹⁾	KEY	AIR-081-A SV-081-A-16	AIR-093-A SV-093-A-16	AIR-094-A SV-094-A-16	AIR-108-A SV-108-A-16	AIR-117-A SV-117-A-16	AIR-118-A SV-118-A-16	AIR-136-A SV-136-A-16	AIR-138-A SV-138-A-16
SAMPLE DATE			20140225	20140225	20140225	20140225	20140225	20140225	20140225	20140225
Volatile Organic Compounds (µg/m³)										
BENZENE	533	ca	0.58 U	1.2	1.1	0.88	0.58 U	1.8	6.7	1.6
CARBON TETRACHLORIDE	667	ca	1.2 U	1.8 U	1.2 U	1.1 U	1.2 U	1.2 U	1.2 U	1.8 U
CHLORODIFLUOROMETHANE	7,333,333	nc	25.4	14.6	3.6	12.3	0.8	5.2	0.37 U	9.6
CHLOROFORM	177	ca	2.8	2.8 U	1.8 U	1.7 U	1.8 U	106	217	2.8 U
DICHLORODIFLUOROMETHANE	14,667	nc	1.8	3.9	2.3	2.5	1.5 J	2	1.9 U	3.3
1,1-DICHLOROETHANE	2,567	ca	1.5 U	2.3 U	1.5 U	2.1	1.5 U	90.3	1.7	2.6
1,2-DICHLOROETHANE	157	ca	0.74 U	1.2 U	0.74 U	0.71 U	0.74 U	0.77 U	0.77 U	1.2 U
1,1-DICHLOROETHENE	29,333	nc	1.5 U	2.3 U	1.5 U	7.7	1.5 U	1670	1.5 U	6.4
CIS-1,2-DICHLOROETHENE	--	--	6.1	2.3 U	1.5 U	1.4 U	1.5 U	477	55.2	5.6
TRANS-1,2-DICHLOROETHENE	--	--	1.5 U	2.3 U	1.5 U	1.4 U	1.5 U	18.1	25.3	2.3 U
ETHYLBENZENE	1,633	ca	57.9	2.5 U	1.6 U	1.5 U	2.1	27.2	1.7	1.9 J
METHYL TERT-BUTYL ETHER	15,667	ca	1.3 U	2.1 U	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U	2.1 U
METHYLENE CHLORIDE	86,667	nc	15.4	415	59.8	12.4	40.4	15	13.5	17.5
NAPHTHALENE	120	ca	1.9 U	3.5	2.5	1.9 UJ	95.1	20.7	9.3	23.1
TETRACHLOROETHENE	6,000	nc	73.8	1.9 U	1.2 U	1.2 U	10.3	1.6	15.1	2.7
TOLUENE	733,333	nc	13.9	6.8	2.3	17.3	9.9	3.8	11.7	10.3
1,2,4-TRICHLOROBENZENE	293	nc	2.7 U	4.3 U	2.7 U	2.6 UJ	2.7 U	2.8 U	2.8 U	4.3 U
1,1,1-TRICHLOROETHANE	733,333	nc	6.4	3.1 U	2 U	1.9 U	5.1	26.2	3.4	3.2 U
1,1,2-TRICHLOROETHANE	29	nc	0.99 U	1.6 U	0.99 U	0.96 U	0.99 U	1 U	1 U	1.6 U
TRICHLOROETHENE	293	nc	7.9	7	0.99 U	0.94 J	109	5860	91000	80.3
1,2,3-TRIMETHYLBENZENE	733	nc	4140	0.56 U	0.36 U	1.7 U	4.5	18.1	6.1	0.57 U
1,2,4-TRIMETHYLBENZENE	1,033	nc	6780	2.8 U	1.8 U	1.7 U	5.8	34.1	6.8	2.9 U
1,3,5-TRIMETHYLBENZENE	733	nc ⁽²⁾	3500	2.8 U	1.8 U	1.7 U	1.8 U	23.2	5.4	2.9 U
VINYL CHLORIDE	933	ca	0.47 U	0.73 U	0.47 U	0.45 U	0.47 U	0.49 U	0.49 U	0.75 U
M+P-XYLENES	14,667	nc	480	5 U	3.2 U	2.9 J	9.7	156	4.2	6.1
O-XYLENE	14,667	nc	228	2.5 U	1.6 U	1.2 J	8.3	65.2	3.4	1.6 J
TOTAL XYLENES	14,667	nc	708	0	0	4.1 J	18	221.2	7.6	7.7 J

Notes: All sample concentrations are in micrograms per cubic meter (µg/m³)

Shaded cells indicate a concentration greater than risk-based screening level

TOTAL XYLENES values are calculated.

-- = not available

ca = screening value based on carcinogenic effects

J = estimated value

nc = screening value based on noncarcinogenic effects

U = nondetect

(1) Screening values derived in accordance with Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (November 2002). Screening values are equal to United States Environmental Protection Agency (USEPA) Industrial Air Screening Values divided by an attenuation factor of 0.03, and correspond to a target cancer risk level of 1.0E-05.

(2) Value is for 1,2,3-trimethylbenzene.

TABLE 3-8

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 1 OF 7

Analyte	Co-Located SV Sample ID	Result (µg/m³)	Duplicate/ Additional	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate/ Additional
Benzene	SV-015-A-16 and its duplicate	0.64	0.9 U	IAQ-015-A-16 and its duplicate	1.2	1.2
Carbon tetrachloride		1.2 U	1.8 U		1.1 U	1.6 U
Chlorodifluoromethane		5.8 J	2.6 J		7.5	8.2
Chloroform		64.7	93.6		1.7 U	2.5 U
Dichlorodifluoromethane		2.1	2.3 J		2.9	3.2
1,1-Dichloroethane		14.6	21.6		1.4 U	2 U
1,2-Dichloroethane		0.77 U	1.1 U		0.69 U	1 U
1,1-Dichloroethene		369	473		1.4 U	2 U
cis -1,2-Dichloroethene		1,110	1260		1 U	2 U
trans -1,2-Dichloroethene		25	37.7		1.4 U	2 U
Ethylbenzene		1.6 U	2.4 U		0.77 J	2.2 U
Methyl tert-butyl ether		1.4 U	2 U		1.2 U	1.8 U
Methylene chloride		31.6 J	18.6 J		13.7 J	7.4 J
Naphthalene		2 UJ	3 U		1.8 UJ	2.1 J
Tetrachloroethene		1.3 U	1.9 U		1.2 U	1.7 U
Toluene		7.1	4.6		15.6	16.9
1,2,4-Trichlorobenzene		2.8 UJ	4.2 U		2.5 UJ	3.8 U
1,1,1-Trichloroethane		76.3	112		1.9 U	2.8 U
1,1,2-Trichloroethane		1 U	1.5 U		0.92 U	1.4 U
Trichloroethene		564	619		0.92 U	1.4 U
1,2,3-Trimethylbenzene		1.9 U	0.55 U		1.7 U	0.5 U
1,2,4-Trimethylbenzene		1.9 U	2.8 U		1.7 U	2.5 U
1,3,5-Trimethylbenzene		1.9 U	2.8 U		1.7 U	2.5 U
Vinyl chloride		0.49 UJ	1.5 J		0.44 U	0.65 U
Xylenes, meta- + para-		3.1 J	4.9 U		3.3	3.4 J
Xylene, ortho-		1.6 J	1.4 J		1.3 J	1.4 J
Xylenes, total		4.7	6.3		4.6	4.8
Benzene	SV-018-A-16 and its duplicate	0.96	0.77	IAQ-018-A-16	0.75	
Carbon tetrachloride		1.3 U	1.1 U		1.1 U	
Chlorodifluoromethane		8.9	7.1		2.6	
Chloroform		1.7 J	1.4 J		1.4 J	
Dichlorodifluoromethane		2.2	1.9		2	
1,1-Dichloroethane		3.1	3.2		1.4 U	
1,2-Dichloroethane		0.83 U	0.71 U		0.71 U	
1,1-Dichloroethene		230	192		1.4 U	
cis -1,2-Dichloroethene		16	13.7		1 U	
trans -1,2-Dichloroethene		1.6 U	1.4 U		1.4 U	
Ethylbenzene		1.8 U	1.5 U		1.5 U	
Methyl tert-butyl ether		1.5 U	1.3 U		1.3 U	
Methylene chloride		19.8	17.8		14.4	
Naphthalene		2.8	3.1		2.8	
Tetrachloroethene		1.4 U	1.2 U		1.2 U	
Toluene		2.6	2		1.7	
1,2,4-Trichlorobenzene		3.1 U	2.6 U		2.6 U	
1,1,1-Trichloroethane		2.2 U	1.9 U		1.9 U	
1,1,2-Trichloroethane		1.1 U	0.96 U		0.96 U	
Trichloroethene		174	150		1	
1,2,3-Trimethylbenzene		0.4 U	0.35 U		0.35 U	
1,2,4-Trimethylbenzene		1.7 J	1.5 J		1.7 U	
1,3,5-Trimethylbenzene		2 U	1.4 J		1.7 U	
Vinyl chloride		0.57	0.59		0.45 U	
Xylenes, meta- + para-		2 J	1.7 J		3.1 U	
Xylene, ortho-		1.8 U	1.5 U		1.5 U	
Xylenes, total		2	1.7		0	

TABLE 3-8

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 7

Analyte	Co-Located SV Sample ID	Result (µg/m³)	Duplicate/ Additional	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate/ Additional
Benzene	SV-075-A-16	0.79		IAQ-075-A-16	15.9	
Carbon tetrachloride		1.1 U			1.2 U	
Chlorodifluoromethane		4.1			3.9	
Chloroform		1.7 U			1.9 U	
Dichlorodifluoromethane		2.1			2.2	
1,1-Dichloroethane		1.4 U			1.5 U	
1,2-Dichloroethane		0.69 U			0.77 U	
1,1-Dichloroethene		1.4 U			1.5 U	
cis-1,2-Dichloroethene		1 U			2 U	
trans-1,2-Dichloroethene		1.4 U			1.5 U	
Ethylbenzene		1.6			0.87 J	
Methyl tert-butyl ether		1.2 U			1.4 U	
Methylene chloride		3.1			14.7	
Naphthalene		259			3.6	
Tetrachloroethene		1.2 U			1.3 U	
Toluene		7.8			49.3	
1,2,4-Trichlorobenzene		2.5 U			2.8 U	
1,1,1-Trichloroethane		1.9 U			2.1 U	
1,1,2-Trichloroethane		0.92 U			1 U	
Trichloroethene		3.1			1.6	
1,2,3-Trimethylbenzene		59.2			0.37 U	
1,2,4-Trimethylbenzene		205			1.9 U	
1,3,5-Trimethylbenzene		107			1.9 U	
Vinyl chloride		0.44 U			0.49 U	
Xylenes, meta- + para-		9			3 J	
Xylene, ortho-		19.7			1.1 J	
Xylenes, total		28.7			4.1	
Benzene	SV-076-A-16	0.61 U		IAQ-076-A-16	0.96	
Carbon tetrachloride		1.2 U			1.2 U	
Chlorodifluoromethane		1.6			2.9	
Chloroform		1.7 J			1.9 U	
Dichlorodifluoromethane		1.9			2.1	
1,1-Dichloroethane		1.5 U			1.5 U	
1,2-Dichloroethane		0.77 U			0.77 U	
1,1-Dichloroethene		1.5 U			1.5 U	
cis-1,2-Dichloroethene		2 U			2 U	
trans-1,2-Dichloroethene		1.5 U			1.5 U	
Ethylbenzene		1.6 U			0.83 J	
Methyl tert-butyl ether		1.4 U			1.4 U	
Methylene chloride		12.6			9.8	
Naphthalene		94.9			3.6	
Tetrachloroethene		1.3 U			1.3 U	
Toluene		3.8			54.5	
1,2,4-Trichlorobenzene		2.8 U			2.8 U	
1,1,1-Trichloroethane		2.1 U			2.1 U	
1,1,2-Trichloroethane		1 U			1 U	
Trichloroethene		14			1.9	
1,2,3-Trimethylbenzene		20.8			0.37 U	
1,2,4-Trimethylbenzene		40.2			1.9 U	
1,3,5-Trimethylbenzene		14			1.9 U	
Vinyl chloride		0.49 U			0.49 U	
Xylenes, meta- + para-		4.4			2.9 J	
Xylene, ortho-		2.9			1.2 J	
Xylenes, total		7.3			4.1	

TABLE 3-8

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 3 OF 7

Analyte	Co-Located SV Sample ID	Result (µg/m³)	Duplicate/ Additional	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate/ Additional
Benzene	SV-079-A-16	1.1		IAQ-079-A-16	0.88	
Carbon tetrachloride		1.2 U			1.2 U	
Chlorodifluoromethane		2.7			4.8	
Chloroform		9			1.9 U	
Dichlorodifluoromethane		1.7 J			2.4	
1,1-Dichloroethane		1.6			1.5 U	
1,2-Dichloroethane		0.74 U			0.77 U	
1,1-Dichloroethene		2.7			1.5 U	
cis -1,2-Dichloroethene		2,620			2 U	
trans -1,2-Dichloroethene		517			1.5 U	
Ethylbenzene		2.1			1.6 U	
Methyl tert -butyl ether		1.3 U			1.4 U	
Methylene chloride		18.7			12.7	
Naphthalene		27.9			2.1	
Tetrachloroethene		14.1			1.3 U	
Toluene		5.9			41.8	
1,2,4-Trichlorobenzene		2.7 U			2.8 U	
1,1,1-Trichloroethane		2.1			2.1 U	
1,1,2-Trichloroethane		0.99 U			1 U	
Trichloroethene		6090			1 U	
1,2,3-Trimethylbenzene		23.1			0.37 U	
1,2,4-Trimethylbenzene		12.3			1.9 U	
1,3,5-Trimethylbenzene		1.8 U			1.9 U	
Vinyl chloride		0.47 U			0.49 U	
Xylenes, meta- + para-		5.2			2.6 J	
Xylene, ortho-		5.3			0.9 J	
Xylenes, total		10.5			3.5	
Benzene	SV-081-A-16	0.58 U		IAQ-081-A-16 IA-081-A-16R ⁽¹⁾	1.4	0.44
Carbon tetrachloride		1.2 U			1.7 U	0.86 U
Chlorodifluoromethane		25.4			36.6	28
Chloroform		2.8			2.6 U	1.3 U
Dichlorodifluoromethane		1.8			2.9	2.1
1,1-Dichloroethane		1.5 U			2.2 U	1.1 U
1,2-Dichloroethane		0.74 U			1.1 U	0.55 U
1,1-Dichloroethene		1.5 U			2.2 U	1.1 U
cis -1,2-Dichloroethene		6			2 U	1.1 U
trans -1,2-Dichloroethene		1.5 U			2.2 U	1.1 U
Ethylbenzene		57.9			36.6	8
Methyl tert -butyl ether		1.3 U			1.9 U	0.98 U
Methylene chloride		15.4			37	1.9 J
Naphthalene		1.9 U			3.7	3.6 U
Tetrachloroethene		73.8			1.8 U	1.6
Toluene		13.9			163	20.4
1,2,4-Trichlorobenzene		2.7 U			4 U	5.1 U
1,1,1-Trichloroethane		6.4			3 U	0.81 J
1,1,2-Trichloroethane		0.99 U			1.5 U	0.74 U
Trichloroethene		7.9			19.2	4.1
1,2,3-Trimethylbenzene		4140			3.6	1.3 U
1,2,4-Trimethylbenzene		6780			11.7	1.3 U
1,3,5-Trimethylbenzene		3500			4.9	1.2 J
Vinyl chloride		0.47 U			0.69 U	0.35 U
Xylenes, meta- + para-		480			161	38.2
Xylene, ortho-		228			48.5	11.6
Xylenes, total		708			210	49.8

TABLE 3-8

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 4 OF 7

Analyte	Co-Located SV Sample ID	Result (µg/m³)	Duplicate/ Additional	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate/ Additional
Benzene	SV-093-A-16	1.2		IAQ-093-A-16	0.98	
Carbon tetrachloride		1.8 U			1.7 U	
Chlorodifluoromethane		14.6			4.4	
Chloroform		2.8 U			2.6 U	
Dichlorodifluoromethane		3.9			3.1	
1,1-Dichloroethane		2.3 U			2.1 U	
1,2-Dichloroethane		1.2 U			1.1 U	
1,1-Dichloroethene		2.3 U			2.1 U	
cis -1,2-Dichloroethene		2 U			2 U	
trans -1,2-Dichloroethene		2.3 U			2.1 U	
Ethylbenzene		2.5 U			2.3 U	
Methyl tert-butyl ether		2.1 U			1.9 U	
Methylene chloride		415			14	
Naphthalene		3.5			2.8	
Tetrachloroethene		1.9 U			1.8 U	
Toluene		6.8			3	
1,2,4-Trichlorobenzene		4.3 U			3.9 U	
1,1,1-Trichloroethane		3.1 U			2.9 U	
1,1,2-Trichloroethane		1.6 U			1.4 U	
Trichloroethene		7			5.9	
1,2,3-Trimethylbenzene		0.56 U			0.52 U	
1,2,4-Trimethylbenzene		2.8 U			2.6 U	
1,3,5-Trimethylbenzene		2.8 U			2.6 U	
Vinyl chloride		0.73 U			0.67 U	
Xylenes, meta- + para-		5 U			4.5 U	
Xylene, ortho-		2.5 U			2.3 U	
Xylenes, total		0			0	
Benzene	SV-094-A-16	1.1		IAQ-094-A-16	0.93	
Carbon tetrachloride		1.2 U			1.1 U	
Chlorodifluoromethane		3.6			1.7	
Chloroform		1.8 U			1.7 U	
Dichlorodifluoromethane		2.3			2.2	
1,1-Dichloroethane		1.5 U			1.4 U	
1,2-Dichloroethane		0.74 U			0.71 U	
1,1-Dichloroethene		1.5 U			1.4 U	
cis -1,2-Dichloroethene		2 U			1 U	
trans -1,2-Dichloroethene		1.5 U			1.4 U	
Ethylbenzene		1.6 U			1.5 U	
Methyl tert-butyl ether		1.3 U			1.3 U	
Methylene chloride		59.8			5	
Naphthalene		2.5			2.2	
Tetrachloroethene		1.2 U			1.2 U	
Toluene		2.3			1.6	
1,2,4-Trichlorobenzene		2.7 U			2.6 U	
1,1,1-Trichloroethane		2 U			1.9 U	
1,1,2-Trichloroethane		0.99 U			0.96 U	
Trichloroethene		0.99 U			0.96 U	
1,2,3-Trimethylbenzene		0.36 U			0.35 U	
1,2,4-Trimethylbenzene		1.8 U			1.7 U	
1,3,5-Trimethylbenzene		1.8 U			1.7 U	
Vinyl chloride		0.47 U			0.45 U	
Xylenes, meta- + para-		3.2 U			3.1 U	
Xylene, ortho-		1.6 U			1.5 U	
Xylenes, total		0			0	

TABLE 3-8

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 5 OF 7

Analyte	Co-Located SV Sample ID	Result (µg/m³)	Duplicate/ Additional	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate/ Additional
Benzene	SV-108-A-16	0.88	IAQ-108-A-16		0.9	
Carbon tetrachloride		1.1 U			1.2 U	
Chlorodifluoromethane		12.3			4	
Chloroform		1.7 U			1.8 U	
Dichlorodifluoromethane		2.5			2.2	
1,1-Dichloroethane		2.1			1.5 U	
1,2-Dichloroethane		0.71 U			0.74 U	
1,1-Dichloroethene		7.7			1.5 U	
cis -1,2-Dichloroethene		1 U			2 U	
trans -1,2-Dichloroethene		1.4 U			1.5 U	
Ethylbenzene		1.5 U			0.94 J	
Methyl tert-butyl ether		1.3 U			1.3 U	
Methylene chloride		12.4			8.8	
Naphthalene		1.9 UJ			2.2	
Tetrachloroethene		1.2 U			1.2 U	
Toluene		17.3			43.8	
1,2,4-Trichlorobenzene		2.6 UJ			2.7 U	
1,1,1-Trichloroethane		1.9 U			2 U	
1,1,2-Trichloroethane		0.96 U			0.99 U	
Trichloroethene		0.94 J			0.99 U	
1,2,3-Trimethylbenzene		1.7 U			0.36 U	
1,2,4-Trimethylbenzene		1.7 U			1.8 U	
1,3,5-Trimethylbenzene		1.7 U			1.8 U	
Vinyl chloride		0.45 U			0.47 U	
Xylenes, meta- + para-		2.9 J			3.4	
Xylene, ortho-		1.2 J			1.3 J	
Xylenes, total		4.1			4.7	
Benzene	SV-117-A-15	0.58 U		IAQ-117-A-15	0.89	
Carbon tetrachloride		1.2 U			1.2 U	
Chlorodifluoromethane		0.8			3.5	
Chloroform		1.8 U			1.9 U	
Dichlorodifluoromethane		1.5 J			2	
1,1-Dichloroethane		1.5 U			1.5 U	
1,2-Dichloroethane		0.74 U			0.77 U	
1,1-Dichloroethene		1.5 U			1.5 U	
cis -1,2-Dichloroethene		2 U			2 U	
trans -1,2-Dichloroethene		1.5 U			1.5 U	
Ethylbenzene		2.1			0.84 J	
Methyl tert-butyl ether		1.3 U			1.4 U	
Methylene chloride		40.4			8.9	
Naphthalene		95.1			2.2	
Tetrachloroethene		10.3			1.3 U	
Toluene		9.9			67.5	
1,2,4-Trichlorobenzene		2.7 U			2.8 U	
1,1,1-Trichloroethane		5.1			2.1 U	
1,1,2-Trichloroethane		0.99 U			1 U	
Trichloroethene		109			1 U	
1,2,3-Trimethylbenzene		4.5			0.37 U	
1,2,4-Trimethylbenzene		5.8			1.9 U	
1,3,5-Trimethylbenzene		1.8 U			1.9 U	
Vinyl chloride		0.47 U			0.49 U	
Xylenes, meta- + para-		9.7			2.7 J	
Xylene, ortho-		8.3			0.92 J	
Xylenes, total		18			3.6	

TABLE 3-8

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 6 OF 7

Analyte	Co-Located SV Sample ID	Result (µg/m³)	Duplicate/ Additional	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate/ Additional
Benzene	SV-118-A-16	1.8		IAQ-118-A-16	1	
Carbon tetrachloride		1.2 U			1.2 U	
Chlorodifluoromethane		5.2			12.4	
Chloroform		106			1.8 U	
Dichlorodifluoromethane		2			1.9	
1,1-Dichloroethane		90.3			1.5 U	
1,2-Dichloroethane		0.77 U			0.74 U	
1,1-Dichloroethene		1670			1.5 U	
cis -1,2-Dichloroethene		477			2 U	
trans -1,2-Dichloroethene		18.1			1.5 U	
Ethylbenzene		27.2			1.4 J	
Methyl tert-butyl ether		1.4 U			1.3 U	
Methylene chloride		15			8.8	
Naphthalene		20.7			2.2	
Tetrachloroethene		1.6			1.2 U	
Toluene		3.8			16.5	
1,2,4-Trichlorobenzene		2.8 U			2.7 U	
1,1,1-Trichloroethane		26.2			1.2 J	
1,1,2-Trichloroethane		1 U			0.99 U	
Trichloroethene		5860			5.6	
1,2,3-Trimethylbenzene		18.1			0.36 U	
1,2,4-Trimethylbenzene		34.1			1.8 U	
1,3,5-Trimethylbenzene		23.2			1.8 U	
Vinyl chloride		0.49 U			0.47 U	
Xylenes, meta- + para-		156			5.6	
Xylene, ortho-		65.2			2	
Xylenes, total		221			7.6	
Benzene	SV-136-A-16	6.7		IAQ-136-A-16	0.94	
Carbon tetrachloride		1.2 U			1.2 U	
Chlorodifluoromethane		0.37 U			3.3	
Chloroform		217			1.8 U	
Dichlorodifluoromethane		1.9 U			2.2	
1,1-Dichloroethane		1.7			1.5 U	
1,2-Dichloroethane		0.77 U			0.74 U	
1,1-Dichloroethene		1.5 U			1.5 U	
cis -1,2-Dichloroethene		55			2 U	
trans -1,2-Dichloroethene		25.3			1.5 U	
Ethylbenzene		1.7			0.75 J	
Methyl tert-butyl ether		1.4 U			1.3 U	
Methylene chloride		13.5			7.3	
Naphthalene		9.3			2.9	
Tetrachloroethene		15.1			1.2 U	
Toluene		11.7			53.6	
1,2,4-Trichlorobenzene		2.8 U			2.7 U	
1,1,1-Trichloroethane		3.4			2 U	
1,1,2-Trichloroethane		1 U			0.99 U	
Trichloroethene		91000			4.2	
1,2,3-Trimethylbenzene		6.1			0.36 U	
1,2,4-Trimethylbenzene		6.8			1.8 U	
1,3,5-Trimethylbenzene		5.4			1.8 U	
Vinyl chloride		0.49 U			0.47 U	
Xylenes, meta- + para-		4.2			2.6 J	
Xylene, ortho-		3.4			0.99 J	
Xylenes, total		7.6			3.6	

TABLE 3-8

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING A, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 7 OF 7

Analyte	Co-Located SV Sample ID	Result (µg/m ³)	Duplicate/ Additional	Co-Located IAQ Sample ID	Result (µg/m ³)	Duplicate/ Additional
Benzene	SV-138-A-15	1.6		IAQ-138-A-15	1.1	
Carbon tetrachloride		1.8 U			1.7 U	
Chlorodifluoromethane		9.6			4.8	
Chloroform		2.8 U			2.6 U	
Dichlorodifluoromethane		3.3			3	
1,1-Dichloroethane		2.6			2.1 U	
1,2-Dichloroethane		1.2 U			1.1 U	
1,1-Dichloroethene		6.4			2.1 U	
<i>cis</i> -1,2-Dichloroethene		6			2 U	
<i>trans</i> -1,2-Dichloroethene		2.3 U			2.1 U	
Ethylbenzene		1.9 J			2.3 U	
Methyl <i>tert</i> -butyl ether		2.1 U			1.9 U	
Methylene chloride		17.5			17.2	
Naphthalene		23.1			3	
Tetrachloroethene		2.7			1.8 U	
Toluene		10.3			2.5	
1,2,4-Trichlorobenzene		4.3 U			3.9 U	
1,1,1-Trichloroethane		3.2 U			2.9 U	
1,1,2-Trichloroethane		1.6 U			1.4 U	
Trichloroethene		80.3			1.6	
1,2,3-Trimethylbenzene		0.57 U			0.52 U	
1,2,4-Trimethylbenzene		2.9 U			2.6 U	
1,3,5-Trimethylbenzene		2.9 U			2.6 U	
Vinyl chloride		0.75 U			0.67 U	
Xylenes, <i>meta</i> - + <i>para</i> -		6.1			4.5 U	
Xylene, <i>ortho</i> -		1.6 J			2.3 U	
Xylenes, total		7.7			0	

Notes: All concentrations are in micrograms per cubic meter air [µg/m³]

Shaded cells indicate a concentration greater than the risk-based screening level.

***Bold font indicates co-located (IAQ and SV) detections within that sample.**

(1) Location AIR-081-A was resampled in April 2014 (IA-081-A-16R). The February 2014 trichloroethene concentration greater than screening criteria was not confirmed in this April 2014 resample.

IAQ = indoor air quality

SV = sub-slab vapor

J = estimated value

U = analyzed for but not detected

TABLE 3-9

**INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING B, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

LOCATION SAMPLE ID	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	AIR-033-B IA-033-B-16	AIR-063-B IA-063-B-16	AIR-101-B IA-101-B-16	AIR-105-Z IA-105-Z-16	AIR-121-B IA-121-B-16	AIR-123-Z IA-123-Z-16	AIR-140-B IA-140-B-16
SAMPLE DATE				20140224	20140224	20140224	20140224	20140224	20140224	20140226
Volatile Organic Compounds (µg/m³)										
BENZENE	319	16	ca	0.87	0.68 U	0.65	1.6	0.78	2.3	0.58 U
CARBON TETRACHLORIDE	62,900	20	ca	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	42.6	6.9	18.9	1.4	37.5	1.3	13.6
CHLOROFORM	240,000	5.3	ca	1.8 U	2.1 U	1.9 U	1.8 U	1.9 U	1.9 U	1.8 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	3.1	2.5	2.7	1.8	1.9	2.1	2.4
1,1-DICHLOROETHANE	400,000	77	ca	1.5 U	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.74 U	0.86 U	0.77 U	0.74 U	0.77 U	0.77 U	0.74 U
1,1-DICHLOROETHENE	--	880	nc	1.5 U	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.5 U	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.5 U	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
ETHYLBENZENE	435,000	49	ca	1.7	1.8 U	1.6 U	113	1.6 U	164	2.1
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.3 U	1.5 U	1.4 U	1.3 U	1.4 U	1.4 U	1.3 U
METHYLENE CHLORIDE	87,000	2,600	nc	12.6	4.9 J	11.5	14.8	4.5 J	8.7	18.3
NAPHTHALENE	50,000	3.6	ca	4 J	5.6 U	1.3 J	3.2 J	3.4 J	5 U	6.5 J
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.4 U	1.3 U	1.2 U	1.3 U	1.3 U	1.2 U
TOLUENE	754,000	22,000	nc	44.1	15.1	17.1	9300	19.4	20000	84
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	6.8 U	7.9 U	2.8 U	6.8 U	7 U	7 U	2.7 UJ
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	2 U	2.3 U	2.1 U	2 U	2.1 U	2.1 U	2 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.99 U	1.2 U	1 U	0.99 U	1 U	1 U	0.99 U
TRICHLOROETHENE	537,000	8.8	nc	0.99 U	1.2 U	1 U	0.99 U	1.1	1 U	0.99 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	0.36 U	0.42 U	0.37 U	0.36 U	0.37 U	0.37 U	1.8 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.4 J	1.1 J	1.9 U	1.7 J	1.9 U	1.3 J	1.8 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽¹⁾	1.8 U	2.1 U	1.9 U	1.8 U	1.9 U	1.9 U	1.8 U
VINYL CHLORIDE	21,560	28	ca	0.47 U	0.55 U	0.49 U	0.47 U	0.49 U	0.49 U	0.47 U
M+P-XYLENES	434000	440	nc	7.4	2.7 J	2.5 J	476	2.8 J	1030	8.1
O-XYLENE	434000	440	nc	2.5	0.95 J	0.95 J	142	1.1 J	210	2.6
TOTAL XYLENES	434000	440	nc	9.9	3.65 J	3.45 J	618	3.9 J	1240	10.7

Shaded cells indicate a concentration greater than the risk -based screening level

TOTAL XYLENES values are calculated.

(1) Value is for 1,2,3-trimethylbenzene.

-- = not available

J = estimated value

ND - calculated value is nondetect.

U = not detected

USEPA = United States Environmental Protection Agency

ca = screening value based on 1x 10⁻⁵ carcinogenic risk

nc = screening value based on noncarcinogenic hazard index = 1

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites May-2014

TABLE 3-10

**SUB-SLAB VAPOR SAMPLE RESULTS, BUILDING B, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

SAMPLE ID	Target Shallow Soil Gas Concentration ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	KEY	AIR-033-B SV-033-B-16	AIR-063-B SV-063-B-16	AIR-101-B SV-101-B-16	AIR-105-Z SV-105-Z-16	AIR-121-B SV-121-B-16	AIR-123-Z SV-123-Z-16
SAMPLE DATE			20140224	20140224	20140224	20140224	20140224	20140224
Volatile Organic Compounds ($\mu\text{g}/\text{m}^3$)								
BENZENE	533	ca	1.2	0.55 U	0.57 U	1.5	0.58 U	0.55 U
CARBON TETRACHLORIDE	667	ca	1.1 U	16.3	2.6	1.1 U	4.4	1.1 U
CHLORODIFLUOROMETHANE	7,333,333	nc	32.6	1.7	4.3	9	1.5	5.9 U
CHLOROFORM	177	ca	1.7 U	1.7 U	1.7 U	2.5	26.4	1.7 U
DICHLORODIFLUOROMETHANE	14,667	nc	3.4	2.2	4.5	1.7 U	2.3	2.6
1,1-DICHLOROETHANE	2,567	ca	1.4 U	1.4 U	1.4 U	1.4 U	1.5 J	1.4 U
1,2-DICHLOROETHANE	157	ca	0.69 U	0.69 U	0.71 U	0.69 U	0.74 U	0.69 U
1,1-DICHLOROETHENE	29,333	nc	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U
CIS-1,2-DICHLOROETHENE	--	--	1.4 U	1.4 U	1.4 U	36.3	1.5 U	0.7 J
TRANS-1,2-DICHLOROETHENE	--	--	1.4 U	1.4 U	1.4 U	5.5 J+	1.5 U	1.4 U
ETHYLBENZENE	1,633	ca	3.1	1.5 U	0.87 J	5.3	1.5 J	3.9
METHYL TERT-BUTYL ETHER	15,667	ca	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U
METHYLENE CHLORIDE	86,667	nc	10.5	14.6	14.3	621 J	24.6	8.2
NAPHTHALENE	120	ca	10.4	3.3 J	9.7	4.9	85.8	10.9
TETRACHLOROETHENE	6,000	nc	1.2 U	3.3	45.9	1.2 U	2.4	1.2 U
TOLUENE	733,333	nc	36.1	2.4	12.5	59.6	6.7	50.9
1,2,4-TRICHLOROBENZENE	293	nc	6.3 U	6.3 U	6.6 U	6.3 U	6.8 U	2.5 U
1,1,1-TRICHLOROETHANE	733,333	nc	88.6	1.9 U	143	1.9 U	1.5 J	1.9 U
1,1,2-TRICHLOROETHANE	29	nc	0.92 U	0.92 U	0.96 U	0.92 U	0.99 U	0.92 U
TRICHLOROETHENE	293	nc	2.8	1.6	79.2	129	203	37.5
1,2,3-TRIMETHYLBENZENE	733	nc	5.2	0.34 U	2.9	1.8	13.2	3.7
1,2,4-TRIMETHYLBENZENE	1,033	nc	11.1	1.4 J	3.4	2.7	32	1.7
1,3,5-TRIMETHYLBENZENE	733	nc ⁽²⁾	1.7 U	1.7 U	1.7 U	1.7 U	1.8 U	2.9
VINYL CHLORIDE	933	ca	0.44 U	0.44 U	0.45 U	9.4	0.47 U	0.44 U
M+P-XYLENES	14,667	nc	13.8	1.8 J	2.7 J	22.7	7.2	19.9
O-XYLENE	14,667	nc	4.9	1.5 U	1.8	4.8	5	4.3
TOTAL XYLENES	14,667	nc	18.7	1.8 J	4.5 J	27.5	12.2	24.2

Notes: All sample concentrations are in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Shaded cells indicate a concentration greater than risk-based screening level
TOTAL XYLENES values are calculated.

-- = not available

ca = screening value based on carcinogenic effects

J = estimated value

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

nc = screening value based on noncarcinogenic effects

U = nondetect

(1) Screening values derived in accordance with Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (November 2002). Screening values are equal to United States Environmental Protection Agency (USEPA) Industrial Air Screening Values divided by an attenuation factor of 0.03, and correspond to a target cancer risk level of $1.0\text{E-}05$.

(2) Value is for 1,2,3-trimethylbenzene.

TABLE 3-11

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING B, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 1 OF 3

Analyte	Co-Located SV Sample ID	Result (µg/m ³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m ³)	Duplicate
Benzene	SV-033-B-16	1.2		IAQ-033-B-16	0.87	
Carbon tetrachloride		1.1 U			1.2 U	
Chlorodifluoromethane		32.6			42.6	
Chloroform		1.7 U			1.8 U	
Dichlorodifluoromethane		3.4			3.1	
1,1-Dichloroethane		1.4 U			1.5 U	
1,2-Dichloroethane		0.69 U			0.74 U	
1,1,1-Dichloroethene		1.4 U			1.5 U	
cis -1,2-Dichloroethene		1 U			2 U	
trans -1,2-Dichloroethene		1.4 U			1.5 U	
Ethylbenzene		3.1			1.7	
Methyl tert -butyl ether		1.2 U			1.3 U	
Methylene chloride		10.5			12.6	
Naphthalene		10.4			4 J	
Tetrachloroethene		1.2 U			1.2 U	
Toluene		36.1			44.1	
1,2,4-Trichlorobenzene		6.3 U			6.8 U	
1,1,1-Trichloroethane		88.6			2 U	
1,1,2-Trichloroethane		0.92 U			0.99 U	
Trichloroethene		2.8			0.99 U	
1,2,3-Trimethylbenzene		5.2			0.36 U	
1,2,4-Trimethylbenzene		11.1			1.4 J	
1,3,5-Trimethylbenzene		1.7 U			1.8 U	
Vinyl chloride		0.44 U			0.47 U	
Xylenes, meta- + para-		13.8			7.4	
Xylene, ortho-		4.9			2.5	
Xylenes, total		18.7			9.9	
Benzene	SV-063-B-16	0.55 U		IAQ-063-B-16	0.68 U	
Carbon tetrachloride		16.3			1.3 U	
Chlorodifluoromethane		1.7			6.9	
Chloroform		1.7 U			2.1 U	
Dichlorodifluoromethane		2.2			2.5	
1,1-Dichloroethane		1.4 U			1.7 U	
1,2-Dichloroethane		0.69 U			0.86 U	
1,1-Dichloroethene		1.4 U			1.7 U	
cis -1,2-Dichloroethene		1 U			2 U	
trans -1,2-Dichloroethene		1.4 U			1.7 U	
Ethylbenzene		1.5 U			1.8 U	
Methyl tert -butyl ether		1.2 U			1.5 U	
Methylene chloride		14.6			4.9 J	
Naphthalene		3.3 J			5.6 U	
Tetrachloroethene		3.3			1.4 U	
Toluene		2.4			15.1	
1,2,4-Trichlorobenzene		6.3 U			7.9 U	
1,1,1-Trichloroethane		1.9 U			2.3 U	
1,1,2-Trichloroethane		0.92 U			1.2 U	
Trichloroethene		1.6			1.2 U	
1,2,3-Trimethylbenzene		0.34 U			0.42 U	
1,2,4-Trimethylbenzene		1.4 J			1.1 J	
1,3,5-Trimethylbenzene		1.7 U			2.1 U	
Vinyl chloride		0.44 U			0.55 U	
Xylenes, meta- + para-		1.8 J			2.7 J	
Xylene, ortho-		1.5 U			0.95 J	
Xylenes, total		1.8			3.7	

TABLE 3-11

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING B, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 3

Analyte	Co-Located SV Sample ID	Result (µg/m ³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m ³)	Duplicate
Benzene	SV-101-B-16	0.57 U		IAQ-101-B-16	0.65	
Carbon tetrachloride		2.6			1.2 U	
Chlorodifluoromethane		4.3			18.9	
Chloroform		1.7 U			1.9 U	
Dichlorodifluoromethane		4.5			2.7	
1,1-Dichloroethane		1.4 U			1.5 U	
1,2-Dichloroethane		0.71 U			0.77 U	
1,1-Dichloroethene		1.4 U			1.5 U	
cis-1,2-Dichloroethene		1 U			2 U	
trans-1,2-Dichloroethene		1.4 U			1.5 U	
Ethylbenzene		0.87 J			1.6 U	
Methyl tert-butyl ether		1.3 U			1.4 U	
Methylene chloride		14.3			11.5	
Naphthalene		9.7			1.3 J	
Tetrachloroethene		45.9			1.3 U	
Toluene		12.5			17.1	
1,2,4-Trichlorobenzene		6.6 U			2.8 U	
1,1,1-Trichloroethane		143			2.1 U	
1,1,2-Trichloroethane		0.96 U			1 U	
Trichloroethene		79.2			1 U	
1,2,3-Trimethylbenzene		2.9			0.37 U	
1,2,4-Trimethylbenzene		3.4			1.9 U	
1,3,5-Trimethylbenzene		1.7 U			1.9 U	
Vinyl chloride		0.45 U			0.49 U	
Xylenes, meta- + para-		2.7 J			2.5 J	
Xylene, ortho-		1.8			0.95 J	
Xylenes, total		4.5			3.5	
Benzene	SV-121-B-16	0.58 U		IAQ-121-B-16	0.78	
Carbon tetrachloride		4.4			1.2 U	
Chlorodifluoromethane		1.5			37.5	
Chloroform		26.4			1.9 U	
Dichlorodifluoromethane		2.3			1.9	
1,1-Dichloroethane		1.5 J			1.5 U	
1,2-Dichloroethane		0.74 U			0.77 U	
1,1-Dichloroethene		1.5 U			1.5 U	
cis-1,2-Dichloroethene		2 U			2 U	
trans-1,2-Dichloroethene		1.5 U			1.5 U	
Ethylbenzene		1.5 J			1.6 U	
Methyl tert-butyl ether		1.3 U			1.4 U	
Methylene chloride		24.6			4.5 J	
Naphthalene		85.8			3.4 J	
Tetrachloroethene		2.4			1.3 U	
Toluene		6.7			19.4	
1,2,4-Trichlorobenzene		6.8 U			7 U	
1,1,1-Trichloroethane		1.5 J			2.1 U	
1,1,2-Trichloroethane		0.99 U			1 U	
Trichloroethene		203			1.1	
1,2,3-Trimethylbenzene		13.2			0.37 U	
1,2,4-Trimethylbenzene		32			1.9 U	
1,3,5-Trimethylbenzene		1.8 U			1.9 U	
Vinyl chloride		0.47 U			0.49 U	
Xylenes, meta- + para-		7.2			2.8 J	
Xylene, ortho-		5			1.1 J	
Xylenes, total		12.2			3.9	

TABLE 3-11

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING B, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 3 OF 3

Analyte	Co-Located SV Sample ID	Result (µg/m ³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m ³)	Duplicate
Benzene	SV-105-Z-16	1.5		IAQ-105-Z-16	1.6	
Carbon tetrachloride		1.1 U			1.2 U	
Chlorodifluoromethane		9			1.4	
Chloroform		2.5			1.8 U	
Dichlorodifluoromethane		1.7 U			1.8	
1,1-Dichloroethane		1.4 U			1.5 U	
1,2-Dichloroethane		0.69 U			0.74 U	
1,1-Dichloroethene		1 U			1.5 U	
cis -1,2-Dichloroethene		36.3			2 U	
trans -1,2-Dichloroethene		5.5 J+			1.5 U	
Ethylbenzene		5.3			113	
Methyl tert -butyl ether		1.2 U			1.3 U	
Methylene chloride		621 J			14.8	
Naphthalene		4.9			3.2 J	
Tetrachloroethene		1.2 U			1.2 U	
Toluene		59.6			9300	
1,2,4-Trichlorobenzene		6.3 U			6.8 U	
1,1,1-Trichloroethane		1.9 U			2 U	
1,1,2-Trichloroethane		0.92 U			0.99 U	
Trichloroethene		129			0.99 U	
1,2,3-Trimethylbenzene		1.8			0.36 U	
1,2,4-Trimethylbenzene		2.7			1.7 J	
1,3,5-Trimethylbenzene		1.7 U			1.8 U	
Vinyl chloride		9.4			0.47 U	
Xylenes, meta- + para-		22.7			476	
Xylene, ortho-		4.8			142	
Xylenes, total		27.5			618	
Benzene	SV-123-Z-16	0.55 U		IAQ-123-Z-16	2.3	
Carbon tetrachloride		1.1 U			1.2 U	
Chlorodifluoromethane		5.9 U			1.3	
Chloroform		1.7 U			1.9 U	
Dichlorodifluoromethane		2.6			2.1	
1,1-Dichloroethane		1.4 U			1.5 U	
1,2-Dichloroethane		0.69 U			0.77 U	
1,1-Dichloroethene		1.4 U			1.5 U	
cis -1,2-Dichloroethene		1 J			2 U	
trans -1,2-Dichloroethene		1.4 U			1.5 U	
Ethylbenzene		3.9			164	
Methyl tert -butyl ether		1.2 U			1.4 U	
Methylene chloride		8.2			8.7	
Naphthalene		10.9			5 U	
Tetrachloroethene		1.2 U			1.3 U	
Toluene		50.9			20000	
1,2,4-Trichlorobenzene		2.5 U			7 U	
1,1,1-Trichloroethane		1.9 U			2.1 U	
1,1,2-Trichloroethane		0.92 U			1 U	
Trichloroethene		37.5			1 U	
1,2,3-Trimethylbenzene		3.7			0.37 U	
1,2,4-Trimethylbenzene		1.7			1.3 J	
1,3,5-Trimethylbenzene		2.9			1.9 U	
Vinyl chloride		0.44 U			0.49 U	
Xylenes, meta- + para-		19.9			1030	
Xylene, ortho-		4.3			210	
Xylenes, total		24.2			1240	

Notes: All concentrations are in micrograms per cubic meter air [µg/m³]

Shaded cells indicate a concentration greater than the risk-based screening level.

***Bold font indicates co-located (IAQ and SV) detections within that sample.**

IAQ = indoor air quality

SV = sub-slab vapor

J = estimated value

U = analyzed for but not detected

TABLE 3-12

INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 1 OF 3

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	AIR-060-C IA-060-C-16	AIR-065-C IA-065-C-16	AIR-088-C IA-088-C-16	AIR-102-C IA-102-C-16	AIR-113-C IA-113-C-16 IA-113-C-16-D (IA-DUP-2)		AIR-113-C IA-113-C-16R	AIR-126-C IA-126-C-16	AIR-128-C IA-128-C-16
SAMPLE DATE				20140224	20140224	20140224	20140224	20140224	20140224	20140417	20140224	20140224
Volatile organic compounds (µg/m³)												
BENZENE	319	16	ca	0.81	0.64	11.8 U	0.61 J	1.9	0.89	0.52 U	0.79	0.84
CARBON TETRACHLORIDE	62,900	20	ca	1.1 U	1.1 U	23.3 U	1.2 U	3.4 U	1.1 U	1 U	1.1 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	9.4	23.9	7.3 U	1.8 J	6.5 J	3.1 J	4	2	23.2
CHLOROFORM	240,000	5.3	ca	1.7 U	1.7 U	36 U	1.9 U	5.3 U	1.7 U	1.6 U	1.7 U	1.9 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	2.4	2.3	36.7 U	2.6	4.7 J	2.1	2.5	2.3	2.4
1,1-DICHLOROETHANE	400,000	77	ca	1.4 U	1.4 U	29.8 U	1.6 U	43.7	1.4 U	1.3 U	1.4 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.71 U	0.69 U	14.9 U	0.8 U	2.2 U	0.69 U	0.66 U	0.71 U	0.77 U
1,1-DICHLOROETHENE	--	880	nc	1.4 U	1.4 U	29.5 U	1.6 U	17.1	1.4 U	1.3 U	1.4 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	29.5 U	1.6 U	4.3 U	1.4 U	1.3 U	1.4 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	29.5 U	1.6 U	4.3 U	1.4 U	1.3 U	1.4 U	1.5 U
ETHYLBENZENE	435,000	49	ca	1.5 U	1.5 U	32 UJ	1.7 U	4.7 U	1.5 U	1.2 J	1.5 U	1.6 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.3 U	1.2 U	26.5 U	1.4 U	3.9 U	1.2 U	1.2 U	1.3 U	1.4 U
METHYLENE CHLORIDE	87,000	2,600	nc	8.1	5.8 J	33.6 J	8.6	79.7 J	5.1 J	3.1 J	14.6	14.5
NAPHTHALENE	50,000	3.6	ca	3.6 J	5.1	96.7 UJ	1.1 J	14.1 U	3.2 J	2.1 J	3.4 J	3.9 J
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.2 U	25.1 U	1.3 U	3.7 U	1.2 U	1.6	1.2 U	1.3 U
TOLUENE	754,000	22,000	nc	3.8	2.1	28 U	3.2	24.7	1.3 U	5.1	6	4.3
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	6.6 U	6.3 U	137 UJ	2.9 U	20 UJ	6.3 U	6.1 U	6.6 U	7 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	1.9 U	1.9 U	40.4 U	2.2 U	13.2	1.9 U	1.8 U	1.9 U	2.1 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.96 U	0.92 U	20 U	1.1 U	2.9 U	0.92 U	0.89 U	0.96 U	1 U
TRICHLOROETHENE	537,000	8.8	nc	0.96 U	0.92 U	20 U	1.1 U	20	0.92 U	0.89 U	0.96 U	1 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	0.35 U	0.34 U	7.3 UJ	0.39 U	1.1 U	0.34 U	1.6 U	0.35 U	0.37 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.7 U	1.7 U	36.3 UJ	1.9 U	3.2 J	0.94 J	1.6 U	1.7 U	1.9 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽¹⁾	1.7 U	1.7 U	36.3 UJ	1.9 U	5.3 U	1.7 U	4 U	1.7 U	1.9 U
VINYL CHLORIDE	21,560	28	ca	0.45 U	0.44 U	9.5 U	0.5 U	1.4 U	0.44 U	0.42 U	0.45 U	0.49 U
M+P-XYLENES	434000	440	nc	2.5 J	3 U	64 UJ	1.9 J	76.6 J	3.4 J	2 J	3.1 U	2.6 J
O-XYLENE	434000	440	nc	0.98 J	1.5 U	32 UJ	1.7 U	26.6 J	1.2 J	0.9 J	1.5 U	1.1 J
TOTAL XYLENES	434000	440	nc	3.48 J	0	0	1.9 J	103.2 J	4.6 J	2.9	0	3.7 J

TABLE 3-12

INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 3

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	AIR-130-C IA-130-C-16 20140224	AIR-133-C IA-133-C-16 20140224	AIR-133-C IA-133-C-16-D (IA-DUP-1) 20140224	AIR-135-C IA-135-C-16 20140224	AIR-141-C IA-141-C-16 20140224	AIR-142-C IA-142-C-16 20140224	AIR-143-C IA-143-C-16 20140224	AIR-144-C IA-144-C-16 20140224	AIR-145-C IA-145-C-16 20140224
Volatile organic compounds (µg/m³)												
BENZENE	319	16	ca	1.3	0.93	0.83	0.8	0.92	0.67	0.81	0.71	3.6
CARBON TETRACHLORIDE	62,900	20	ca	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.2 U	1.2 U	1.2 U	1.4
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	4	4.4	3.9	2.1	7.1	1.9	2.5	18	37.2
CHLOROFORM	240,000	5.3	ca	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.9 U	1.8 U	1.9 U	1.9 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	2.4	2.4	2.3	2.3	3	2	2.4	2	4.8
1,1-DICHLOROETHANE	400,000	77	ca	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.69 U	0.69 U	0.69 U	0.74 U	0.71 U	0.77 U	0.74 U	0.77 U	0.77 U
1,1-DICHLOROETHENE	--	880	nc	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
ETHYLBENZENE	435,000	49	ca	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	1.6 U	1.6 U	1.6 U	1.7
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.4 U	1.3 U	1.4 U	1.4 U
METHYLENE CHLORIDE	87,000	2,600	nc	14.1	8.4 J	1.9 J	13.2	7.8	3.8 J	6.1 J	6.6	1140
NAPHTHALENE	50,000	3.6	ca	3.6 J	3.7 J	3.5 J	4.8 U	4.6 U	3.4 J	4.4 J	3.6 J	4.1 J
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U
TOLUENE	754,000	22,000	nc	3.5	2.9	2.4	1.4 U	2.1	1.4 U	1.4 U	3.5	16.2
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	6.3 U	6.3 U	6.3 U	6.8 U	6.6 U	7 U	6.8 U	7 U	7 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	1.9 U	1.9 U	1.9 U	2 U	1.9 U	2.1 U	2 U	2.1 U	2.1 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.92 U	0.92 U	0.92 U	0.99 U	0.96 U	1 U	0.99 U	1 U	1 U
TRICHLOROETHENE	537,000	8.8	nc	0.92 U	1.2	1.4	0.99 U	0.96 U	1 U	0.99 U	1 U	1 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	0.34 U	0.34 U	0.34 U	0.36 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.9 U	1.2 J	1.9 U	3.4
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽¹⁾	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.9 U	1.8 U	1.9 U	1 J
VINYL CHLORIDE	21,560	28	ca	0.44 U	0.44 U	0.44 U	0.47 U	0.45 U	0.49 U	0.47 U	0.49 U	0.49 U
M+P-XYLENES	434000	440	nc	1.6 J	2.1 J	1.9 J	3.2 U	1.6 J	1.7 J	3.2 U	2.3 J	6.1
O-XYLENE	434000	440	nc	1.5 U	0.84 J	1.5 U	1.6 U	1.5 U	1.6 U	1.6 U	0.88 J	2.3
TOTAL XYLENES	434000	440	nc	1.6 J	2.94 J	1.9 J	0	1.6 J	1.7 J	0	3.18 J	8.4

TABLE 3-12

INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 3 OF 3

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	AIR-146-C IA-146-C-16	AIR-147-C IA-147-C-16	AIR-148-C IA-148-C-16
SAMPLE DATE				20140224	20140224	20140224
Volatile organic compounds (µg/m³)						
BENZENE	319	16	ca	0.76	0.8	0.61
CARBON TETRACHLORIDE	62,900	20	ca	1.2 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	54.2	18.2	24.4
CHLOROFORM	240,000	5.3	ca	1.8 U	1.9 U	1.9 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	2.3	2.1	2.7
1,1-DICHLOROETHANE	400,000	77	ca	1.5 U	1.5 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.74 U	0.77 U	0.77 U
1,1-DICHLOROETHENE	--	880	nc	1.5 U	1.5 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.5 U	1.5 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.5 U	1.5 U	1.5 U
ETHYLBENZENE	435,000	49	ca	1.6 U	1.6 U	1.6 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.3 U	1.4 U	1.4 U
METHYLENE CHLORIDE	87,000	2,600	nc	6.7	19.1	11
NAPHTHALENE	50,000	3.6	ca	3.7 J	4.9 J	1.2 J
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.3 U	1.3 U
TOLUENE	754,000	22,000	nc	2.5	5.4	2.9
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	6.8 U	7 U	2.8 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	2 U	2.1 U	2.1 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.99 U	1 U	1 U
TRICHLOROETHENE	537,000	8.8	nc	0.99 U	1 U	1 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	0.36 U	0.37 U	0.37 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.8 U	1.9 U	1.9 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽¹⁾	1.8 U	1.9 U	1.9 U
VINYL CHLORIDE	21,560	28	ca	0.47 U	0.49 U	0.49 U
M+P-XYLENES	434000	440	nc	2.3 J	2.7 J	2.3 J
O-XYLENE	434000	440	nc	0.88 J	1.1 J	0.93 J
TOTAL XYLENES	434000	440	nc	3.18 J	3.8 J	3.23 J

Shaded cells indicate a concentration greater than the risk -based screening level

TOTAL XYLENES values are calculated.

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites May-2014

(1) Value is for 1,2,3-trimethylbenzene.

(2) Location AIR-113-C was resampled in April 2014 (IA-113-C-16R). The February 2014 trichloroethene exceedance criteria was not confirmed in this April 2014 resample.

-- = not available

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

ca = screening value based on 1×10^{-5} carcinogenic risk

J = estimated value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

ND - calculated value is nondetect.

nc = screening value based on noncarcinogenic hazard index = 1

OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit

U = not detected

USEPA = United States Environmental Protection Agency

TABLE 3-13

SUB-SLAB VAPOR SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
 LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
 PAGE 1 OF 2

SAMPLE ID	Target Shallow Soil Gas Concentration ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	KEY	AIR-060-C SV-060-C-16	AIR-065-C SV-065-C-16	AIR-088-C SV-088-C-16	AIR-102-C SV-102-C-16	AIR-113-C SV-113-C-16	AIR-113-C SV-113-C-16-D DUP	AIR-126-C SV-126-C-16	AIR-128-C SV-128-C-16
SAMPLE DATE			20140224	20140224	20140224	20140224	20140224	20140224	20140224	20140224
Volatile Organic Compounds ($\mu\text{g}/\text{m}^3$)										
BENZENE	533	ca	0.85	0.55 U	1.2	7.5	2.4	0.55 U	88.4	3.6
CARBON TETRACHLORIDE	667	ca	1.1 U	1.1 U	1.1 U	3.1	1.1	1.1 U	1.1 U	1.1 U
CHLORODIFLUOROMETHANE	7,333,333	nc	5.8 J	7.9	3.2	3.3	10.7 J	3.5 J	0.34 U	6.1
CHLOROFORM	177	ca	3.1	2.7	1.7 U	71.9	1.7 U	1.8	0.84 J	1.7 U
DICHLORODIFLUOROMETHANE	14,667	nc	2.8	7.3	2.6	5.8	3.8 J	2.2 J	1.5 J	2.5
1,1-DICHLOROETHANE	2,567	ca	2.3	1.4 U	1.4 U	6760	1.4 U	1.4 U	1.4 U	1.4 U
1,2-DICHLOROETHANE	157	ca	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
1,1-DICHLOROETHENE	29,333	nc	0.86 J	1.4 U	1.4 U	2530	1.4 U	1.4 U	199	1.4 U
CIS-1,2-DICHLOROETHENE	--	--	16.5	1.4 U	17.6	67.4	0.73 J	31.7 J	205	6.5
TRANS-1,2-DICHLOROETHENE	--	--	1.1 J	1.4 U	1.4 U	3.9 J+	1.4 U	1.4 U	1.4 U	1.4 U
ETHYLBENZENE	1,633	ca	96.5	1.5 U	2.2	2140	1.5 U	1.5 U	3	2
METHYL TERT-BUTYL ETHER	15,667	ca	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
METHYLENE CHLORIDE	86,667	nc	10.7	16.9	82.5	46.3	557 J	12.5 J	9.2	9.6
NAPHTHALENE	120	ca	4.4	6.9	22.3	66	4.5 U	3.7 J	70.6	92.6
TETRACHLOROETHENE	6,000	nc	2.2	12.6	1.2 U	2.2	1.2 U	1.2 U	1.2 U	1.6
TOLUENE	733,333	nc	13.1	1.2 J	1.3 U	128	6.1 J	1.7 J	14.7	5.8
1,2,4-TRICHLOROBENZENE	293	nc	2.5 U	2.5 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U
1,1,1-TRICHLOROETHANE	733,333	nc	1.9 U	1.9 U	1.9 U	2070	1.9 U	1.9 U	1.9 U	1.9 U
1,1,2-TRICHLOROETHANE	29	nc	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
TRICHLOROETHENE	293	nc	291	0.92 U	70.6	2740	7 J	243 J	177	2.1
1,2,3-TRIMETHYLBENZENE	733	nc	0.91	0.95	1.1	90.4	0.34 U	0.34 U	1.4	1.2
1,2,4-TRIMETHYLBENZENE	1,033	nc	3.2	1.3 J	1.8	89.1	1.7 U	1.7 U	4.3	2.8
1,3,5-TRIMETHYLBENZENE	733	nc ⁽²⁾	2.2	1.7 U	1.7 U	39.7	1.7 U	1.7 U	1.1 J	1.7 U
VINYL CHLORIDE	933	ca	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	11900	0.44 U
M+P-XYLENES	14,667	nc	561	1.1 J	10	11500	2.4 J	1.5 J	13.4	12.1
O-XYLENE	14,667	nc	230	1.5 U	4.7	4040	0.83 J	1.5 U	5.7	3.6
TOTAL XYLENES	14,667	nc	791	1.1	14.7	15540	3.23	1.5	19.1	15.7

TABLE 3-13

SUB-SLAB VAPOR SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 2

SAMPLE ID	Target Shallow Soil Gas Concentration (µg/m ³) ⁽¹⁾	KEY	AIR-130-C SV-130-C-16	AIR-133-C SV-133-C-16	AIR-133-C SV-133-C-16-D DUP	AIR-135-C SV-135-C-16	AIR-141-C SV-141-C-16	AIR-142-C SV-142-C-16	AIR-143-C SV-143-C-16
SAMPLE DATE			20140224	20140224	20140224	20140224	20140224	20140224	20140224
Volatile Organic Compounds (µg/m³)									
BENZENE	533	ca	4.1	0.77	0.87	0.33 J	0.88	0.55 U	1.8
CARBON TETRACHLORIDE	667	ca	1.1 U	1.1 U	1.1 U	1.1 U	1.3 U	1.1 U	133
CHLORODIFLUOROMETHANE	7,333,333	nc	1.7 J	4.3	4.4	2.1	2.6	1.4	1.7 J
CHLOROFORM	177	ca	1.8	6.7	6.2	1.7 U	2 U	15	194
DICHLORODIFLUOROMETHANE	14,667	nc	3.1	3.2	3	2.1	2.3	2.2	2.6 J
1,1-DICHLOROETHANE	2,567	ca	1.3 J	1.4 U	1.4 U	1.4 U	1.7 U	1.4 U	1.8 J
1,2-DICHLOROETHANE	157	ca	0.69 U	0.92	0.82	0.69 U	0.83 U	0.69 U	1.7 U
1,1-DICHLOROETHENE	29,333	nc	2.9	1.4 U	1.4 U	1.4 U	1.7	1.4 U	2.1 J
CIS-1,2-DICHLOROETHENE	--	--	1.4 U	8.4	8.7	1.4 U	2.2	1.4 U	5.7
TRANS-1,2-DICHLOROETHENE	--	--	1.4 U	3.6 J+	3.5 J+	1.4 U	1.6 U	1.4 U	3.4 U
ETHYLBENZENE	1,633	ca	2.3	1.5 U	1.5 U	4.2	2.2	1.5 U	3.7 U
METHYL TERT-BUTYL ETHER	15,667	ca	1.2 U	1.2 U	1.2 U	1.2 U	1.5 U	1.2 U	3.1 U
METHYLENE CHLORIDE	86,667	nc	28.2	20.2 J	13 J	2.1 J	39.1	7.5	30.1
NAPHTHALENE	120	ca	1.8 U	4.7	4.2 J	3.8 J	4.1 J	157	19.3
TETRACHLOROETHENE	6,000	nc	3.3	169	159	1.2 U	1.4 U	1.2 U	15
TOLUENE	733,333	nc	12.2	3.6 J	5.5 J	1.3 U	3.7	1.3 U	13.6
1,2,4-TRICHLOROBENZENE	293	nc	2.5 U	6.3 U	6.3 U	6.3 U	7.6 U	6.3 U	6.4 U
1,1,1-TRICHLOROETHANE	733,333	nc	21.3	1.9 U	1.9 U	1.9 U	2.2 U	1.9 U	4.7 U
1,1,2-TRICHLOROETHANE	29	nc	0.92 U	0.92 U	0.92 U	0.92 U	1.1 U	0.92 U	2.3 U
TRICHLOROETHENE	293	nc	3.4	10700	8630	5.6	25.2	6.8	33.1
1,2,3-TRIMETHYLBENZENE	733	nc	3.4	0.34 U	0.34 U	0.34 U	0.4 U	0.71	0.84 U
1,2,4-TRIMETHYLBENZENE	1,033	nc	9.9	1.7 U	1.7 U	1.7 U	2 U	1.4 J	4.2 U
1,3,5-TRIMETHYLBENZENE	733	nc ⁽²⁾	4.4	1.7 U	1.7 U	1.7 U	2 U	1.7 U	4.2 U
VINYL CHLORIDE	933	ca	0.44 U	0.44 U	0.44 U	0.44 U	0.53 U	0.44 U	1.1 U
M+P-XYLENES	14,667	nc	9.2	1.8 J	2 J	18.1	11.6	5.1	3.3 J
O-XYLENE	14,667	nc	7.5	0.81 J	0.95 J	4.3	3.7	3.1	3.7 U
TOTAL XYLENES	14,667	nc	16.7	2.61	2.95	22.4	15.3	8.2	3.3

Notes: All sample concentrations are in micrograms per cubic meter (µg/m³)
TOTAL XYLENES values are calculated.

Shaded cells indicate a concentration greater than risk-based screening level

(1) Screening values derived in accordance with Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (November 2002). Screening values are equal to United States Environmental Protection Agency (USEPA) Industrial Air Screening Values divided by an attenuation factor of 0.03, and correspond to a target cancer risk level of 1.0E-05.

(2) Value is for 1,2,3-trimethylbenzene.

-- = not available

ca = screening value based on carcinogenic effects

J = estimated value

µg/m³ = micrograms per cubic meter

nc = screening value based on noncarcinogenic effects

U = nondetect

TABLE 3-14

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 1 OF 7

Analyte*	Co-Located SV Sample ID	Result (µg/m³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate	Additional
Benzene	SV-060-C-16	0.85		IAQ-060-C-16	0.81		
Carbon tetrachloride		1.1 U			1.1 U		
Chlorodifluoromethane		5.8 J			9.4		
Chloroform		3.1			1.7 U		
Dichlorodifluoromethane		2.8			2.4		
1,1-Dichloroethane		2.3			1.4 U		
1,2-Dichloroethane		0.69 U			0.71 U		
1,1-Dichloroethene		0.86 J			1.4 U		
cis -1,2-Dichloroethene		17			1 U		
trans -1,2-Dichloroethene		1.1 J			1.4 U		
Ethylbenzene		96.5			1.5 U		
Methyl tert-butyl ether		1.2 U			1.3 U		
Methylene chloride		10.7			8.1		
Naphthalene		4.4			3.6 J		
Tetrachloroethene		2.2			1.2 U		
Toluene		13.1			3.8		
1,2,4-Trichlorobenzene		2.5 U			6.6 U		
1,1,1-Trichloroethane		1.9 U			1.9 U		
1,1,2-Trichloroethane		0.92 U			0.96 U		
Trichloroethene		291			0.96 U		
1,2,3-Trimethylbenzene		0.91			0.35 U		
1,2,4-Trimethylbenzene		3.2			1.7 U		
1,3,5-Trimethylbenzene		2.2			1.7 U		
Vinyl chloride		0.44 U			0.45 U		
Xylenes, meta- + para-		561			2.5 J		
Xylene, ortho-		230			0.98 J		
Xylenes, total		791			3.48 J		
Benzene	SV-065-C-16	0.55 U		IAQ-065-C-16	0.64		
Carbon tetrachloride		1.1 U			1.1 U		
Chlorodifluoromethane		7.9			23.9		
Chloroform		2.7			1.7 U		
Dichlorodifluoromethane		7.3			2.3		
1,1-Dichloroethane		1.4 U			1.4 U		
1,2-Dichloroethane		0.69 U			0.69 U		
1,1-Dichloroethene		1.4 U			1.4 U		
cis -1,2-Dichloroethene		1 U			1 U		
trans -1,2-Dichloroethene		1.4 U			1.4 U		
Ethylbenzene		1.5 U			1.5 U		
Methyl tert-butyl ether		1.2 U			1.2 U		
Methylene chloride		16.9			5.8 J		
Naphthalene		6.9			5.1		
Tetrachloroethene		12.6			1.2 U		
Toluene		1.2 J			2.1		
1,2,4-Trichlorobenzene		2.5 U			6.3 U		
1,1,1-Trichloroethane		1.9 U			1.9 U		
1,1,2-Trichloroethane		0.92 U			0.92 U		
Trichloroethene		0.92 U			0.92 U		
1,2,3-Trimethylbenzene		0.95			0.34 U		
1,2,4-Trimethylbenzene		1.3 J			1.7 U		
1,3,5-Trimethylbenzene		1.7 U			1.7 U		
Vinyl chloride		0.44 U			0.44 U		
Xylenes, meta- + para-		1.1 J			3 U		
Xylene, ortho-		1.5 U			1.5 U		
Xylenes, total		1.1			0		

TABLE 3-14

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 7

Analyte*	Co-Located SV Sample ID	Result (µg/m³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate	Additional
Benzene	SV-088-C-16	1.2		IAQ-088-C-16	11.8 U		
Carbon tetrachloride		1.1 U			23.3 U		
Chlorodifluoromethane		3.2			7.3 U		
Chloroform		1.7 U			36 U		
Dichlorodifluoromethane		2.6			36.7 U		
1,1-Dichloroethane		1.4 U			29.8 U		
1,2-Dichloroethane		0.69 U			14.9 U		
1,1-Dichloroethene		1.4 U			29.5 U		
cis-1,2-Dichloroethene		18			30 U		
trans-1,2-Dichloroethene		1.4 U			29.5 U		
Ethylbenzene		2.2			32 UJ		
Methyl tert-butyl ether		1.2 U			26.5 U		
Methylene chloride		82.5			33.6 J		
Naphthalene		22.3			96.7 UJ		
Tetrachloroethene		1.2 U			25.1 U		
Toluene		1.3 U			28 U		
1,2,4-Trichlorobenzene		6.3 U			137 UJ		
1,1,1-Trichloroethane		1.9 U			40.4 U		
1,1,2-Trichloroethane		0.92 U			20 U		
Trichloroethene		70.6			20 U		
1,2,3-Trimethylbenzene		1.1			7.3 UJ		
1,2,4-Trimethylbenzene		1.8			36.3 UJ		
1,3,5-Trimethylbenzene		1.7 U			36.3 UJ		
Vinyl chloride		0.44 U			9.5 U		
Xylenes, meta- + para-		10			64 UJ		
Xylene, ortho-		4.7			32 UJ		
Xylenes, total		14.7			0		
Benzene	SV-102-C-16	7.5		IAQ-102-C-16	0.61 J		
Carbon tetrachloride		3.1			1.2 U		
Chlorodifluoromethane		3.3			1.8 J		
Chloroform		71.9			1.9 U		
Dichlorodifluoromethane		5.8			2.6		
1,1-Dichloroethane		6760			1.6 U		
1,2-Dichloroethane		0.69 U			0.8 U		
1,1-Dichloroethene		2530			1.6 U		
cis-1,2-Dichloroethene		67			2 U		
trans-1,2-Dichloroethene		3.9 J+			1.6 U		
Ethylbenzene		2140			1.7 U		
Methyl tert-butyl ether		1.2 U			1.4 U		
Methylene chloride		46.3			8.6		
Naphthalene		66			1.1 J		
Tetrachloroethene		2.2			1.3 U		
Toluene		128			3.2		
1,2,4-Trichlorobenzene		6.3 U			2.9 U		
1,1,1-Trichloroethane		2070			2.2 U		
1,1,2-Trichloroethane		0.92 U			1.1 U		
Trichloroethene		2740			1.1 U		
1,2,3-Trimethylbenzene		90.4			0.39 U		
1,2,4-Trimethylbenzene		89.1			1.9 U		
1,3,5-Trimethylbenzene		39.7			1.9 U		
Vinyl chloride		0.44 U			0.5 U		
Xylenes, meta- + para-		11500			1.9 J		
Xylene, ortho-		4040			1.7 U		
Xylenes, total		15540			1.9 J		

TABLE 3-14

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 3 OF 7

Analyte*	Co-Located SV Sample ID	Result (µg/m³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m³)	Duplicate	Additional
Benzene	SV-113-C-16	2.4	0.55 U	IAQ-113-C-16	1.9	0.89	
Carbon tetrachloride		1.1	1.1 U		3.4 U	1.1 U	
Chlorodifluoromethane		10.7 J	3.5 J		6.5 J	3.1 J	
Chloroform		1.7 U	1.8		5.3 U	1.7 U	
Dichlorodifluoromethane		3.8 J	2.2 J		4.7 J	2.1	
1,1,1-Dichloroethane		1.4 U	1.4 U		43.7	1.4 U	
1,2-Dichloroethane		0.69 U	0.69 U		2.2 U	0.69 U	
1,1-Dichloroethene		1.4 U	1.4 U		17.1	1.4 U	
cis-1,2-Dichloroethene		1 J	31.7 J		4 U	1.4 U	
trans-1,2-Dichloroethene		1.4 U	1.4 U		4.3 U	1.4 U	
Ethylbenzene		1.5 U	1.5 U		4.7 U	1.5 U	
Methyl tert-butyl ether		1.2 U	1.2 U		3.9 U	1.2 U	
Methylene chloride		557 J	12.5 J		79.7 J	5.1 J	
Naphthalene		4.5 U	3.7 J		14.1 U	3.2 J	
Tetrachloroethene		1.2 U	1.2 U		3.7 U	1.2 U	
Toluene		6.1 J	1.7 J		24.7	1.3 U	
1,2,4-Trichlorobenzene		6.3 U	6.3 U		20 UJ	6.3 U	
1,1,1-Trichloroethane		1.9 U	1.9 U		13.2	1.9 U	
1,1,2-Trichloroethane		0.92 U	0.92 U		2.9 U	0.92 U	
Trichloroethene		7 J	243 J		20	0.92 U	
1,2,3-Trimethylbenzene		0.34 U	0.34 U		1.1 U	0.34 U	
1,2,4-Trimethylbenzene		1.7 U	1.7 U		3.2 J	0.94 J	
1,3,5-Trimethylbenzene		1.7 U	1.7 U		5.3 U	1.7 U	
Vinyl chloride		0.44 U	0.44 U		1.4 U	0.44 U	
Xylenes, meta- + para-		2.4 J	1.5 J		76.6 J	3.4 J	
Xylene, ortho-		0.83 J	1.5 U		26.6 J	1.2 J	
Xylenes, total		3.23	1.5		103 J	4.6 J	
Benzene	SV-126-C-16	88.4		IAQ-126-C-16	0.79		
Carbon tetrachloride		1.1 U			1.1 U		
Chlorodifluoromethane		0.34 U			2		
Chloroform		0.84 J			1.7 U		
Dichlorodifluoromethane		1.5 J			2.3		
1,1,1-Dichloroethane		1.4 U			1.4 U		
1,2-Dichloroethane		0.69 U			0.71 U		
1,1-Dichloroethene		199			1.4 U		
cis-1,2-Dichloroethene		205			1 U		
trans-1,2-Dichloroethene		1.4 U			1.4 U		
Ethylbenzene		3			1.5 U		
Methyl tert-butyl ether		1.2 U			1.3 U		
Methylene chloride		9.2			14.6		
Naphthalene		70.6			3.4 J		
Tetrachloroethene		1.2 U			1.2 U		
Toluene		14.7			6		
1,2,4-Trichlorobenzene		6.3 U			6.6 U		
1,1,1-Trichloroethane		1.9 U			1.9 U		
1,1,2-Trichloroethane		0.92 U			0.96 U		
Trichloroethene		177			0.96 U		
1,2,3-Trimethylbenzene		1.4			0.35 U		
1,2,4-Trimethylbenzene		4.3			1.7 U		
1,3,5-Trimethylbenzene		1.1 J			1.7 U		
Vinyl chloride		11900			0.45 U		
Xylenes, meta- + para-		13.4			3.1 U		
Xylene, ortho-		5.7			1.5 U		
Xylenes, total		19.1			0		

TABLE 3-14

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 4 OF 7

Analyte*	Co-Located SV Sample ID	Result (µg/m ³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m ³)	Duplicate	Additional
Benzene	SV-128-C-16	3.6		IAQ-128-C-16	0.84		
Carbon tetrachloride		1.1 U			1.2 U		
Chlorodifluoromethane		6.1			23.2		
Chloroform		1.7 U			1.9 U		
Dichlorodifluoromethane		2.5			2.4		
1,1,1-Dichloroethane		1.4 U			1.5 U		
1,2-Dichloroethane		0.69 U			0.77 U		
1,1-Dichloroethene		1.4 U			1.5 U		
cis-1,2-Dichloroethene		7			2 U		
trans-1,2-Dichloroethene		1.4 U			1.5 U		
Ethylbenzene		2			1.6 U		
Methyl tert-butyl ether		1.2 U			1.4 U		
Methylene chloride		9.6			14.5		
Naphthalene		92.6			3.9 J		
Tetrachloroethene		1.6			1.3 U		
Toluene		5.8			4.3		
1,2,4-Trichlorobenzene		6.3 U			7 U		
1,1,1-Trichloroethane		1.9 U			2.1 U		
1,1,2-Trichloroethane		0.92 U			1 U		
Trichloroethene		2.1			1 U		
1,2,3-Trimethylbenzene		1.2			0.37 U		
1,2,4-Trimethylbenzene		2.8			1.9 U		
1,3,5-Trimethylbenzene		1.7 U			1.9 U		
Vinyl chloride		0.44 U			0.49 U		
Xylenes, meta- + para-		12.1			2.6 J		
Xylene, ortho-		3.6			1.1 J		
Xylenes, total		15.7			3.7 J		
Benzene	SV-130-C-16	4.1		IAQ-130-C-16	1.3		
Carbon tetrachloride		1.1 U			1.1 U		
Chlorodifluoromethane		1.7 J			4		
Chloroform		1.8			1.7 U		
Dichlorodifluoromethane		3.1			2.4		
1,1-Dichloroethane		1.3 J			1.4 U		
1,2-Dichloroethane		0.69 U			0.69 U		
1,1-Dichloroethene		2.9			1.4 U		
cis-1,2-Dichloroethene		1 U			1 U		
trans-1,2-Dichloroethene		1.4 U			1.4 U		
Ethylbenzene		2.3			1.5 U		
Methyl tert-butyl ether		1.2 U			1.2 U		
Methylene chloride		28.2			14.1		
Naphthalene		1.8 U			3.6 J		
Tetrachloroethene		3.3			1.2 U		
Toluene		12.2			3.5		
1,2,4-Trichlorobenzene		2.5 U			6.3 U		
1,1,1-Trichloroethane		21.3			1.9 U		
1,1,2-Trichloroethane		0.92 U			0.92 U		
Trichloroethene		3.4			0.92 U		
1,2,3-Trimethylbenzene		3.4			0.34 U		
1,2,4-Trimethylbenzene		9.9			1.7 U		
1,3,5-Trimethylbenzene		4.4			1.7 U		
Vinyl chloride		0.44 U			0.44 U		
Xylenes, meta- + para-		9.2			1.6 J		
Xylene, ortho-		7.5			1.5 U		
Xylenes, total		16.7			1.6 J		

TABLE 3-14

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 5 OF 7

Analyte*	Co-Located SV Sample ID	Result (µg/m ³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m ³)	Duplicate	Additional
Benzene	SV-133-C-16 and its duplicate	0.77	0.87	IAQ-133-C-16 and its duplicate; IA-113-C-16R ⁽¹⁾	0.93	0.83	0.52 U
Carbon tetrachloride		1.1 U	1.1 U		1.1 U	1.1 U	1 U
Chlorodifluoromethane		4.3	4.4		4.4	3.9	4
Chloroform		6.7	6.2		1.7 U	1.7 U	1.6 U
Dichlorodifluoromethane		3.2	3		2.4	2.3	2.5
1,1-Dichloroethane		1.4 U	1 U		1.4 U	1.4 U	1.3 U
1,2-Dichloroethane		0.92	0.82		0.69 U	0.69 U	0.66 U
1,1-Dichloroethene		1.4 U	1 U		1.4 U	1.4 U	1.3 U
cis-1,2-Dichloroethene		8	8.7		1 U	1.4 U	1.3 U
trans-1,2-Dichloroethene		3.6 J+	3.5 J+		1.4 U	1.4 U	1.3 U
Ethylbenzene		1.5 U	1.5 U		1.5 U	1.5 U	1.2 J
Methyl tert-butyl ether		1.2 U	1.2 U		1.2 U	1.2 U	1.2 U
Methylene chloride		20.2 J	13 J		8.4 J	1.9 J	3.1 J
Naphthalene		4.7	4.2 J		3.7 J	3.5 J	2.1 J
Tetrachloroethene		169	159		1.2 U	1.2 U	1.6
Toluene		3.6 J	5.5 J		2.9	2.4	5.1
1,2,4-Trichlorobenzene		6.3 U	6.3 U		6.3 U	6.3 U	6.1 U
1,1,1-Trichloroethane		1.9 U	1.9 U		1.9 U	1.9 U	1.8 U
1,1,2-Trichloroethane		0.92 U	0.92 U		0.92 U	0.92 U	0.89 U
Trichloroethene		10700	8630		1.2	1.4	0.89 U
1,2,3-Trimethylbenzene		0.34 U	0.34 U		0.34 U	0.34 U	1.6 U
1,2,4-Trimethylbenzene		1.7 U	1.7 U		1.7 U	1.7 U	1.6 U
1,3,5-Trimethylbenzene		1.7 U	1.7 U		1.7 U	1.7 U	4 U
Vinyl chloride		0.44 U	0.44 U		0.44 U	0.44 U	0.42 U
Xylenes, meta- + para-		1.8 J	2 J		2.1 J	1.9 J	2 J
Xylene, ortho-		0.81 J	0.95 J		0.84 J	1.5 U	0.9 J
Xylenes, total		2.61	2.95		2.94 J	1.9 J	2.9
Benzene	SV-135-C-16	0.33 J		IAQ-135-C-16	0.8		
Carbon tetrachloride		1.1 U			1.2 U		
Chlorodifluoromethane		2.1			2.1		
Chloroform		1.7 U			1.8 U		
Dichlorodifluoromethane		2.1			2.3		
1,1-Dichloroethane		1.4 U			1.5 U		
1,2-Dichloroethane		0.69 U			0.74 U		
1,1-Dichloroethene		1.4 U			1.5 U		
cis-1,2-Dichloroethene		1 U			2 U		
trans-1,2-Dichloroethene		1.4 U			1.5 U		
Ethylbenzene		4.2			1.6 U		
Methyl tert-butyl ether		1.2 U			1.3 U		
Methylene chloride		2.1 J			13.2		
Naphthalene		3.8 J			4.8 U		
Tetrachloroethene		1.2 U			1.2 U		
Toluene		1.3 U			1.4 U		
1,2,4-Trichlorobenzene		6.3 U			6.8 U		
1,1,1-Trichloroethane		1.9 U			2 U		
1,1,2-Trichloroethane		0.92 U			0.99 U		
Trichloroethene		5.6			0.99 U		
1,2,3-Trimethylbenzene		0.34 U			0.36 U		
1,2,4-Trimethylbenzene		1.7 U			1.8 U		
1,3,5-Trimethylbenzene		1.7 U			1.8 U		
Vinyl chloride		0.44 U			0.47 U		
Xylenes, meta- + para-		18.1			3.2 U		
Xylene, ortho-		4.3			1.6 U		
Xylenes, total		22.4			0		

TABLE 3-14

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 6 OF 7

Analyte*	Co-Located SV Sample ID	Result (µg/m ³)	Duplicate	Co-Located IAQ Sample ID	Result (µg/m ³)	Duplicate	Additional
Benzene	SV-141-C-16	0.88		IAQ-141-C-16	0.92		
Carbon tetrachloride		1.3 U			1.1 U		
Chlorodifluoromethane		2.6			7.1		
Chloroform		2 U			1.7 U		
Dichlorodifluoromethane		2.3			3		
1,1-Dichloroethane		1.7 U			1.4 U		
1,2-Dichloroethane		0.83 U			0.71 U		
1,1-Dichloroethene		1.7			1.4 U		
cis-1,2-Dichloroethene		2			1 U		
trans-1,2-Dichloroethene		1.6 U			1.4 U		
Ethylbenzene		2.2			1.5 U		
Methyl tert-butyl ether		1.5 U			1.3 U		
Methylene chloride		39.1			7.8		
Naphthalene		4.1 J			4.6 U		
Tetrachloroethene		1.4 U			1.2 U		
Toluene		3.7			2.1		
1,2,4-Trichlorobenzene		7.6 U			6.6 U		
1,1,1-Trichloroethane		2.2 U			1.9 U		
1,1,2-Trichloroethane		1.1 U			0.96 U		
Trichloroethene		25.2			0.96 U		
1,2,3-Trimethylbenzene		0.4 U			0.35 U		
1,2,4-Trimethylbenzene		2 U			1.7 U		
1,3,5-Trimethylbenzene		2 U			1.7 U		
Vinyl chloride		0.53 U			0.45 U		
Xylenes, meta- + para-		11.6			1.6 J		
Xylene, ortho-		3.7			1.5 U		
Xylenes, total		15.3			1.6 J		
Benzene	SV-142-C-16	0.55 U		IAQ-142-C-16	0.67		
Carbon tetrachloride		1.1 U			1.2 U		
Chlorodifluoromethane		1.4			1.9		
Chloroform		15			1.9 U		
Dichlorodifluoromethane		2.2			2		
1,1-Dichloroethane		1.4 U			1.5 U		
1,2-Dichloroethane		0.69 U			0.77 U		
1,1-Dichloroethene		1.4 U			1.5 U		
cis-1,2-Dichloroethene		1 U			2 U		
trans-1,2-Dichloroethene		1.4 U			1.5 U		
Ethylbenzene		1.5 U			1.6 U		
Methyl tert-butyl ether		1.2 U			1.4 U		
Methylene chloride		7.5			3.8 J		
Naphthalene		157			3.4 J		
Tetrachloroethene		1.2 U			1.3 U		
Toluene		1.3 U			1.4 U		
1,2,4-Trichlorobenzene		6.3 U			7 U		
1,1,1-Trichloroethane		1.9 U			2.1 U		
1,1,2-Trichloroethane		0.92 U			1 U		
Trichloroethene		6.8			1 U		
1,2,3-Trimethylbenzene		0.71			0.37 U		
1,2,4-Trimethylbenzene		1.4 J			1.9 U		
1,3,5-Trimethylbenzene		1.7 U			1.9 U		
Vinyl chloride		0.44 U			0.49 U		
Xylenes, meta- + para-		5.1			1.7 J		
Xylene, ortho-		3.1			1.6 U		
Xylenes, total		8.2			1.7 J		

TABLE 3-14

CO-LOCATED SUB-SLAB VAPOR AND INDOOR AIR QUALITY SAMPLING RESULTS, BUILDING C, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 7 OF 7

Analyte*	Co-Located SV Sample ID	Result ($\mu\text{g}/\text{m}^3$)	Duplicate	Co-Located IAQ Sample ID	Result ($\mu\text{g}/\text{m}^3$)	Duplicate	Additional
Benzene	SV-143-C-16	1.8		IAQ-143-C-16	0.81		
Carbon tetrachloride		133			1.2 U		
Chlorodifluoromethane		1.7 J			2.5		
Chloroform		194			1.8 U		
Dichlorodifluoromethane		2.6 J			2.4		
1,1-Dichloroethane		1.8 J			1.5 U		
1,2-Dichloroethane		1.7 U			0.74 U		
1,1-Dichloroethene		2.1 J			1.5 U		
cis-1,2-Dichloroethene		6			2 U		
trans-1,2-Dichloroethene		3.4 U			1.5 U		
Ethylbenzene		3.7 U			1.6 U		
Methyl tert-butyl ether		3.1 U			1.3 U		
Methylene chloride		30.1			6.1 J		
Naphthalene		19.3			4.4 J		
Tetrachloroethene		15			1.2 U		
Toluene		13.6			1.4 U		
1,2,4-Trichlorobenzene		6.4 U			6.8 U		
1,1,1-Trichloroethane		4.7 U			2 U		
1,1,2-Trichloroethane		2.3 U			0.99 U		
Trichloroethene		33.1			0.99 U		
1,2,3-Trimethylbenzene		0.84 U			0.36 U		
1,2,4-Trimethylbenzene		4.2 U			1.2 J		
1,3,5-Trimethylbenzene		4.2 U			1.8 U		
Vinyl chloride		1.1 U			0.47 U		
Xylenes, meta- + para-		3.3 J			3.2 U		
Xylene, ortho-		3.7 U			1.6 U		
Xylenes, total		3.3			0		

Notes: All concentrations are in micrograms per cubic meter air [$\mu\text{g}/\text{m}^3$]

Shaded cells indicate a concentration greater than the risk-based screening level.

***Bold font indicates co-located (IAQ and SV) detections within that sample.**

(1) Location AIR-113-C was resampled in April 2014 (IA-113-C-16R). The February 2014 trichloroethene concentration greater than screening criteria was not confirmed in this April 2014 resample.

IAQ = indoor air quality

SV = sub-slab vapor

J = estimated value

U = analyzed for but not detected

TABLE 3-15

**INDOOR AIR QUALITY SAMPLING RESULTS, VERTICAL-LAUNCH SYSTEM (VLS) BUILDING, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

LOCATION SAMPLE ID	OSHA PEL (µg/m ³)	Industrial Air Screening Level	KEY	AIR-146-VLS IA-146-VLS-2	AIR-147-VLS IA-147-VLS-2	AIR-147-VLS IA-147-VLS-2- DUP	AIR-148-VLS IA-148-VLS-2	AIR-149-VLS IA-149-VLS-2	AIR-150-VLS IA-150-VLS-2	AIR-151-VLS IA-151-VLS-2	AIR-152-VLS IA-152-VLS-2
SAMPLE DATE				20140226	20140226	20140226	20140226	20140226	20140226	20140226	20140226
Volatile Organic Compounds (µg/m³)											
BENZENE	319	16	ca	0.66	2.5 J	0.92 J	0.98	0.66	0.67	0.75	0.83
CARBON TETRACHLORIDE	62,900	20	ca	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	2.3	5	4.6	3.2	2	2.1	2.7	3.8
CHLOROFORM	240,000	5.3	ca	1.9 U	1.7 U	1.7 U	1.8 U	1.8 U	1.8 U	1.7 U	1.8 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	1.9	1.7 U	2.6	2.7	1.8	1.9	2.4	2.6
1,1-DICHLOROETHANE	400,000	77	ca	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.77 U	0.69 U	0.69 U	0.74 U	0.74 U	0.74 U	0.69 U	0.74 U
1,1-DICHLOROETHENE	--	880	nc	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U
ETHYLBENZENE	435,000	49	ca	9.8	12.1	14.7	17.9	10.5	12.8	1.5 U	1.6 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.4 U	1.2 U	1.2 U	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U
METHYLENE CHLORIDE	87,000	2,600	nc	6.8	483 J	11.7 J	21.9	11.7	11.8	7.3	19.3
NAPHTHALENE	50,000	3.6	ca	1.4 J	71 J	1.8 UJ	1.9 UJ	1.3 J	1.3 J	1.8 UJ	1.9 UJ
TETRACHLOROETHENE	678,000	180	nc	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
TOLUENE	754,000	22,000	nc	10	120 J	18.9 J	17.4	9.5	11.2	5	4.4
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	2.8 U	2.5 UJ	2.5 UJ	2.7 UJ	2.7 U	2.7 U	2.5 UJ	2.7 UJ
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	2.1 U	1.9 U	1.9 U	2 U	2 U	2 U	1.9 U	2 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	1 U	0.92 U	0.92 U	0.99 U	0.99 U	0.99 U	0.92 U	0.99 U
TRICHLOROETHENE	537,000	8.8	nc	1 U	0.92 U	0.92 U	0.99 U	0.99 U	0.99 U	0.92 U	0.99 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.3 J	1.6 J	1.8 U	1.4	1.4	1.7 U	1.8 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.6	4.1	4.9	2.9	2.5	2.7	1.7 U	1.8 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9 J	1.8	1.7 U	1.8 U	1.9	1.9	1.7 U	1.8 U
VINYL CHLORIDE	21,560	28	ca	0.49 U	0.44 U	0.44 U	0.47 U	0.47 U	0.47 U	0.44 U	0.47 U
M+P-XYLENES	434000	440	nc	26.1	31.9	38.5	47.9	27.4	32.2	3 U	3.2 U
O-XYLENE	434000	440	nc	6.8	8.5	10.3	12	7.3	8.8	1.5 U	1.6 U
TOTAL XYLENES	434000	440	nc	32.9	40.4	48.8	59.9	34.7	41	0	0

Shaded cells indicate a concentration greater than the risk-based screening level

TOTAL XYLENES values are calculated.

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites May-2014

(1) Value is for 1,2,3-trimethylbenzene.

-- = not available; not applicable

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

ca = screening value based on 1x 10⁻⁶ carcinogenic risk

J = estimated value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

nc = screening value based on noncarcinogenic hazard index = 1

ND - calculated value is nondetect.

OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit

U = not detected

USEPA = United States Environmental Protection Agency

TABLE 3-16

**INDOOR AIR QUALITY SAMPLING RESULTS, ENGINEERING RESEARCH (ER) BUILDING, FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

LOCATION SAMPLE ID SAMPLE DATE	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	AIR-001-ER IA-001-ER-1 20140226	AIR-002-ER IA-002-ER-1 20140226	AIR-003-ER IA-003-ER-1 20140226	IA-003-ER-1-D DUP 20140226
Volatile organic compounds (µg/m³)							
BENZENE	319	16	ca	0.83	1.1	0.89	1.3
CARBON TETRACHLORIDE	62,900	20	ca	1.5 U	1.2 U	1.1 U	1.1 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	4.8	4.3	4.5 J	12.9 J
CHLOROFORM	240,000	5.3	ca	2.3 U	1.8 U	1.7 U	1.7 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	2.5	2.5	2	2.9
1,1-DICHLOROETHANE	400,000	77	ca	1.9 U	1.5 U	1.4 U	1.4 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.94 U	0.74 U	0.69 U	0.69 U
1,1-DICHLOROETHENE	--	880	nc	1.9 U	1.5 U	1.4 U	1.4 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.9 U	1.5 U	1.4 U	1.4 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.9 U	19.9	17.4 J	70.1 J
ETHYLBENZENE	435,000	49	ca	2 U	5.2	5 J	17.1 J
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.7 U	1.3 U	1.2 U	1.2 U
METHYLENE CHLORIDE	87,000	2,600	nc	20.8	14.4	605 J	22.2 J
NAPHTHALENE	50,000	3.6	ca	2.5 UJ	1.9 UJ	1.1 J	1.8 UJ
TETRACHLOROETHENE	678,000	180	nc	1.6 U	1.2 U	1.2 U	1.2 U
TOLUENE	754,000	22,000	nc	2.7	14.8	14.6 J	44.7 J
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	3.5 UJ	2.7 UJ	2.5 U	2.5 UJ
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	2.5 U	2 U	1.9 U	1.9 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	1.3 U	0.99 U	0.92 U	0.92 U
TRICHLOROETHENE	537,000	8.8	nc	1.3 U	0.99 U	0.92 U	0.92 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	2.3 U	1.8 U	0.88	1.7 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.3 U	1.8 U	1.3 J	3
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽¹⁾	2.3 U	1.8 U	1.4 J	1.7 U
VINYL CHLORIDE	21,560	28	ca	0.6 U	0.47 U	0.44 U	0.44 U
M+P-XYLENES	434000	440	nc	4 U	25.7	21.5 J	81.5 J
O-XYLENE	434000	440	nc	2 U	8.9	7.8 J	29.5 J
TOTAL XYLENES	434000	440	nc	--	34.6	29.3	111 J

All concentrations are in micrograms per cubic meter air (µg/m³)

Shaded cells indicate a concentration greater than the risk -based screening level

TOTAL XYLENES values are calculated.

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites May-2014

(1) Value is for 1,2,3-trimethylbenzene.

-- = not available; not applicable

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

ca = screening value based on 1x 10⁻⁵ carcinogenic risk

J = estimated value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

nc = screening value based on noncarcinogenic hazard index = 1

ND - calculated value is nondetect.

OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit

U = not detected

USEPA = United States Environmental Protection Agency

TABLE 3-17

**INDOOR AIR QUALITY SAMPLING RESULTS, PROGRAM BUILDING (PB), FEBRUARY 2014
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND**

LOCATION				AIR-001-PB		AIR-002-PB
SAMPLE ID	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	IA-001-PB-1	IA-001-PB-1-D DUP	IA-002-PB-1
SAMPLE DATE				20140226	20140226	20140226
Volatile Organic Compounds (µg/m³)						
BENZENE	319	16	ca	0.86	0.8	0.65
CARBON TETRACHLORIDE	62,900	20	ca	1.1 U	1.1 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	2.8	2.6	11.5
CHLOROFORM	240,000	5.3	ca	1.7 U	1.7 U	1.8 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	2.2	2.2	2
1,1-DICHLOROETHANE	400,000	77	ca	1.4 U	1.4 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	0.69 U	0.69 U	0.74 U
1,1-DICHLOROETHENE	--	880	nc	1.4 U	1.4 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	1.4 U	1.4 U	1.5 U
ETHYLBENZENE	435,000	49	ca	1.6	1.5 U	1.2 J
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	1.2 U	1.2 U	1.3 U
METHYLENE CHLORIDE	87,000	2,600	nc	9.6	6.5	11.3
NAPHTHALENE	50,000	3.6	ca	1.2 J	1.8 U	1.3 J
TETRACHLOROETHENE	678,000	180	nc	1.2 U	1.2 U	1.2 U
TOLUENE	754,000	22,000	nc	1.4	1.4	3.9
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	2.5 U	2.5 U	2.7 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	1.9 U	1.9 U	2 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	0.92 U	0.92 U	0.99 U
TRICHLOROETHENE	537,000	8.8	nc	0.92 U	0.92 U	0.99 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	0.97	0.34 U	0.94
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	1.7	1.7 U	1.4 J
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽¹⁾	1.5 J	1.7 U	1.8 U
VINYL CHLORIDE	21,560	28	ca	0.44 U	0.44 U	0.47 U
M+P-XYLENES	434000	440	nc	2.9 J	1.5 J	1.5 J
O-XYLENE	434000	440	nc	0.95 J	1.5 U	1.6 U
TOTAL XYLENES	434000	440	nc	3.85 J	1.5 J	1.5 J

Shaded cells indicate a concentration greater than the risk -based screening level

-- = not available

J = estimated value

U = not detected

USEPA = United States Environmental Protection Agency

TOTAL XYLENES values are calculated.

ND - calculated value is nondetect.

ca = screening value based on 1×10^{-5} carcinogenic risk

nc = screening value based on noncarcinogenic hazard index = 1

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites May-2014

(1) Value is for 1,2,3-trimethylbenzene.

TABLE 3-18

**ANALYTE CONCENTRATIONS IN BACKGROUND AIR SAMPLES
COMPARED TO INDOOR AIR SAMPLES - FEBRUARY 2014
LOCKHEED MARTIN CORPORATION MIDDLE RIVER COMPLEX
MIDDLE RIVER, MARYLAND**

Analyte	Maximum Background Concentration	Maximum Sample Concentration	Number of Samples with Detects	Number of Samples < Background	Number of Samples = Background	Number of Samples > Background
Benzene	2.7	15.9	50	52	0	2
Chlorodifluoromethane	10.8	54.2	53	38	0	16
Dichlorodifluoromethane	3.4	4.8	53	52	0	2
Ethylbenzene	2.6	164	26	36	5	13
Methylene chloride	580	1140	54	52	0	2
Naphthalene	3.5	71	43	37	0	17
Tetrachloroethene	1.9	1.6	2	54	0	0
Toluene	24	20000	50	40	0	14
Trichloroethene	4.2	20	13	49	0	5
1,2,3-Trimethylbenzene	1.4	3.6	8	52	0	2
1,2,4-Trimethylbenzene	2.8	11.7	18	47	0	7
1,3,5-Trimethylbenzene	1.7	4.9	9	49	0	5
Xylenes, total	8.1	1240	42	39	0	15

$\mu\text{g}/\text{m}^3$ - micrograms per cubic meter

Note: Locations AIR-081-A and AIR-113-C were resampled in April 2014 (IA-081-A-16R and IA-113-C-16R). The February 2014 trichloroethene exceedances were not confirmed in the April 2014 resamples.



Figure 3-2
Indoor Air and Sub-Slab Vapor Monitoring Locations
for Building A, Round 16, February 2014

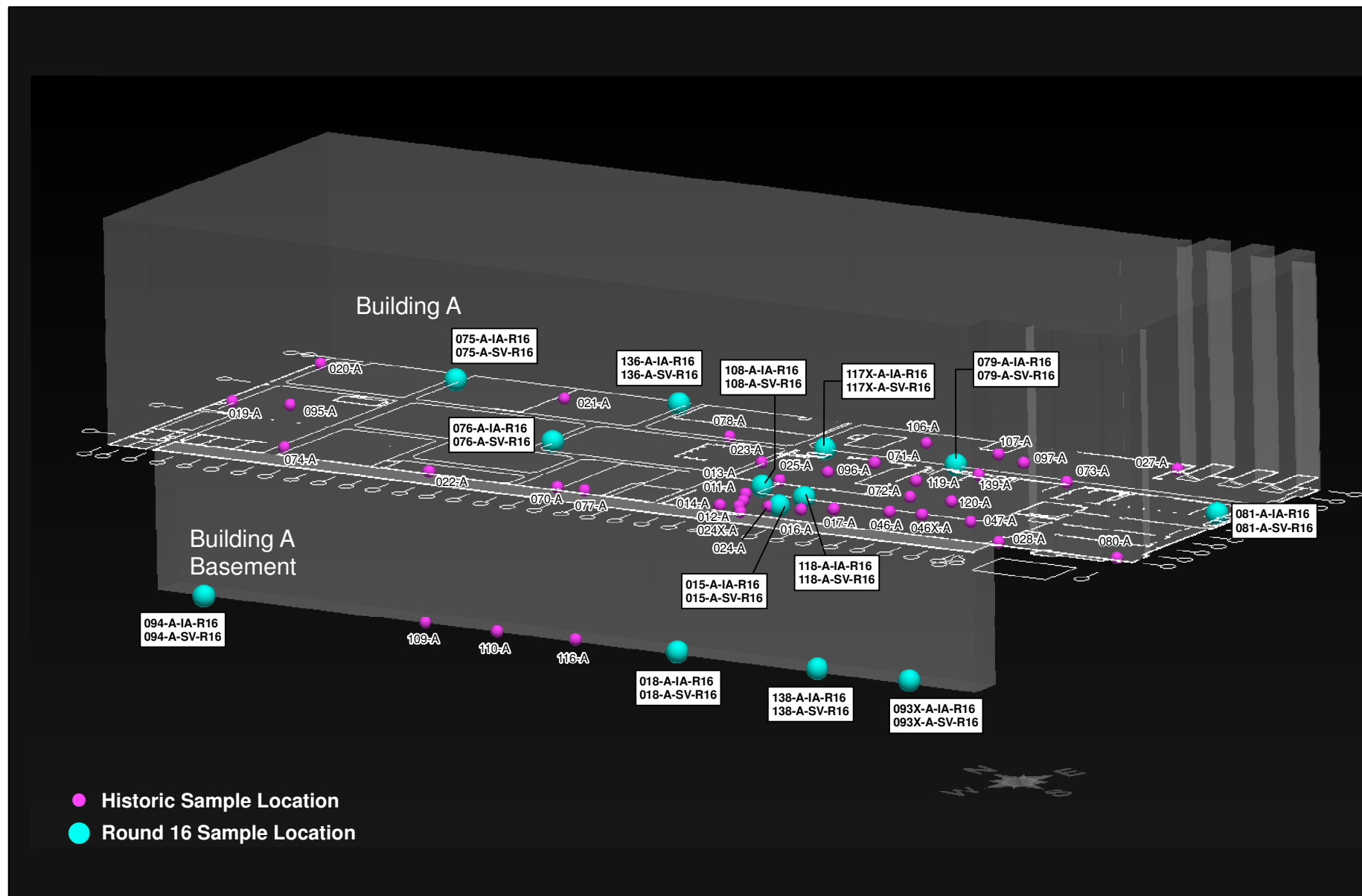


Figure 3-3
Indoor Air and Sub-Slab Vapor Monitoring Locations
for Building B, Round 16, February 2014

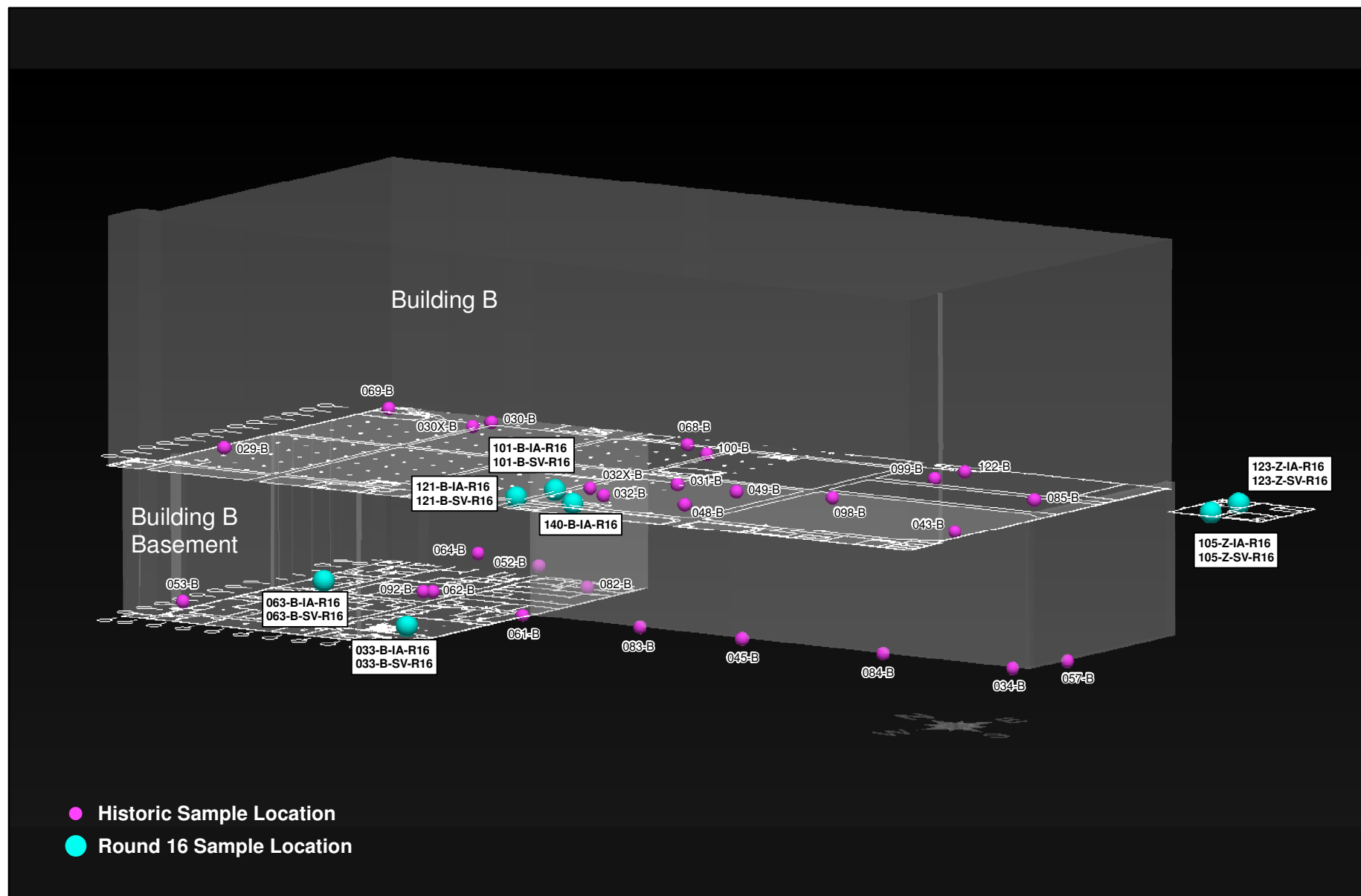
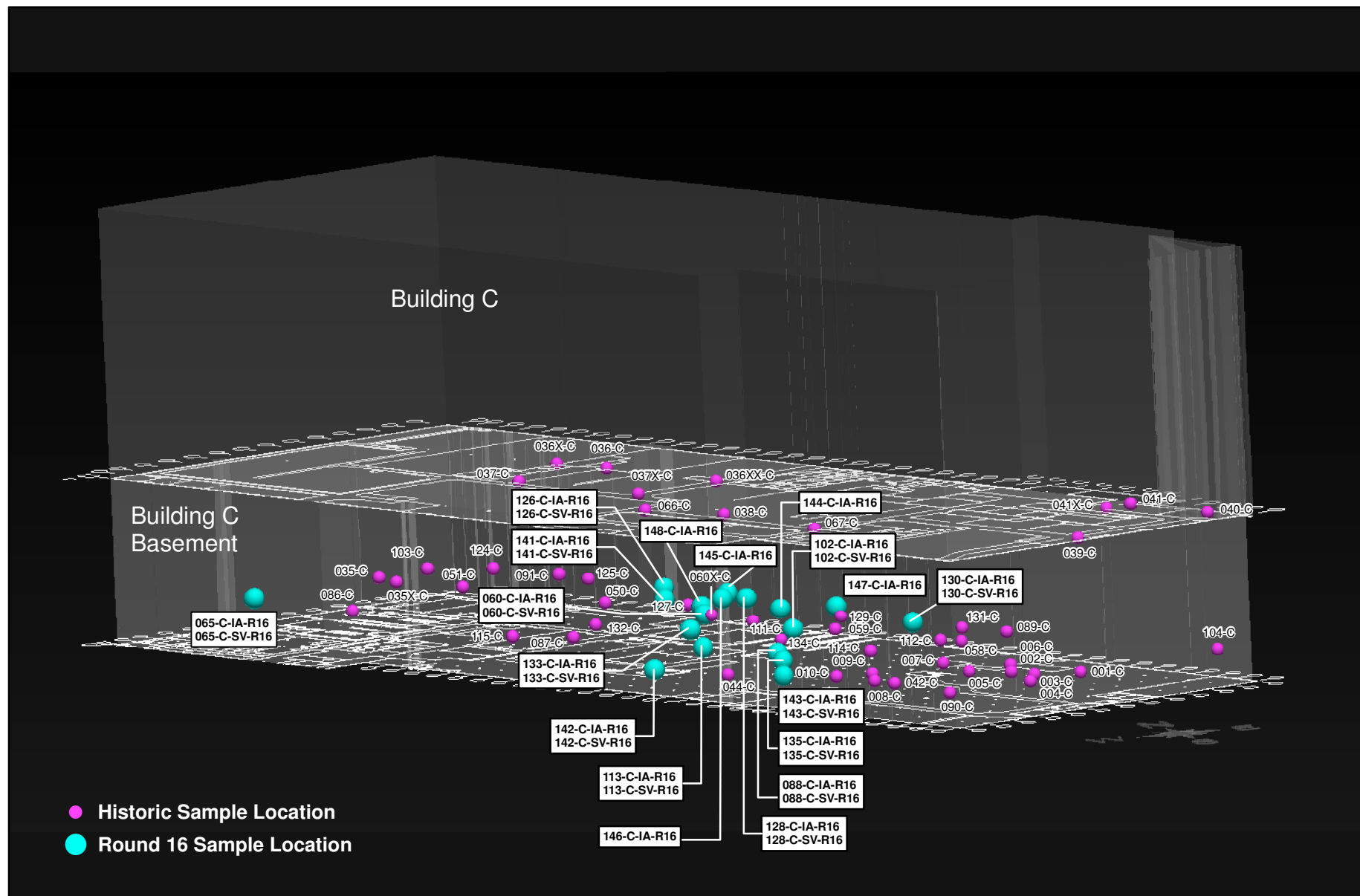


Figure 3-4
Indoor Air and Sub-Slab Vapor Monitoring Locations
for Building C, Round 16, February 2014





Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

FIGURE 3-5

**SAMPLE LOCATIONS
ER, PB AND VLS BUILDINGS**

LEGEND

- ▲ IAQ, 1st Floor
- ▲ IAQ, Basement

***Lockheed Martin Middle River Complex
Middle River, Maryland***

0 60 120 Feet

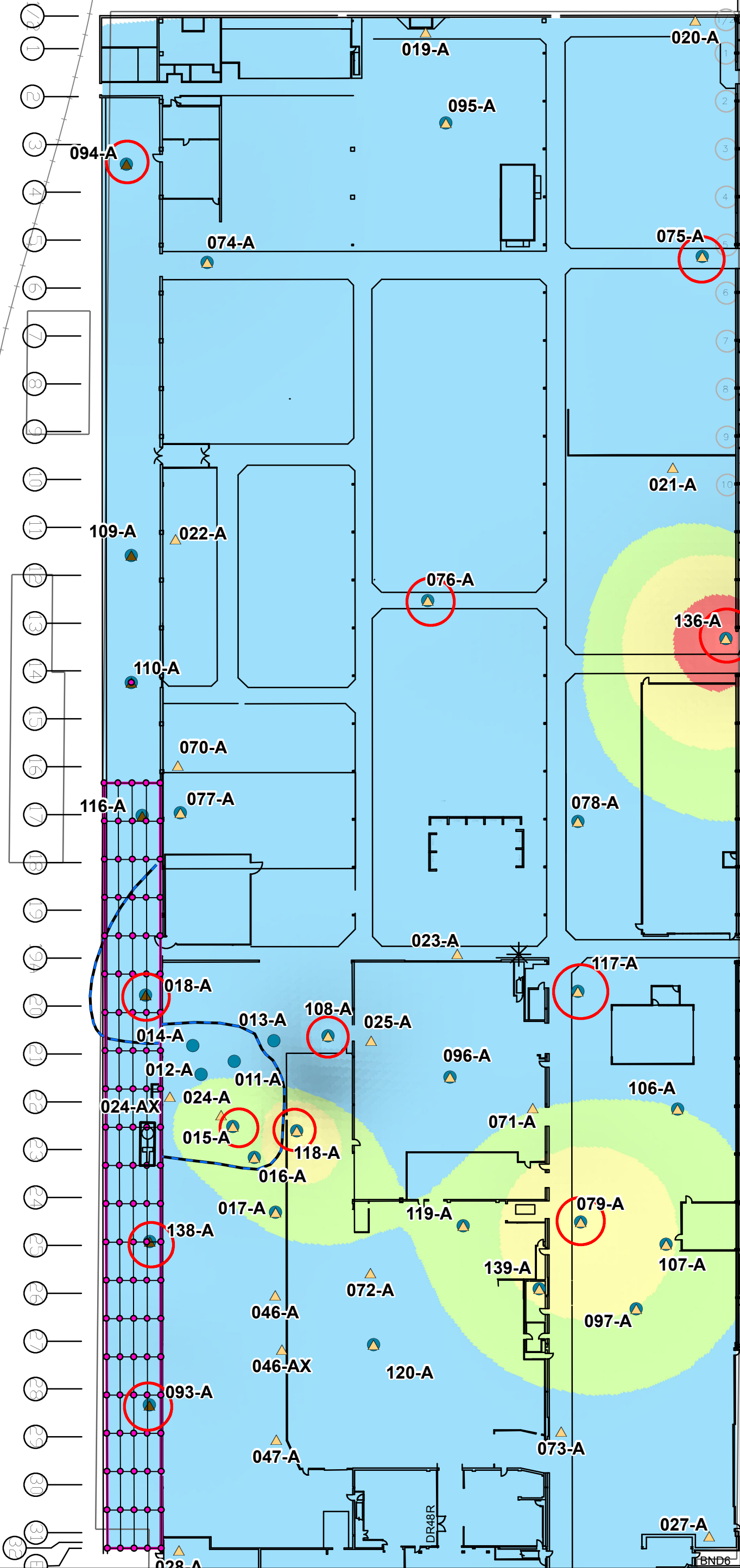


DATE MODIFIED: 06/17/14

CREATED BY: JEE



FIGURE 3-6
PORTABLE GC/MS GRID
SAMPLE LOCATIONS FOR
BUILDING A BASEMENT
ROUND 16
FEBRUARY 2014



Legend

- Portable GC/MS Sample Location
- SSD Radius of Influence
- IAQ, Basement
- IAQ, 1st Floor
- SV
- Buildings A, B, and C
- Building B and C Basement
- SSD Treatment Unit
- Proposed Round 16 Sample Locations
- X - moved from original location once

February 2014 Sub-Slab Vapor TCE Concentration

10000 ug/m3
1000 ug/m3
293 ug/m3
0.1 ug/m3

0 27.5 55 Feet

Lockheed Martin Middle River Complex
Middle River, Maryland

DATE MODIFIED: 08/08/14
CREATED BY: MP

Tt TETRA TECH

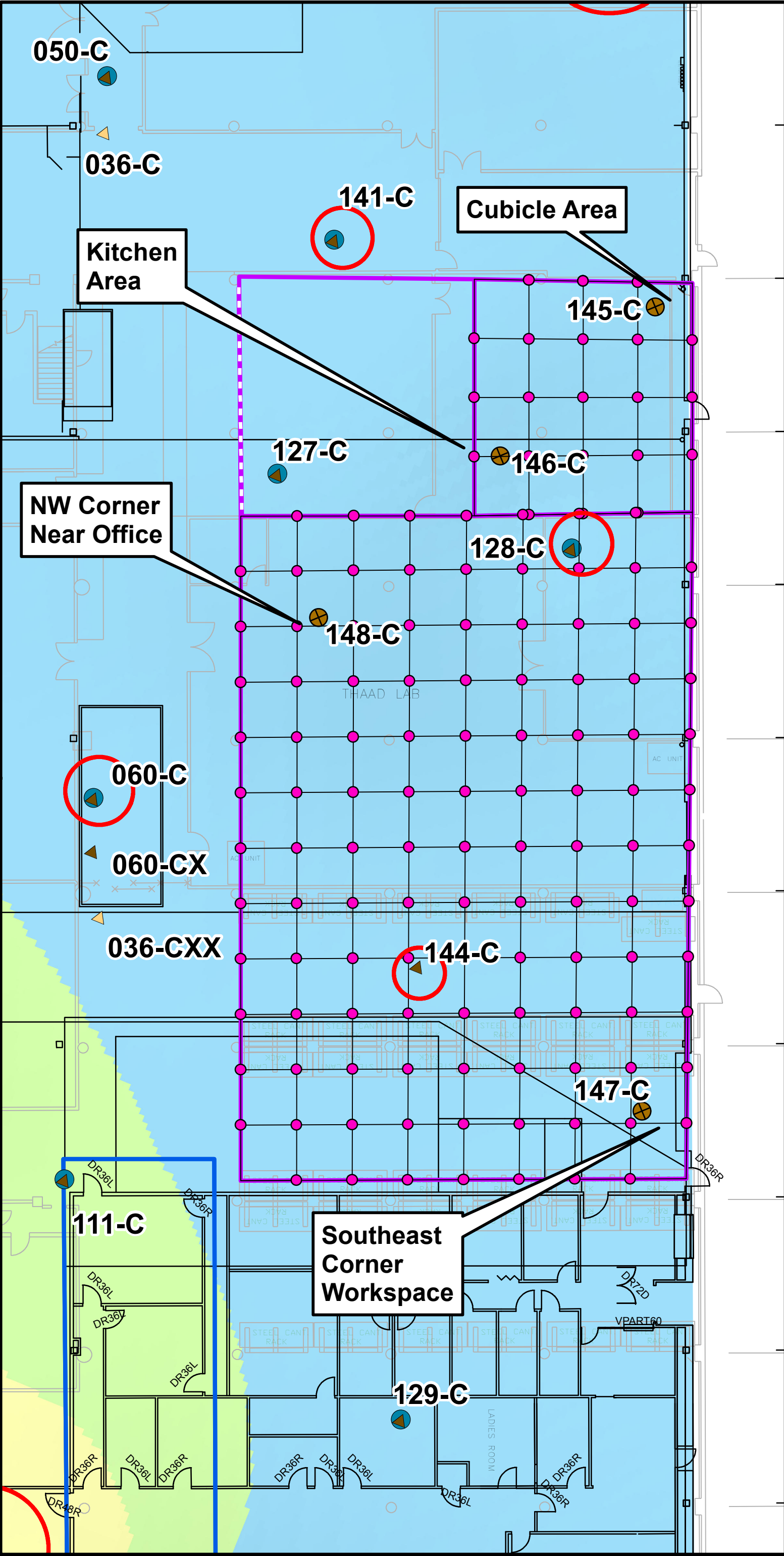


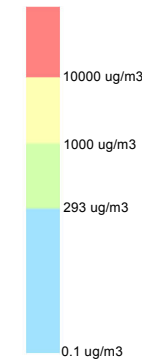
FIGURE 3-7

PORTABLE GC/MS GRID
SAMPLE LOCATIONS FOR
BUILDING C MACHINE SHOP
ROUND 16
FEBRUARY 2014

Legend

- Additional IAQ Basement Sample
- IAQ, Basement
- IAQ, 1st Floor
- SV
- Portable GC/MS Sample Location
- Former Patriot Plating Line
- Tunnel
- Buildings A, B, and C
- Building B and C Basement
- SSD Radius of Influence
- MST MPL Machine Shop and Offices
- Storage Cage
- SSD Treatment Unit
- Proposed Round 16 Sample Locations
- X - moved from original location once
- XX - moved from original location twice

February 2014 Sub-Slab Vapor
TCE Concentration



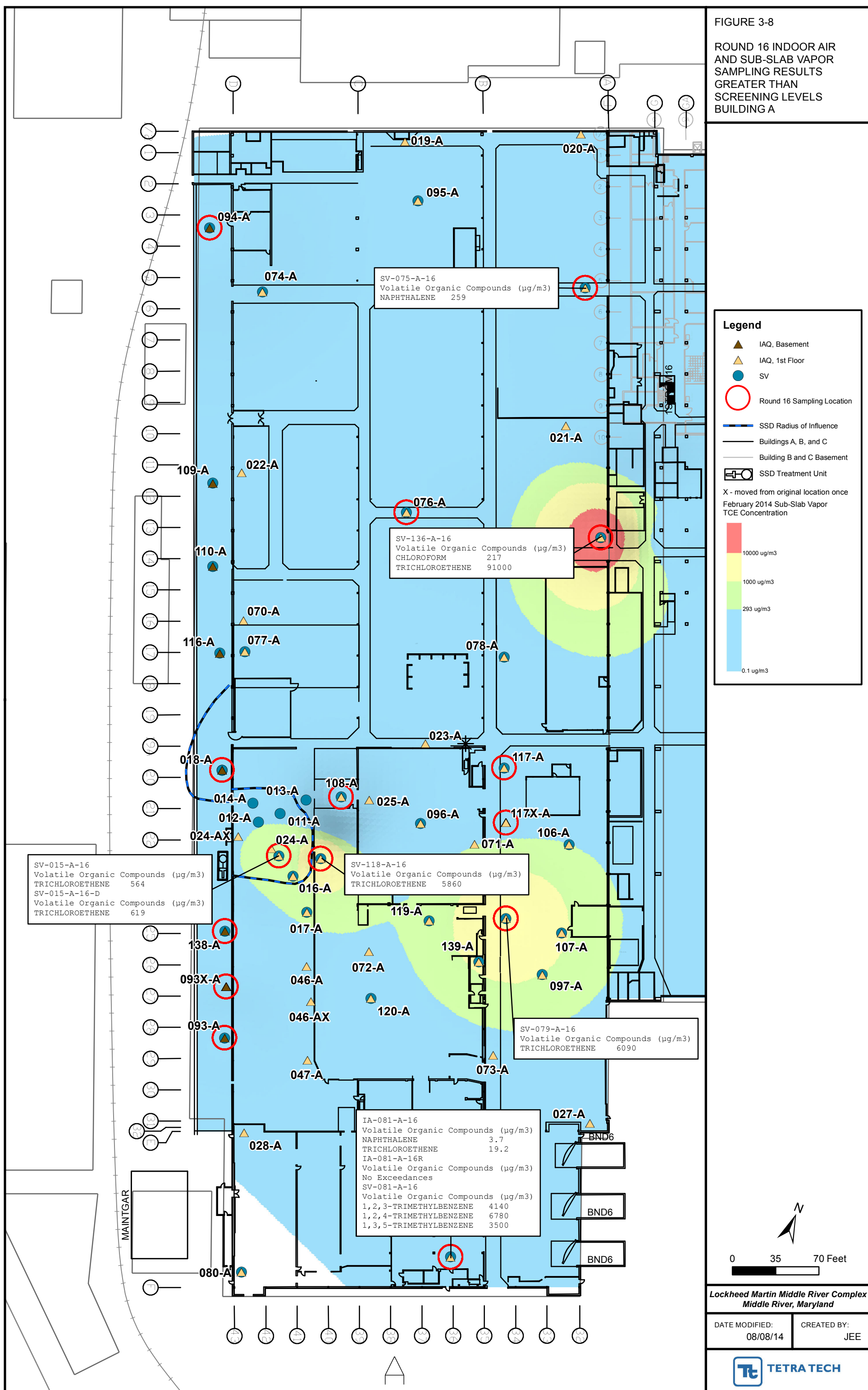
0 8 16 Feet

Lockheed Martin Middle River Complex
Middle River, Maryland

DATE MODIFIED:
08/08/14

CREATED BY:
MP





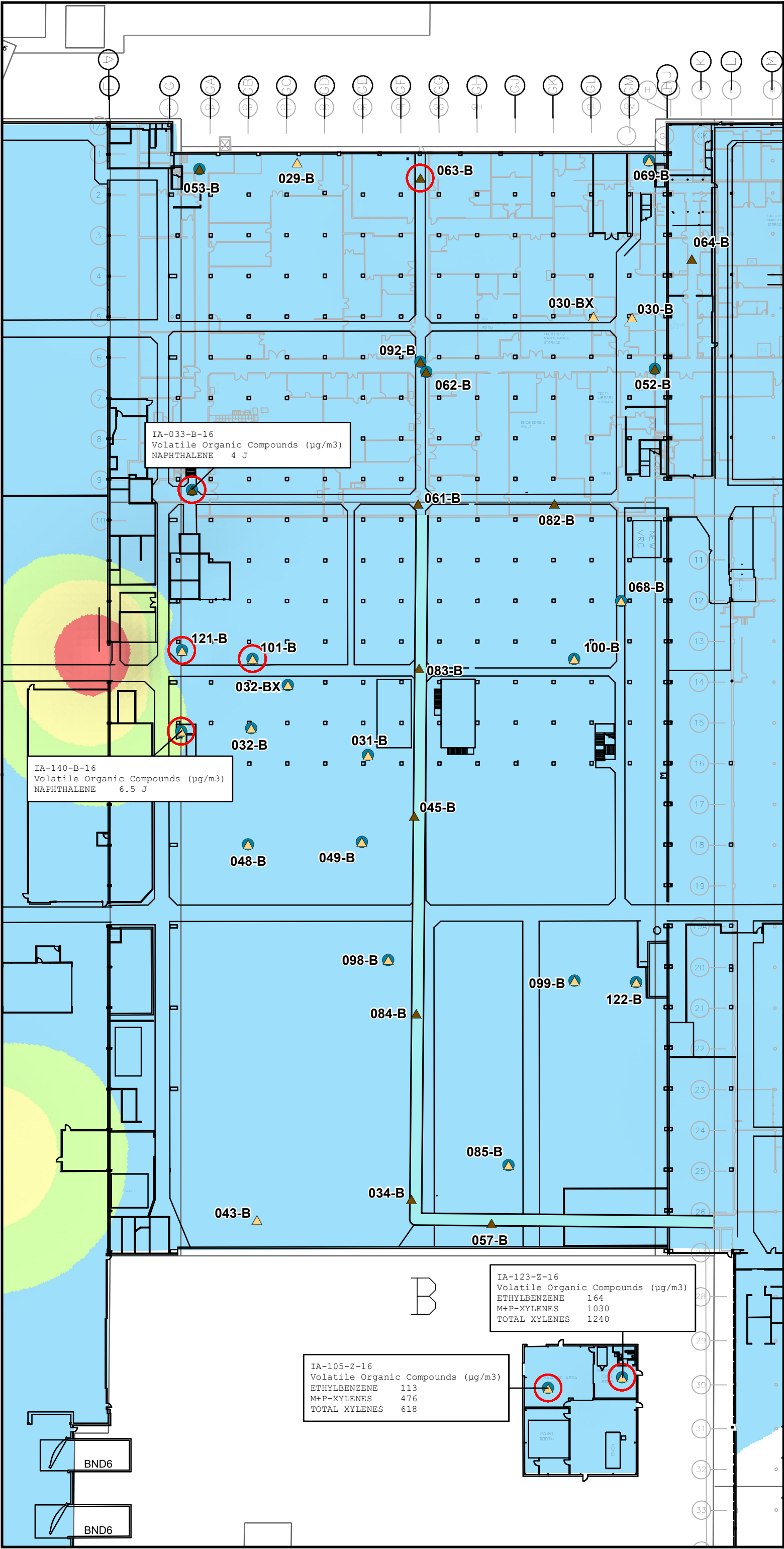


FIGURE 3-9
ROUND 16 INDOOR AIR
AND SUB-SLAB VAPOR
SAMPLING RESULTS
GREATER THAN
SCREENING LEVELS
BUILDING B

Legend

IAQ, Basement

IAQ, 1st Floor

SV

Round 16 Sampling Location

Tunnel

Buildings A, B, and C

Building B and C Basement

SSD Treatment Unit

X - moved from original location once
February 2014 Sub-Slab Vapor
TCE Concentration

10000 ug/m3

1000 ug/m3

293 ug/m3

0.1 ug/m3

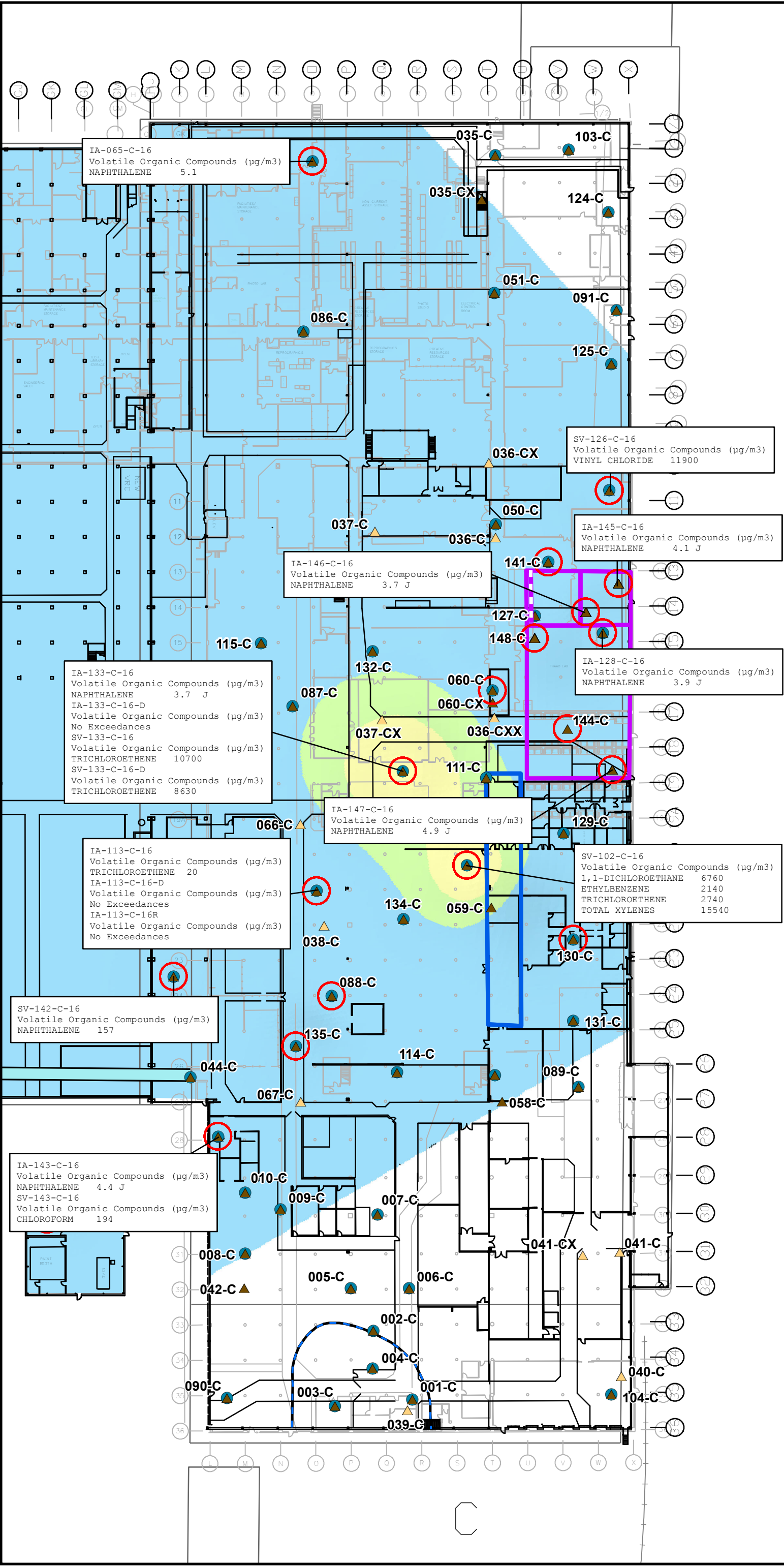


FIGURE 3-10

ROUND 16 INDOOR AIR
AND SUB-SLAB VAPOR
SAMPLING RESULTS
GREATER THAN
SCREENING LEVELS
BUILDING C

Legend

- IAQ, Basement
- IAQ, 1st Floor
- SV
- Round 16 Sampling Location
- SSD Radius of Influence
- Tunnel
- Building B and C Basement
- Former Plating Lines
- MST MPL Offices; MST MPL Machine Shop; Storage Cage
- Storage Cage
- SSD Treatment Unit
- X - moved from original location once February 2014 Sub-Slab Vapor TCE Concentration
- 10000 ug/m3
- 1000 ug/m3
- 293 ug/m3
- 0.1 ug/m3



0 35 70 Feet

Lockheed Martin Middle River Complex
Middle River, Maryland

DATE MODIFIED:
08/08/14

CREATED BY:
JEE





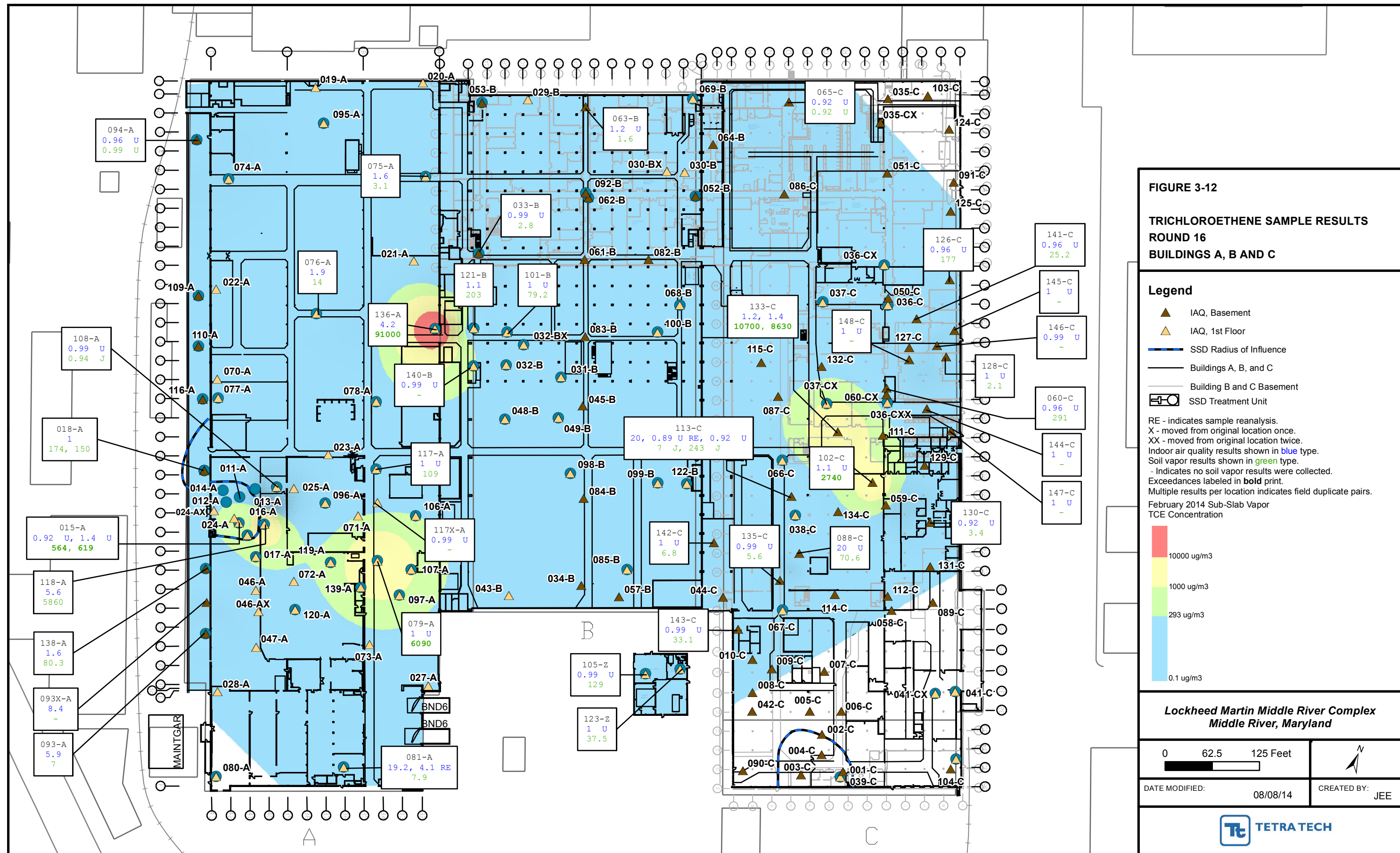


Figure 3-13A
Concentrations of Select Chemicals from Round 16 -
Building A - Soil Vapor

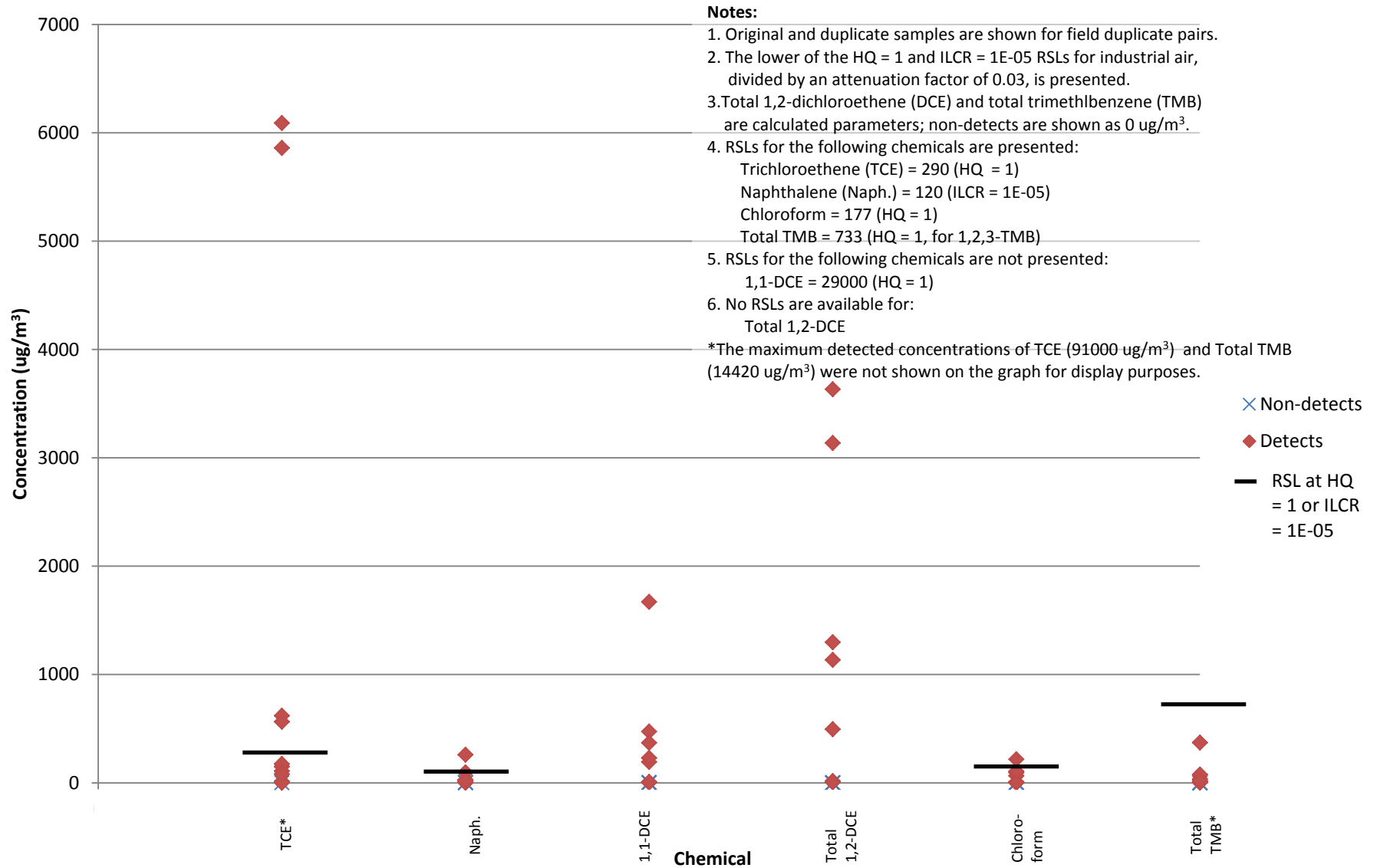


Figure 3-13B
Concentrations of Select Chemicals from Round 16 - Building A -
Indoor Air - Basement

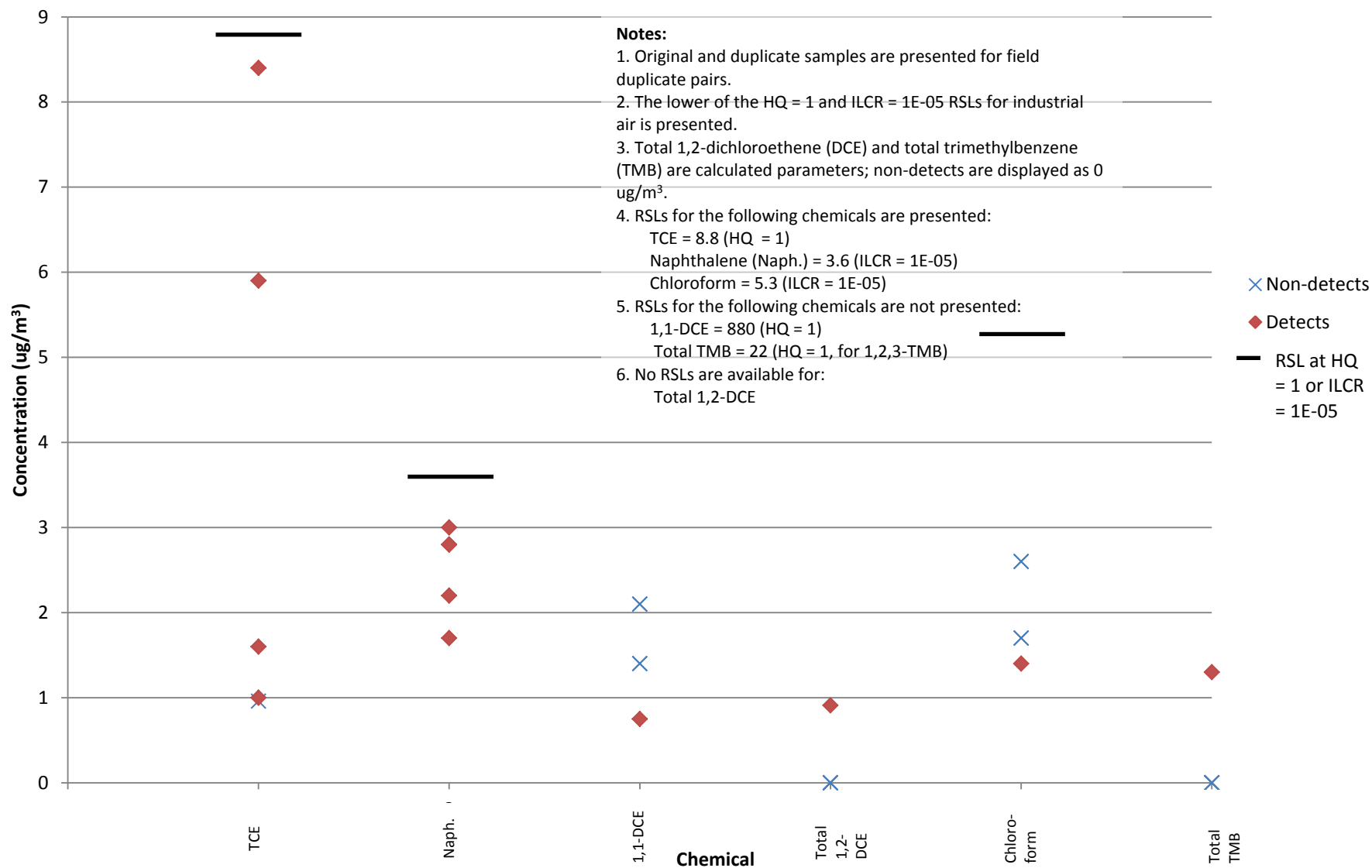


Figure 3-13C
Concentrations of Select Chemicals from Round 16 - Building A -
Indoor Air - First Floor

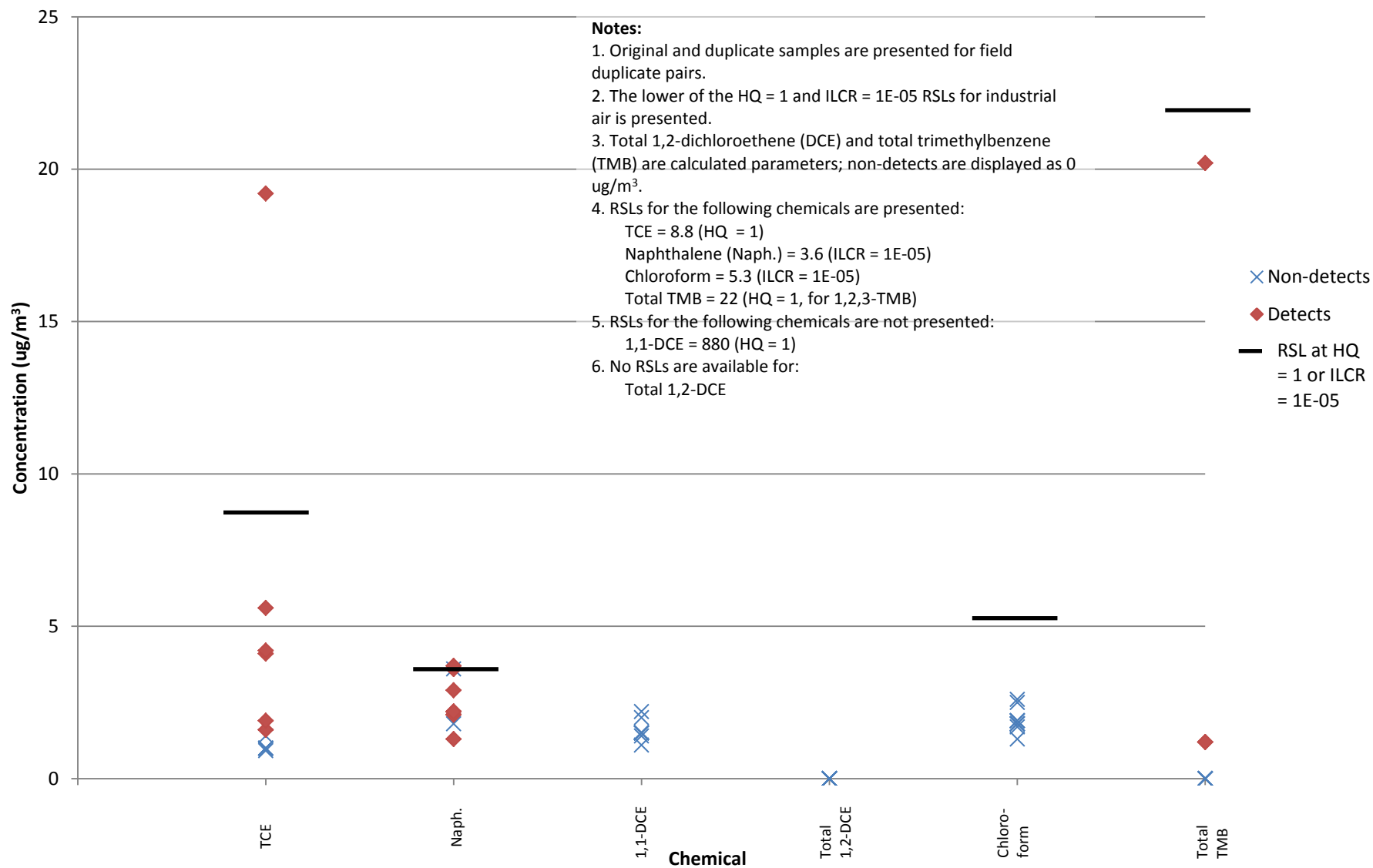


Figure 3-14A
Building A Historical Maximum IAQ
TCE Concentrations

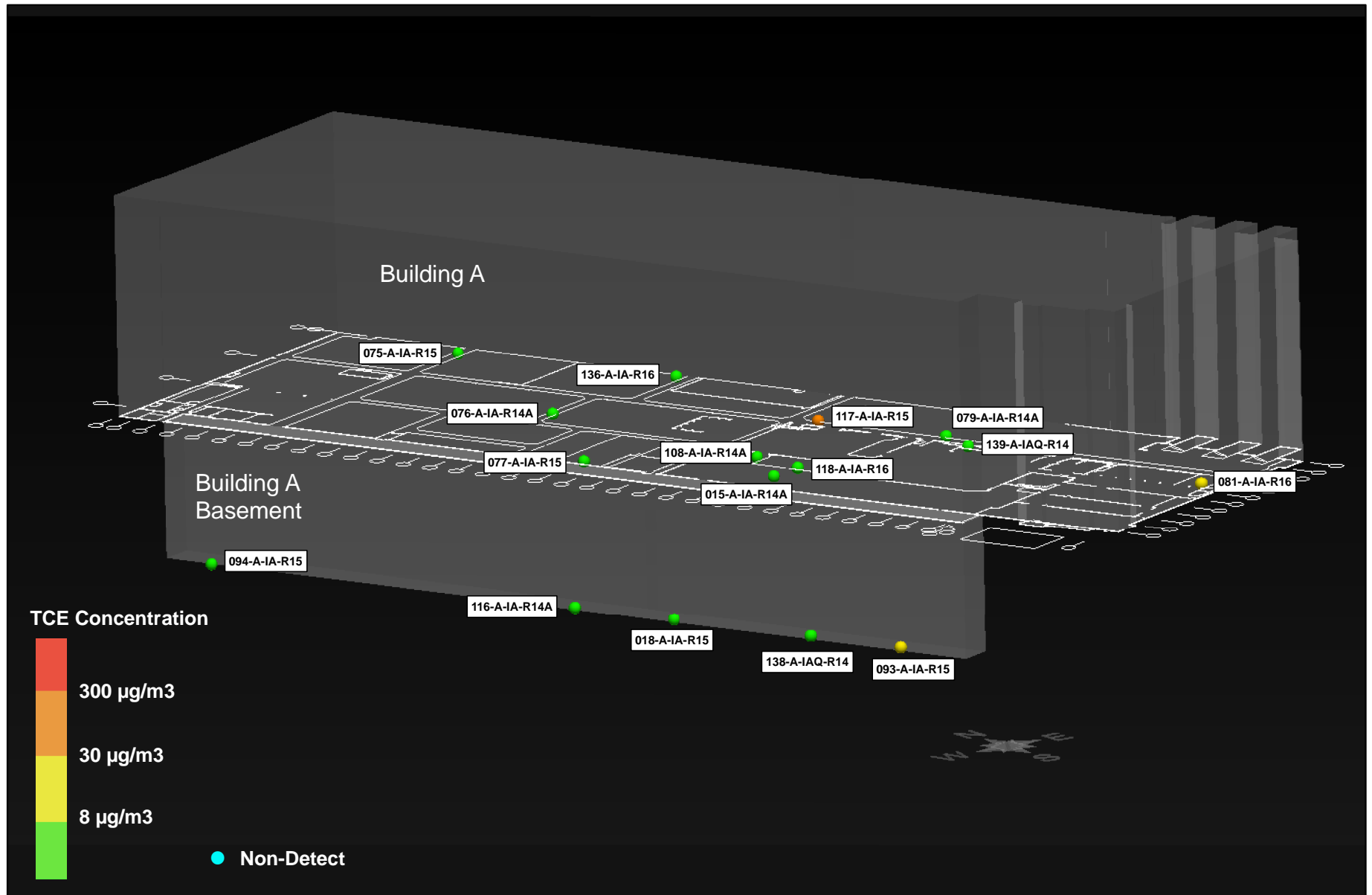


Figure 3-14B
Building A Historical Maximum SV
TCE Concentrations

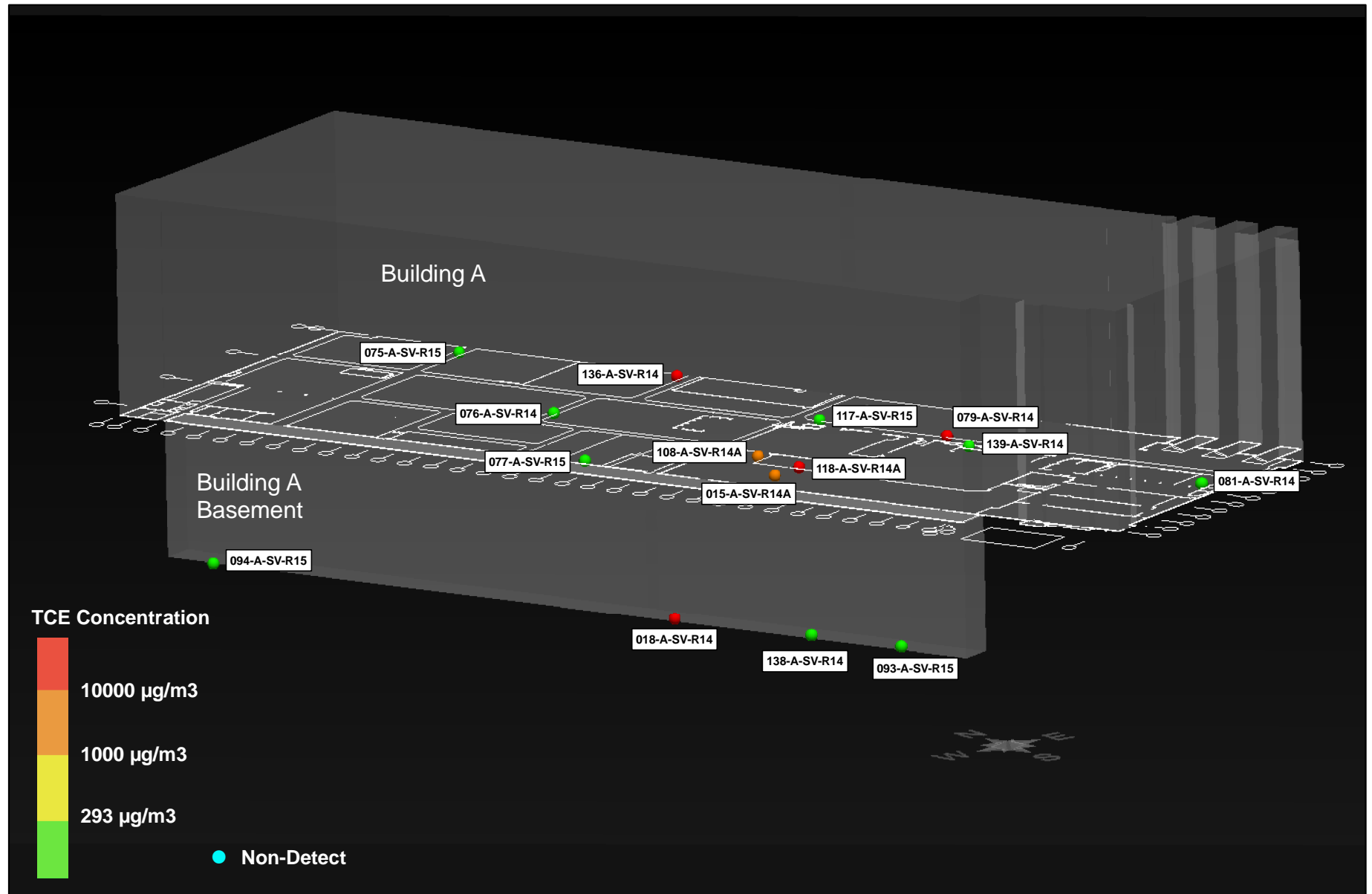


Figure 3-14C
TCE Results Indoor Air Monitoring Locations
for Building A, Round 16, February 2014

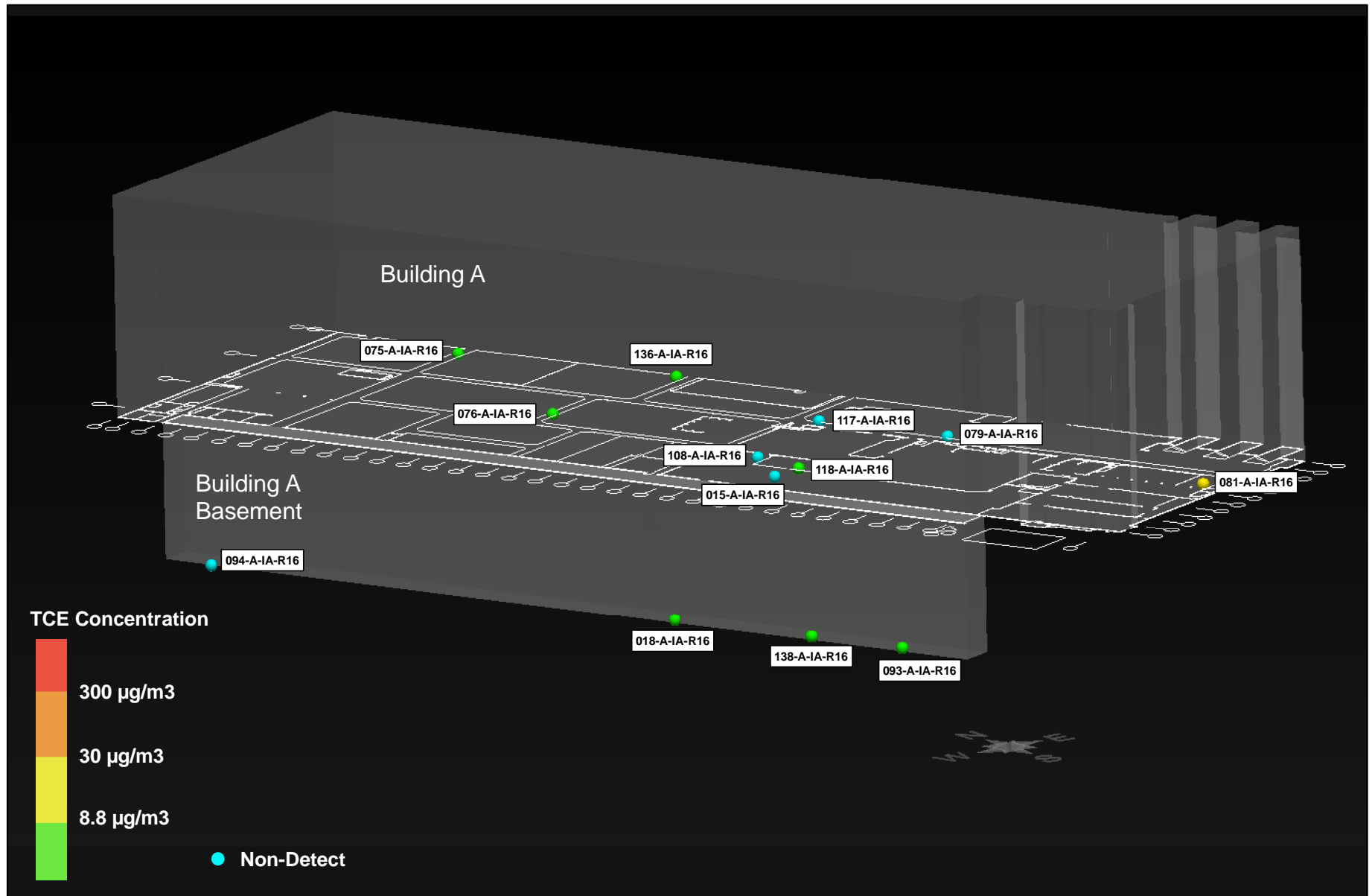


Figure 3-14D
TCE Results Sub-Slab Vapor Monitoring Locations
for Building A, Round 16, February 2014



Figure 3-15A
Concentrations of Select Chemicals from Round 16 -
Building B - Soil Vapor

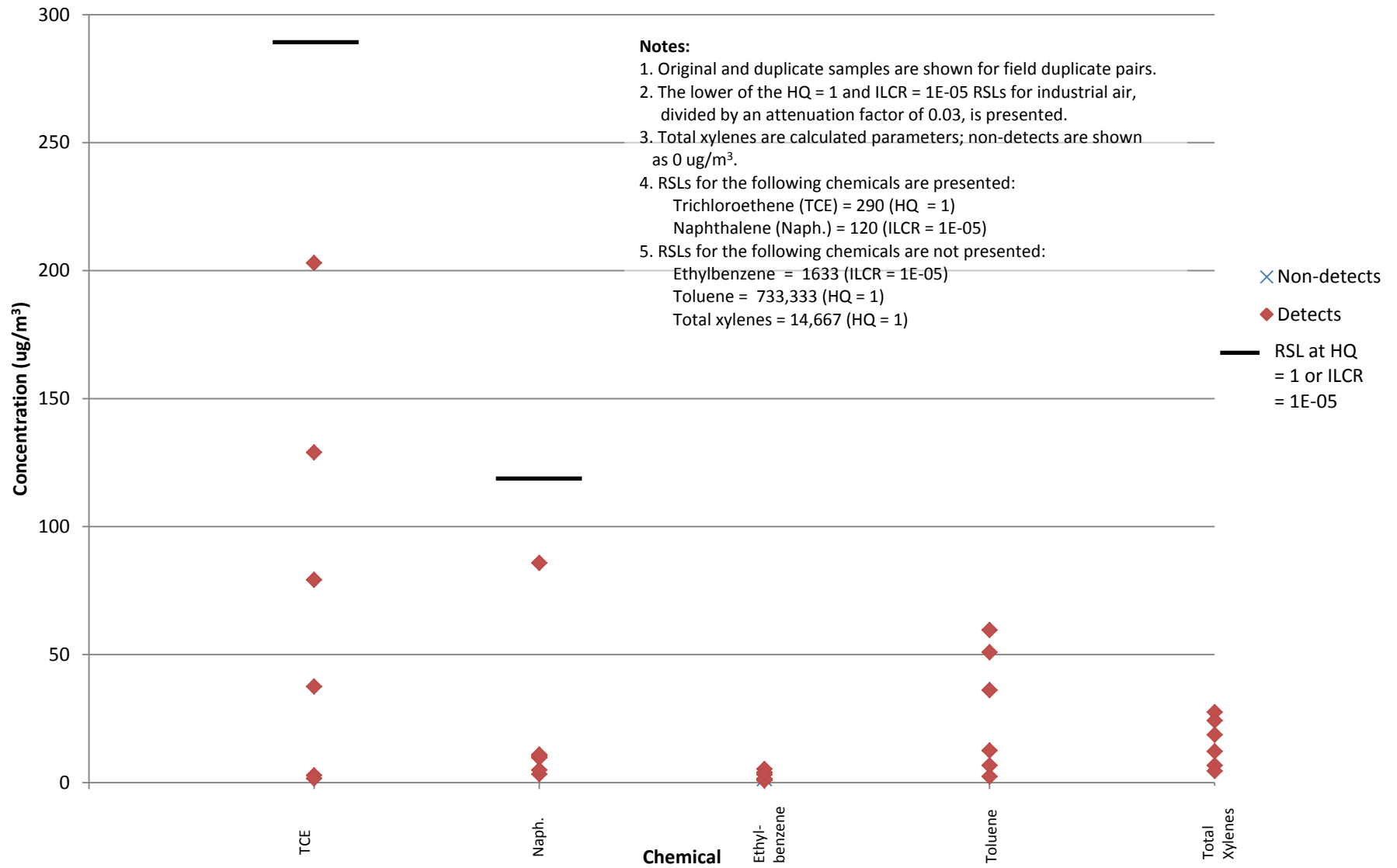


Figure 3-15B
Concentrations of Select Chemicals from Round 16 - Building B -
Indoor Air - Basement

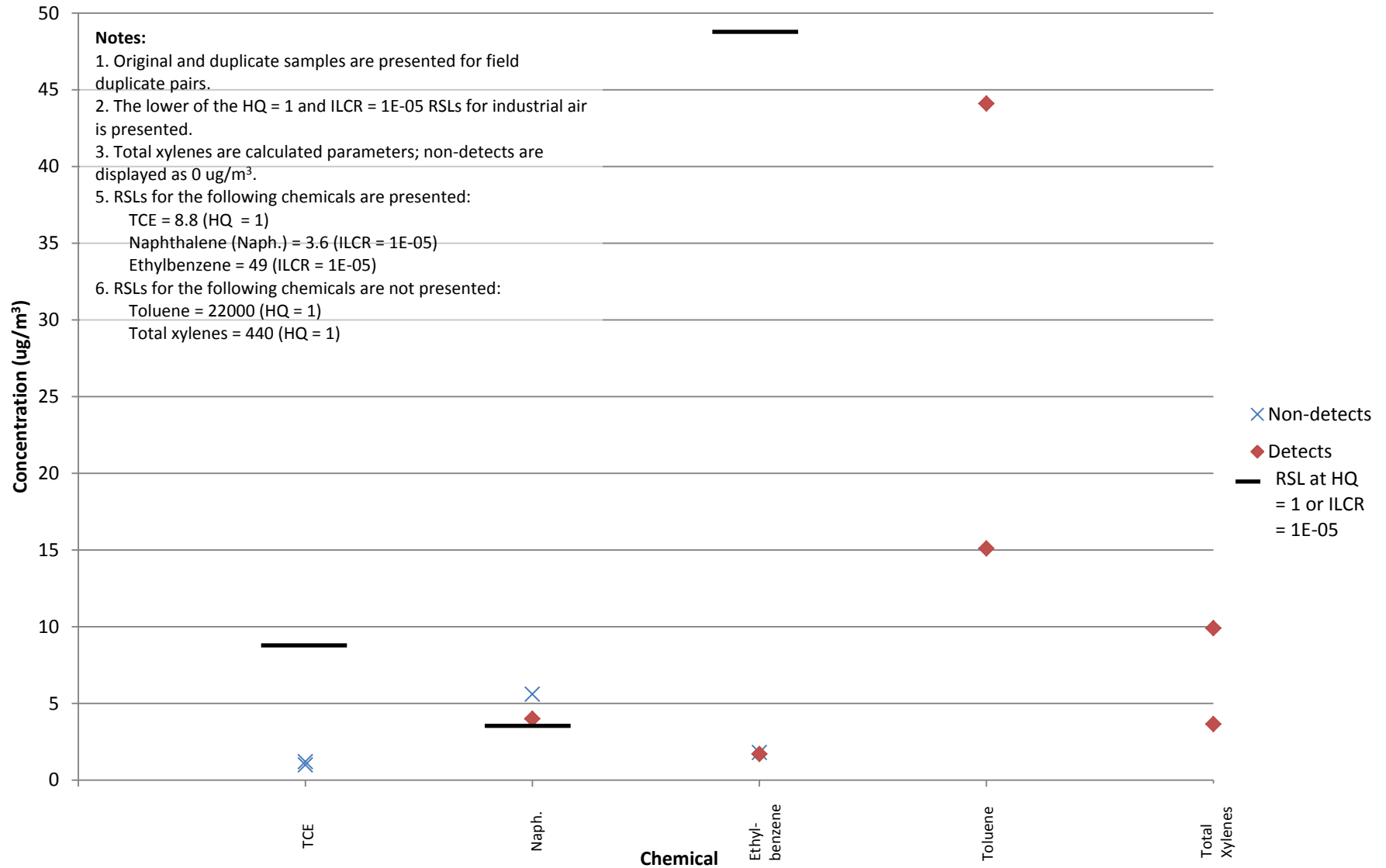


Figure 3-15C
Concentrations of Select Chemicals from Round 16 - Building B -
Indoor Air - First Floor

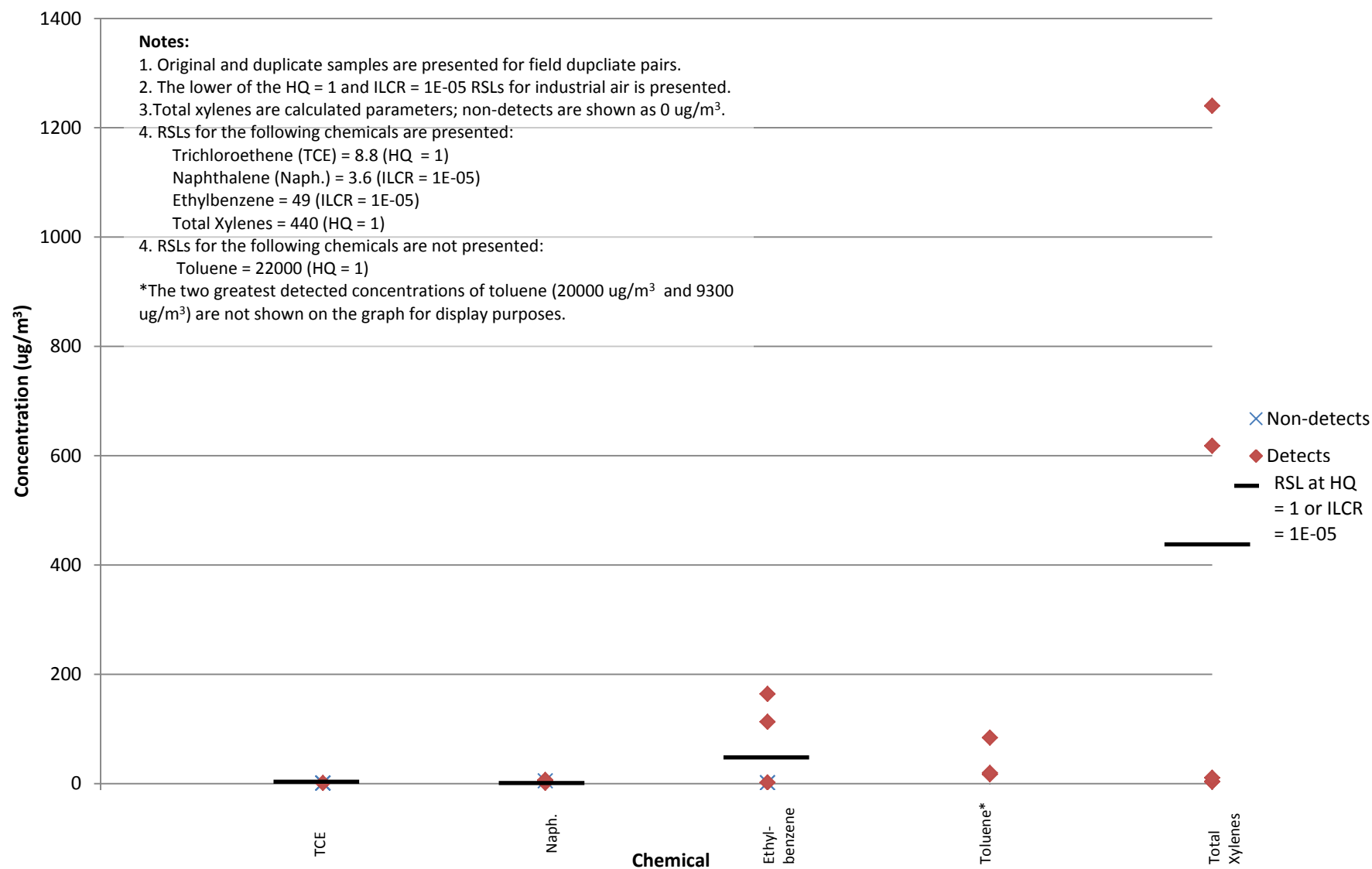


Figure 3-16A
Building B Historical Maximum IAQ
TCE Concentrations

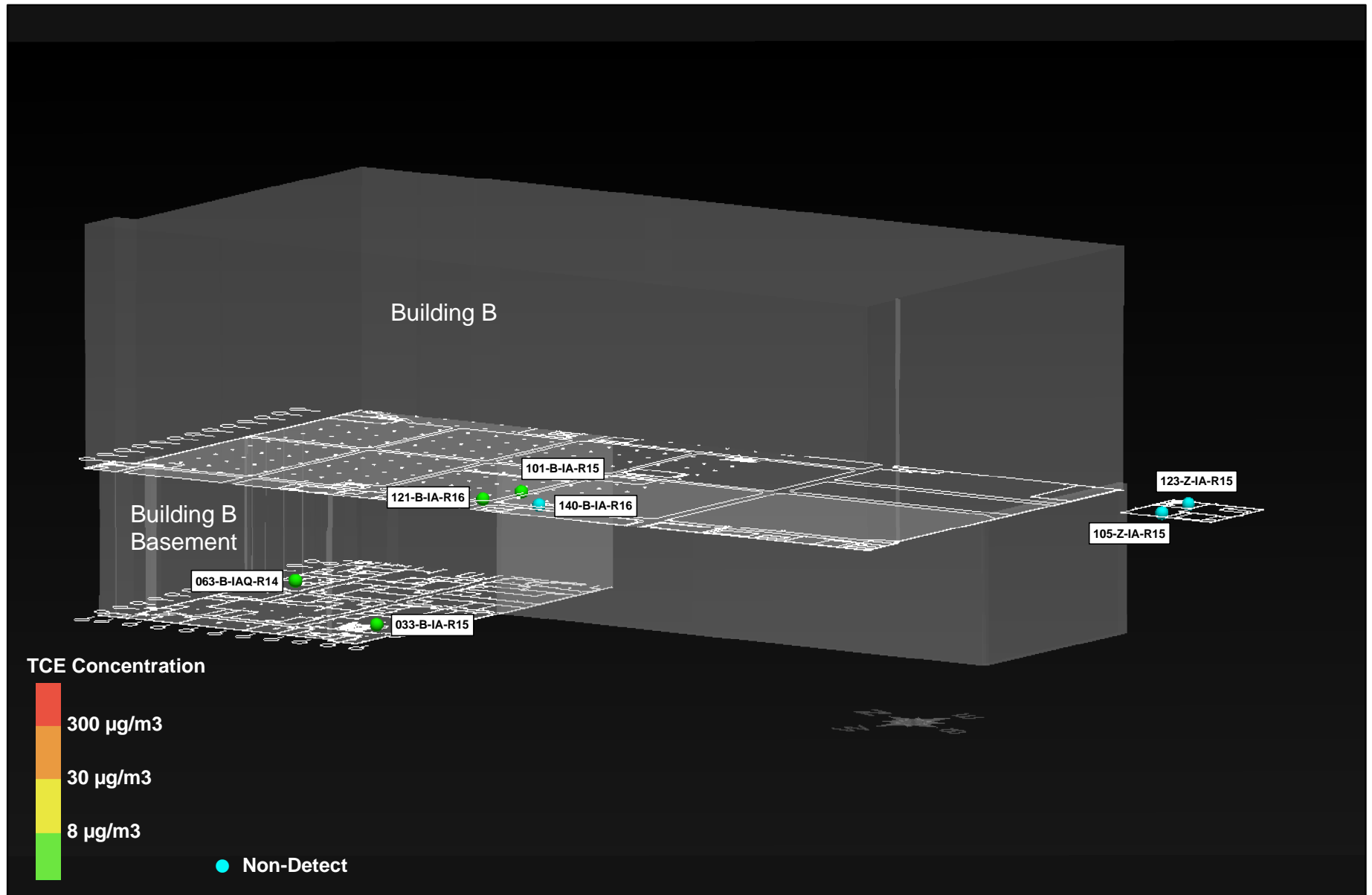


Figure 3-16B
Building B Historical Maximum SV
TCE Concentrations

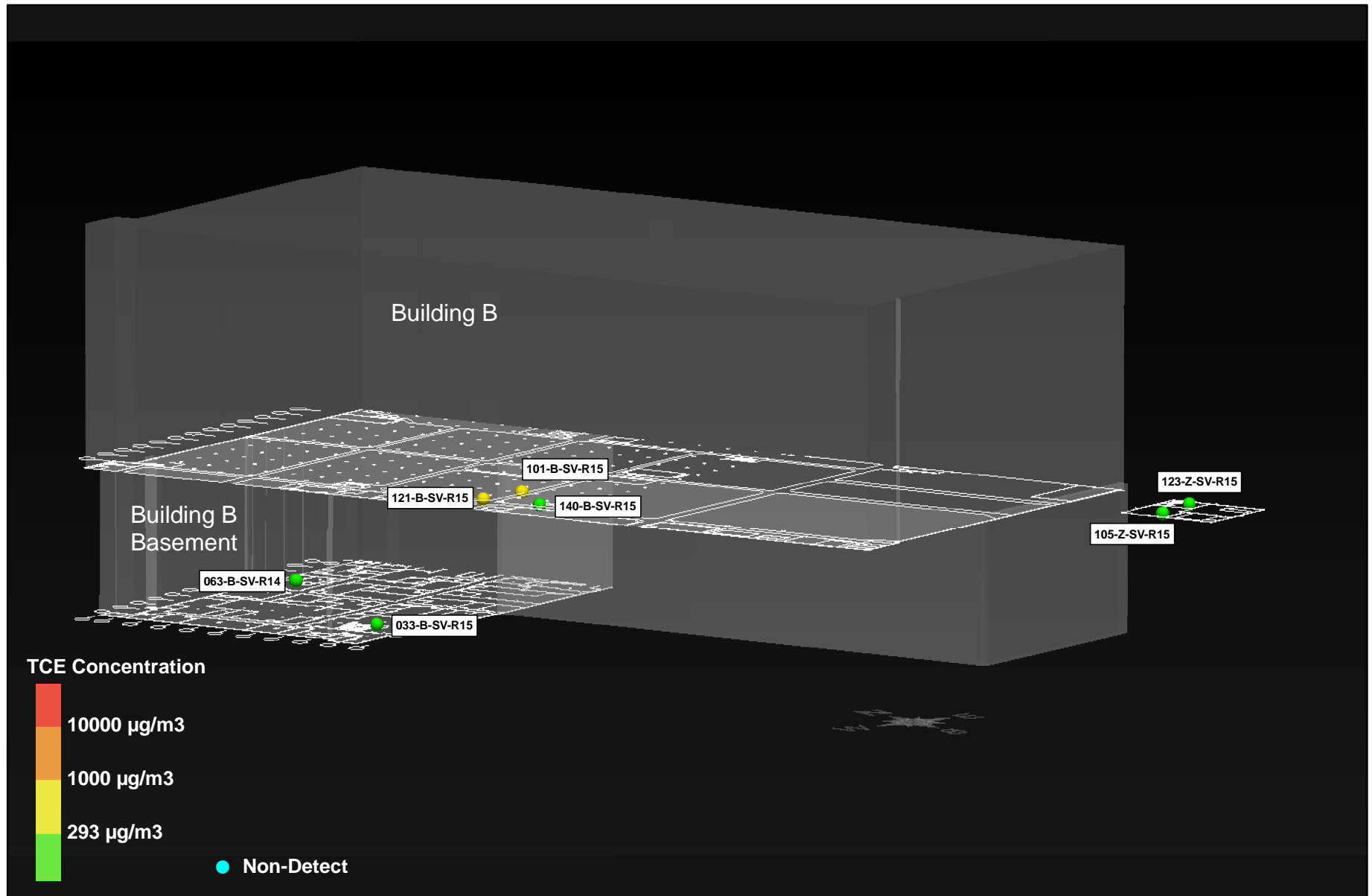


Figure 3-16C
TCE Results for Indoor Air Monitoring Locations
for Building B, Round 16, February 2014

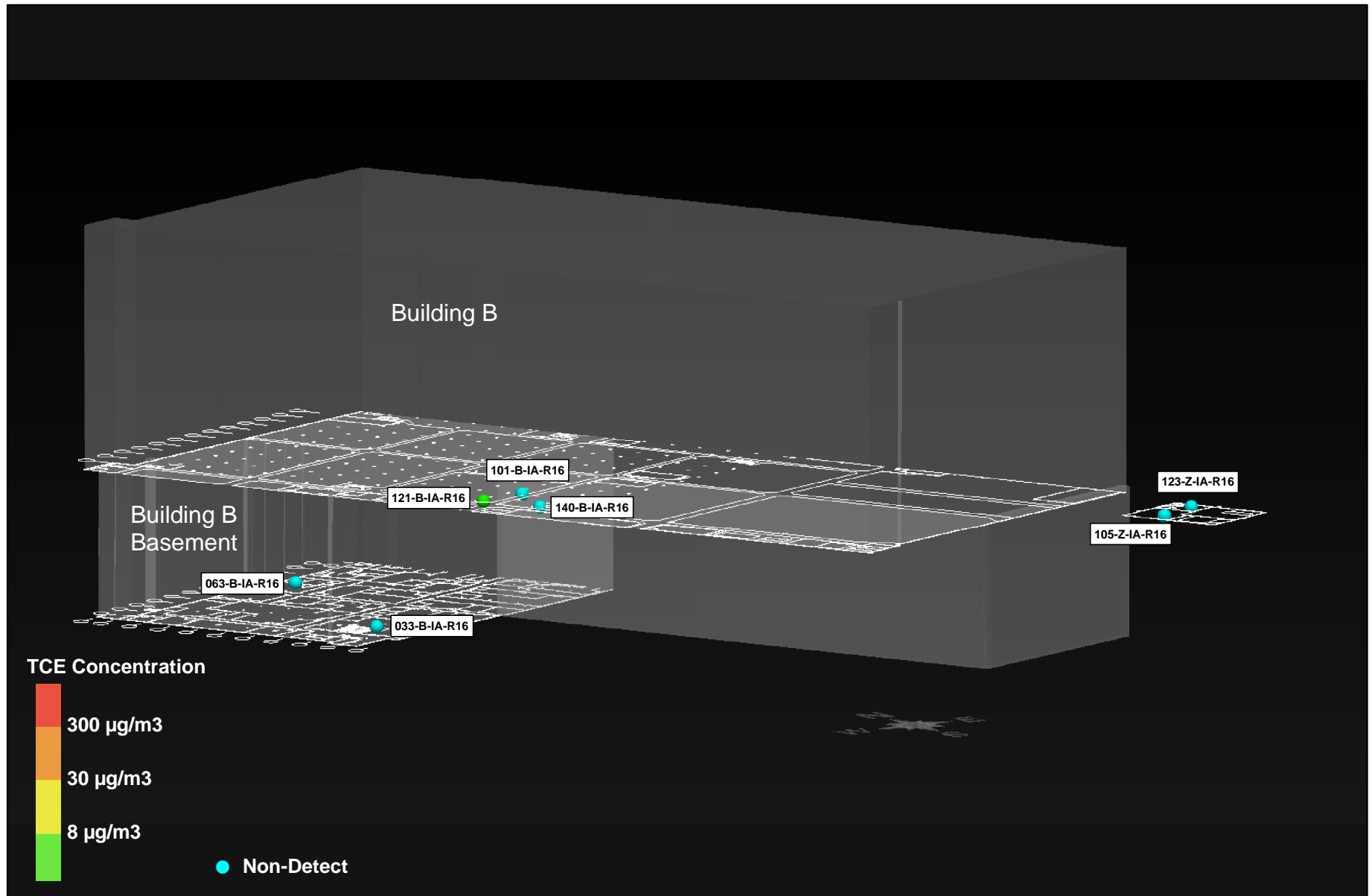


Figure 3-16D
TCE Results for Sub-Slab Vapor Monitoring Locations
for Building B, Round 16, February 2014

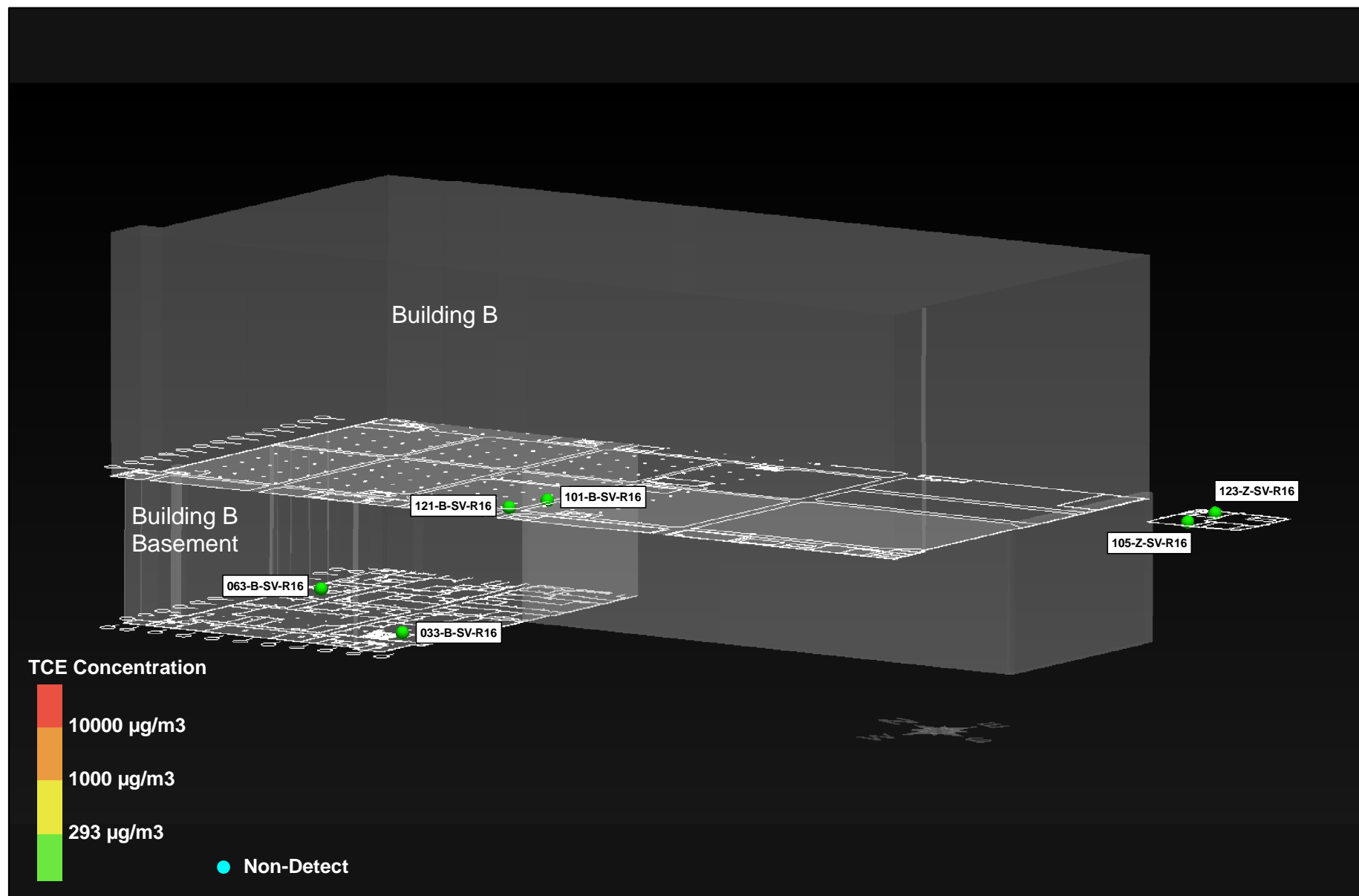


Figure 3-17A
Concentrations of Select Chemicals from Round 16 -
Building C - Soil Vapor

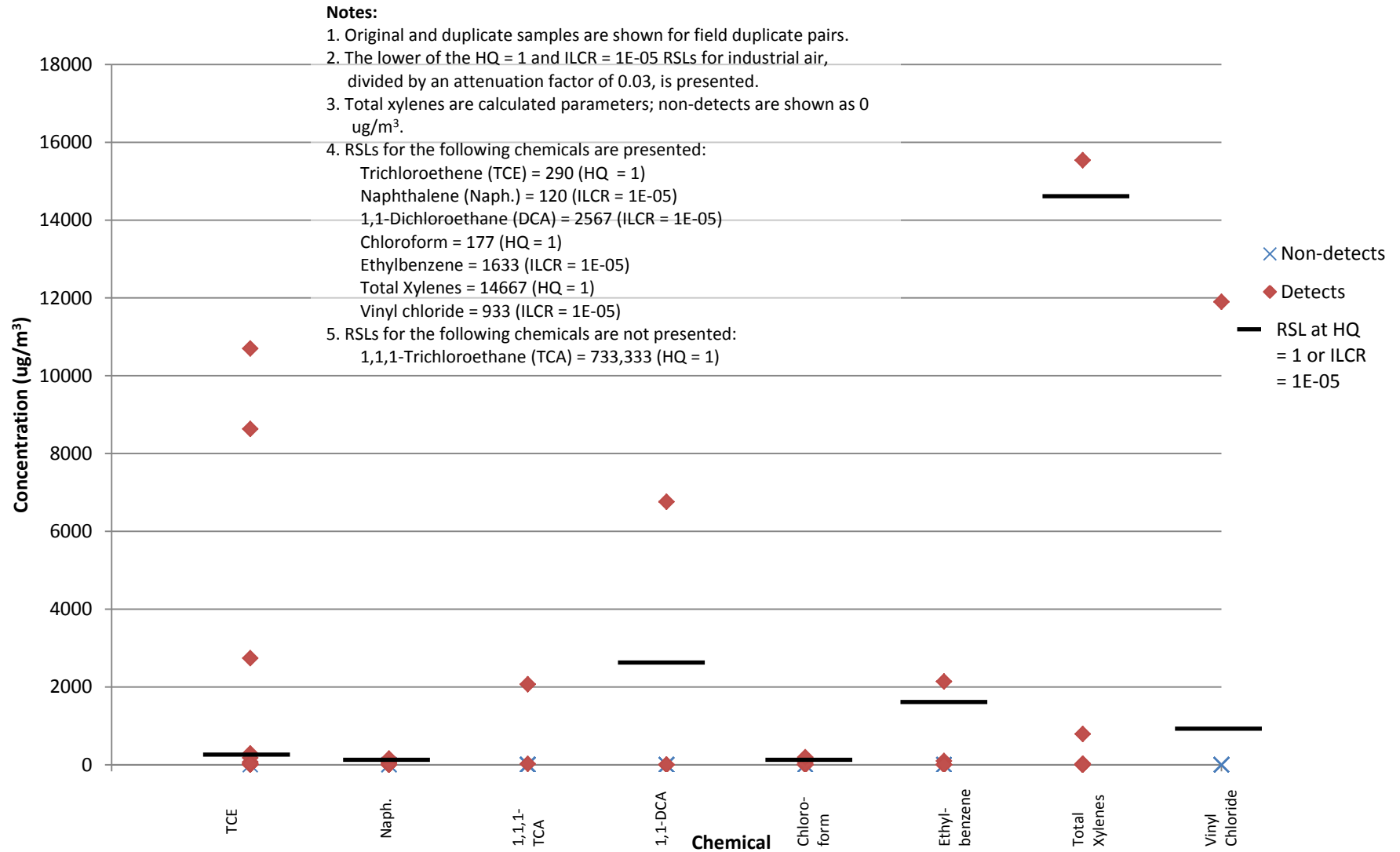


Figure 3-17B
Concentrations of Select Chemicals from Round 15 - Building C -
Indoor Air - Basement

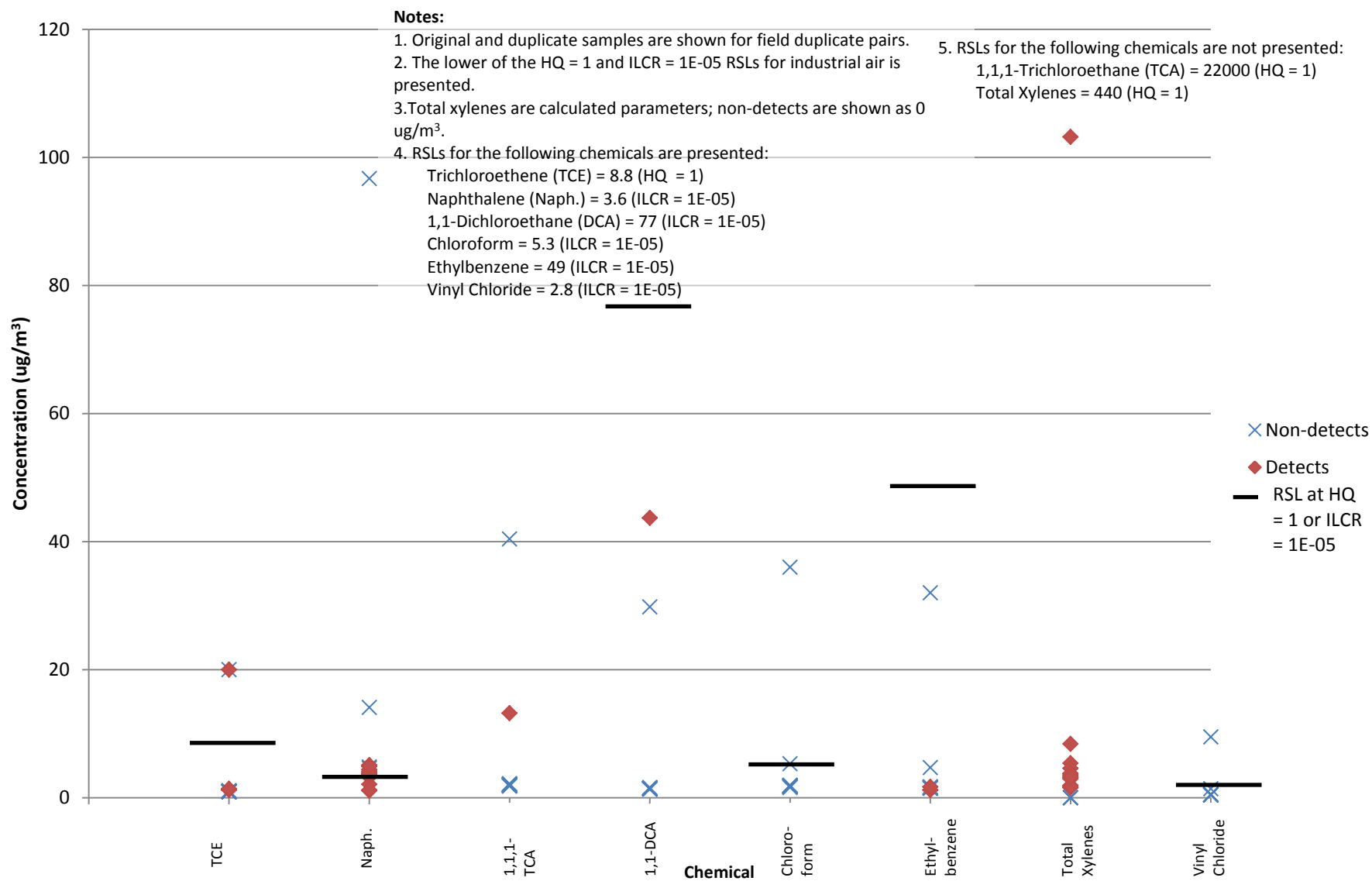


Figure 3-18A
Building C Historical Maximum IAQ
TCE Concentrations

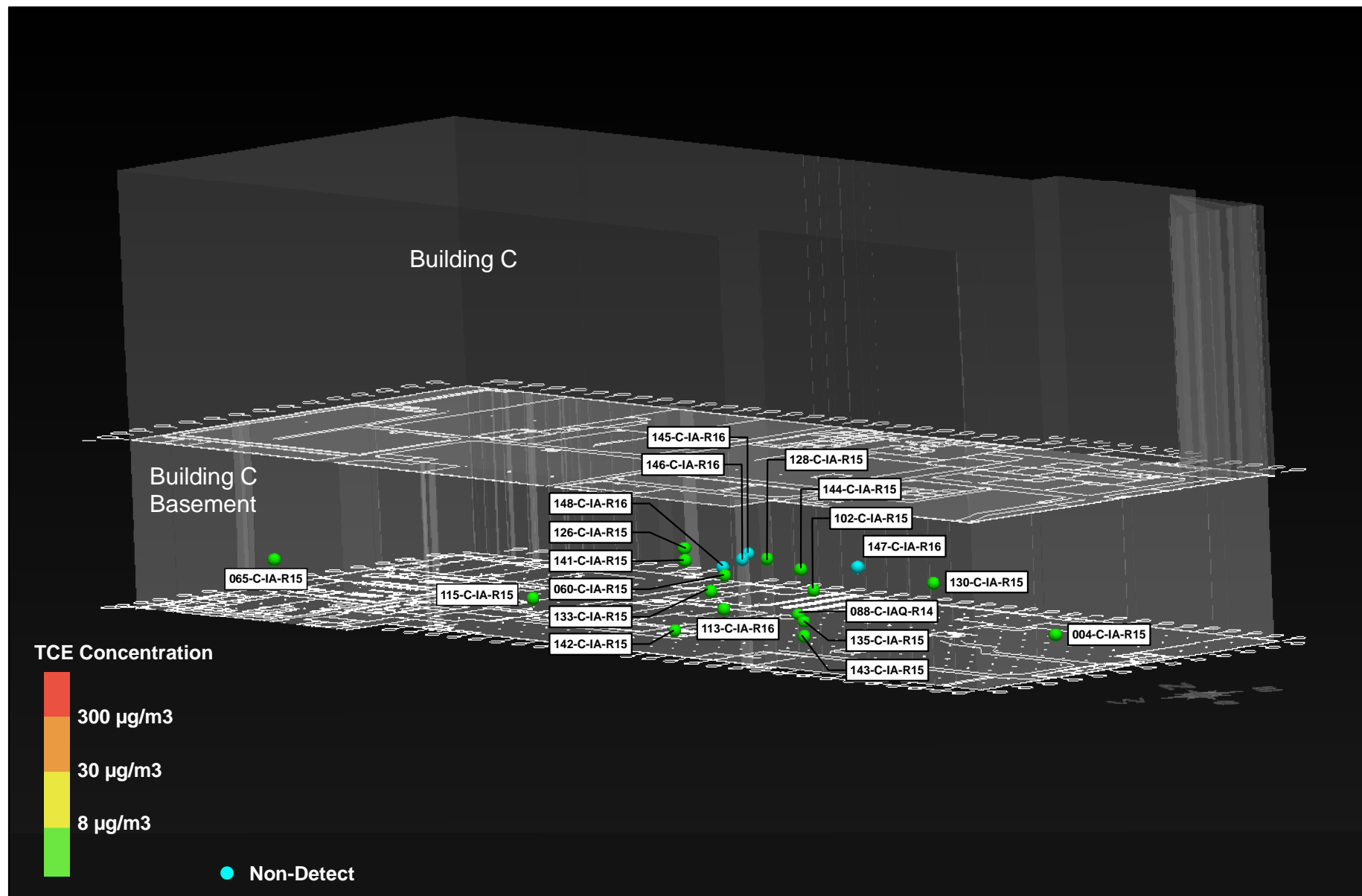


Figure 3-18B
Building C Historical Maximum SV
TCE Concentrations

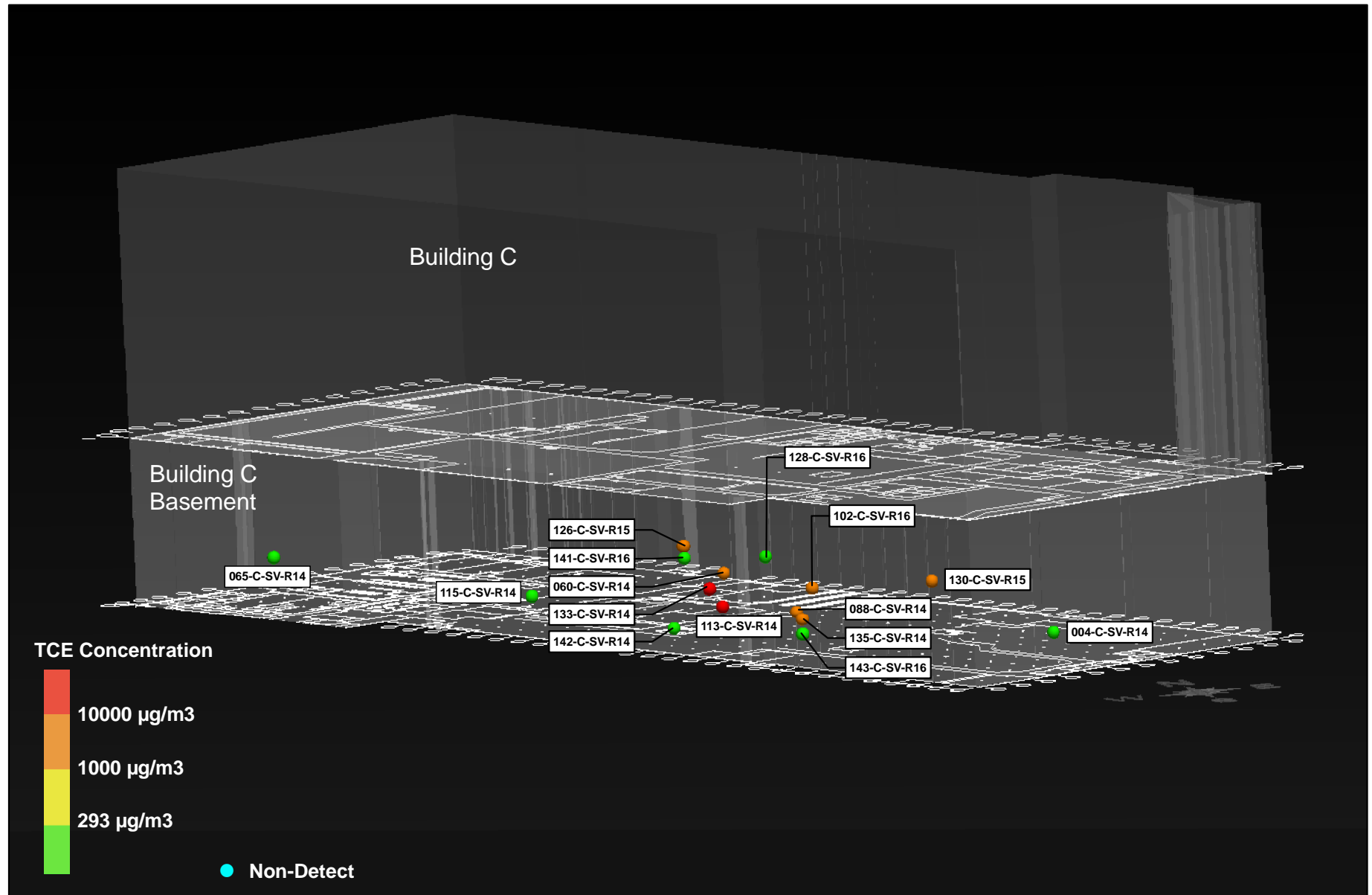


Figure 3-18C
TCE Results for Indoor Air Monitoring Locations
for Building C, Round 16, February 2014

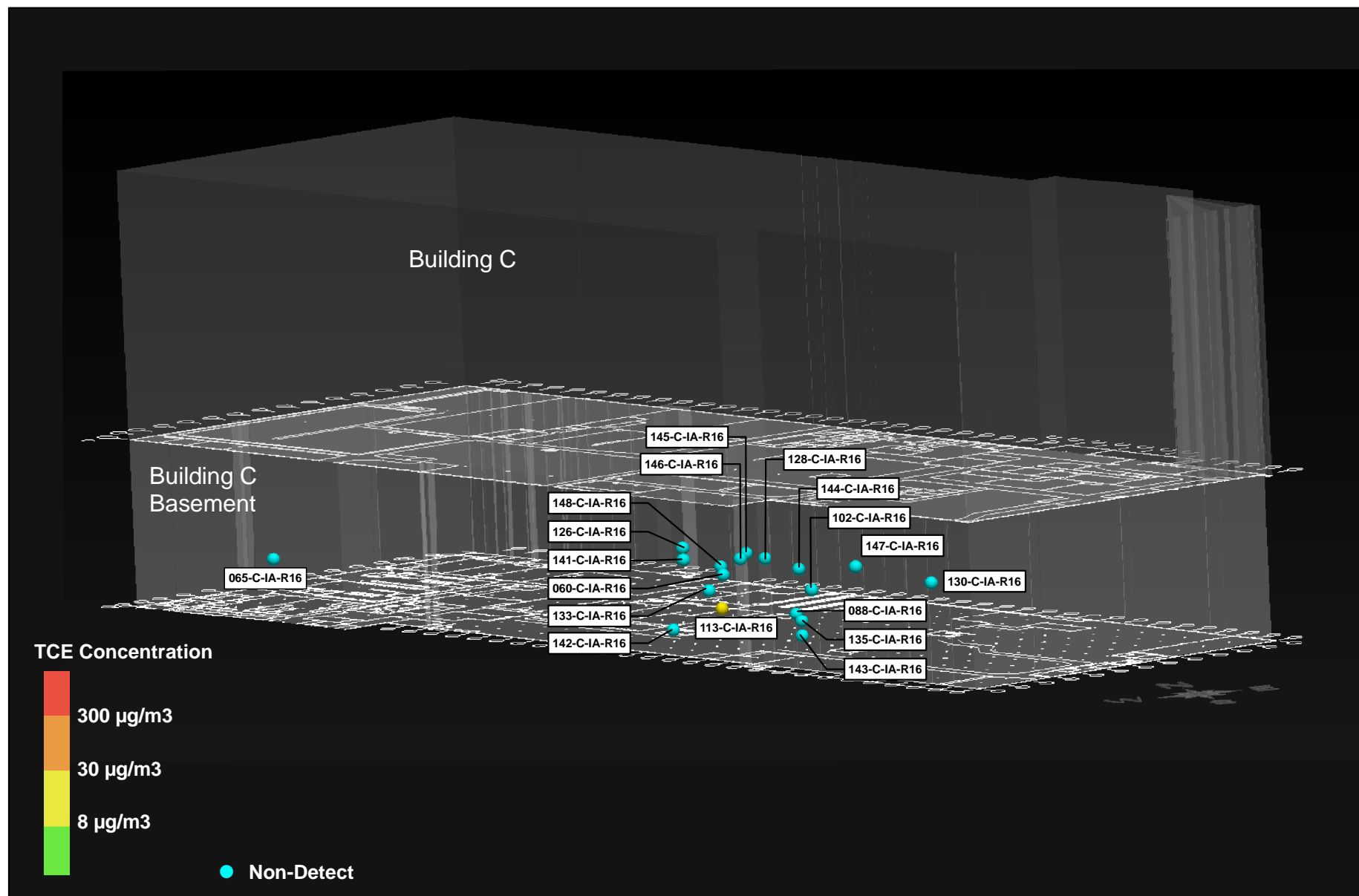


Figure 3-18D
TCE Results for Sub-Slab Vapor Monitoring Locations
for Building C, Round 16, February 2014

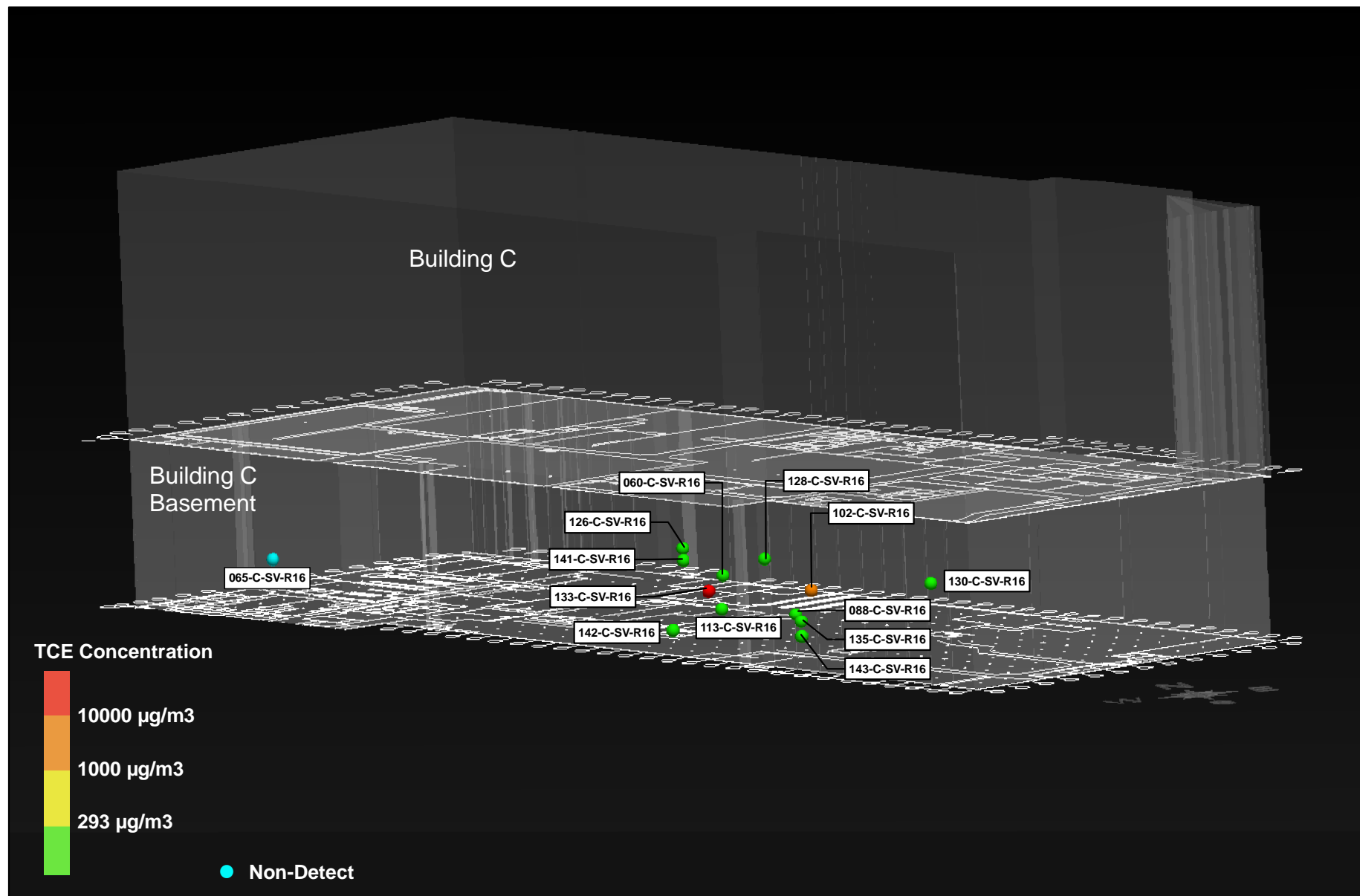


Figure 3-19
Graphical Display of Trichloroethene Indoor Air Concentrations
from All Buildings (All Rounds)

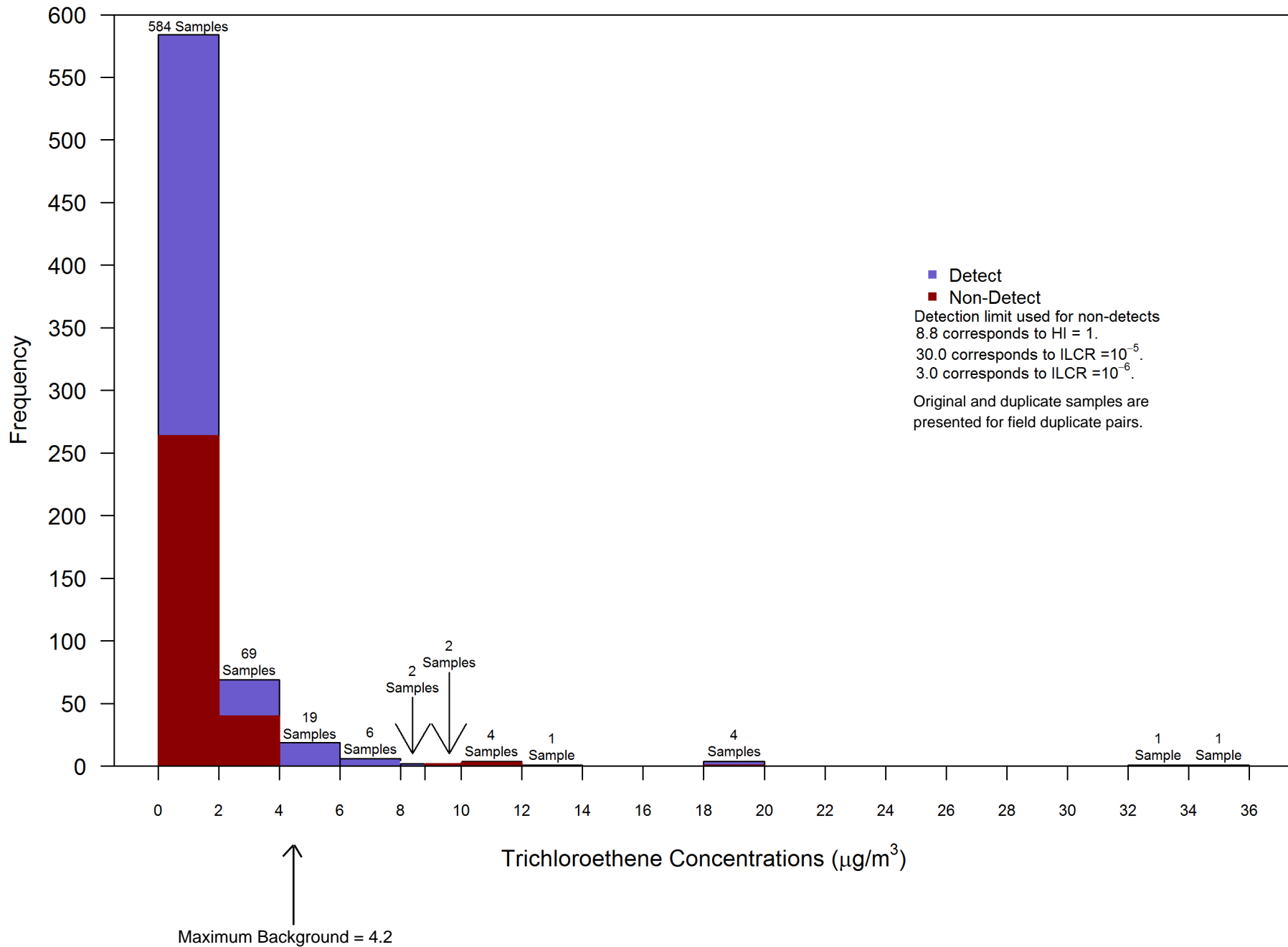


Figure 3-20
Graphical Display of Naphthalene Indoor Air Concentrations
from All Buildings (All Rounds)

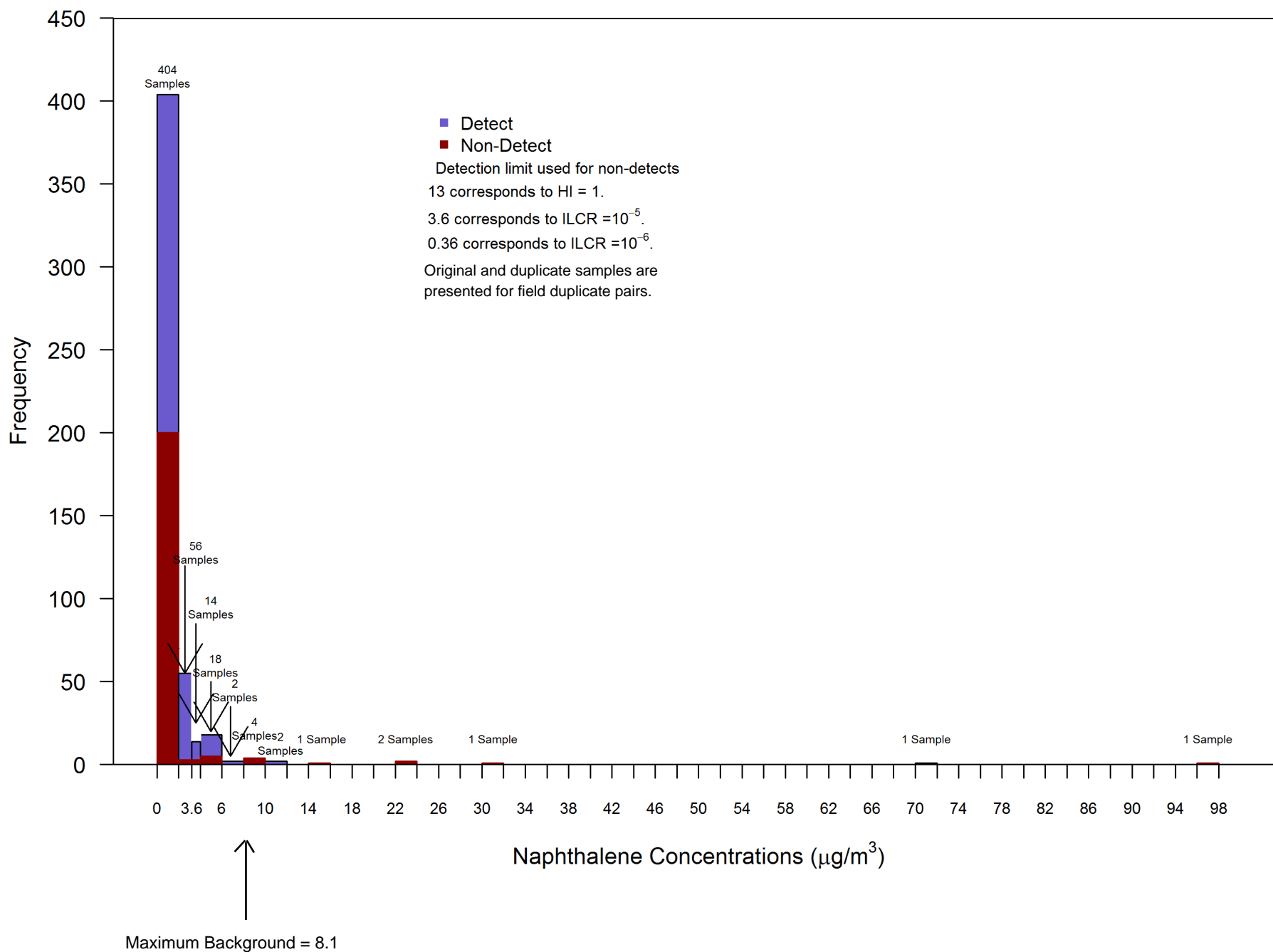


Figure 3-21
Graphical Display of Benzene Indoor Air Concentrations
from All Buildings (All Rounds)

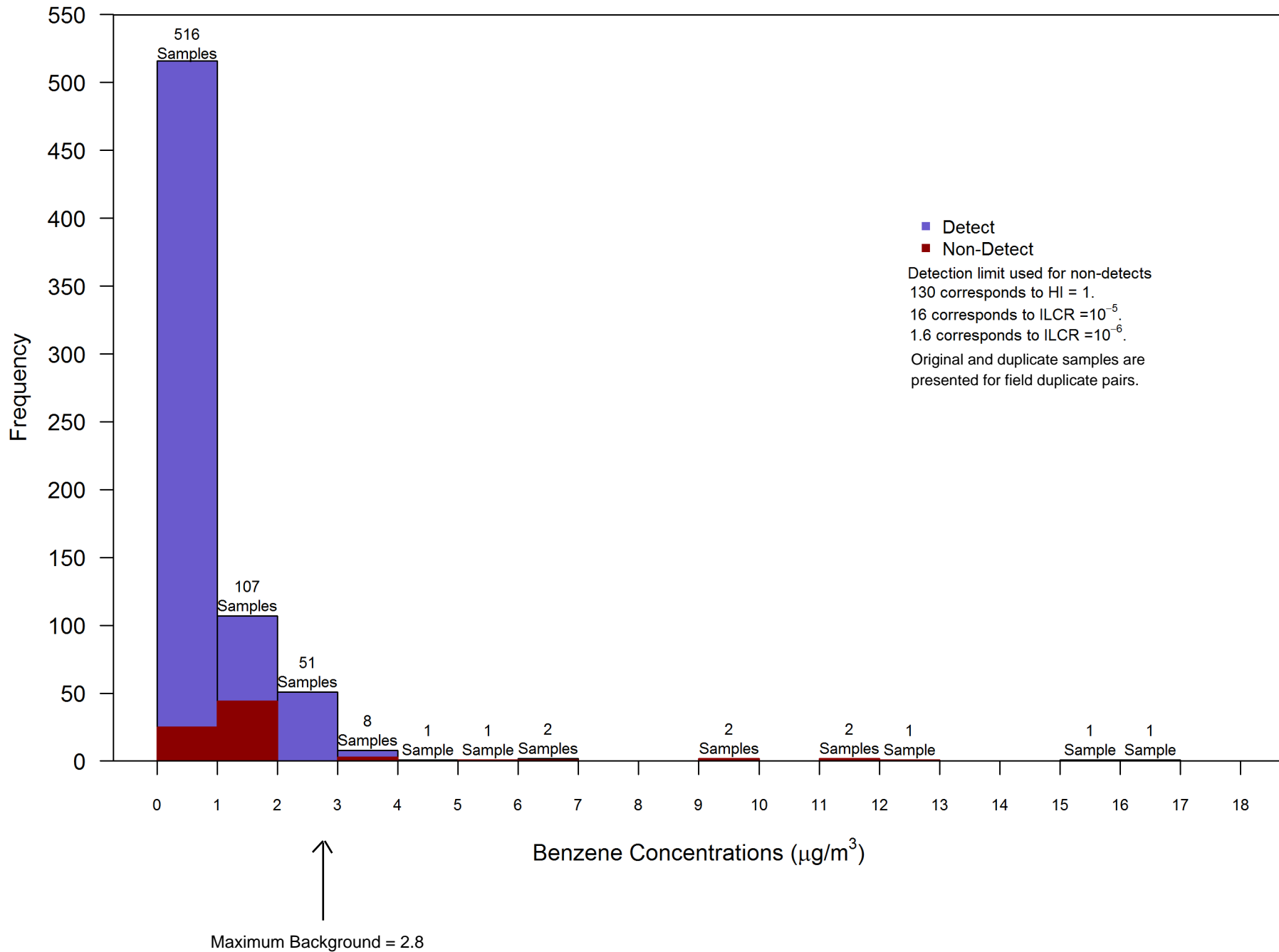


Figure 3-22
Graphical Display of 1,2-Dichloroethane Indoor Air Concentrations
from All Buildings (All Rounds)

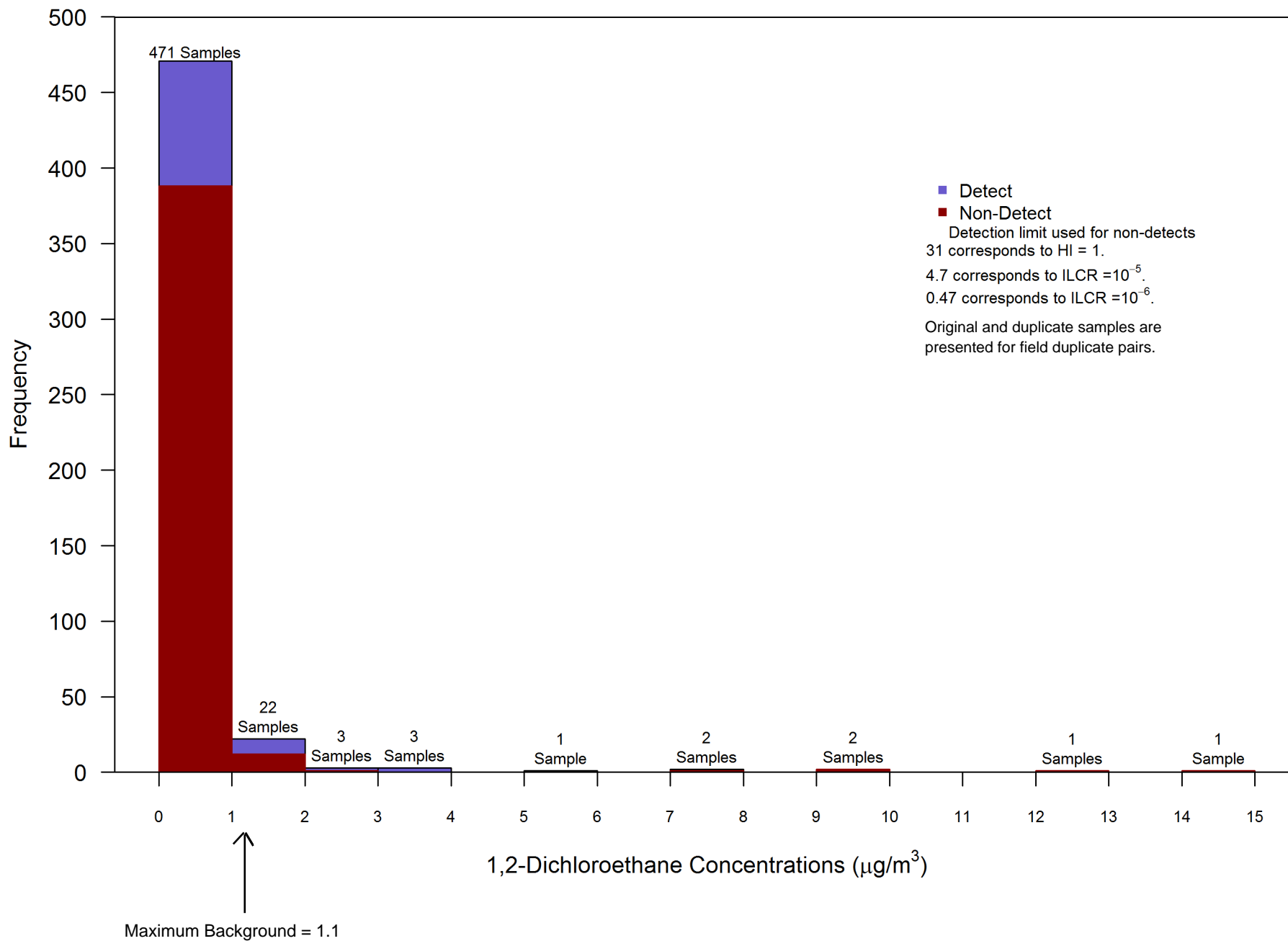


Figure 3-23
Graphical Display of Ethylbenzene Indoor Air Concentrations
from All Buildings (All Rounds)

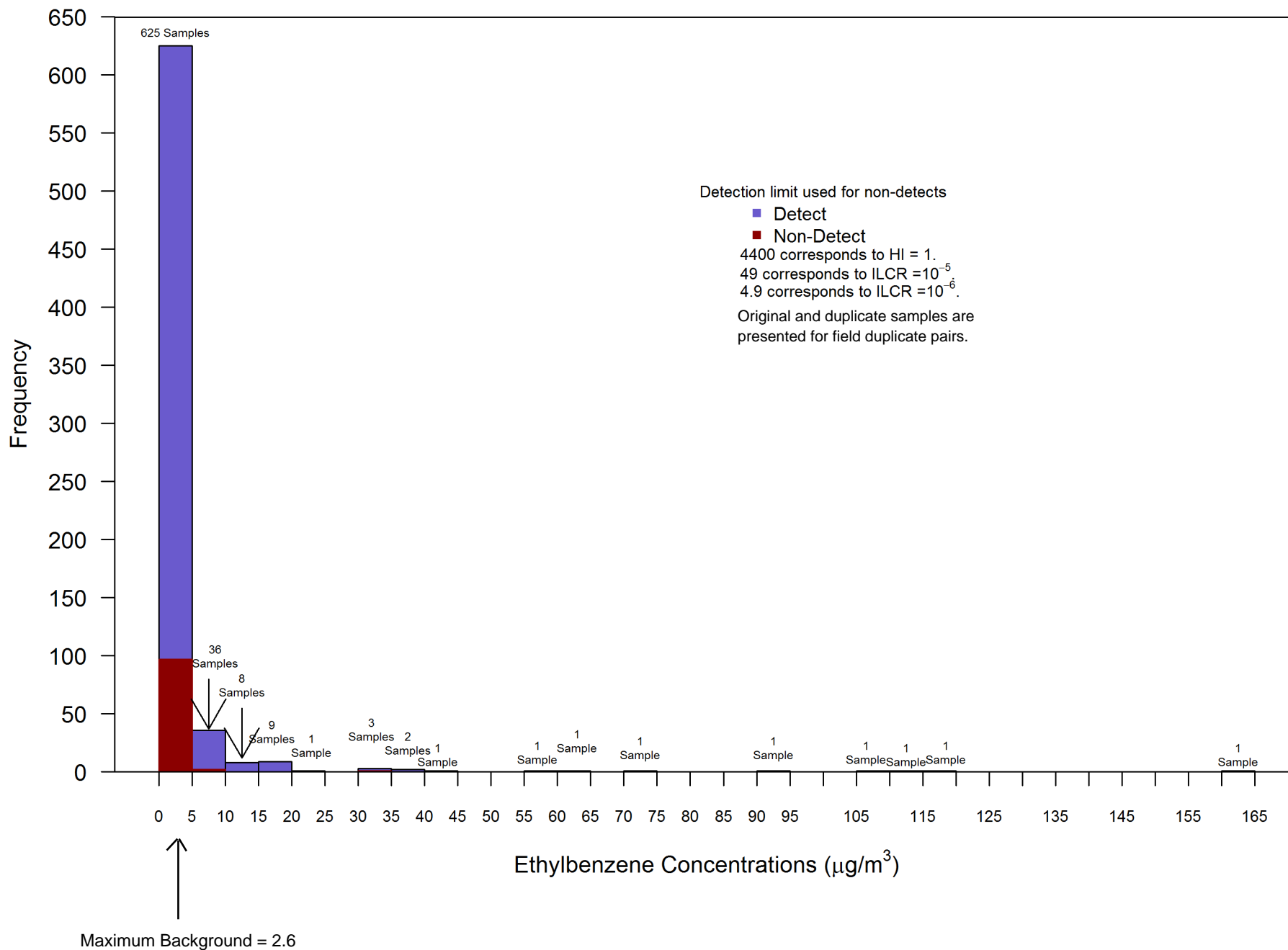
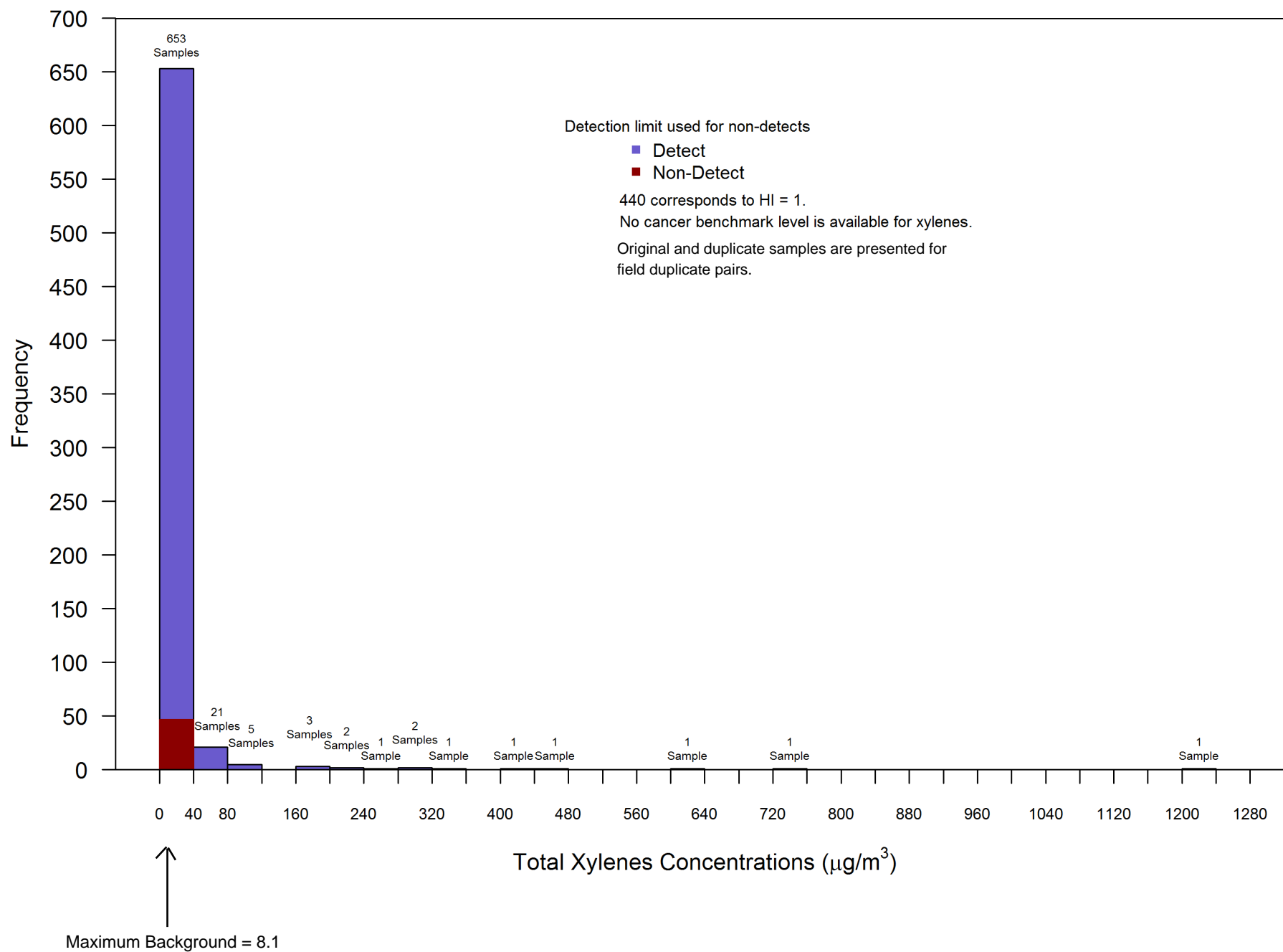


Figure 3-24
Graphical Display of Total Xylenes Indoor Air Concentrations
from All Buildings (All Rounds)



Section 4

Sub-Slab- Depressurization-System Data Analysis

The operation and monitoring activities for the sub-slab-depressurization (SSD) systems operating in Buildings A and C were completed from October 1, 2013 to March 31, 2014. A detailed account of these activities is in the April 29, 2014 *Remedial Action Progress Report #20*, included herein as Appendix G. The location and layout of the SSD systems and associated sub-slab-vapor (SV) extraction points and vapor monitoring points (VMPs) are shown in Figures 1, 2, and 4 of Appendix G. This section discusses SV sampling results, extraction points, system influent, vacuum influence, and performance of the SSD systems.

4.1 SUB-SLAB-VAPOR MONITORING POINTS

Tables 4-1 and 4-2 summarize the concentrations of target volatile organic compounds (VOCs) detected at SV monitoring points to date at the Building A plating shop and Building C basement, respectively.

4.1.1 Building A

SV samples collected to date near the Building A SSD-system (SSDS) are shown in the chart below. In Building A, sub-slab-vapor monitoring points 015-A and 018-A have been sampled regularly as part of the facility-wide semiannual sub-slab and indoor-air monitoring program. Location 015-A is on the main floor of Building A, and 018-A is in the basement (see Figure 2 in Appendix G). Both VMPs are within the measured SSDS radius of influence.

Sub-slab monitoring points sampled near the Building A SSD-system							
Date	SSD-11-A	SSD-12-A	SSD-13-A	015-A	SSD-16-A	017-A	018-A
Mar-06	✓	✓	✓	✓	✓	✓	✓
Dec-06			✓	✓			✓
Apr-07			✓	✓			✓
Oct-07			✓	✓			✓
Jul-08	✓	✓	✓	✓	✓		
Nov-08	✓	✓	✓	✓	✓	✓	✓
Oct-09				✓		✓	✓
Aug-10				✓			✓
Oct-10					✓		
Feb-11				✓			✓
Aug-11				✓			✓
Oct-11				✓			✓
Feb-12				✓			✓
Aug-12				✓			✓
Feb-13				✓			✓
Aug-13				✓			✓
Feb-14				✓			✓

Note: Points with an "SSD" designation were installed and are monitored for the SSD system; points without the SSD designation are used for the vapor-intrusion monitoring program.

As shown below, the highest trichloroethene (TCE) concentrations detected at VMPs 015-A and 018-A before SSDS operation began (i.e., before March 2008 on the main floor [015-A] and before October 2010 in the basement [018-A]), are two to three orders of magnitude (i.e., 100–1,000 times) greater than the most recent concentrations (post-SSD-system operation):

Trichloroethene concentrations—Building A				
VMP location	Before SSD-system operation*		Post-SSD-system operation (most recent concentration)	
015-A	April 2007	326,000 µg/m ³	February 2014	564 µg/m ³
018-A	August 2010	64,000 µg/m ³	February 2014	174 µg/m ³

*SSD-system startup for the main floor of Building A (015-A) was in March 2008, and for the Building A basement (018-A) in October 2010.

µg/m³—microgram(s) per cubic meter air

SSD—sub-slab depressurization

VMP—vapor monitoring point

While a significant decline has been observed at 015-A, TCE concentrations continue to fluctuate over time. For example, TCE was detected at 8.1 micrograms per cubic meter of air (µg/m³) in October 2009, but at 3,400 µg/m³ in October 2011 (see Figure 4-1). Similar

fluctuations also occurred in sub-slab SV at 018-A, where TCE was detected at the following concentrations over 2.5 years (see Figure 4-2):

- 7.2 $\mu\text{g}/\text{m}^3$ in August 2011
- 800,000 $\mu\text{g}/\text{m}^3$ in October 2011
- 95,000 $\mu\text{g}/\text{m}^3$ in February 2013
- 4,000J $\mu\text{g}/\text{m}^3$ (estimated) in August 2013
- 174 $\mu\text{g}/\text{m}^3$ in February 2014

Post-SSD-system concentrations are generally lower than before the system began operation. VOC reductions at 018-A might be more limited than the main floor VMPs because of the high water levels (frequently less than one foot below the basement slab) that could impede vapor flow.

4.1.2 Building C

SV samples collected to date near the Building C SSD system are shown on the following page. Sub-slab-vapor monitoring points 060-C, 088-C, 113-C, 126-C, 133-C, and 135-C (in the middle basement area), which were sampled before SSD-system expansion, were sampled in February 2014. The locations of these monitoring points are shown on Figure 4 of Appendix G. These points are within 100 feet of SSD-system extraction points in the Building C basement, and several (060-C, 113-C, 133-C, and 135-C) show the influence of SSD-system operations. Table 4-2 shows the highest TCE concentrations detected in these points before SSD system operation, and compares them with the most recent concentrations (post-SSD-system operation).

The February 2014 TCE concentrations listed below are lower than the concentrations measured before SSD-system startup and lower than the concentrations measured in August 2013. Concentrations of vinyl chloride (detected only at 126-C-SV) have also decreased since the SSD-system expansion. Vinyl chloride (VC) concentrations at 126-C-SV have varied over time:

- 37,000 $\mu\text{g}/\text{m}^3$ (February 2012)
- 110,000 $\mu\text{g}/\text{m}^3$ (August 2012)
- 28,000 $\mu\text{g}/\text{m}^3$ (August 2013)
- 11,900 $\mu\text{g}/\text{m}^3$ (February 2014)

The reason for these fluctuations is difficult to determine, as no vacuum influence has been observed at 126-C. VC has not been detected in SSD-system-influent samples or in groundwater samples collected from a nearby well pair (MW88A/B).

Trichloroethene concentrations—Building C				
VMP location	Before SSD-system operation*		Post-SSD-system operation (most recent concentration)	
060-C	August 2011	12,000 µg/m ³	February 2014	291 µg/m ³
088-C	February 2012	3,800 µg/m ³	February 2014	70.6 µg/m ³
113-C	February 2013	16,000 µg/m ³ <i>J</i>	February 2014	7 µg/m ³ <i>J</i>
126-C	August 2012	5,800 µg/m ³ <i>J</i>	February 2014	177 µg/m ³
133-C	February 2013	60,000 µg/m ³	February 2014	10,700 µg/m ³
135-C	August 2012	16,000 µg/m ³	February 2014	5.6 µg/m ³
SSD-4-C	December 2006**	28,300 µg/m ³	August 2013	140 µg/m ³

*SSD-system startup in the middle basement area of Building C was in May 2013

**SSD-system startup in the south end of Building C was in March 2008

µg/m³—microgram(s) per cubic meter air

SSD—sub-slab depressurization

VMP—vapor monitoring point

Analytical results from a few discrete groundwater sampling events in that area show TCE concentrations up to 1,500 µg/L, but no detectable VC concentrations. The 126-C area might be affected by groundwater fluctuation (depth to groundwater there is between four and five feet), but its correlation to VC concentrations is difficult to determine. In general, SV concentrations in the southern basement (SSD-4-C) of Building C have decreased since the March 2008 SSD-system startup. Middle basement VMPs (060-C, 088-C, 113-C, 126-C, 133-C, and 135-C) also show lower concentrations as compared to results before startup of the expanded system in May 2013. Tetra Tech will continue to monitor concentrations to determine if the SSD system is mitigating sub-slab concentrations of VOCs in the middle basement area of Building C.

Sub-slab monitoring points sampled near the Building C SSD-system													
Date	001-C	SSD-2-C	SSD-3-C	SSD-4-C	SSD-5-C	SSD-6-C	060-C	088-C	113-C	126-C	133-C	135-C	141-C
Mar-06	✓	✓	✓	✓	✓	✓							
Dec-06	✓			✓									
Apr-07	✓			✓									
Oct-07	✓			✓									
Jul-08	✓	✓	✓	✓									
Nov-08	✓	✓	✓	✓	✓	✓							
Jul-09							✓	✓					
Oct-09	✓				✓		✓	✓					
Feb-10	✓						✓	✓					
Aug-10	✓				✓		✓	✓					
Feb-11	✓						✓	✓	✓				
Aug-11	✓						✓	✓	✓				
Feb-12	✓						✓	✓	✓	✓	✓	✓	
Jun-12	✓		✓	✓									
Jul-12	✓		✓	✓									
Aug-12	✓						✓	✓	✓	✓	✓	✓	
Feb-13							✓	✓	✓	✓	✓	✓	
Aug-13				✓			✓	✓	✓	✓	✓	✓	
Feb-14							✓	✓	✓	✓	✓	✓	✓

Note: Points with an "SSD" designation were installed and are monitored for the SSD system; points without the SSD designation are used for the vapor-intrusion monitoring program.

4.2 SUB-SLAB-VAPOR EXTRACTION POINTS

The Building A sub-slab-vapor extraction trenches and Building C SV extraction points were not sampled in February 2014. Figures 2 and 4 in Appendix G show the locations of the extraction trenches (Building A north, south, north basement, and south basement laterals) and extraction points (Building C SSD-21-C, SSD-23-C, SSD-26-C, SSD-27-C, SSD-28-C, SSD-29-C, SSD-30-C, SSD-31-C, SSD-32-C, SSD-33-C, and SSD-34-C), respectively.

4.3 VACUUM INFLUENCE

Figures 6, 7, and 8 in Appendix G show induced vacuum levels over time for the sub-slab VMPs in Building A, in the southern end of the Building C basement, and in the middle basement area of Building C, respectively. Representative values from monitoring in March 2014 are indicated on plan views in Figures 9, 10, and 11 of Appendix G. Vacuum influence in the SSD-system-associated VMPs is checked biweekly. As indicated in the April 2014 progress report (Appendix G), extraction trenches near the Building A plating shop induce a vacuum over an approximate 5,600-square-foot area; this area encompasses all SV monitoring points that had relatively high levels of VOCs before system startup. The trenches in the Building A basement induce a vacuum over an approximately 400-square-foot area that encompasses three of four VMPs used to measure the SSD-system-induced vacuum in the basement.

The Building C basement wells induce a vacuum influence over an approximate 3,900-square-foot area in the southern aspect of the basement, while the extraction wells in the mid-basement area induce vacuum influence over an approximate 37,500-square-foot area. Five of eight mid-basement monitoring points are within the target area shown to have vacuum influence. Additional monitoring points will be needed to determine a more accurate measure of the SSD-system radius of influence. Vacuum influence has not been observed at VMPs near active extraction points SSD-29-C and SSD-34-C in the northern target area.

4.4 SUB-SLAB-DEPRESSURIZATION-SYSTEM INFLUENT-VAPOR SAMPLES

Influent-vapor samples were collected monthly to monitor SSD-system operation. VOC concentrations at the granular activated-carbon (GAC) influent, midpoint (after the lead unit), and effluent (after the second unit) are monitored to determine when the midpoint concentration reaches 50% of the influent; when it does, the lead GAC unit is changed out. These samples also allow monitoring of influent-concentration trends over time. Samples were collected directly from all three sampling ports of both SSD systems by connecting a clean one-liter Summa[®] canister (batch certified) to the Teflon[®] tubing of each sampling port and opening the valve for approximately one minute. The October and November 2013 samples were submitted to TestAmerica Laboratories, Inc. in Knoxville, Tennessee; subsequent monthly samples were submitted to Pace Analytical Services, Inc. in Minneapolis, Minnesota (the new project

laboratory) for VOC analysis using United States Environmental Protection Agency (USEPA) Toxic Organic Method (TO-15).

Table 4-3 summarizes the influent-vapor concentrations of target VOCs in samples collected over time (from system startup in March 2008 through March 2014). These results are displayed graphically on Figures 12 and 13 in Appendix G. Table 4-3 also provides average influent concentrations for the current (October 2013–March 2014) and previous (April–September 2013) reporting periods. The average influent VOC concentration in Building A during the current reporting period ($4,212 \mu\text{g}/\text{m}^3$) is higher than that observed during the previous semiannual reporting period ($3,750 \mu\text{g}/\text{m}^3$). This increase is attributed to an abnormally high toluene concentration ($9,820 \mu\text{g}/\text{m}^3$) measured in January 2014.

As indicated in Section 2.2 of Appendix G, this toluene result appears to be a one-time occurrence, as a concentration this high had not been detected in previous monitoring episodes. No construction was occurring near the Building A system during this time. If the January 2014 outlier is excluded, the average influent VOC concentrations for Building A are lower than those detected in the previous semiannual reporting period. Average influent VOC concentrations in Building C are also lower than concentrations detected during the previous semiannual reporting period: $345 \mu\text{g}/\text{m}^3$ compared to $771 \mu\text{g}/\text{m}^3$, respectively. Vinyl chloride, which has only been detected in 126-C during the recent sampling events, has not been detected in the Building C SSD-system influent. Overall, influent VOC concentrations for both SSD systems have been relatively stable since 2009 (see Figures 12 and 13 in Appendix G).

VOC removal rates (SSD-system influent mass) in Building A are 0.021 to 0.166 pounds per day (lbs/day); these rates are similar to the removal rates (0.018 to 0.172 lbs/day) observed in the previous semiannual reporting period. The Building A system has removed 11.13 lbs of VOCs during this reporting period, 9.4 lbs in the previous reporting period, and 108.5 lbs of VOCs total since system startup in March 2008. VOC removal rates in Building C during the current reporting period are between 0.077 lbs/month and 0.213 lbs/month; these rates are lower than the removal rates (0.018 to 0.968 lbs/month) observed during the previous semiannual reporting period. The Building C SSD-system has removed 0.84 lbs of VOCs this reporting period, 1.7 lbs in the previous reporting period, and 7.75 lbs since system startup in March 2008.

4.5 SUB-SLAB-DEPRESSURIZATION-SYSTEM CONCLUSIONS

In general, the flow rate and induced vacuum for the SSD systems are performing as designed. However, the induced-vacuum area for the middle basement area of Building C is unknown because the current monitoring network is not adequate for evaluation. The induced-vacuum influence for the Building A system is at least 0.05-inches water column over areas of 5,600-square-feet on the main floor (encompassing the plating shop) and 2,400-square-feet in the basement. The induced-vacuum influence for the Building C SSD-system extends over an approximate 3,900-square-foot area in the southern basement and over an approximate 37,500-square-foot area in the middle basement. The Building C middle basement requires additional monitoring points to accurately determine the area of influence.

Table 4-1

Summary of Positive Detects for Vapor Samples
 Building A Plating Shop
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 1 of 5

	SSD-11-A										SSD-12-A									
Sample ID:	SV-11-A	SV-11-A	SV-11-A	SV-11-A	SV-11-A	SV-11-A	SV-11-A	SV-11-A	SV-11-A	SV-11-A	SV-12-A	SV-12-A	SV-12-A	SV-12-A	SV-12-A	SV-12-A	SV-12-A	SV-12-A	SV-12-A	
Sample Date:	Mar-06	Jul-08	Nov-08	Oct-09	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14		Mar-06	Jul-08	Nov-08	Oct-09	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	
Volatile organic compounds (ug/m ³)																				
1,1-Dichloroethane	8,070	12,000	4,600	NS	NS	NS	NS	NS	NS	NS	26,900	2,400	11,000	NS	NS	NS	NS	NS	NS	
1,1-Dichloroethene	--	3,900	1,900	NS	NS	NS	NS	NS	NS	NS	--	1,800	9,900	NS	NS	NS	NS	NS	NS	
1,1,1-Trichloroethane	--	--	--	NS	NS	NS	NS	NS	NS	NS	--	780	3,700	NS	NS	NS	NS	NS	NS	
1,2,4-Trichlorobenzene	--	--	--	NS	NS	NS	NS	NS	NS	NS	--	--	--	NS	NS	NS	NS	NS	NS	
Chloroethane	--	460	--	NS	NS	NS	NS	NS	NS	NS	--	--	--	NS	NS	NS	NS	NS	NS	
Methylene chloride	--	--	4,800	NS	NS	NS	NS	NS	NS	NS	--	--	--	NS	NS	NS	NS	NS	NS	
Benzene	257 J	--	--	NS	NS	NS	NS	NS	NS	NS	61 J	--	--	NS	NS	NS	NS	NS	NS	
Carbon tetrachloride	--	--	--	NS	NS	NS	NS	NS	NS	NS	8 J	--	--	NS	NS	NS	NS	NS	NS	
Chloroform	11 J	--	--	NS	NS	NS	NS	NS	NS	NS	55 J	--	--	NS	NS	NS	NS	NS	NS	
cis-1,2-Dichloroethene	163,000 J	79,000	31,000	NS	NS	NS	NS	NS	NS	NS	18,800	1,200	2,900	NS	NS	NS	NS	NS	NS	
Dichlorodifluoromethane	--	--	--	NS	NS	NS	NS	NS	NS	NS	--	--	--	NS	NS	NS	NS	NS	NS	
Ethylbenzene	76	--	--	NS	NS	NS	NS	NS	NS	NS	44 J	--	--	NS	NS	NS	NS	NS	NS	
Methyl tert-butyl ether	425 J	--	NS	NS	NS	NS	NS	NS	NS	NS	206 J	--	NS	NS	NS	NS	NS	NS	NS	
Tetrachloroethene	387	--	--	NS	NS	NS	NS	NS	NS	NS	181 J	--	--	NS	NS	NS	NS	NS	NS	
Toluene	309	500	--	NS	NS	NS	NS	NS	NS	NS	119 J	--	--	NS	NS	NS	NS	NS	NS	
Total Xylenes	227	--	--	NS	NS	NS	NS	NS	NS	NS	340 J	--	--	NS	NS	NS	NS	NS	NS	
trans-1,2-Dichloroethene	1,980 J	--	--	NS	NS	NS	NS	NS	NS	NS	240 J	--	--	NS	NS	NS	NS	NS	NS	
Trichloroethene	2,150 J	2,800	850	NS	NS	NS	NS	NS	NS	NS	81,400	3,500	6,800	NS	NS	NS	NS	NS	NS	
Vinyl chloride	727 J	--	--	NS	NS	NS	NS	NS	NS	NS	42 J	--	--	NS	NS	NS	NS	NS	NS	
TOTAL VOCs	177,619 J	98,660	43,150	NS	NS	NS	NS	NS	NS	NS	128,395 J	9,680	34,300	NS	NS	NS	NS	NS	NS	

-- = non-detect (below detection limit)
 J = estimated value
 NS = not sampled
 SSD - sub-slab depressurization
 SV - soil vapor
 VOCs = volatile organic compounds
 ug/m³ = micrograms per cubic meter air

Table 4-1

Summary of Positive Detects for Vapor Samples
 Building A Plating Shop
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 2 of 5

	SSD-13-A												
Sample ID:	SV-13-A	SV-13-A	SV-13-A D	SV-13-A	SV-13-A	SV-13-A	SV-13-A	SV-13-A	SV-13-A	SV-13-A	SV-13-A	SV-13-A	SV-13-A
Sample Date:	Mar-06	Dec-06	Dec-06	Apr-07	Oct-07	Jul-08	Nov-08	Oct-09	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (ug/m3)													
1,1-Dichloroethane	17,900	9,080	9,360	11,000	3,400	200	--	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	--	--	--	--	--	520	16	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	--	--	--	--	--	550	--	NS	NS	NS	NS	NS	NS
Methylene chloride	--	--	--	--	--	--	20	NS	NS	NS	NS	NS	NS
Benzene	61 J	82	88	--	--	--	--	NS	NS	NS	NS	NS	NS
Carbon tetrachloride	--	--	--	--	--	--	--	NS	NS	NS	NS	NS	NS
Chloroform	59	85 J	96 J	65 J	--	--	--	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	230,000 J	242,000	234,000	292,000	15,000	3,800	47	NS	NS	NS	NS	NS	NS
Dichlorodifluoromethane	--	--	--	--	--	--	--	NS	NS	NS	NS	NS	NS
Ethylbenzene	27 B	--	--	--	--	--	--	NS	NS	NS	NS	NS	NS
Methyl tert-butyl ether	155 J	--	--	--	--	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	215	178	195	166 J	--	--	--	NS	NS	NS	NS	NS	NS
Toluene	70	--	--	--	1,100	--	170	NS	NS	NS	NS	NS	NS
Total Xylenes	83 J	--	--	--	--	--	15	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	1,190 J	3,160	3,470	4,650	--	--	--	NS	NS	NS	NS	NS	NS
Trichloroethene	270,000 J	369,000	352,000	326,000	820	4,700	46	NS	NS	NS	NS	NS	NS
Vinyl chloride	182 J	618	701	549	--	--	--	NS	NS	NS	NS	NS	NS
TOTAL VOCs	519,942 J	624,202 J	599,910 J	634,430 J	20,320	9,770	314	NS	NS	NS	NS	NS	NS

-- = non-detect (below detection limit)

D = duplicate

J = estimated value

NA = not applicable

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-1

Summary of Positive Detects for Vapor Samples
 Building A Plating Shop
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 3 of 5

	015-A-SV																
Sample ID:	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV	015-A-SV
Sample Date:	Mar-06	Dec-06	Apr-07	Oct-07	Oct-07	Jul-08	Nov-08	Oct-09	Aug-10	Feb-11	Aug-11	Oct-11	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m³)																	
1,1-Dichloroethane	27,700 J	2,160	6,010	5,700	7,600	320	480	0.4 J	58	12	1.7	51	65	77	13	45	14.6
1,1-Dichloroethene	--	--	--	--	--	3,400	6,400	3.4	1,200	150	12	1,100	780	1,500	490	1,100 J	369
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	9,800	2,500	--	--	380	--	1,100	840	770	140	280 J	76.3
Benzene	51 J	22 J	--	--	--	--	--	--	--	0.4 J	--	--	--	--	--	0.49	0.64
Carbon tetrachloride	6 J	--	--	--	--	--	--	--	--	--	0.6	0.96	--	--	0.77 J	0.83 J	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.8 J
Chloroform	63 J	68	109	--	--	--	--	--	-- J	0.9 J	1.1	5.2	--	18	6.8	19	64.7
cis-1,2-Dichloroethene	118,000 J	83,800	167,000	140,000	190,000	7,800	20,000	36	1,800	200	320	1,800	1,100	2,000	1,300	2,700	1,110
Dichlorodifluoromethane	--	--	--	--	--	--	--	3.2 J	--	2	2.7	2.2	--	--	2.7	2.8	2.1
Ethylbenzene	794 J	43 J	--	--	--	--	--	4.6	--	2	3.6	0.79	--	--	2.3	7.5	--
Methyl tert-butyl ether	1,050 J	19 J	--	--	--	NA	NA	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--	3 B	0.9	0.6	--	--	0.74	0.99	31.6 J
Napthalene	--	--	--	--	--	--	--	--	--	1 UL	4	--	--	--	0.8	1.2 J	--
Tetrachloroethene	346 J	55 J	99	--	--	--	--	--	--	--	--	1.4	--	--	--	3.9	--
Toluene	431 J	16 J	15 J	--	--	--	480	210	14	27	28	15	47	8 J	14	240 J	7.1
Total Xylenes	5,150 J	--	--	--	--	--	310	13.9	0.7	10	27.9	5.9	--	--	17.3	57	4.7 J
trans-1,2-Dichloroethene	1,370 J	1,430	4,660	2,100	3,200	--	--	--	99	13	2.7	46	46	69	23	79	25
Trichloroethene	154,000 J	161,000	326,000	150,000	220,000	17,000	12,000	8.1	1,300	340	18	3,400	2,400	2,600	710	1,600	564
Vinyl chloride	100 J	210	491	--	--	--	--	--	9.8	0.8	0.26	4	--	7.3 J	1.4	7.5 J	--
TOTAL VOCs	309,061 J	248,823	504,383	297,800	420,800	38,320	42,170	280	4,482	1,142	424	7,533	5,278	7,050 J	2,723 J	6,145 J	2,276 J

-- = non-detect (below detection limit)
 B = analyte detected in laboratory blank
 D = duplicate
 J = estimated value
 NA = not applicable
 SSD = sub-slab depressurization
 SV = soil vapor
 UL = non-detect, result biased low
 VOCs = volatile organic compounds
 µg/m³ = micrograms per cubic meter air

Table 4-1

Summary of Positive Detects for Vapor Samples
 Building A Plating Shop
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 4 of 5

	SSD-16-A										SSD-17-A							
Sample ID:	SV-16-A	SV-16-A	SV-16-A	SV-16-A	SV-16-A	SV-16-A	SV-16-A	SV-16-A	SV-16-A	SV-17-A	SV-17-A	SV-17-A	SV-17-A	SV-17-A	SV-17-A	SV-17-A	SV-17-A	SV-17-A
Sample Date:	Mar-06	Jul-08	Nov-08	Oct-10	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	Mar-06	Nov-08	Oct-09	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	
Volatile organic compounds (µg/m ³)																		
1,1-Dichloroethane	42,700 J	180	1,400	40	NS	NS	NS	NS	NS	5.6	47	6.7	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	--	2,100	18,000	770	NS	NS	NS	NS	NS	--	38	6	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	--	--	--	--	NS	NS	NS	NS	NS	--	--	--	NS	NS	NS	NS	NS	NS
Chloroethane	--	--	53	--	NS	NS	NS	NS	NS	--	--	--	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	--	67	420	5.7 J	NS	NS	NS	NS	NS	--	21	--	NS	NS	NS	NS	NS	NS
Benzene	46.1 J	--	--	--	NS	NS	NS	NS	NS	0.9 J	--	0.4	NS	NS	NS	NS	NS	NS
Carbon tetrachloride	10.7 J	--	--	--	NS	NS	NS	NS	NS	0.8 J	--	0.5	NS	NS	NS	NS	NS	NS
Chloroform	47.4 J	--	--	--	NS	NS	NS	NS	NS	1.1 J	78	27	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	5,820	710	3,000	88	NS	NS	NS	NS	NS	43.8	8	2.4	NS	NS	NS	NS	NS	NS
Dichlorodifluoromethane	--	--	--	--	NS	NS	NS	NS	NS	2.8	--	2.8	NS	NS	NS	NS	NS	NS
Ethylbenzene	19.2 B	--	--	--	NS	NS	NS	NS	NS	0.5 B	--	3.3	NS	NS	NS	NS	NS	NS
Methyl tert-butyl ether	1,490 J	--	--	--	NS	NS	NS	NS	NS	0.7 J	NA	0.5 J	NS	NS	NS	NS	NS	NS
Tetrachloroethene	514 J	--	--	--	NS	NS	NS	NS	NS	0.7 J	--	0.8	NS	NS	NS	NS	NS	NS
Toluene	30.8 B	--	--	7.9 J	NS	NS	NS	NS	NS	2.3	--	58	NS	NS	NS	NS	NS	NS
Total Xylenes	68.1 J	--	--	--	NS	NS	NS	NS	NS	1.7 J	--	11.3	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	297 J	--	--	9.7	NS	NS	NS	NS	NS	0.7 J	--	0.2 J	NS	NS	NS	NS	NS	NS
Trichloroethene	6,870	1,300	3,700	130	NS	NS	NS	NS	NS	60.4	310	67	NS	NS	NS	NS	NS	NS
Vinyl chloride	124 J	--	63	6.4	NS	NS	NS	NS	NS	--	--	0.1 J	NS	NS	NS	NS	NS	NS
TOTAL VOCs	58,037 J	4,357	26,636	1,058 J	NS	NS	NS	NS	NS	122	502	187 J	NS	NS	NS	NS	NS	NS

-- = non-detect (below detection limit)

B = blank contamination

J = estimated value

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-1

Summary of Positive Detects for Vapor Samples
 Building A Plating Shop
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 5 of 5

	018-A-SV															
Sample ID:	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV	018-A-SV
Sample Date:	Mar-06	Dec-06	Apr-07	Oct-07	Oct-07	Nov-08	Oct-09	Aug-10	Feb-11	Aug-11	Oct-11	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Location:	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A	BLDG A
Volatile organic compounds (µg/m³)																
1,1-Dichloroethane	9,550 J	1,750	78,600	10	76,000	44,000	1,100	750	3	--	2,200	1,300	1,200	410	92 J	3.1
1,1-Dichloroethene	--	--	--	--	--	1,500,000	43,000	32,000	48	2.9	130,000	69,000	42,000	54,000	6,100 J	230
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.7 J
Benzene	1.5 J	--	--	--	--	--	--	--	1	0.58	7.8	--	--	23	1.3	0.96
Carbon tetrachloride	1.8 J	17.3	337	--	--	--	--	--	--	--	6.7	--	--	7	1.7 J	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.9
Chloroform	5.7	8.8 J	316	--	--	--	--	--	0.6 J	0.65 J	14	--	--	15	1.6 J	1.7 J
cis-1,2-Dichloroethene	2,040 J	6,270	232,000	30	250,000	170,000	4,400	3,200	17	1.3	23,000	6,700	8,200	3,800	850 J	16.3
Dichlorodifluoromethane	--	--	--	--	--	--	--	--	2	2.5	2.2	--	--	2.80	3.3	2.2
Ethylbenzene	0.8 J	--	--	--	--	--	--	--	1	2.6	0.97	--	--	--	1.1	--
Methyl tert-butyl ether	14.4	5.3 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	4 B	0.81	--	--	450 B	--	1.7 J	19.8
Napthalene	--	--	--	--	--	--	--	--	--	11 J	--	--	450 J	--	6.9	2.8
Tetrachloroethene	9.9	91.2	4,470	--	--	--	--	--	--	--	120	--	--	110	6.2 J	--
Toluene	1.6 B	2.1 J	29.6 J	--	--	--	--	--	4	32	19	--	--	4.1	27 J	2.6
Total Xylenes	2.5 J	--	--	--	--	--	500	--	5	14.9	1.63 J	--	--	0.62	4.5	2.0 J
trans-1,2-Dichloroethene	15.4	113	4,160	--	--	--	--	--	--	--	71	--	--	66.00	6.4 J	--
Trichloroethene	20,900 J	162,000	6,200,000	330	3,900,000	2,700,000	63,000	64,000	160	7.2	800,000	83,000	69,000	95,000	4,000 J	174
Vinyl chloride	7	91.2	1,850	--	--	--	--	--	--	--	550	300 J	180 J	170	24	0.57
TOTAL VOCs	32,551 J	170,349 J	6,521,763 J	370	4,226,000	4,414,000	112,000	99,950	246 J	76 J	955,993 J	160,300 J	121,480 J	153,609	11,128 J	467 J

-- = non-detect (below detection limit)

B = analyte detected in laboratory blank

D = duplicate value

J = estimated value

NA = not applicable

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
 Building C Basement Area
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 1 of 8

	001-C-SV																	
Sample ID:	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV	001-C-SV
Sample Date:	Mar-06	Mar-06	Dec-06	Apr-07	Oct-07	Jul-08	Nov-08	Oct-09	Aug-10	Feb-11	Aug-11	Feb-12	Jun-12	Jul-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m³)																		
1,1-Dichloroethane	5,410	2,960	--	--	--	--	--	--	--	--	6.7	--	--	--	1.4 J	NS	NS	NS
1,1-Dichloroethene	--	--	--	--	--	24	39	1 J	--	--	2.3	--	--	23	--	NS	NS	NS
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	2.8	--	--	--	--	NS	NS	NS
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS
Benzene	--	33.4 J	--	--	--	--	--	--	--	--	0.39 J	--	--	--	--	NS	NS	NS
Carbon tetrachloride	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS
Chloroform	86.8 J	57 J	--	--	--	--	--	7.4	18	4	13	5	--	--	8.9 J	NS	NS	NS
cis-1,2-Dichloroethene	792,000 J	840,000 J	481,000	1,550,000	260,000	1,100	3,300	230	360	97	250	100	110	1,900	170	NS	NS	NS
Dichlorodifluoromethane	--	--	--	--	--	--	--	2.2 J	--	2	2.6	2.4 J	--	--	--	NS	NS	NS
Ethylbenzene	39.3 B	34.8 B	--	--	--	--	--	--	--	--	6.6	--	--	--	--	NS	NS	NS
Methyl tert-butyl ether	332	238	--	--	--	NA	NA	--	--	1	--	--	--	--	--	NS	NS	NS
Methylene Chloride	--	--	--	--	--	--	--	--	--	33 J	1.1	--	--	32	30 B	NS	NS	NS
Napthalene	--	--	--	--	--	--	--	--	--	1 UR	3.1	--	--	--	--	NS	NS	NS
Styrene	--	--	--	--	--	13	--	--	--	--	--	--	--	--	--	NS	NS	NS
Tetrachloroethene	107 J	100 J	158 J	136 J	--	--	--	3 J	6 J	2	4.8	1.8 J	--	--	8.7 J	NS	NS	NS
Toluene	103 B	86.8	--	--	--	--	--	--	--	1 J	3.6	1.2 J	--	--	13	NS	NS	NS
Total Xylenes	68.7 J	81.5 J	--	--	--	--	--	3.2	19	--	18	--	--	--	5.1 J	NS	NS	NS
trans-1,2-Dichloroethene	5,180	2,580	5,200	5,930	3,500	--	--	49	88	25	44	18	--	--	33	NS	NS	NS
Trichloroethene	19,200	16,400 J	19,600	21,100	8,500	450	850	330	620	190	550	160	150	700	300	NS	NS	NS
Vinyl chloride	1,320	542	761	578	--	58	40	--	--	--	--	--	--	14	--	NS	NS	NS
TOTAL VOCs	823,847 J	863,113 J	506,719 J	1,577,744 J	272,000	1,645	4,229	626 J	1,111 J	355 J	909 J	288 J	--	2,669	570 J	NS	NS	NS

-- = non-detect (below detection limit)

B = blank contamination

D = duplicate

J = estimated value

NA = not applicable

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

UR = nondetect, data rejected

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
 Building C Basement Area
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 2 of 8

	SSD-2-C								SSD-3-C									
Sample ID:	SV-2-C	SV-2-C	SV-2-C	SV-2-C	SV-2-C	SV-2-C	SV-2-C	SV-2-C	SV-3-C	SV-3-C	SV-3-C	SV-3-C	SV-3-C	SV-3-C	SV-3-C	SV-3-C	SV-3-C	SV-3-C
Sample Date:	Mar-06	Jul-08	Nov-08	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	Mar-06	Jul-08	Nov-08	Feb-12	Jun-12	Jul-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m ³)																		
1,1-Dichloroethane	10.6 B	--	--	NS	NS	NS	NS	NS	3.4 B	--	--	NS	--	--	NS	NS	NS	NS
1,2,4-Trichlorobenzene	--	--	--	NS	NS	NS	NS	NS	--	--	--	NS	--	--	NS	NS	NS	NS
Methylene chloride	--	44	--	NS	NS	NS	NS	NS	--	--	--	NS	--	--	NS	NS	NS	NS
Benzene	18.3 J	--	8.4	NS	NS	NS	NS	NS	6.7 J	64	--	NS	--	--	NS	NS	NS	NS
Carbon tetrachloride	--	--	--	NS	NS	NS	NS	NS	1.8 J	--	--	NS	--	--	NS	NS	NS	NS
Chloroform	552 J	--	18	NS	NS	NS	NS	NS	66	--	--	NS	--	--	NS	NS	NS	NS
cis-1,2-Dichloroethene	320 J	22	350	NS	NS	NS	NS	NS	93	--	9	NS	--	11	NS	NS	NS	NS
Dichlorodifluoromethane	4.5 J	--	--	NS	NS	NS	NS	NS	--	--	--	NS	--	--	NS	NS	NS	NS
Ethylbenzene	38.2 J	--	--	NS	NS	NS	NS	NS	19	--	--	NS	--	--	NS	NS	NS	NS
Methyl tert-butyl ether	1,000	NA	NA	NS	NS	NS	NS	NS	469	--	--	NS	--	--	NS	NS	NS	NS
Tetrachloroethene	174 J	--	--	NS	NS	NS	NS	NS	388	--	14	NS	--	58	NS	NS	NS	NS
Toluene	65.9 J	14	--	NS	NS	NS	NS	NS	18.8	--	NS	NS	--	--	NS	NS	NS	NS
Total Xylenes	95.5 J	--	--	NS	NS	NS	NS	NS	70.9	--	--	NS	8.7	--	NS	NS	NS	NS
trans-1,2-Dichloroethene	20.9 J	--	--	NS	NS	NS	NS	NS	24.4	--	--	NS	--	--	NS	NS	NS	NS
Trichloroethene	408 J	55	770	NS	NS	NS	NS	NS	2,130	49	60	NS	49	310	NS	NS	NS	NS
Vinyl chloride	15.9 J	--	--	NS	NS	NS	NS	NS	--	--	--	NS	--	--	NS	NS	NS	NS
TOTAL VOCs	2,724 J	135	1,146	NS	NS	NS	NS	NS	3,291 J	113	83	NS	58	379	NS	NS	NS	NS

-- = non-detect (below detection limit)

B = blank contamination

J = estimated value

NA = not applicable

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
 Building C Basement Area
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 3 of 8

	SSD-4-C												
Sample ID:	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C	SV-4-C
Sample Date:	Mar-06	Dec-06	Apr-07	Oct-07	Jul-08	Nov-08	Feb-12	Jun-12	Jul-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m ³)													
1,1-Dichloroethane	1,010	--	--	--	--	--	NS	--	--	NS	NS	--	NS
1,1-Dichloroethene	--	--	--	--	9.7	9.9	NS	--	--	NS	NS	1.7	NS
1,2,4-Trichlorobenzene	--	--	--	--	--	--	NS	--	--	NS	NS	--	NS
Methylene chloride	--	--	--	--	--	36	NS	--	--	NS	NS	1.2	NS
Benzene	51.2	50	71.2	--	--	--	NS	--	--	NS	NS	0.65	NS
Carbon tetrachloride	--	--	--	--	--	--	NS	--	--	NS	NS	0.83 J	NS
Chloroform	131	7 J	--	--	270	240	NS	33	46	NS	NS	88	NS
cis-1,2-Dichloroethene	65,800	79,300	58,100	11,000	650	520	NS	200	2,500	NS	NS	71	NS
Dichlorodifluoromethane	--	--	--	--	--	--	NS	--	--	NS	NS	2.3	NS
Ethylbenzene	58.9	4.3 J	4 J	--	--	--	NS	--	--	NS	NS	1.5 J	NS
Methyl tert-butyl ether	420	--	--	--	--	NS	NS	--	--	NS	NS	--	NS
Tetrachloroethene	72.1	33.9	33.8 J	--	--	--	NS	--	--	NS	NS	2.2 J	NS
Toluene	211	51.2	72.1	210	--	--	NS	--	--	NS	NS	14	NS
Total Xylenes	264	--	--	--	--	--	NS	--	--	NS	NS	4.7	NS
trans-1,2-Dichloroethene	1,020	661	759	140	--	--	NS	--	--	NS	NS	20	NS
Trichloroethene	14,400	28,300	16,500	2,700	430	300	NS	240	2,500	NS	NS	140	NS
Vinyl chloride	663	381	609	--	16	13	NS	--	--	NS	NS	0.65	NS
TOTAL VOCs	84,101	108,788 J	76,149 J	14,050	1,376	1,119	NS	473	5,046	NS	NS	349 J	NS

-- = non-detect (below detection limit)

D = duplicate

J = estimated

NA = not applicable

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
 Building C Basement Area
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 4 of 8

	SSD-5-C									SSD-6-C						
Sample ID:	SV-5-C	SV-5-C	SV-5-C	SV-5-C	SV-5-C	SV-5-C	SV-5-C	SV-5-C	SV-5-C	SV-6-C	SV-6-C	SV-6-C	SV-6-C	SV-6-C	SV-6-C	SV-6-C
Sample Date:	Mar-06	Nov-08	Oct-09	Aug-10	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	Mar-06	Nov-08	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m ³)																
1,1-Dichloroethane	--	--	--	0.12 J	NS	NS	NS	NS	NS	0.5 B	--	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	--	--	--	--	NS	NS	NS	NS	NS	--	--	NS	NS	NS	NS	NS
1,2,4-Trimethylbenzene	--	--	--	--	NS	NS	NS	NS	NS	--	12	NS	NS	NS	NS	NS
Benzene	9 J	--	0.36	0.39	NS	NS	NS	NS	NS	23.5 J	--	NS	NS	NS	NS	NS
Trichlorofluoromethane	--	19	--	--	NS	NS	NS	NS	NS	--	--	NS	NS	NS	NS	NS
Methylene chloride	--	--	--	0.58 J	NS	NS	NS	NS	NS	--	52	NS	NS	NS	NS	NS
Carbon tetrachloride	0.9 J	--	0.4 J	0.61	NS	NS	NS	NS	NS	1.4 J	--	NS	NS	NS	NS	NS
Chloroform	286	15	8.5	13	NS	NS	NS	NS	NS	390	--	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	0.8 B	--	--	--	NS	NS	NS	NS	NS	2.7 B	--	NS	NS	NS	NS	NS
Dichlorodifluoromethane	3.1 J	--	3.7	0.73	NS	NS	NS	NS	NS	2.6 J	--	NS	NS	NS	NS	NS
Ethylbenzene	93.6 J	--	0.24 J	0.41	NS	NS	NS	NS	NS	164 J	--	NS	NS	NS	NS	NS
Methyl tert-butyl ether	572	NA	--	--	NS	NS	NS	NS	NS	416	NS	NS	NS	NS	NS	NS
Tetrachloroethene	82.9 J	64	66	110	NS	NS	NS	NS	NS	76.3 J	42	NS	NS	NS	NS	NS
Toluene	157 J	--	0.53	0.56	NS	NS	NS	NS	NS	249	--	NS	NS	NS	NS	NS
Total Xylenes	407 J	--	1.08	1.64 J	NS	NS	NS	NS	NS	935	--	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	--	--	--	--	NS	NS	NS	NS	NS	--	--	NS	NS	NS	NS	NS
Trichloroethene	2 B	--	0.94	2.6	NS	NS	NS	NS	NS	5.1 B	--	NS	NS	NS	NS	NS
Vinyl chloride	--	--	--	--	NS	NS	NS	NS	NS	--	--	NS	NS	NS	NS	NS
TOTAL VOCs	1,614 J	98	82 J	131 J	NS	NS	NS	NS	NS	2,266 J	106	NS	NS	NS	NS	NS

-- = non-detect (below detection limit)

D = duplicate

J = estimated

NA = not applicable

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
 Building C Basement Area
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 5 of 8

	060-C-SV					088-C-SV				
Sample ID:	060-C-SV	060-C-SV	060-C-SV	060-C-SV	060-C-SV	088-C-SV	088-C-SV	088-C-SV	088-C-SV	088-C-SV
Sample Date:	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m³)										
1,1-Dichloroethane	71 J	74	43	6.9	2.3	--	--	0.66	--	--
1,2-Dichloroethane	--	--	--	0.53 J	--	--	--	--	0.62	--
1,1-Dichloroethene	11 J	4.6 J	22	7.4	0.86 J	3.3 J	--	1	0.52 J	--
1,1,1-Trichloroethane	11 J	9.5 J	19	19	--	--	--	--	0.67 J	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	20 J	--	9.5	5.4 J	3.2	39	--	5.4	5.4	1.8
1,2,3-Trimethylbenzene	--	--	6.8	1.5 J	0.91	30	--	2.9	3	1.1
1,3,5-Trimethylbenzene	--	--	14	5.8 J	2.2	11 J	--	1.1	1.7	--
Benzene	--	--	5.9	0.62	0.85	--	--	1.1	0.97	1.2
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--
Methylene chloride	25 B	15 B	5.8	3.4	10.7	9.4 B	6.5 B	0.92	1.30	82.5
Naphthalene	280 J	360 J	67	4.3 J	4.4	540	180 J	61	15	22.3
Carbon tetrachloride	--	--	--	--	--	--	--	0.77 J	--	--
Chloroform	56	69	57	5	3.1	9.7 J	4.5 J	6.6	2.4	--
Chlorodifluoromethane	18 B	6 J	--	260	5.8 J	34 B	--	--	210	3.2
cis-1,2-Dichloroethene	200 J	230	460 J	23	16.5	670	290	470	33	17.6
Dichlorodifluoromethane	--	--	4	3.8	2.8	--	--	3.2	6.8	2.6
Ethylbenzene	190 J	160	390 J	150	96.5	15 J	--	1.1	2.6 J	2.2
Methyl tert-butyl ether	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	23 J	26 J	23	1.2 J	2.2	--	--	2.3	0.83 J	--
Toluene	14 J	10 J	8	20	13.1	12 J	--	1.4	8.4	--
Total Xylenes	1,200 J	2,600	4,100	780	791	150	5 J	9.9	18.1	14.7
trans-1,2-Dichloroethene	26 J	24	18	3.5	1.1 J	14 J	5.4 J	5.4	1.9	--
Trichloroethene	3,000	3,700	10,000	370	291	3,800	1,900	2,800	270	70.6
Vinyl chloride	--	--	--	--	--	--	--	0.49	--	--
TOTAL Volatile organic c	5,145 J	7,288 J	15,253 J	1,671 J	1,249 J	5,337 J	2,391 J	3,375 J	583 J	220

-- = non-detect (below detection limit)

J = estimated value

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
 Building C Basement Area
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 6 of 8

	113-C-SV					126-C-SV				
Sample ID:	113-C-SV	113-C-SV	113-C-SV	113-C-SV	113-C-SV	126-C-SV	126-C-SV	126-C-SV	126-C-SV	126-C-SV
Sample Date:	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m³)										
1,1-Dichloroethane	--	--	2.2	2.2 J	--	--	--	--	--	--
1,2-Dichloroethane	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	1.7	0.69 J	--	360	1,000	680	720	199
1,1,1-Trichloroethane	--	--	1.1	1.3 J	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	4.3
1,2,4-Trimethylbenzene	--	--	8.5	6.3 J	--	29 J	--	--	6.2 J	--
1,2,3-Trimethylbenzene	--	--	2.8	3 J	--	--	--	5.5	5.8 J	1.4
1,3,5-Trimethylbenzene	--	--	2.2	1.9 J	--	--	--	--	--	1.1 J
Benzene	--	--	2	0.49 J	2.4	86	220	250	300	88.4
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--
Methylene chloride	12 B	24 B	0.53	0.53 J	557 J	36 B	27 B	4.2	3.1 J	9.2
Naphthalene	64 J	30 J	51	47	--	250	360	200	100 J	70.6
Carbon tetrachloride	--	--	--	--	1.1	--	--	1.2	--	--
Chloroform	38	59	50	3 J	--	--	--	--	2.3 J	0.84 J
Chlorodifluoromethane	13 B	12 J	3.2	27	10.7 J	20 J	--	--	--	--
cis-1,2-Dichloroethene	500	700	850	40	--	350	670	560	740	205
Dichlorodifluoromethane	--	--	3.2	2.4 J	3.8 J	--	--	0.96	0.55 J	1.5 J
Ethylbenzene	--	--	1.6	2.6 J	--	72	180	8.7	13.0 J	3.0
Methyl tert-butyl ether	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	14 J	21 J	15	0.69 J	--	--	--	--	--	--
Toluene	15 J	16 J	3	7 J	6.1 J	54	92	19	45 J	14.7
Total Xylenes	--	--	8.9	18.5 J	3.23	350	980	29	29 J	19.1
trans-1,2-Dichloroethene	--	--	5.2	0.6 J	0.73 J	41 J	80	32	92	--
Trichloroethene	5,700	8,900	16,000	290	7.0 J	280	2,900 J	920	2,400	177
Vinyl chloride	--	--	1	--	--	82,000	110,000	37,000	28,000	11,900
TOTAL VOCs	6,356 J	9,762 J	17,013	455 J	592 J	83,928 J	116,482 J	39,711	32,457 J	12,695 J

-- = non-detect (below detection limit)

D = duplicate

J = estimated value

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
 Building C Basement Area
 Lockheed Martin Corporation, Middle River Complex
 Middle River, Maryland
 Page 7 of 8

	133-C-SV					135-C-SV				
Sample ID:	133-C-SV	133-C-SV	133-C-SV	133-C-SV	133-C-SV	135-C-SV	135-C-SV	135-C-SV	135-C-SV	135-C-SV
Sample Date:	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Volatile organic compounds (µg/m³)										
1,1-Dichloroethane	--	--	--	0.41 J	--	--	--	--	--	--
1,2-Dichloroethane	--	--	0.7	0.66	0.92	--	--	--	0.49 J	--
1,1-Dichloroethene	--	--	--	0.6	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	5.2	--	--	--	--	0.78 J	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	--	--	2.1	28 J	--	81	--	4.1	2.1	--
1,2,3-Trimethylbenzene	--	--	0.95	4.1 J	--	--	--	3.2	--	--
1,3,5-Trimethylbenzene	--	--	0.6 J	3.6	--	27 J	--	1.2	1	--
Benzene	--	--	1.3	0.62	0.77	--	--	0.75	1.1	0.33 J
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--
Methylene chloride	2,700 J	230 B	--	0.53	20.2 J	23 B	58 B	0.49 J	--	--
Naphthalene	2,200	--	110	42 J	4.7	510	580	280	6.7	3.8 J
Carbon tetrachloride	--	--	2.5	0.77 J	--	--	--	52	1.7	--
Chloroform	83 J	--	43	7.9	6.7	14 J	--	21	0.84	--
Chlorodifluoromethane	1,500	--	--	190 J	4.3	--	--	--	89	2.1
cis-1,2-Dichloroethene	--	--	33	2.5	8.4	220	260	130	--	--
Dichlorodifluoromethane	130 J	--	--	--	3.2	--	--	2.7	3.4	2.1
Ethylbenzene	--	--	0.93	2.2	--	40 J	--	--	3	4.2
Methyl tert-butyl ether	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	2,200	740	1,500	77	169	22 J	--	11	--	--
Toluene	180 J	90 J	1.3	7.7	3.6 J	49	--	0.61	7.7	--
Total Xylenes	60 J	--	1.5	10.4	2.61	210	--	2.56	14	22.4
trans-1,2-Dichloroethene	--	--	25	3.1	3.6	15 J	--	3.9	--	--
Trichloroethene	50,000	20,000	60,000	5,600	10,700	11,000	16,000	4,500	29	5.6
Vinyl chloride	--	--	--	0.57	--	--	--	--	--	--
TOTAL VOCs	59,053 J	21,060 J	61,723 J	5,988 J	10,928 J	12,211 J	16,898 J	5,014 J	161 J	40.5 J

-- = non-detect (below detection limit)

D = duplicate

J = estimated value

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Table 4-2

Summary of Positive Detects for Vapor Samples
Building C Basement Area
Lockheed Martin Corporation, Middle River Complex
Middle River, Maryland
Page 8 of 8

	SV-141-C
Sample ID:	SV-141-C
Sample Date:	Feb-14
Volatile organic compounds (µg/m³)	
1,1-Dichloroethane	--
1,1-Dichloroethene	1.7
1,2,4-Trichlorobenzene	--
Methylene chloride	39.1
Benzene	0.88
Carbon tetrachloride	--
Chlorodifluoromethane	2.6
Chloroform	--
cis-1,2-Dichloroethene	2.2
Dichlorodifluoromethane	2.3
Ethylbenzene	2.2
Methyl tert-butyl ether	--
Napthalene	4.1 J
Tetrachloroethene	--
Toluene	3.7
Total Xylenes	15.3
trans-1,2-Dichloroethene	--
Trichloroethene	25.2
Vinyl chloride	--
TOTAL VOCs	99.28 J

-- = non-detect (below detection limit)

J = estimated value

NA = not applicable

NS = not sampled

SSD = sub-slab depressurization

SV = soil vapor

VOCs = volatile organic compounds

µg/m³ = micrograms per cubic meter air

Figure 4-1
Volatile Organic Compound Concentrations
at 015-A (Building A)
Lockheed Martin Corporation, Middle River Complex
Middle River, Maryland

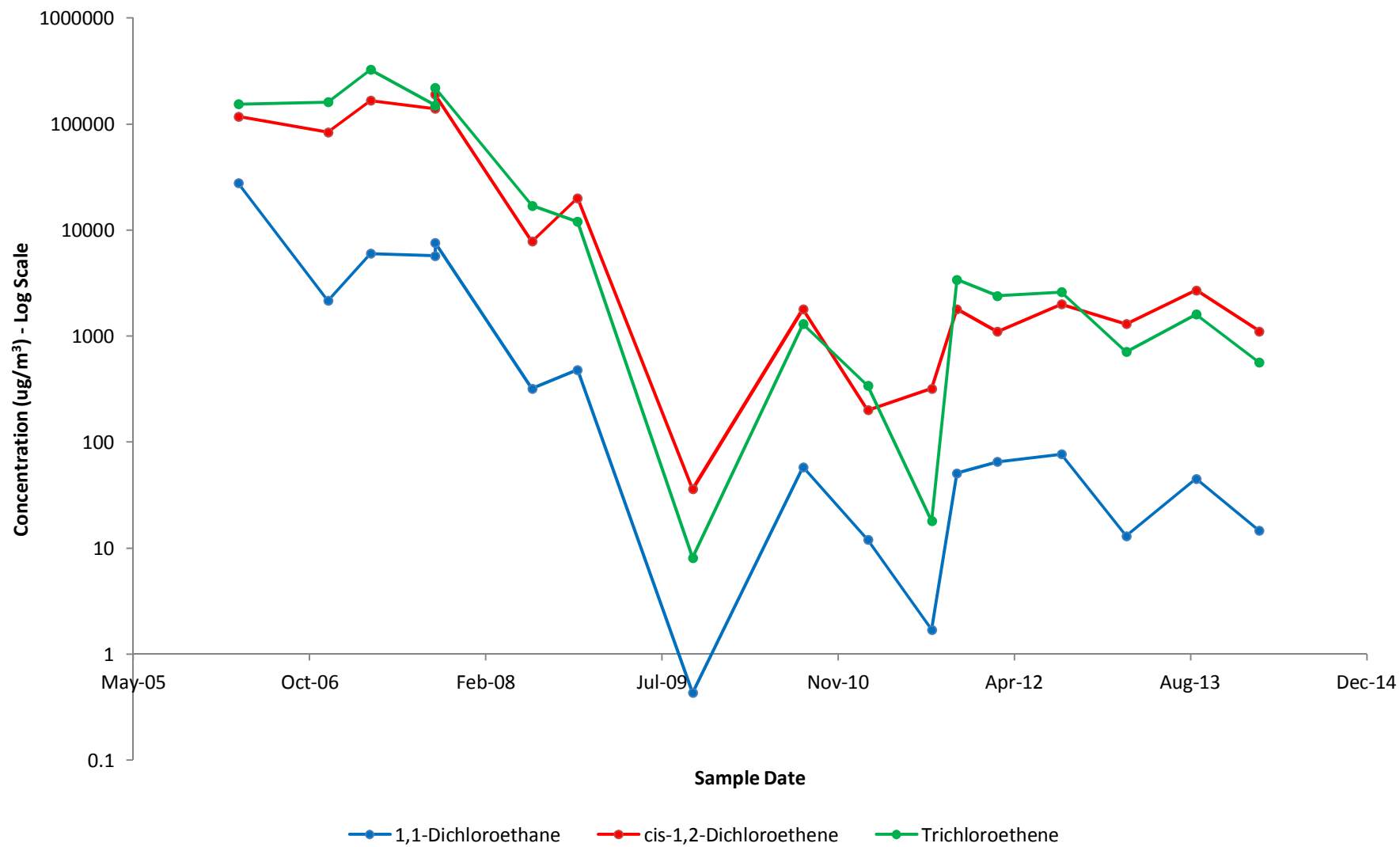


Figure 4-2
Volatile Organic Compound Concentrations
at 018-A (Building A Basement)
Lockheed Martin Corporation, Middle River Complex
Middle River, Maryland

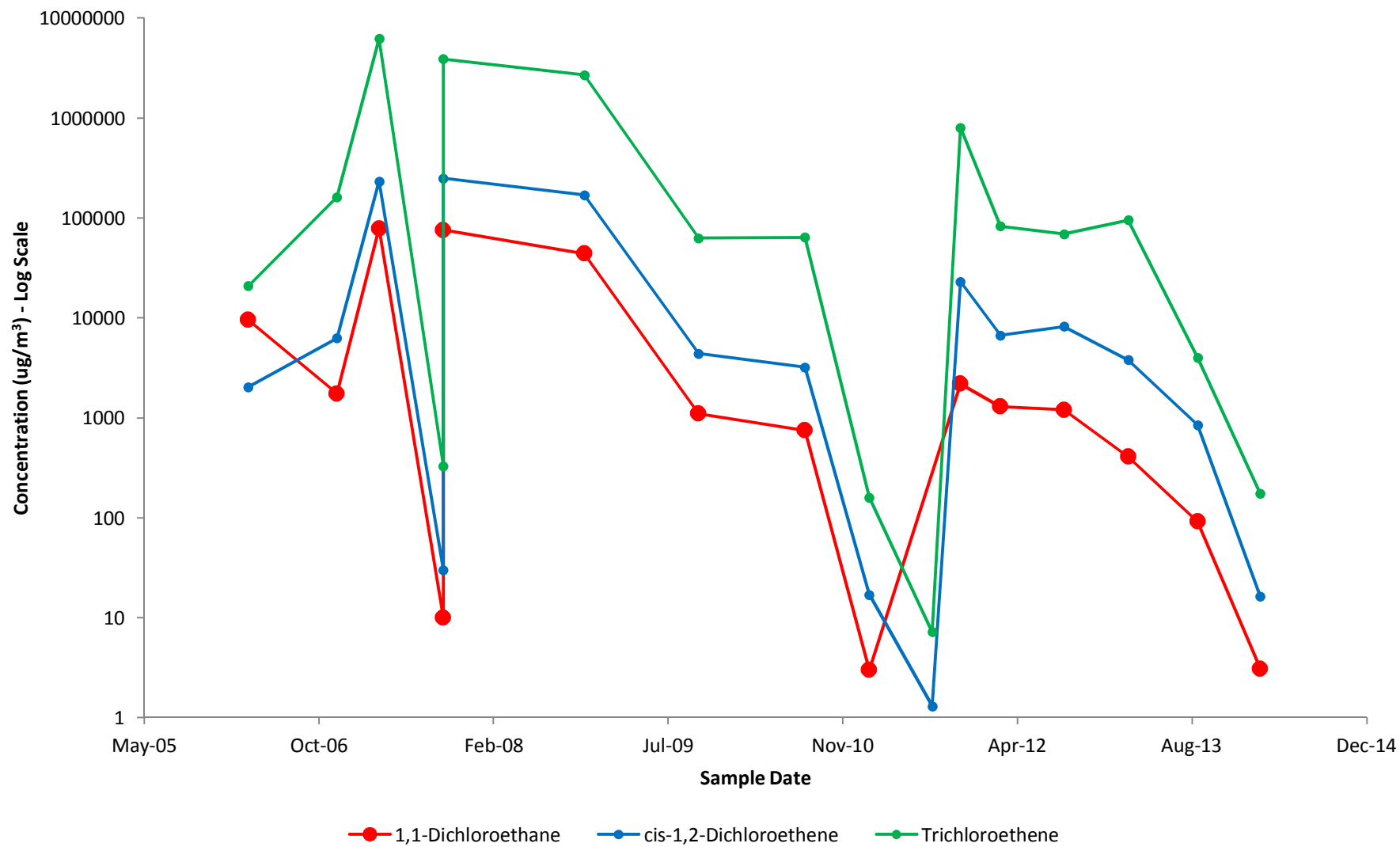
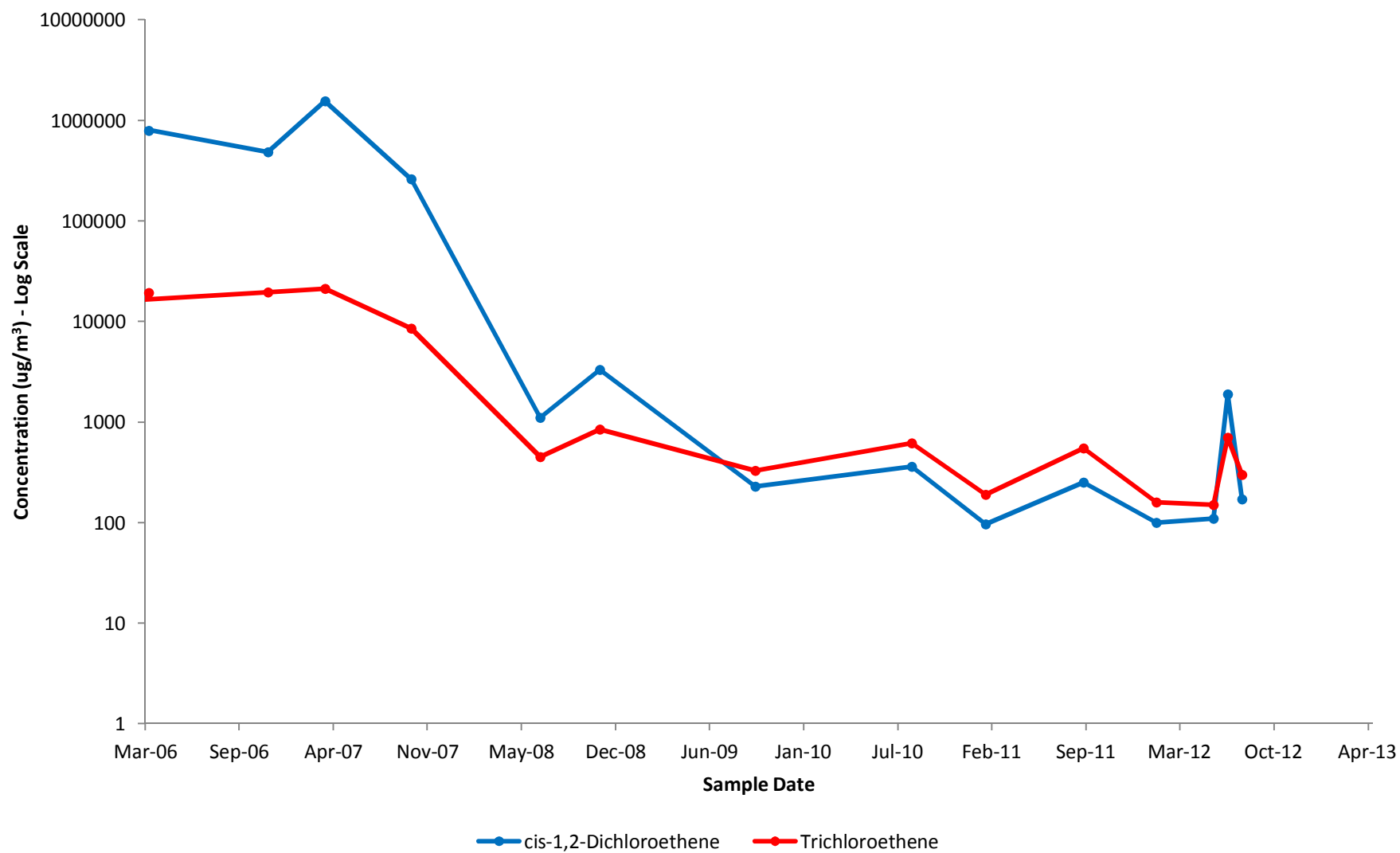


Figure 4-3
Volatile Organic Compound Concentrations
at 001-C (Building C Basement)
Lockheed Martin Corporation, Middle River Complex
Middle River, Maryland



Section 5

Conclusions and Recommendations

5.1 CONCLUSIONS

Tetra Tech, Inc. (Tetra Tech) has completed the first of two rounds of vapor-intrusion monitoring (Round 16) scheduled for 2014 in Buildings A, B, and C at the LMC Properties, Inc. (LMPCI) Middle River Complex (MRC) in Middle River, Maryland. This ongoing investigation seeks to evaluate whether volatile organic compounds (VOCs) in sub-slab vapors (associated with soil and groundwater chemicals of concern [COC] at the site) might be moving into indoor air at Middle River Complex facilities. The data set is comprised of indoor air (IA) and sub-slab-vapor (SV) samples collected in February 2014 from interior locations in Buildings A, B, and C, and in the Fire Coat, Vertical-Launch System (VLS), Engineering Research (ER), and Program buildings (PB), as well as two follow-up samples (one each from Buildings A and C) collected in April 2014. Ambient air samples were collected at four background locations around the perimeter of the Middle River Complex. All data were validated to ensure compliance with analytical method requirements.

Indoor air quality (IAQ) data were compared to risk-based screening levels for industrial air set at the 10^{-5} (i.e., one-in-100,000 probability) risk level for carcinogens and at a hazard index of 1 for noncarcinogens (as published by the United States Environmental Protection Agency's [USEPA's] *Regional Screening Levels for Chemical Contaminants at Superfund Sites* [USEPA, 2014]) and to Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs). Alternate values, such as the "Threshold Limit Values" published by the American Council of Governmental Industrial Hygienists, were used for chemicals without OSHA PELs. Sub-slab-vapor (SV) data were compared to screening values derived using methods described in *Draft Guidance for Evaluating the Vapor-Intrusion to Indoor-Air Pathway*

from *Groundwater and Soils* [USEPA, 2002]) by applying an attenuation factor of 0.03 to the indoor-air screening-values.

Results from the Round 16 monitoring program led to the following conclusions:

Overall indoor-air quality—

- While some evidence of sub-slab vapor intrusion to indoor air at the Middle River Complex continues to be found, Round 16 results indicate that its impact on indoor air quality appears limited. Trichloroethene, naphthalene, ethylbenzene, and xylenes were detected at concentrations exceeding indoor-air screening levels. Trichloroethene exceedances were detected at two locations in February 2014, but not in the follow-up samples collected at the same locations in April 2014.
- Naphthalene concentrations exceeded screening levels at 11 locations scattered throughout the study area, but Round 16 results generally do not indicate that sub-slab-vapor concentrations are strongly correlated to indoor air concentrations. The spatial distribution of data and a comparison of indoor air to background concentrations suggests that other factors (e.g., background, other indoor air sources) are likely affecting indoor air concentrations of naphthalene.
- Ethylbenzene and xylenes exceedances were observed in both samples collected from the Fire Coat building. The indoor air concentrations of these two analytes are greater than their co-located sub-slab-vapor concentrations, suggesting that vapor intrusion is not the source of these chemicals.
- No chemicals exceeded their applicable Occupational Safety and Health Administration permissible exposure limits (OSHA PELs) during Round 16 monitoring.

Trichloroethene in indoor air—

- Trichloroethene continues to be detected in indoor air.
- In Building A, the maximum trichloroethene indoor air concentration for this round was on the southern end of the first floor. This location has never had a historical exceedance. A lower concentration (below the screening level) of trichloroethene was detected in the sample collected from this location in April. Maximum detections of trichloroethene have historically been observed in the basement of the building near the plating shop. The higher indoor air concentrations of trichloroethene in the basement area might result from several factors, including a lack of ventilation in this area, the density of trichloroethene (it is heavier than air), and/or the area's proximity to a possible source(s).
- The HAPSITE instrument (portable gas chromatograph/mass spectrometer [GC/MS]) recorded one significant detection ($87\text{ }\mu\text{g}/\text{m}^3$) at a location above a floor grate near air sampling locations 093-A and 138-A in the Building A basement. This suggests that the drain may serve as a preferential pathway to this area.

-
- The only indoor air detection of trichloroethene in Building B was at a sampling point on the western side of the first floor, adjacent to Building A. Although trichloroethene has been detected in Building B indoor air in the past, it has never exceeded its indoor-air-quality screening level.
 - Trichloroethene exceeded its indoor air screening level at location 113-C in the center of Building C, although the duplicate sample collected at the same time did not show a trichloroethene exceedance. Trichloroethene was not detected in the sample subsequently collected from this location in April. Although trichloroethene has been routinely detected in indoor air in Building C, its concentrations have not typically exceeded its screening level, except during Round 15. The location of this specific exceedance at location 144-C during Round 15 was in the Mission Systems & Training (MST) mechanical prototype lab (MPL) machine shop, northeast of the former Patriot plating line in the east-central part of the building. During Round 15 sampling, this room had a positive pressure and was air-conditioned. Elevated concentrations here suggest a possible indoor source. Trichloroethene was not detected at this location during the current round of sampling. Moreover, the HAPSITE instrument did not detect any trichloroethene concentrations above background in the Building C machine shop.
 - Trichloroethene exceeded its indoor air screening level at location 081-A on the southern side of Building A in February 2014, but was detected at a concentration less than its screening level when this location was resampled in April 2014. Historically, this location has never had an indoor air exceedance of trichloroethene.
 - Trichloroethene concentrations in indoor air vary, as demonstrated by comparing initial sampling results (February 2014) at locations 081-A and 113-C to resampling results (April 2014). This variability reflects the transient nature of volatile organic compound concentrations.
 - Trichloroethene was not detected in indoor air in the Fire Coat, Vertical-Launch System, Engineering Research, or Program buildings.

Trichloroethene in sub-slab vapor—

- Four locations in Building A had sub-slab-vapor concentrations of trichloroethene greater than screening levels during Round 16. One area of elevated trichloroethene is along the southern half of the first floor of Building A from 015-A across to 079-A, near the plating shop. The other location is in the north-central/northeast section of Building A (Figure 3-8).
- Sub-slab-vapor trichloroethene has historically been high near the Building A plating shop (018-A). However, the soil vapor concentration of trichloroethene in this area during Round 16 was below the screening level. This may suggest that the sub-slab-depressurization system has influenced this area. Elevated concentrations of trichloroethene found at 079-A to the east could also be associated with an isolated source.

-
- Exceedances of trichloroethene in sub-slab-vapor were also detected in the central-eastern portion of the Building C basement, ranging from 2,740 $\mu\text{g}/\text{m}^3$ to 10,700 $\mu\text{g}/\text{m}^3$. A comparison to same-season results shows that these concentrations are less than Round 14 results (2,600 to 60,000 $\mu\text{g}/\text{m}^3$) and Round 12 results (trichloroethene greater than 200,000 $\mu\text{g}/\text{m}^3$). This concentration reduction might be associated with the expansion of the Building C sub-slab-depressurization system, or could be due to random concentration fluctuations.

Relationship between soil-vapor and indoor-air trichloroethene concentrations—

- Exceedances of trichloroethene in soil vapor samples in the southern half of Building A near the plating shop might be a possible source of the indoor air contamination identified throughout Building A (Figure 3-8).
- The detection of trichloroethene in indoor air (via portable gas-chromatograph/mass-spectrometer) above a floor grate near sampling location 093-A suggests a possible soil vapor source to the Building A basement through a preferential pathway.
- While the indoor air concentrations of trichloroethene in Building C were less than the screening level, its presence likely (at least in part) results from a possible indoor air source or a possible vapor intrusion contribution, due to the presence of elevated trichloroethene concentrations and degradation products in sub-slab vapor (Figure 3-10).
- The detection of trichloroethene in Building B is most likely related to its proximate location to Building A.

Trichloroethene degradation products—

- The concentrations and distribution of possible the trichloroethene-degradation products 1,1-dichloroethene, *cis*-1,2-dichloroethene, *trans*-1,2-dichloroethene, and vinyl chloride were compared to trichloroethene concentrations in sub-slab vapor and indoor air. In Building A, sub-slab-vapor concentrations of these degradation products typically coincide with higher sub-slab-vapor concentrations of trichloroethene. These results indicate that trichloroethene degradation in the subsurface could be contributing these breakdown products to sub-slab vapor beneath parts of Building A. The presence of these degradation products in indoor air where trichloroethene is located continues to indicate that sub-slab-vapor intrusion is occurring, particularly in Building A.
- In Buildings B and C, high sub-slab concentrations of trichloroethene do not necessarily correlate with high sub-slab-vapor concentrations of trichloroethene degradation products.
- Elevated levels of vinyl chloride have been observed in sub-slab vapor in the Building C basement beneath its southern aspect, and in the northeastern and central portions of the Building C basement near its eastern edge. Vinyl chloride was not detected in any indoor air samples during Round 16.
- The recurring high sub-slab-vapor concentration of vinyl chloride at 126-C might indicate that this location is above or at the leading edge of an upgradient subsurface source of chlorinated-solvent contamination, possibly originating outside the building.

The groundwater samples collected from MW-88 during the March–May 2011 and March–May 2012 monitoring rounds contained trichloroethene exceedances (1200 µg/L and 712 µg/L, respectively). This well is outside Building C, approximately 112-feet northeast of sampling location 126-C. In the 2009 Block I Phase II site investigation, trichloroethene (20,000 µg/m³) was also reported in soil gas sample SG-2, collected approximately 56-feet north of 126-C (also outside the building). The groundwater concentration reported is unlikely to result in sub-slab-vapor concentrations greater than its screening level, but might still suggest a contributing groundwater source of trichloroethene in soil vapor.

Naphthalene in soil vapor and indoor air—

- Naphthalene exceeded its sub-slab-vapor screening level at one location in Building A and at one location in Building C.
- Naphthalene exceeded its indoor-air screening level at one location in Building A, two locations in Building B, and seven locations in Building C.
- In Buildings A, B, and C, no notable correlations were noted between the soil vapor and indoor air concentrations of naphthalene.
- Naphthalene was detected in seven indoor air samples collected from the Vertical-Launch System, Engineering Research, and Program buildings. Naphthalene was detected at a concentration greater than its screening level in only one sample from the northwestern corner of the Vertical-Launch System building. The presence of naphthalene in indoor air in these buildings might be related to the use of products containing naphthalene.

Chloroform in soil vapor and indoor air—

- Chloroform is a common industrial solvent and a potential degradation product of carbon tetrachloride. Only two locations (136-A and 143-C) had an exceedance of chloroform in sub-slab vapor. Chloroform was not detected in the co-located indoor air sample. Chloroform concentrations in indoor air did not exceed its screening level.

Xylene and ethylbenzene in soil vapor and indoor air—

- During Round 16, ethylbenzene and xylenes exceedances were detected in both indoor air samples collected from the Fire Coat building. Their co-located soil-vapor concentrations were less than their screening levels, but were greater than concentrations detected in Building B soil vapor. Detected levels of ethylbenzene and xylenes in the Fire Coat building are most likely related to solvents present within the building.

Contribution of background sources to indoor air—

- Interior and/or sub-slab sources appear to contribute chlorodifluoromethane, ethylbenzene, naphthalene, toluene, trichloroethene, trimethylbenzenes, and total xylenes to indoor air, because a significant number of their indoor air concentrations are greater than background (Table 3-18).
- Most Round 16 indoor air concentrations reported for benzene, methylene chloride, tetrachloroethene, and dichlorodifluoromethane likely reflect background conditions, because these compounds were infrequently detected at concentrations greater than the maximum background concentration (Table 3-18).

-
- The evaluation of the Round 16 and historical background data for trichloroethene and naphthalene—the two most significant IA chemicals—suggests that IA concentrations reported for many of the locations sampled also likely reflect background conditions. In specific portions of Buildings A and C, trichloroethene and naphthalene data could indicate a possibly concurrent vapor-intrusion source.

Analysis of historical data—

- The locations of historical maximum indoor-air and sub-slab-vapor concentrations of trichloroethene in Buildings A and C indicate a possible spatial relationship. Elevated concentrations of trichloroethene in soil vapor on the eastern side of Building A correlate with the historical detections of trichloroethene in indoor air. Similarly, the elevated concentrations of trichloroethene in soil vapor in the center of Building C correlate with the historical detections of trichloroethene in the indoor air of this section of Building C.

Sub-slab-depressurization-systems—

- The sub-slab-depressurization mitigation-systems appear to be operating as designed and appear effective in mitigating sub-slab-vapor intrusion from known source areas of sub-slab-vapor contamination. Contaminants are constantly removed from soil vapor during system operation, and indoor air concentrations rarely exceed screening values. The Building C sub-slab-depressurization-system has been expanded to address the sub-slab-vapor contamination found beneath the eastern and central portions of the Building C basement. Concentrations of trichloroethene and *cis*-1,2-dichloroethene in sub-slab vapor at extraction points in the southern portion of the Building C basement have remained relatively constant over the last five rounds of sampling. These areas will continue to be monitored as the expanded Building C sub-slab-depressurization system continues to operate.

5.2 RECOMMENDATIONS

Results of the February 2014 Round 16 vapor-intrusion investigation at Buildings A, B, and C lead to the following recommendations:

- Continue SSD-system operations in Buildings A and C.
- Install additional vapor-monitoring points in the central portion of Building C that will more accurately measure the recently expanded SSD-system radius of influence in that area.
- Continue semiannual indoor-air-quality/sub-slab-vapor monitoring to evaluate possible vapor intrusion and to assess the ongoing performance of the existing mitigation systems. Monitoring will continue to evaluate the effectiveness of the sub-slab-depressurization systems. These results will be used to evaluate the control and reduction (if occurring) of known sources, identify new sources (if present), and help determine if additional mitigation or sub-slab-depressurization-system modifications are needed. Locations within the Building C sub-slab-depressurization systems' radii of influence should continue to be monitored to evaluate whether the recent system expansion affects contaminant concentrations.

-
- High concentrations of trichloroethene in sub-slab vapor beneath the eastern part of Building A (defined by results at locations 136-A and 079-A) suggest a need for additional sampling locations in this part of the building to determine if trichloroethene contamination is localized or widespread. Use of the HAPSITE portable gas-chromatograph/mass-spectrometer should be considered to determine if the eastern side of Building A has sources contributing trichloroethene to indoor air. In addition, sampling of IA on the west side of the Building A basement should be considered in light of the exceedance of TCE in IA found above the grate near 093-A using the HAPSITE instrument.

This page intentionally left blank.

Section 6

References

1. Air Toxics Ltd., 2007. *The Application of Method TO-15 to Naphthalene Measurements in Air*. Heidi C. Hayes and Diane J. Benton, Extended Abstract #13. Air Toxics Ltd. Folsom, California.
2. Maryland Department of the Environment (MDE), 2006. *Voluntary Cleanup Program Guidance Document*, Environmental Restoration and Redevelopment Program, Maryland Department of the Environment. March 17.
3. Maryland Department of the Environment (MDE), 2009. Conversation among Mr. Mark Mank (MDE), Tetra Tech, and Lockheed Martin. June.
4. Tetra Tech, Inc. (Tetra Tech), 2006a. *Site Characterization Report, Lockheed Martin Middle River Complex, Revision 1*. May.
5. Tetra Tech, Inc. (Tetra Tech), 2006b. *Indoor-Air-Quality Assessment Work Plan for Buildings A, B, C, and VLS, Lockheed Martin Middle River Complex*. November.
6. Tetra Tech, Inc. (Tetra Tech), 2007. *Indoor-Air-Quality Investigation, Buildings A, B, C, and VLS, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard, Middle River, Maryland*. September.
7. Tetra Tech, Inc. (Tetra Tech), 2008a. *Indoor-Air-Quality Investigation Round 3, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard, Middle River, Maryland*. January.
8. Tetra Tech, Inc. (Tetra Tech), 2008b. *Indoor-Air-Quality Investigation, 2008 Summary Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland*. July.
9. Tetra Tech, Inc. (Tetra Tech), 2008c. *November 2008 Sub-Slab Sampling Report, Sub-Slab Depressurization-Systems, Buildings A and C, Lockheed Martin Corporation Middle River Complex, Middle River, Maryland*. December.
10. Tetra Tech, Inc. (Tetra Tech), 2009a. *Block I Phase II Investigation Report, July 2009, Lockheed Martin Middle River Complex 2323 Eastern Boulevard Middle River, Maryland*. July.
11. Tetra Tech, Inc. (Tetra Tech), 2010a. *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation 2009 Summary Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland*. July.

-
12. Tetra Tech, Inc. (Tetra Tech), 2010b. *Indoor-Air-Quality Investigation August 2010 Summary Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* August.
 13. Tetra Tech, Inc. (Tetra Tech), 2011a. *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation August 2010 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* January.
 14. Tetra Tech, Inc. (Tetra Tech), 2011b. *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation February 2011 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* July.
 15. Tetra Tech, Inc. (Tetra Tech), 2011c. *Work Plan Addendum, Indoor Air and Sub-Slab-Vapor Sampling Round 11, August 2011, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* July.
 16. Tetra Tech, Inc. (Tetra Tech), 2012a. *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation February 2012 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* March.
 17. Tetra Tech, Inc. (Tetra Tech), 2012b. *Vapor-Intrusion Management Plan, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* September.
 18. Tetra Tech, Inc. (Tetra Tech), 2012c. *Remedial Action Progress Report #14 April 1, 2012 through September 30, 2012 Sub-Slab Depressurization-Systems in Buildings A and C, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* October.
 19. Tetra Tech, Inc. (Tetra Tech) 2013a. *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation August 2012 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* January.
 20. Tetra Tech, Inc. (Tetra Tech), 2013b. *Work Plan Addendum, Indoor Air and Sub-Slab-Vapor Monitoring Round 14, February 2013, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard, Middle River, Maryland.* January.
 21. Tetra Tech, Inc. (Tetra Tech) 2013c. *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation February 2013 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* January.
 22. Tetra Tech, Inc. (Tetra Tech) 2014a. *Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation August 2013 Monitoring Report, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard Middle River, Maryland.* April.

-
23. Tetra Tech, Inc. (Tetra Tech), 2014b. *Work Plan Addendum, Indoor Air and Sub-Slab-Vapor Monitoring Round 16, February 2014, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard, Middle River, Maryland*. September.
 24. Tetra Tech, Inc. (Tetra Tech), 2014c. *Work Plan Addendum for Indoor Air and Sub-Slab-Vapor Monitoring Round 16—Letter, February 2014, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard, Middle River, Maryland*. September.
 25. United States Environmental Protection Agency (USEPA), 1996. *Soil-Gas-Sampling Standard Operating Procedure #2042*. United States Environmental Protection Agency Environmental Response Team. May 1. REV. #: 0.0.
 26. 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).” (USEPA/625/R-96/010b). Center for Environmental Research Information, Office of Research and Development, U.S. Environmental Protection Agency. Cincinnati, Ohio 45268. January.
 27. United States Environmental Protection Agency (USEPA), 2002. “Draft Guidance for Evaluating the Vapor Intrusion to Indoor-Air Pathway from Groundwater and Soils (Docket ID No. RCRA-2002-0033).” *Federal Register*: November 29 (Volume 67, Number 230).
 28. United States Environmental Protection Agency (USEPA), 2004. *Sub-Slab Sampling and Analysis to Support Assessment of Vapor Intrusion*. United States Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, Groundwater and Ecosystem Restoration Division. Ada, Oklahoma. May.
 29. United States Environmental Protection Agency (USEPA), 2008. *USEPA Contact Laboratory Program National Functional Guidelines for Superfund Organic-Method Data Review*. USEPA Office of Superfund Remediation and Technology Innovation (OSRTI), Office of Solid Waste and Emergency Response (OSWER 9240.1-48) (USEPA-540-R-08-901). Washington, D.C. June.
 30. United States Environmental Protection Agency (USEPA), 2013. *Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air (External Review Draft)* 04-11-2013. USEPA Office of Solid Waste and Emergency Response. April.
 31. United States Environmental Protection Agency (USEPA), 2014. *Regional Screening Levels for Chemical Contaminants at Superfund Sites*. USEPA Office of Superfund and the U.S. Department of Energy’s Oak Ridge National Laboratory. May.

This page intentionally left blank.

APPENDIX A—FEBRUARY 2014 SAMPLE LOG SHEETS/ CHAIN OF CUSTODY

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: DLM/Jm/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE

SV Sample ID: SV-015-A-16SV Canister #: 2268SV Regulator #: FC0075SV Start Time: 0845SV Start Pressure: -30SV Stop Time: 0948SV Stop Pressure: +5.0

INDOOR AIR QUALITY SAMPLE

IAQ Sample ID: IA-015-A-16IAQ Canister #: 1156IAQ Regulator #: FC0233IAQ Start Time: 0730IAQ Start Pressure: -30IAQ Stop Time: 1549IAQ Stop Pressure: -1.0

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<input checked="" type="checkbox"/>

LOCATION:

SV-DUP3-A-16
Can # 2550IA-DUP3-A-16
Can # 2401

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: IA-DUP3-A-16
SV-DUP3-A-16

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: DLM/Jm/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-018-A-16</u>	IAQ Sample ID: <u>IA-018-A-16</u>
SV Canister #: <u>2568</u>	IAQ Canister #: <u>2287</u>
SV Regulator #: <u>FC0247</u>	IAQ Regulator #: <u>FC0295</u>
SV Start Time: <u>0930</u>	IAQ Start Time: <u>0740</u>
SV Start Pressure: <u>-38</u>	IAQ Start Pressure: _____
SV Stop Time: <u>1030</u>	IAQ Stop Time: <u>1623</u>
SV Stop Pressure: <u>-5.0</u>	IAQ Stop Pressure: <u>-2.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

SV-DUP4-A-16
Can# 2197

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

SV-DUP4-A-16

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: DM/JM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-075-A-16</u>	IAQ Sample ID: <u>IA-075-A-16</u>
SV Canister #: <u>2263</u>	IAQ Canister #: <u>1458</u>
SV Regulator #: <u>FC0041</u>	IAQ Regulator #: <u>FC0455</u>
SV Start Time: <u>0919</u>	IAQ Start Time: <u>0817</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1020</u>	IAQ Stop Time: <u>1617</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-3.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: DLM/JM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-076-A-16</u>	IAQ Sample ID: <u>IAQ - 076-A-16</u>
SV Canister #: <u>2223</u>	IAQ Canister #: <u>1105</u>
SV Regulator #: <u>FC0407</u>	IAQ Regulator #: <u>FC0412</u>
SV Start Time: <u>0908</u>	IAQ Start Time: <u>0812</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-27</u>
SV Stop Time: <u>1008</u>	IAQ Stop Time: <u>1612</u>
SV Stop Pressure: <u>-4.0</u>	IAQ Stop Pressure: <u>-3.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: Dum/Am/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-079-A-16</u>	IAQ Sample ID: <u>IA-079-A-16</u>
SV Canister #: <u>2507</u>	IAQ Canister #: <u>2436</u>
SV Regulator #: <u>FC0600</u>	IAQ Regulator #: <u>FC0144</u>
SV Start Time: <u>0900</u>	IAQ Start Time: <u>0757</u>
SV Start Pressure: <u>-28</u>	IAQ Start Pressure: <u>-28</u>
SV Stop Time: <u>1000</u>	IAQ Stop Time: <u>1555</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-4.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
TO 15	SUMMA CAN	✓

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/16

Project Number - Task: _____

Sampled By: Dm/um/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-081-A-16</u>	IAQ Sample ID: <u>IA-081-A-16</u>
SV Canister #: <u>0827</u>	IAQ Canister #: <u>1106</u>
SV Regulator #: <u>FC0053</u>	IAQ Regulator #: <u>FC0009</u>
SV Start Time: <u>0903</u>	IAQ Start Time: <u>0800</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-29</u>
SV Stop Time: <u>1004</u>	IAQ Stop Time: <u>1600</u>
SV Stop Pressure: <u>-8.0*</u>	IAQ Stop Pressure: <u>-2.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
TO15	SUMMA CAN	✓

LOCATION:

OBSERVATIONS / NOTES:

*Regulator gauge may be broken.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: Dum/Am/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-093-A-16</u>	IAQ Sample ID: <u>IA-093-A-16</u>
SV Canister #: <u>1785</u>	IAQ Canister #: <u>1108</u>
SV Regulator #: <u>FC0056</u>	IAQ Regulator #: <u>FC0364</u>
SV Start Time: <u>0940</u>	IAQ Start Time: <u>0745</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: _____
SV Stop Time: <u>1627</u>	IAQ Stop Time: <u>1627</u>
SV Stop Pressure: <u>0</u>	IAQ Stop Pressure: <u>-2.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/ljm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: _____	IAQ Sample ID: <u>IA-093X-A-16</u>
SV Canister #: _____	IAQ Canister #: <u>2396</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0528</u>
SV Start Time: _____	IAQ Start Time: <u>0840</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-29</u>
SV Stop Time: _____	IAQ Stop Time: 08 <u>1710</u>
SV Stop Pressure: _____	IAQ Stop Pressure: 1710 <u>-3</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

ALTERNATE LOCATION NEAR 093

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: Dlm/Am/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-094-A-16</u>	IAQ Sample ID: <u>IA-094-A-16</u>
SV Canister #: <u>2230</u>	IAQ Canister #: <u>2195</u>
SV Regulator #: <u>FC0253</u>	IAQ Regulator #: <u>FC0153</u>
SV Start Time: <u>0925</u>	IAQ Start Time: <u>0750</u>
SV Start Pressure: <u>-27</u>	IAQ Start Pressure: _____
SV Stop Time: <u>1026</u>	IAQ Stop Time: <u>1619</u>
SV Stop Pressure: <u>-3.0</u>	IAQ Stop Pressure: <u>-3.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: Dm/jm/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-108-A-16</u>	IAQ Sample ID: <u>IA-108-A-16</u>
SV Canister #: <u>2242</u>	IAQ Canister #: <u>2492</u>
SV Regulator #: <u>FC0133</u>	IAQ Regulator #: <u>FC0534</u>
SV Start Time: <u>0848</u>	IAQ Start Time: <u>0737</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-28</u>
SV Stop Time: <u>0951</u>	IAQ Stop Time: <u>1549</u>
SV Stop Pressure: <u>-2.0</u>	IAQ Stop Pressure: <u>-3.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: Dmlym/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-117-A-16</u>	IAQ Sample ID: <u>IA-117-A-16</u>
SV Canister #: <u>2501</u>	IAQ Canister #: <u>2530</u>
SV Regulator #: <u>FC0119</u>	IAQ Regulator #: <u>FC0152</u>
SV Start Time: <u>0859</u>	IAQ Start Time: <u>0753</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>0959</u>	IAQ Stop Time: <u>1553</u>
SV Stop Pressure: <u>-30</u>	IAQ Stop Pressure: <u>-1.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING ADate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/lm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: _____	IAQ Sample ID: <u>IA-117X-A-16</u>
SV Canister #: _____	IAQ Canister #: <u>2524</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC 0458</u>
SV Start Time: _____	IAQ Start Time: <u>0848</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-28</u>
SV Stop Time: _____	IAQ Stop Time: <u>1713</u>
SV Stop Pressure: _____	IAQ Stop Pressure: <u>-4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

ALTERNATE LOCATION TO 117

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: DLm/Jm/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-118-A-16</u>	IAQ Sample ID: <u>IA-118-A-16</u>
SV Canister #: <u>2277</u>	IAQ Canister #: <u>2265</u>
SV Regulator #: <u>FC0054</u>	IAQ Regulator #: <u>FC0113</u>
SV Start Time: <u>0855</u>	IAQ Start Time: <u>0747</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-28</u>
SV Stop Time: <u>0955</u>	IAQ Stop Time: <u>1553</u>
SV Stop Pressure: <u>-4</u>	IAQ Stop Pressure: <u>-3.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: Dimla/ITA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-¹³⁶000-A-16</u>	IAQ Sample ID: <u>IA-136-A-16</u>
SV Canister #: <u>2555</u>	IAQ Canister #: <u>2458</u>
SV Regulator #: <u>FC0091</u>	IAQ Regulator #: <u>FC0527</u>
SV Start Time: <u>0810</u>	IAQ Start Time: <u>0805</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-29</u>
SV Stop Time: <u>0910</u>	IAQ Stop Time: <u>1608</u>
SV Stop Pressure: <u>-4.5</u>	IAQ Stop Pressure: <u>0.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD	Duplicate ID No.: _____
--------	-------------------------

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING ADate: 2/25/14

Project Number - Task: _____

Sampled By: DLMLM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-138-A-16</u>	IAQ Sample ID: <u>IA-138-A-16</u>
SV Canister #: <u>1331</u>	IAQ Canister #: <u>0991</u>
SV Regulator #: <u>FC0035</u>	IAQ Regulator #: <u>FC0520</u>
SV Start Time: <u>0935</u>	IAQ Start Time: <u>0745</u>
SV Start Pressure: <u>-27</u>	IAQ Start Pressure: _____
SV Stop Time: <u>1035</u>	IAQ Stop Time: <u>1624</u>
SV Stop Pressure: <u>-20</u>	IAQ Stop Pressure: <u>-1.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING BDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/JM

SAMPLING DATA:

SOIL VAPOR SAMPLE

SV Sample ID: SV-033-B-16SV Canister #: 1778SV Regulator #: FC0174SV Start Time: 1000SV Start Pressure: -28SV Stop Time: 1218SV Stop Pressure: 0.0

INDOOR AIR QUALITY SAMPLE

IAQ Sample ID: IA-033-B-16IAQ Canister #: 1786IAQ Regulator #: FC0524IAQ Start Time: 1000IAQ Start Pressure: -29IAQ Stop Time: 1828IAQ Stop Pressure: -4

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING BDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/JM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-063-B-16</u>	IAQ Sample ID: <u>IA-063-B-16</u>
SV Canister #: <u>2498</u>	IAQ Canister #: <u>2449</u>
SV Regulator #: <u>FC 0182</u>	IAQ Regulator #: <u>FC 0149</u>
SV Start Time: <u>0955</u>	IAQ Start Time: <u>0955</u>
SV Start Pressure: <u>-28</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1214</u>	IAQ Stop Time: <u>1825</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-8</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING BDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/JM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-101-B-16</u>	IAQ Sample ID: <u>IA-101-B-16</u>
SV Canister #: <u>3441</u>	IAQ Canister #: <u>1332</u>
SV Regulator #: <u>FC0196</u>	IAQ Regulator #: <u>FC0535</u>
SV Start Time: <u>1105</u>	IAQ Start Time: <u>1105</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-29</u>
SV Stop Time: <u>1240</u>	IAQ Stop Time: <u>1903</u>
SV Stop Pressure: <u>+3.0</u>	IAQ Stop Pressure: <u>-5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING BDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/Jm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-121-B-16</u>	IAQ Sample ID: <u>TA-121-B-16</u>
SV Canister #: <u>2497</u>	IAQ Canister #: <u>2558</u>
SV Regulator #: <u>FC0179</u>	IAQ Regulator #: <u>FC0433</u>
SV Start Time: <u>1103</u>	IAQ Start Time: <u>1103</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1239</u>	IAQ Stop Time: <u>1902</u>
SV Stop Pressure: <u>-3.0</u>	IAQ Stop Pressure: <u>1 -4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING BDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/SM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>NO SV</u>	IAQ Sample ID: <u>IA-140-B-16</u>
SV Canister #: <u>SAMPLE</u>	IAQ Canister #: <u>2267</u>
SV Regulator #: <u>FLUSH MOUNT</u>	IAQ Regulator #: <u>FC0001</u>
SV Start Time: <u>FULL OF SURFACE</u>	IAQ Start Time: <u>0852</u>
SV Start Pressure: <u>WATER-SPILL</u>	IAQ Start Pressure: <u>-28</u>
SV Stop Time: _____	IAQ Stop Time: <u>1715</u>
SV Stop Pressure: _____	IAQ Stop Pressure: <u>-3</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>TO15</u> ✓

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 2/24/16

Project Number - Task: _____

Sampled By: Dim/3m

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-060-C-16</u>	IAQ Sample ID: <u>SVIA-060-C-16</u>
SV Canister #: <u>1016</u>	IAQ Canister #: <u>2003</u>
SV Regulator #: <u>FC0057</u>	IAQ Regulator #: <u>FC 0150</u>
SV Start Time: <u>0928</u>	IAQ Start Time: <u>0928</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1159</u>	IAQ Stop Time: <u>1800</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-3</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/LM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-065-C-16</u>	IAQ Sample ID: <u>IA-065-C-16</u>
SV Canister #: <u>1330</u>	IAQ Canister #: <u>1023</u>
SV Regulator #: <u>FC0199</u>	IAQ Regulator #: <u>FC 0521</u>
SV Start Time: <u>0950</u>	IAQ Start Time: <u>0950</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-24</u>
SV Stop Time: <u>1210</u>	IAQ Stop Time: <u>1823</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-1</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DM/Jm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-088-C-16</u>	IAQ Sample ID: <u>IA-088-C-16</u>
SV Canister #: <u>1348</u>	IAQ Canister #: <u>1784</u>
SV Regulator #: <u>FC0214</u>	IAQ Regulator #: <u>FC0444</u>
SV Start Time: <u>0853</u>	IAQ Start Time: <u>0853</u>
SV Start Pressure: <u>-28.5</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1142</u>	IAQ Stop Time: <u>1656</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-7.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD	Duplicate ID No.: _____
--------	-------------------------

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/LM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-102-C-16</u>	IAQ Sample ID: <u>IA-102-C-16</u>
SV Canister #: <u>0766</u>	IAQ Canister #: <u>2269</u>
SV Regulator #: <u>FC0038</u>	IAQ Regulator #: <u>FC0017</u>
SV Start Time: <u>0905</u>	IAQ Start Time: <u>0905</u>
SV Start Pressure: <u>-28</u>	IAQ Start Pressure: <u>-29.9</u>
SV Stop Time: <u>1149</u>	IAQ Stop Time: <u>1703</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-5.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/LJM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-113-C-16</u>	IAQ Sample ID: <u>IA-113-C-16</u>
SV Canister #: <u>2523</u>	IAQ Canister #: <u>2448</u>
SV Regulator #: <u>FC0170</u>	IAQ Regulator #: <u>FC0277</u>
SV Start Time: <u>1025</u>	IAQ Start Time: <u>1025</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-29</u>
SV Stop Time: <u>1143</u>	IAQ Stop Time: <u>1659</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>0.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

SV-DUP2-C-16
Can# 2582IA-DUP2-C-16
Can# 1299

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

IA-DUP2-C-16SV-DUP2-C-16

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 2/14/14

Project Number - Task: _____

Sampled By: DLM/Jm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-126-C-16</u>	IAQ Sample ID: <u>IA-126-C-16</u>
SV Canister #: <u>1177</u>	IAQ Canister #: <u>0902</u>
SV Regulator #: <u>FC0128</u>	IAQ Regulator #: <u>FC0434</u>
SV Start Time: <u>0943</u>	IAQ Start Time: <u>0943</u>
SV Start Pressure: <u>-29</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1206</u>	IAQ Stop Time: <u>1819</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-3</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-128-C-16</u>	IAQ Sample ID: <u>TA-128-C-16</u>
SV Canister #: <u>2407</u>	IAQ Canister #: <u>0891</u>
SV Regulator #: <u>FC0308</u>	IAQ Regulator #: <u>EC0453</u>
SV Start Time: <u>1113</u>	IAQ Start Time: <u>1110</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1218</u>	IAQ Stop Time: <u>1913</u>
SV Stop Pressure: <u>-1.0</u>	IAQ Stop Pressure: <u>-8</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/lm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-130-C-16</u>	IAQ Sample ID: <u>IA-130-C-16</u>
SV Canister #: <u>1176</u>	IAQ Canister #: <u>1338</u>
SV Regulator #: <u>FC0386</u>	IAQ Regulator #: <u>FC0435</u>
SV Start Time: <u>0910</u>	IAQ Start Time: <u>0910</u>
SV Start Pressure: <u>-28</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1152</u>	IAQ Stop Time: <u>1758</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-2.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUNMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 3/24/14

Project Number - Task: _____

Sampled By: DLM/LJM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-133-C-16</u>	IAQ Sample ID: <u>IA-133-C-16</u>
SV Canister #: <u>2290</u>	IAQ Canister #: <u>1020</u>
SV Regulator #: <u>FC0183</u>	IAQ Regulator #: <u>FC0124</u>
SV Start Time: <u>1010</u>	IAQ Start Time: <u>1010</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1155</u>	IAQ Stop Time: <u>1840</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-1</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

SV-DUPI-C-16

Can# 2504Reg# FC0183Start Time: 1010Start Press: -30

IA-DUPI-C-16

Can# 9030Reg# FC0124Start Time: 1010Start Press: -30

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

SV-DUPI-C-16IA-DUPI-C-16

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/LM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-135-C-16</u>	IAQ Sample ID: <u>IA-135-C-16</u>
SV Canister #: <u>2271</u>	IAQ Canister #: <u>1030</u>
SV Regulator #: <u>FC 0339</u>	IAQ Regulator #: <u>FC 0148</u>
SV Start Time: <u>0850</u>	IAQ Start Time: <u>0850</u>
SV Start Pressure: <u>-28</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1135</u>	IAQ Stop Time: <u>1654</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-28 -3.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TD15</u>	<u>SUMMA CAN</u>	<input checked="" type="checkbox"/>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: Dim/Am

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-141-C-16</u>	IAQ Sample ID: <u>IA-141-C-16</u>
SV Canister #: <u>2461</u>	IAQ Canister #: <u>2075</u>
SV Regulator #: <u>FC0336</u>	IAQ Regulator #: <u>FC0147</u>
SV Start Time: <u>0935</u>	IAQ Start Time: <u>0935</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1202</u>	IAQ Stop Time: <u>1814</u>
SV Stop Pressure: <u>-6</u>	IAQ Stop Pressure: <u>-3</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/LM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-142-C-16</u>	IAQ Sample ID: <u>IA-142-C-16</u>
SV Canister #: <u>2574</u>	IAQ Canister #: <u>2581</u>
SV Regulator #: <u>FC0167</u>	IAQ Regulator #: <u>FC0536</u>
SV Start Time: <u>0855</u>	IAQ Start Time: <u>0855</u>
SV Start Pressure: <u>-27</u>	IAQ Start Pressure: <u>-27.5</u>
SV Stop Time: <u>1138 1140</u>	IAQ Stop Time: <u>1657</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-5.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.: _____
--------	-------------------------

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM/SM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-143-C-16</u>	IAQ Sample ID: <u>IA-143-C-16</u>
SV Canister #: <u>2877</u>	IAQ Canister #: <u>2070</u>
SV Regulator #: <u>FC0204</u>	IAQ Regulator #: <u>FC0408</u>
SV Start Time: <u>0842</u>	IAQ Start Time: <u>0842</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1127-1632</u>	IAQ Stop Time: <u>1644</u>
SV Stop Pressure: <u>-23</u>	IAQ Stop Pressure: <u>-4.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

*Gauge on SV sample appears broken.

Circle if Applicable:

MS/MSD	Duplicate ID No.: _____	Signature(s): <u>[Signature]</u>
--------	-------------------------	----------------------------------

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: JA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>IA-4⁴-C-16</u>
SV Canister #: _____	IAQ Canister #: <u>2261</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0141</u>
SV Start Time: _____	IAQ Start Time: <u>1137</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-30</u>
SV Stop Time: _____	IAQ Stop Time: <u>1937</u>
SV Stop Pressure: <u>✓</u>	IAQ Stop Pressure: <u>-3</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>TA-145-C-16</u>
SV Canister #:	IAQ Canister #: <u>2421</u>
SV Regulator #:	IAQ Regulator #: <u>FC0445</u>
SV Start Time:	IAQ Start Time: <u>1120</u>
SV Start Pressure:	IAQ Start Pressure: <u>-30</u>
SV Stop Time:	IAQ Stop Time: <u>1920</u>
SV Stop Pressure:	IAQ Stop Pressure: <u>-5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: JA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>NIA</u>	IAQ Sample ID: <u>JA-146-C-16</u>
SV Canister #: _____	IAQ Canister #: <u>2221</u>
SV Regulator #: _____	IAQ Regulator #: <u>FCC519</u>
SV Start Time: _____	IAQ Start Time: <u>1118</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-30</u>
SV Stop Time: _____	IAQ Stop Time: <u>1918</u>
SV Stop Pressure: <u>✓</u>	IAQ Stop Pressure: <u>-4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>TA-147-C-16</u>
SV Canister #: _____	IAQ Canister #: <u>1334</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0512</u>
SV Start Time: _____	IAQ Start Time: <u>1125</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-30</u>
SV Stop Time: _____	IAQ Stop Time: <u>1925</u>
SV Stop Pressure: _____	IAQ Stop Pressure: <u>-5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 2/24/14

Project Number - Task: _____

Sampled By: DLM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>IA-148-C-16</u>
SV Canister #: _____	IAQ Canister #: <u>11601</u>
SV Regulator #: _____	IAQ Regulator #: <u>FL0512</u>
SV Start Time: _____	IAQ Start Time: <u>1115</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-30</u>
SV Stop Time: _____	IAQ Stop Time: <u>1915</u>
SV Stop Pressure: <u>✓</u>	IAQ Stop Pressure: <u>-7</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC - BUILDING ZDate: 2/24/14

Project Number - Task: _____

Sampled By: DLm/lsm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-105-2-16</u>	IAQ Sample ID: <u>IA-105-7-16</u>
SV Canister #: <u>0828</u>	IAQ Canister #: <u>922</u>
SV Regulator #: <u>FC0037</u>	IAQ Regulator #: <u>FC-0454</u>
SV Start Time: <u>1050</u>	IAQ Start Time: <u>1050</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-30</u>
SV Stop Time: <u>1229</u>	IAQ Stop Time: <u>1848</u>
SV Stop Pressure: <u>-10</u>	IAQ Stop Pressure: <u>-4.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BUILDING 2Date: 2/24/14

Project Number - Task: _____

Sampled By: DLM/LJM

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>SV-123-2-16</u>	IAQ Sample ID: <u>IA-123-2-16</u>
SV Canister #: <u>2398</u>	IAQ Canister #: <u>2537</u>
SV Regulator #: <u>FC0239</u>	IAQ Regulator #: <u>FC0146</u>
SV Start Time: <u>1053</u>	IAQ Start Time: <u>1053</u>
SV Start Pressure: <u>-30</u>	IAQ Start Pressure: <u>-29</u>
SV Stop Time: <u>1232</u>	IAQ Stop Time: <u>1849</u>
SV Stop Pressure: <u>0.0</u>	IAQ Stop Pressure: <u>-4.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BACKGROUNDDate: 2/25/14

Project Number - Task: _____

Sampled By: JA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>BCK-1-16</u>
SV Canister #:	IAQ Canister #: <u>1170</u>
SV Regulator #:	IAQ Regulator #: <u>FC0441</u>
SV Start Time:	IAQ Start Time: <u>0652</u>
SV Start Pressure:	IAQ Start Pressure: <u>-30</u>
SV Stop Time:	IAQ Stop Time: <u>1537</u>
SV Stop Pressure: <u>↓</u>	IAQ Stop Pressure: <u>-2.0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<input checked="" type="checkbox"/>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BACKGROUNDDate: 2/25/14

Project Number - Task: _____

Sampled By: TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>BCK-2-16</u>
SV Canister #: _____	IAQ Canister #: <u>0880</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0305</u>
SV Start Time: _____	IAQ Start Time: <u>0657</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-17</u>
SV Stop Time: _____	IAQ Stop Time: <u>0.0</u>
SV Stop Pressure: _____	IAQ Stop Pressure: <u>1533</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

DUP
CAN 2413
REG FC0305
ST PRESS 0657 -17
TIME
BCK-DUP-16

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

BCK-DUP-16

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BACKGROUNDDate: 2/25/14

Project Number - Task: _____

Sampled By: JA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>BCK-3-16</u>
SV Canister #: _____	IAQ Canister #: <u>2250</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0296</u>
SV Start Time: _____	IAQ Start Time: <u>0711</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-30</u>
SV Stop Time: _____	IAQ Stop Time: <u>1538</u>
SV Stop Pressure: <u>↓</u>	IAQ Stop Pressure: <u>-3.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC BACKGROUNDDate: 2/25/14

Project Number - Task: _____

Sampled By: TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>BCK-4-16</u>
SV Canister #: _____	IAQ Canister #: <u>2208</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0523</u>
SV Start Time: _____	IAQ Start Time: <u>0105</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-28</u>
SV Stop Time: _____	IAQ Stop Time: <u>1522</u>
SV Stop Pressure: <u>✓</u>	IAQ Stop Pressure: <u>-2.5</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

--

OBSERVATIONS / NOTES:

--

Circle if Applicable:

MS/MSD	Duplicate ID No.: _____
--------	-------------------------

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: VLS BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: Dunham/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>IA-146-VLS-2</u>
SV Canister #: _____	IAQ Canister #: <u>2570</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0513</u>
SV Start Time: _____	IAQ Start Time: <u>1022</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-28</u>
SV Stop Time: _____	IAQ Stop Time: <u>1831</u>
SV Stop Pressure: <u>↓</u>	IAQ Stop Pressure: <u>-4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/SM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>TA-147-VLS-2</u>
SV Canister #: _____	IAQ Canister #: <u>0905</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0358</u>
SV Start Time: _____	IAQ Start Time: <u>1025</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-28.5</u>
SV Stop Time: _____	IAQ Stop Time: <u>1828</u>
SV Stop Pressure: <u>✓</u>	IAQ Stop Pressure: <u>0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

IA-DUP 1-VLS-2
CAN 2491

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

IA-DUP1-VLS-2

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/SM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>TA-148-VLS-2</u>
SV Canister #:	IAQ Canister #: <u>2412</u>
SV Regulator #:	IAQ Regulator #: <u>FC0449</u>
SV Start Time:	IAQ Start Time: <u>1013</u>
SV Start Pressure:	IAQ Start Pressure: <u>-27.5</u>
SV Stop Time:	IAQ Stop Time: <u>1855 1855</u>
SV Stop Pressure:	IAQ Stop Pressure: <u>TA -2</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/JM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>IA-149-VLS-2</u>
SV Canister #:	IAQ Canister #: <u>2397</u>
SV Regulator #:	IAQ Regulator #: <u>FC0537</u>
SV Start Time:	IAQ Start Time: <u>1007</u>
SV Start Pressure:	IAQ Start Pressure: <u>-30</u>
SV Stop Time:	IAQ Stop Time: <u>1825</u>
SV Stop Pressure:	IAQ Stop Pressure: <u>-4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/AM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>TA-150-VLS-2</u>
SV Canister #: _____	IAQ Canister #: <u>2548</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC 0518</u>
SV Start Time: _____	IAQ Start Time: <u>1019</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-28</u>
SV Stop Time: _____	IAQ Stop Time: <u>1834</u>
SV Stop Pressure: <u>↓</u>	IAQ Stop Pressure: <u>-3</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/lm

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>IA-151-VLS-2</u>
SV Canister #:	IAQ Canister #: <u>2227</u>
SV Regulator #:	IAQ Regulator #: <u>FC0415</u>
SV Start Time:	IAQ Start Time: <u>0955</u>
SV Start Pressure:	IAQ Start Pressure: <u>-30</u>
SV Stop Time:	IAQ Stop Time: <u>1850</u>
SV Stop Pressure: <u>↓</u>	IAQ Stop Pressure: <u>-4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/jm/

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: <u>N/A</u>	IAQ Sample ID: <u>IA-152-VLS-2</u>
SV Canister #:	IAQ Canister #: <u>2435</u>
SV Regulator #:	IAQ Regulator #: <u>FC0448</u>
SV Start Time:	IAQ Start Time: <u>0953</u>
SV Start Pressure:	IAQ Start Pressure: <u>-30</u>
SV Stop Time:	IAQ Stop Time: <u>-4</u>
SV Stop Pressure: <u>✓</u>	IAQ Stop Pressure: <u>1845</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS- ENGINEERING RESEARCH
Project Number - Task: BUILDING

Date: 2/26/14
Sampled By: TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID:	IAQ Sample ID: <u>IA-001-ER-1</u>
SV Canister #:	IAQ Canister #: <u>2026</u>
SV Regulator #:	IAQ Regulator #: <u>FC0451</u>
SV Start Time:	IAQ Start Time: <u>0933</u>
SV Start Pressure:	IAQ Start Pressure: <u>-29</u>
SV Stop Time:	IAQ Stop Time: <u>1753</u>
SV Stop Pressure:	IAQ Stop Pressure: <u>-10</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

M/L41 Integration Lab

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS-ERDate: 8/26/14Project Number - Task: ENGINEERING RESEARCH Sampled By: DLM/um/TA
BUILDING 6

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID:	IAQ Sample ID: <u>TA-002-ER-1</u>
SV Canister #:	IAQ Canister #: <u>2283</u>
SV Regulator #:	IAQ Regulator #: <u>FC0533</u>
SV Start Time:	IAQ Start Time: <u>0931</u>
SV Start Pressure:	IAQ Start Pressure: <u>-39</u>
SV Stop Time:	IAQ Stop Time: <u>1814</u>
SV Stop Pressure:	IAQ Stop Pressure: <u>-1</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

Storage Room

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: VL3-ERDate: 2/26/14Project Number - Task: ENGINEERING RESEARCH
BUILDINGSampled By: DLM/lm/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID:	IAQ Sample ID: <u>IA-003-ER-1</u>
SV Canister #:	IAQ Canister #: <u>2427 2427</u>
SV Regulator #:	IAQ Regulator #: <u>FC0552</u>
SV Start Time:	IAQ Start Time: <u>0925</u>
SV Start Pressure:	IAQ Start Pressure: <u>-30</u>
SV Stop Time:	IAQ Stop Time: <u>1810</u>
SV Stop Pressure:	IAQ Stop Pressure: <u>0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

IA-DUPI-ER-1
CAN 1323

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

IA-DUPI-ER-1

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: MRC-PBDate: 2/26/14Project Number - Task: PROGRAM BUILDINGSampled By: DUM/SM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID:	IAQ Sample ID: <u>IA-001-PB-1</u>
SV Canister #:	IAQ Canister #: <u>2434 2434</u>
SV Regulator #:	IAQ Regulator #: <u>FC0320</u>
SV Start Time:	IAQ Start Time: <u>0921</u>
SV Start Pressure:	IAQ Start Pressure: <u>-28.5</u>
SV Stop Time:	IAQ Stop Time: <u>1804</u>
SV Stop Pressure:	IAQ Stop Pressure: <u>0</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

IA-DUP1-PB-1
24SI CAN

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

IA-DUP1-PB-1

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: VLS - Program BUILDINGDate: 2/26/14

Project Number - Task: _____

Sampled By: DLM/JM/TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: _____	IAQ Sample ID: <u>IA-002-PB-1</u>
SV Canister #: _____	IAQ Canister #: <u>2528</u>
SV Regulator #: _____	IAQ Regulator #: <u>FC0409</u>
SV Start Time: _____	IAQ Start Time: <u>0911</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>--30</u>
SV Stop Time: _____	IAQ Stop Time: <u>1801</u>
SV Stop Pressure: _____	IAQ Stop Pressure: <u>-4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<u>✓</u>

LOCATION:

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

14848

Page: 1 of 4

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Program	
Company: <u>Tetra Tech</u>		Report To:		Attention:		<input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input checked="" type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Address: <u>20251 Century Blvd</u>		Copy To:		Company Name:		Location of Sampling by State <u>MD</u>	
Email To: <u>Tony.Aponso@tetratech.com</u>		Purchase Order No.:		Address:		Reporting Units ug/m ³ <input type="checkbox"/> mg/m ³ <input type="checkbox"/> PPBV <input type="checkbox"/> PPMV <input type="checkbox"/>	
Phone: <u>410-208-7400</u> Fax: <u>410-208-7400</u>		Project Name:		Pace Quote Reference:		Report Level I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> Other <input type="checkbox"/>	
Requested Due Date/TAT:		Project Number: <u>1121000231</u>		Pace Project Manager/Sales Rep.:		Pace Profile #:	

ITEM #	'Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE Tedlar Bag TB 1 Liter Summa Can 1LC 6 Liter Summa Can 6LC Low Volume Puff LVP High Volume Puff HVP Other PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method:												Pace Lab ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
					COMPOSITE START		COMPOSITE -						PM10	3C Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-12 (PAH)	TO-14	TO-15	TO15 Short List*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
					DATE	TIME	DATE	TIME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
1	SV-143-C-16	1LC	N/A	2/24/14	0842	2/24/14	1632	-30	-23	2877	0204																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Comments :	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
	<u>David J. Monico</u>	<u>2/25/14</u>	<u>1420</u>					Y/N	Y/N	Y/N	Y/N
								Y/N	Y/N	Y/N	Y/N
								Y/N	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
PRINT Name of SAMPLER: <u>David J. Monico</u>	SIGNATURE OF SAMPLER: <u>David J. Monico</u>				
DATE Signed (MM/DD/YY) <u>2/24/14</u>					

4

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

14856

Page: 2 of 4

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Tetra Tech</u>		Report To:		Attention:	
Address: <u>20051 Century Blvd Ste 200</u>		Copy To:		Company Name:	
<u>Germantown, MD 20874</u>				Address:	
Email To: <u>Joey.Apanavicius@tetratech.com</u>		Purchase Order No.:		Pace Quote Reference:	
Phone: _____ Fax: _____		Project Name:		Pace Project Manager/Sales Rep.:	
Requested Due Date/TAT:		Project Number: <u>112-C-060221</u>		Pace Profile #:	

Program	
<input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input checked="" type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Location of Sampling by State: <u>MD</u>	Reporting Units: ug/m ³ _____ mg/m ³ _____ PPBV _____ PPMV _____ Other _____
Report Level: II. _____ III. _____ IV. _____ Other _____	

ITEM #	'Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE Tedlar Bag TB 1 Liter Summa Can 1LC 6 Liter Summa Can 6LC Low Volume Puff LVP High Volume Puff HVP Other PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number				Method:										Pace Lab ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
					COMPOSITE START END/GRAB		COMPOSITE -									PM10	3C: Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO-15 Short List*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
					DATE	TIME	DATE	TIME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
1	SV-060-C-16		1LC	MD	2/24/14	0928	1159	-30.0	0.0	1016	0057																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Comments:		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS			
		Dawn Monica		2/25/14	1420						Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on	Custody Sealed Cooler	Samples Intact
PRINT Name of SAMPLER: <u>Dawn Monica</u> SIGNATURE OF SAMPLER: <u>[Signature]</u>					
DATE Signed (MM / DD / YY)					
2/24/14					

4

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

14861

Page: 1 of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		<div>Program</div> <div> <input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input checked="" type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other </div> <div> <div>Location of Sampling by State: <u>MD</u></div> <div> <div>Reporting Units</div> <div> <div>µg/m³</div> <div>mg/m³</div> <div>PPBV</div> <div>PPMV</div> </div> </div> </div> <div>Report Level: I. <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> Other <input type="checkbox"/></div>	
Company: <u>TelcoTech</u>		Report To: <u>same</u>		Attention:			
Address: <u>30251 Century Blvd Suite 200</u>		Copy To:		Company Name:			
<u>Germaniawh, MD 20874</u>				Address:			
Email To: <u>Tony.Aronavage@telco-tech.com</u>		Purchase Order No.:		Pace Quote Reference:			
Phone: <u></u> Fax: <u></u>		Project Name:		Pace Project Manager/Sales Rep.			
Requested Due Date/TAT:		Project Number:		Pace Profile #:			

ITEM #	'Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE Tedlar Bag TB 1 Liter Summa Can 1LC 6 Liter Summa Can 6LC Low Volume Puff LVP High Volume Puff HVP Other PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method:										Pace Lab ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
					COMPOSITE START (ppm/ug)		COMPOSITE						PM10	3C - Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO-15 Short List*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
					DATE	TIME	DATE	TIME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
1	SV-015-A-16		1LC	N/A	2/25/14	0845	2/25/14	0948	-30	+5	2268	0075																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</

Comments: - Reg FC0053 appears to be broken		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS			
		[Signature]		2/27/14	1200						Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N
											Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
PRINT Name of SAMPLER <u>Dawn Monica</u> SIGNATURE of SAMPLER <u>[Signature]</u> DATE Signed (MM/DD/YY) <u>2/25/14</u>					

4

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

14863

Page: 2 of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Program <input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input checked="" type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Company: <u>Tetra Tech</u>		Report To: <u>same</u>		Attention:		Location of Sampling by State <u>MD</u> Reporting Units ug/m ³ mg/m ³ PPBV PPMV Other	
Address: <u>20051 Century Blvd Suite 200</u>		Copy To:		Company Name:			
<u>Germanstown, MD 20874</u>				Address:			
Email To: <u>Tony.Apanavice@tetradtech.com</u>		Purchase Order No.:		Pace Quote Reference:			
Phone: Fax:		Project Name:		Pace Project Manager/Sales Rep.		Report Level II. III. IV. Other	
Requested Due Date/TAT:		Project Number:		Pace Profile #:			

ITEM #	'Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE Tedlar Bag TB 1 Liter Summa Can 1LC 6 Liter Summa Can 6LC Low Volume Puff LVP High Volume Puff HVP Other PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method:															Pace Lab ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					COMPOSITE START <small>(ENHANCED)</small>		COMPOSITE -						PM10	3C - Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO-15 Short List																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
					DATE	TIME	DATE	TIME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
1	SY-136-A-16		1LC	NA	2/25/14	0810	2/25/14	0910	-30	-4.5	2555	0091																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
<u>[Signature]</u> TE	2/27/14	1200				Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
SAMPLER NAME AND SIGNATURE						Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
PRINT Name of SAMPLER: <u>Dawn Monica</u> SIGNATURE of SAMPLER: <u>[Signature]</u> DATE Signed (MM/DD/YY): <u>2/25/14</u>									

4

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

14841

Page: / of /

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Program	
Company: <u>Tetra Tech</u>		Report To: <u>same</u>		Attention:		<input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input checked="" type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Address: <u>20251 Century Blvd 200</u>		Copy To:		Company Name:		Location of Sampling by State <u>MD</u>	
Email To: <u>gary.aparovich@tetratech.com</u> Phone: <u>301.233.8230</u> Fax: <u>301.233.8230</u>		Purchase Order No.: <u>CO-1-1</u>		Address:		Reporting Units ug/m ³ mg/m ³ PPBV PPMV Other	
Requested Due Date/TAT:		Project Name:		Pace Quote Reference:		Report Level <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> Other	
		Project Number:		Pace Project Manager/Sales Rep.			
				Pace Profile #:			

ITEM #	'Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE Tedlar Bag TB 1 Liter Summa Can 1LC 6 Liter Summa Can 6LC Low Volume Puff LVP High Volume Puff HVP Other PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method:										Pace Lab ID		
					COMPOSITE START ENDIGRAB		COMPOSITE -						PM10	3C - Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO-15 Short List*				
					DATE	TIME	DATE	TIME																	
1	IA-001-PB-1		1LC		3/26/14	0921	3/26/14	1804	-26.5	0	2434	0320												X	
2	IA-002-PB-1					0911		1801	-30	-4	2528	0409												X	
3	IA-001-ER-1					0933		1753	-29	-10	2226	0451												X	
4	IA-002-ER-1					0931		1814	-29	-1	2283	0533												X	
5	IA-003-ER-1					0925		1810	-30	0	2427	0222												X	
6	IA-DUP1-PB-1					-		-	-	-	2451	-												X	
7	IA-DUP1-ER-1		V		V	-	V	-	-	-	1323	-												X	
8																									
9	IA-093X-A-16		1LC		3/26/14	1542	3/26/14	0710	-29	-3	2396	0528												X	
10	IA-117X-A-16		1LC		3/26/14	1749	3/26/14	1713	-28	-4	2324	0458												X	
11	IA-140B-16		1LC		3/26/14	1752	3/26/14	1715	-28	-3	2267	0021												X	
12																									

Comments:			RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS			
			<u>[Signature]</u>		3/27/14		1200								Temp in °C Received on Ice Custody Sealed Cooler Samples Intact			

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Tom Aparovich
 SIGNATURE of SAMPLER: [Signature] DATE Signed (MM/DD/YY): 3/27/14

4

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

14855

Page: / of /

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		<div>Program</div> <input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input checked="" type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Company: <u>Tetra Tech</u>		Report To: <u>Same</u>		Attention:		<div>Location of Sampling by State</div> <u>MD</u>	
Address: <u>20251 Century Blvd #400</u>		Copy To:		Company Name:		<div>Reporting Units</div> <u>ug/m³</u> <u>mg/m³</u> <u>PPBV</u> <u>PPMV</u> Other	
City/State/Zip: <u>Baltimore, MD 20974</u>		Purchase Order No.:		Address:		<div>Report Level</div> I. <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> Other	
Email To: <u>Tony.Apranavage@tetratech.com</u>		Project Name:		Pace Quote Reference:			
Phone: <u>301-233-8230</u> Fax:		Pace Project Manager/Sales Rep.		Pace Profile #:			
Requested Due Date/TAT:		Project Number:					

ITEM #	'Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA Tedlar Bag 1 Liter Summa Can 6 Liter Summa Can Low Volume Puff High Volume Puff Other	CODE TB 1LC 6LC LVP HVP PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method:										Pace Lab ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
						COMPOSITE START SPECIES		COMPOSITE -						PM10	3C-Fixed Gas (%)	TO3	TO3M (Methane)	TO4 (PCBs)	TO13 (PAH)	TO14	TO15	TO15 Short List*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
						DATE	TIME	DATE	TIME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1	IA-147-VLS-2			ILC	NA	2/26/14	1025	2/26/14	1828	-28.5	0	0905	0258																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

Comments:	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	<u>TL</u>	<u>2/27/14</u>	<u>1200</u>				Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Tony Apranavage
 SIGNATURE of SAMPLER: [Signature] DATE Signed: 2/27/14

**TETRA TECH****SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEET**Page 1 of 1Project Site Name: MRC BUILDING ADate: 4/17/14

Project Number - Task: _____

Sampled By: TA**SAMPLING DATA:**

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: _____	IAQ Sample ID: <u>1A-081-A-16R</u>
SV Canister #: _____	IAQ Canister #: <u>1195</u>
SV Regulator #: _____	IAQ Regulator #: <u>0285</u>
SV Start Time: _____	IAQ Start Time: <u>0835</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-30</u>
SV Stop Time: _____	IAQ Stop Time: <u>1635</u>
SV Stop Pressure: _____	IAQ Stop Pressure: <u>-4</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<input checked="" type="checkbox"/>

LOCATION:SE CORNER OF BUILDING A**OBSERVATIONS / NOTES:**

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):

SOIL VAPOR AND INDOOR AIR QUALITY
SAMPLE LOG SHEETPage 1 of 1Project Site Name: MRC BUILDING CDate: 4/17/14

Project Number - Task: _____

Sampled By: TA

SAMPLING DATA:

SOIL VAPOR SAMPLE	INDOOR AIR QUALITY SAMPLE
SV Sample ID: _____	IAQ Sample ID: <u>1A-113-C-16R</u>
SV Canister #: _____	IAQ Canister #: <u>2357</u>
SV Regulator #: _____	IAQ Regulator #: <u>0377</u>
SV Start Time: _____	IAQ Start Time: <u>0843</u>
SV Start Pressure: _____	IAQ Start Pressure: <u>-28</u>
SV Stop Time: _____	IAQ Stop Time: <u>1643</u>
SV Stop Pressure: _____	IAQ Stop Pressure: <u>-6</u>

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected
<u>TO15</u>	<u>SUMMA CAN</u>	<input checked="" type="checkbox"/>

LOCATION:

CENTRAL PORTION BUILDING C BASEMENT

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.: _____

Signature(s):



AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10263934

Section A Required Client Information:

Company: **TETRA TECH**
Address: **20351 CENTURY BLVD, STE 200**
GERMANTOWN, MD 20874
Email To: **tony.apanavage@tetratech.com**
Phone: **301528 3021** Fax: **301528 3000**
Requested Due Date/TAT:

Section B Required Project Information:

Report To: **Tony Apanavage**
Copy To: **200**
Purchase Order No.: **MRL SV/IAQ**
Project Name: **12IC06279**
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #:

13045

Page: of

Program

UST Superfund Emissions Clean Air Act
☒ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other

Location of Sampling by State **MD**
Reporting Units
µg/m³ mg/m³
PPBV PPMV

Report Level I. II. III. IV. Other

Method:

PM10 3C Fixed Gas (%) TO-3 TO-3M (Methane) TO-4 (PCBs) TO-13 (PAH) TO-14 TO-15 TO-15 Short List*
Pace Lab ID

'Section D Required Client Information

AIR SAMPLE ID

Sample IDs MUST BE UNIQUE

Valid Media Codes
MEDIA CODE
Tedlar Bag TB
1 Liter Summa Can 1LC
6 Liter Summa Can 6LC
Low Volume Puff LVP
High Volume Puff HVP
Other PM10

PID Reading (Client only)

COLLECTED

START END
COMPOSITE START COMPOSITE -
END/GRAB
DATE TIME DATE TIME

Canister Pressure
(Initial Field - psig)

Canister Pressure
(Final Field - psig)

Summa
Can
Number

Flow
Control Number

ITEM #

1A-081-A-16R
1A-113-C-16R

6LC
6LC

4/17/14 0825 4/17/14 1635
4/17/14 0843 4/17/14 1643

30 -4
28 -6

1195
2357

0285
0377

K
K

881
882

Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<i>[Signature]</i> TE	4/18/14	1715	<i>[Signature]</i> MC	4/18/14	0905	AMB (2) Y/N Y/N Y/N
						Y/N Y/N Y/N
						Y/N Y/N Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER

SIGNATURE of SAMPLER

TONY APANAVAGE

DATE Signed (MM/DD/YY)

4/17/14

Temp in °C

Received on Ice

Custody Sealed Cooler

Samples Intact

ORIGINAL

APPENDIX B—METHOD DETECTION LIMITS

Pace Analytical Services, Inc.
Method Detection Limits and Reporting Limits
for EPA TO15 ALL

00-022 11/-
qr
QR
xz
HR
hr

Analyte	CAS #	MDL (ppbv)	PRL (ppbv)	MW	MDL (ug/m ³)	PRL (ug/m ³)	Avg LCS		DUP
							Lower	Upper	RPD
1,1,1-Trichloroethane	71-55-6	0.0250	0.2	133.4047	0.139	1.11	72	128	25
1,1,2,2-Tetrachloroethane	79-34-5	0.0334	0.1	167.8498	0.233	0.70	72	136	25
1,1,2-Trichloroethane	79-00-5	0.0437	0.1	133.4047	0.243	0.55	72	130	25
1,1,2-Trichlorotrifluoroethane	76-13-1	0.0205	0.2	187.3762	0.160	1.60	68	126	25
1,1-Dichloroethane	75-34-3	0.0341	0.2	98.9596	0.140	0.82	68	128	25
1,1-Dichloroethene	75-35-4	0.0255	0.2	96.9438	0.103	0.81	68	130	25
1,2,4-Trichlorobenzene	120-82-1	0.0482	0.2	181.4487	0.364	1.51	30	150	25
1,2,4-Trimethylbenzene	95-63-6	0.0244	0.2	120.1938	0.122	1.00	71	140	25
1,2-Dibromoethane	106-93-4	0.0300	0.2	187.8616	0.234	1.56	73	136	25
1,2-Dichlorobenzene	95-50-1	0.0230	0.2	147.0036	0.141	1.22	63	150	25
1,2-Dichloroethane	107-06-2	0.0289	0.1	98.9596	0.119	0.41	71	132	25
1,2-Dichloropropane	78-87-5	0.0323	0.2	112.9864	0.152	0.94	72	130	25
1,3,5-Trimethylbenzene	108-67-8	0.0414	0.2	120.1938	0.207	1.00	73	136	25
1,3-Butadiene	106-99-0	0.0376	0.2	54.0914	0.085	0.45	72	130	25
1,3-Dichlorobenzene	541-73-1	0.0379	0.2	147.0036	0.232	1.22	69	142	25
1,4-Dichlorobenzene	106-46-7	0.0324	0.2	147.0036	0.198	1.22	65	142	25
2-Butanone (MEK)	78-93-3	0.0912	0.2	72.1066	0.273	0.6	71	135	25
2-Hexanone	591-78-6	0.0512	0.2	100.1602	0.213	0.83	75	133	25
2-Propanol	67-63-0	0.0374	0.5	60.1	0.093	1.25	68	135	25
4-Ethyltoluene	622-96-8	0.0349	0.2	120.1938	0.174	1.00	73	134	25
4-Methyl-2-pentanone (MIBK)	108-10-1	0.0411	0.2	100.1602	0.171	0.83	72	137	25
Acetone	67-64-1	0.5000	1	58.0798	1.207	2.414	68	136	25
Benzene	71-43-2	0.0362	0.1	78.1134	0.118	0.33	69	134	25
Benzyl Chloride	100-44-7	0.1000	0.2	126.58	0.526	1.05	71	136	25
Bromodichloromethane	75-27-4	0.0268	0.2	163.8289	0.182	1.36	74	129	25
Bromoform	75-25-2	0.0307	0.2	252.7309	0.323	2.10	69	138	25
Bromomethane	74-83-9	0.0685	0.2	94.9387	0.270	0.79	68	127	25
Carbon Disulfide	75-15-0	0.0228	0.2	76.131	0.072	0.63	68	130	25
Carbon tetrachloride	56-23-5	0.0500	0.1	153.823	0.320	0.64	66	134	25

Pace Analytical Services, Inc.
Method Detection Limits and Reporting Limits
for EPA TO15 ALL

00-022 11/-
qr
QR
xz
HR
hr

Chlorobenzene	108-90-7	0.0227	0.2	112.5585	0.106	0.94	72	137	25
Chloroethane	75-00-3	0.0600	0.2	64.5145	0.161	0.54	69	128	25
Chloroform	67-66-3	0.0360	0.2	119.3779	0.179	0.99	72	127	25
Chloromethane	74-87-3	0.0917	0.2	50.4877	0.192	0.42	69	125	25
cis-1,2-Dichloroethene	156-59-2	0.0487	0.2	96.9438	0.196	0.81	71	135	25
cis-1,3-Dichloropropene	10061-01-5	0.0295	0.2	110.9706	0.136	0.92	74	134	25
Cyclohexane	110-82-7	0.0360	0.2	84.1608	0.126	0.70	72	130	25
Dibromochloromethane	124-48-1	0.1000	0.2	208.2799	0.866	1.73	73	133	25
Dichlorodifluoromethane	75-71-8	0.0216	0.2	120.9138	0.109	1.01	69	125	25
Dichlorotetrafluoroethane	76-14-2	0.0351	0.2	170.9216	0.249	1.42	68	128	25
Ethanol	64-17-5	0.1646	0.5	46.07	0.315	0.96	70	134	25
Ethyl Acetate	141-78-6	0.0345	0.2	88.106	0.126	0.73	71	134	25
Ethyl Benzene	100-41-4	0.0405	0.2	106.167	0.179	0.88	73	139	25
Hexachlorobutadiene	87-68-3	0.0379	0.2	260.762	0.411	2.20	30	150	25
m&p-Xylene	106-42-3	0.0318	0.4	106.167	0.140	1.77	73	139	25
Methyl Tert Butyl Ether	1634-04-4	0.0243	0.2	88.1492	0.089	0.73	72	132	25
Methylene chloride	75-0902	0.0653	1	84.9328	0.231	3.53	64	134	25
Naphthalene	91-20-3	0.0483	0.5	128.1732	0.258	2.66	61	150	25
n-Heptane	142-82-5	0.0390	0.2	100.2034	0.162	0.83	70	130	25
n-Hexane	110-54-3	0.0281	0.2	86.1766	0.101	0.72	69	128	25
o-Xylene	95-47-6	0.1000	0.2	106.167	0.441	0.88	71	138	25
Propylene	115-07-1	0.0628	0.2	42.0804	0.110	0.35	69	133	25
Styrene	100-42-5	0.0313	0.2	104.1512	0.135	0.87	74	136	25
Tetrachloroethene	127-18-4	0.0273	0.1	165.834	0.188	0.69	69	136	25
Tetrahydrofuran	109-99-9	0.0464	0.2	72.1066	0.139	0.60	73	131	25
Toluene	108-88-3	0.0351	0.2	92.1402	0.135	0.77	67	133	25
trans-1,2-dichloroethene	156-60-5	0.0404	0.2	96.9438	0.163	0.81	70	131	25
trans-1,3-Dichloropropene	10061-02-6	0.0328	0.2	110.9706	0.151	0.92	72	135	25
Trichloroethene	79-01-6	0.0326	0.1	131.3889	0.178	0.55	70	135	25
Trichlorofluoromethane	75-69-4	0.0242	0.2	137.3684	0.138	1.14	67	125	25
Vinyl Acetate	108-05-4	0.0971	0.2	86.0902	0.348	0.72	72	133	25
Vinyl chloride	75-01-4	0.0359	0.1	62.4987	0.093	0.26	69	132	25
1,2,3-Trimethylbenzene		0.0355	0.2	120.19	0.177	1.00	70	130	25
Chlorodifluoromethane		0.0539	0.2	86.47	0.194	0.72	70	130	25
Di-isopropyl Ether		0.0497	0.2	102.18	0.211	0.85	70	130	25
Ethyl Tert-Butyl Ether		0.1000	0.2	102.17	0.425	0.85	70	130	25
Isopentane		0.0588	0.2	72.15	0.176	0.60	70	130	25
Methylcyclohexane		0.0652	0.2	98.186	0.266	0.82	70	130	25
p-Isopropyltoluene		0.0287	0.2	134.22	0.160	1.12	70	130	25
Tert Amyl Methyl Ether		0.0484	0.2	88.15	0.177	0.73	70	130	25
Tert-Butyl Benzene		0.0244	0.2	166.217	0.168	1.38	70	130	25

EXTRA ANALYTES (available upon request at an additional cost)

Analyte	CAS #						LCS		DUP
		MDL (ppbv)	PRL (ppbv)	MW	MDL (ug/m ³)	PRL (ug/m ³)	Lower	Upper	RPD
1,4-Dioxane	123-91-1	0.0587	1	88.1	0.215	3.66	62	148	25
2,2,4-Trimethylpentane	540-84-1	0.0286	0.5	114.22	0.136	2.37	70	130	25
Acrolein	107-02-8	0.0981	0.5	56.06	0.229	1.17	69	131	25
Acrylonitrile	107-13-1	0.0632	0.5	53.06	0.139	1.10	73	135	25
Allyl Chloride	107-05-1	0.0879	0.5	76.52	0.280	1.59	67	145	25
N-Butylbenzene	104-51-8	0.0240	0.5	134.2206	0.134	2.79	70	130	25
N-Propylbenzene	103-65-1	0.0323	0.5	120.1938	0.162	2.50	73	132	25

Pace Analytical Services, Inc.
Method Detection Limits and Reporting Limits
for EPA TO15 ALL

00-022 11/-
qr
QR
xz
HR
hr

Sec- Butylbenzene	135-98-8	0.1000	0.5	134.2206	0.558	2.79	70	130	25
Tert Butyl Alcohol (TBA)	75-65-0	0.0737	0.5	74.12	0.227	1.54	70	130	25
Vinyl Bromide	593-60-2	0.0429	0.5	106.95	0.191	2.22	70	130	25
Isopropylbenzene	98-82-8	0.1000	0.5	120.194	0.500	2.50	73	135	25
THC as gas		7.0000	14	104.467	30.400	60.80	65	136	25
Xylene (Total)	1330-20-7	0.1243	0.6	106.17	0.548	2.65	70	130	25

Surrogates									
1,4-Dichlorobenzene-d4 (S)	3855-82-1						58	130	
Hexane-d14 (S)	21666-38-6						30	150	
Toluene-d8 (S)	2037-26-5						30	150	

APPENDIX C—LABORATORY ANALYTICAL REPORTS

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-033-B-16		Lab ID: 10258805024	Collected: 02/24/14 18:28	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.87	ug/m3	0.58	1.8		03/07/14 22:16	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/07/14 22:16	56-23-5	
Chlorodifluoromethane	42.6	ug/m3	0.36	1.8		03/07/14 22:16	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/07/14 22:16	67-66-3	
Dichlorodifluoromethane	3.1	ug/m3	1.8	1.8		03/07/14 22:16	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/07/14 22:16	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 22:16	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 22:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 22:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 22:16	156-60-5	
Ethylbenzene	1.7	ug/m3	1.6	1.8		03/07/14 22:16	100-41-4	
Methylene Chloride	12.6	ug/m3	6.4	1.8		03/07/14 22:16	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 22:16	1634-04-4	
Naphthalene	4.0J	ug/m3	4.8	1.8		03/07/14 22:16	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/07/14 22:16	127-18-4	
Toluene	44.1	ug/m3	1.4	1.8		03/07/14 22:16	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 22:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/07/14 22:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 22:16	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/07/14 22:16	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/07/14 22:16	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.8	1.8		03/07/14 22:16	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 22:16	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 22:16	75-01-4	
m&p-Xylene	7.4	ug/m3	3.2	1.8		03/07/14 22:16	179601-23-1	
o-Xylene	2.5	ug/m3	1.6	1.8		03/07/14 22:16	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-060-C-16		Lab ID: 10258805014	Collected: 02/24/14 18:00	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.81 ug/m3		0.57	1.74		03/07/14 05:01	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.74		03/07/14 05:01	56-23-5	
Chlorodifluoromethane	9.4 ug/m3		0.35	1.74		03/07/14 05:01	75-45-6	
Chloroform	ND ug/m3		1.7	1.74		03/07/14 05:01	67-66-3	
Dichlorodifluoromethane	2.4 ug/m3		1.8	1.74		03/07/14 05:01	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.74		03/07/14 05:01	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.71	1.74		03/07/14 05:01	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.74		03/07/14 05:01	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.74		03/07/14 05:01	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.74		03/07/14 05:01	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.74		03/07/14 05:01	100-41-4	
Methylene Chloride	8.1 ug/m3		6.1	1.74		03/07/14 05:01	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.74		03/07/14 05:01	1634-04-4	
Naphthalene	3.6J ug/m3		4.6	1.74		03/07/14 05:01	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.74		03/07/14 05:01	127-18-4	
Toluene	3.8 ug/m3		1.3	1.74		03/07/14 05:01	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.6	1.74		03/07/14 05:01	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.74		03/07/14 05:01	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.96	1.74		03/07/14 05:01	79-00-5	
Trichloroethene	ND ug/m3		0.96	1.74		03/07/14 05:01	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.35	1.74		03/07/14 05:01	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.74		03/07/14 05:01	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.74		03/07/14 05:01	108-67-8	
Vinyl chloride	ND ug/m3		0.45	1.74		03/07/14 05:01	75-01-4	
m&p-Xylene	2.5J ug/m3		3.1	1.74		03/07/14 05:01	179601-23-1	
o-Xylene	0.98J ug/m3		1.5	1.74		03/07/14 05:01	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-063-B-16		Lab ID: 10258805022	Collected: 02/24/14 18:25		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.68	2.1		03/06/14 19:12	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.3	2.1		03/06/14 19:12	56-23-5	
Chlorodifluoromethane	6.9	ug/m3	0.42	2.1		03/06/14 19:12	75-45-6	
Chloroform	ND	ug/m3	2.1	2.1		03/06/14 19:12	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	2.1	2.1		03/06/14 19:12	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.1		03/06/14 19:12	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.86	2.1		03/06/14 19:12	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.7	2.1		03/06/14 19:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		03/06/14 19:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		03/06/14 19:12	156-60-5	
Ethylbenzene	ND	ug/m3	1.8	2.1		03/06/14 19:12	100-41-4	
Methylene Chloride	4.9J	ug/m3	7.4	2.1		03/06/14 19:12	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.5	2.1		03/06/14 19:12	1634-04-4	
Naphthalene	ND	ug/m3	5.6	2.1		03/06/14 19:12	91-20-3	
Tetrachloroethene	ND	ug/m3	1.4	2.1		03/06/14 19:12	127-18-4	
Toluene	15.1	ug/m3	1.6	2.1		03/06/14 19:12	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.9	2.1		03/06/14 19:12	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.3	2.1		03/06/14 19:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.2	2.1		03/06/14 19:12	79-00-5	
Trichloroethene	ND	ug/m3	1.2	2.1		03/06/14 19:12	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.42	2.1		03/06/14 19:12	526-73-8	
1,2,4-Trimethylbenzene	1.1J	ug/m3	2.1	2.1		03/06/14 19:12	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.1	2.1		03/06/14 19:12	108-67-8	
Vinyl chloride	ND	ug/m3	0.55	2.1		03/06/14 19:12	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.7	2.1		03/06/14 19:12	179601-23-1	
o-Xylene	0.95J	ug/m3	1.8	2.1		03/06/14 19:12	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-065-C-16		Lab ID: 10258805020	Collected: 02/24/14 18:23	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.64	ug/m3	0.55	1.68		03/06/14 21:10	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 21:10	56-23-5	
Chlorodifluoromethane	23.9	ug/m3	0.34	1.68		03/06/14 21:10	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/06/14 21:10	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.7	1.68		03/06/14 21:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 21:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 21:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 21:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 21:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 21:10	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 21:10	100-41-4	
Methylene Chloride	5.8J	ug/m3	5.9	1.68		03/06/14 21:10	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 21:10	1634-04-4	
Naphthalene	5.1	ug/m3	4.5	1.68		03/06/14 21:10	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 21:10	127-18-4	
Toluene	2.1	ug/m3	1.3	1.68		03/06/14 21:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 21:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 21:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 21:10	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/06/14 21:10	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/06/14 21:10	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 21:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 21:10	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 21:10	75-01-4	
m&p-Xylene	ND	ug/m3	3.0	1.68		03/06/14 21:10	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/06/14 21:10	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-088-C-16		Lab ID: 10258805006	Collected: 02/24/14 16:56	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	11.8	36.36		03/10/14 01:06	71-43-2	
Carbon tetrachloride	ND	ug/m3	23.3	36.36		03/10/14 01:06	56-23-5	
Chlorodifluoromethane	ND	ug/m3	7.3	36.36		03/10/14 01:06	75-45-6	
Chloroform	ND	ug/m3	36.0	36.36		03/10/14 01:06	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	36.7	36.36		03/10/14 01:06	75-71-8	D3
1,1-Dichloroethane	ND	ug/m3	29.8	36.36		03/10/14 01:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	14.9	36.36		03/10/14 01:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	29.5	36.36		03/10/14 01:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	29.5	36.36		03/10/14 01:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	29.5	36.36		03/10/14 01:06	156-60-5	
Ethylbenzene	ND	ug/m3	32.0	36.36		03/10/14 01:06	100-41-4	
Methylene Chloride	33.6J	ug/m3	128	36.36		03/10/14 01:06	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	26.5	36.36		03/10/14 01:06	1634-04-4	
Naphthalene	ND	ug/m3	96.7	36.36		03/10/14 01:06	91-20-3	
Tetrachloroethene	ND	ug/m3	25.1	36.36		03/10/14 01:06	127-18-4	
Toluene	ND	ug/m3	28.0	36.36		03/10/14 01:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	137	36.36		03/10/14 01:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	40.4	36.36		03/10/14 01:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	20.0	36.36		03/10/14 01:06	79-00-5	
Trichloroethene	ND	ug/m3	20.0	36.36		03/10/14 01:06	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	7.3	36.36		03/10/14 01:06	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	36.3	36.36		03/10/14 01:06	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	36.3	36.36		03/10/14 01:06	108-67-8	
Vinyl chloride	ND	ug/m3	9.5	36.36		03/10/14 01:06	75-01-4	
m&p-Xylene	ND	ug/m3	64.0	36.36		03/10/14 01:06	179601-23-1	
o-Xylene	ND	ug/m3	32.0	36.36		03/10/14 01:06	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-101-B-16		Lab ID: 10258805036	Collected: 02/24/14 19:03	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.65 ug/m3		0.61	1.87		03/07/14 22:27	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.87		03/07/14 22:27	56-23-5	
Chlorodifluoromethane	18.9 ug/m3		6.6	1.87		03/07/14 22:27	75-45-6	
Chloroform	ND ug/m3		1.9	1.87		03/07/14 22:27	67-66-3	
Dichlorodifluoromethane	2.7 ug/m3		1.9	1.87		03/07/14 22:27	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.87		03/07/14 22:27	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.77	1.87		03/07/14 22:27	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.5	1.87		03/07/14 22:27	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.87		03/07/14 22:27	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.5	1.87		03/07/14 22:27	156-60-5	
Ethylbenzene	ND ug/m3		1.6	1.87		03/07/14 22:27	100-41-4	
Methylene Chloride	11.5 ug/m3		6.6	1.87		03/07/14 22:27	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.4	1.87		03/07/14 22:27	1634-04-4	
Naphthalene	1.3J ug/m3		2.0	1.87		03/07/14 22:27	91-20-3	
Tetrachloroethene	ND ug/m3		1.3	1.87		03/07/14 22:27	127-18-4	
Toluene	17.1 ug/m3		1.4	1.87		03/07/14 22:27	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.8	1.87		03/07/14 22:27	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.1	1.87		03/07/14 22:27	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.0	1.87		03/07/14 22:27	79-00-5	
Trichloroethene	ND ug/m3		1.0	1.87		03/07/14 22:27	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.37	1.87		03/07/14 22:27	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.9	1.87		03/07/14 22:27	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.9	1.87		03/07/14 22:27	108-67-8	
Vinyl chloride	ND ug/m3		0.49	1.87		03/07/14 22:27	75-01-4	
m&p-Xylene	2.5J ug/m3		3.3	1.87		03/07/14 22:27	179601-23-1	
o-Xylene	0.95J ug/m3		1.6	1.87		03/07/14 22:27	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-102-C-16		Lab ID: 10258805010	Collected: 02/24/14 17:03	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.61J	ug/m3	0.63	1.94		03/07/14 21:59	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.94		03/07/14 21:59	56-23-5	
Chlorodifluoromethane	1.8J	ug/m3	6.9	1.94		03/07/14 21:59	75-45-6	
Chloroform	ND	ug/m3	1.9	1.94		03/07/14 21:59	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	2.0	1.94		03/07/14 21:59	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.6	1.94		03/07/14 21:59	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.80	1.94		03/07/14 21:59	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.94		03/07/14 21:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		03/07/14 21:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		03/07/14 21:59	156-60-5	
Ethylbenzene	ND	ug/m3	1.7	1.94		03/07/14 21:59	100-41-4	
Methylene Chloride	8.6	ug/m3	6.9	1.94		03/07/14 21:59	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.94		03/07/14 21:59	1634-04-4	
Naphthalene	1.1J	ug/m3	2.1	1.94		03/07/14 21:59	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.94		03/07/14 21:59	127-18-4	
Toluene	3.2	ug/m3	1.5	1.94		03/07/14 21:59	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.9	1.94		03/07/14 21:59	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.2	1.94		03/07/14 21:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.1	1.94		03/07/14 21:59	79-00-5	
Trichloroethene	ND	ug/m3	1.1	1.94		03/07/14 21:59	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.39	1.94		03/07/14 21:59	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.94		03/07/14 21:59	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.94		03/07/14 21:59	108-67-8	
Vinyl chloride	ND	ug/m3	0.50	1.94		03/07/14 21:59	75-01-4	
m&p-Xylene	1.9J	ug/m3	3.4	1.94		03/07/14 21:59	179601-23-1	
o-Xylene	ND	ug/m3	1.7	1.94		03/07/14 21:59	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-105-Z-16		Lab ID: 10258805030	Collected: 02/24/14 18:48		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.6	ug/m3	0.58	1.8		03/08/14 02:13	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/08/14 02:13	56-23-5	
Chlorodifluoromethane	1.4	ug/m3	0.36	1.8		03/08/14 02:13	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/08/14 02:13	67-66-3	
Dichlorodifluoromethane	1.8	ug/m3	1.8	1.8		03/08/14 02:13	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/08/14 02:13	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/08/14 02:13	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/08/14 02:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/08/14 02:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/08/14 02:13	156-60-5	
Ethylbenzene	113	ug/m3	1.6	1.8		03/08/14 02:13	100-41-4	
Methylene Chloride	14.8	ug/m3	6.4	1.8		03/08/14 02:13	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/08/14 02:13	1634-04-4	
Naphthalene	3.2J	ug/m3	4.8	1.8		03/08/14 02:13	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/08/14 02:13	127-18-4	
Toluene	9300	ug/m3	111	144		03/09/14 18:40	108-88-3	A3
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/08/14 02:13	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/08/14 02:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/08/14 02:13	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/08/14 02:13	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/08/14 02:13	526-73-8	
1,2,4-Trimethylbenzene	1.7J	ug/m3	1.8	1.8		03/08/14 02:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/08/14 02:13	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/08/14 02:13	75-01-4	
m&p-Xylene	476	ug/m3	253	144		03/09/14 18:40	179601-23-1	A3
o-Xylene	142	ug/m3	1.6	1.8		03/08/14 02:13	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-113-C-16		Lab ID: 10258805028	Collected: 02/24/14 16:59		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.9	ug/m3	1.7	5.31		03/10/14 01:35	71-43-2	
Carbon tetrachloride	ND	ug/m3	3.4	5.31		03/10/14 01:35	56-23-5	
Chlorodifluoromethane	6.5	ug/m3	1.1	5.31		03/10/14 01:35	75-45-6	
Chloroform	ND	ug/m3	5.3	5.31		03/10/14 01:35	67-66-3	
Dichlorodifluoromethane	4.7J	ug/m3	5.4	5.31		03/10/14 01:35	75-71-8	
1,1-Dichloroethane	43.7	ug/m3	4.4	5.31		03/10/14 01:35	75-34-3	
1,2-Dichloroethane	ND	ug/m3	2.2	5.31		03/10/14 01:35	107-06-2	
1,1-Dichloroethene	17.1	ug/m3	4.3	5.31		03/10/14 01:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	4.3	5.31		03/10/14 01:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	4.3	5.31		03/10/14 01:35	156-60-5	
Ethylbenzene	ND	ug/m3	4.7	5.31		03/10/14 01:35	100-41-4	
Methylene Chloride	79.7	ug/m3	18.7	5.31		03/10/14 01:35	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	3.9	5.31		03/10/14 01:35	1634-04-4	
Naphthalene	ND	ug/m3	14.1	5.31		03/10/14 01:35	91-20-3	
Tetrachloroethene	ND	ug/m3	3.7	5.31		03/10/14 01:35	127-18-4	
Toluene	24.7	ug/m3	4.1	5.31		03/10/14 01:35	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	20.0	5.31		03/10/14 01:35	120-82-1	
1,1,1-Trichloroethane	13.2	ug/m3	5.9	5.31		03/10/14 01:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.9	5.31		03/10/14 01:35	79-00-5	
Trichloroethene	20.0	ug/m3	2.9	5.31		03/10/14 01:35	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.1	5.31		03/10/14 01:35	526-73-8	
1,2,4-Trimethylbenzene	3.2J	ug/m3	5.3	5.31		03/10/14 01:35	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	5.3	5.31		03/10/14 01:35	108-67-8	
Vinyl chloride	ND	ug/m3	1.4	5.31		03/10/14 01:35	75-01-4	
m&p-Xylene	76.6	ug/m3	9.3	5.31		03/10/14 01:35	179601-23-1	
o-Xylene	26.6	ug/m3	4.7	5.31		03/10/14 01:35	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-121-B-16		Lab ID: 10258805034		Collected: 02/24/14 19:02		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
Benzene	0.78	ug/m3	0.61	1.87		03/07/14 01:35	71-43-2		
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 01:35	56-23-5		
Chlorodifluoromethane	37.5	ug/m3	0.37	1.87		03/07/14 01:35	75-45-6		
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 01:35	67-66-3		
Dichlorodifluoromethane	1.9	ug/m3	1.9	1.87		03/07/14 01:35	75-71-8		
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 01:35	75-34-3		
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 01:35	107-06-2		
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 01:35	75-35-4		
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 01:35	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 01:35	156-60-5		
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 01:35	100-41-4		
Methylene Chloride	4.5J	ug/m3	6.6	1.87		03/07/14 01:35	75-09-2		
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 01:35	1634-04-4		
Naphthalene	3.4J	ug/m3	5.0	1.87		03/07/14 01:35	91-20-3		
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 01:35	127-18-4		
Toluene	19.4	ug/m3	1.4	1.87		03/07/14 01:35	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/07/14 01:35	120-82-1		
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 01:35	71-55-6		
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 01:35	79-00-5		
Trichloroethene	1.1	ug/m3	1.0	1.87		03/07/14 01:35	79-01-6		
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 01:35	526-73-8		
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 01:35	95-63-6		
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 01:35	108-67-8		
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 01:35	75-01-4		
m&p-Xylene	2.8J	ug/m3	3.3	1.87		03/07/14 01:35	179601-23-1		
o-Xylene	1.1J	ug/m3	1.6	1.87		03/07/14 01:35	95-47-6		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-123-Z-16		Lab ID: 10258805032	Collected: 02/24/14 18:49	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.3	ug/m3	0.61	1.87		03/08/14 00:13	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/08/14 00:13	56-23-5	
Chlorodifluoromethane	1.3	ug/m3	0.37	1.87		03/08/14 00:13	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/08/14 00:13	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.9	1.87		03/08/14 00:13	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/08/14 00:13	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/08/14 00:13	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/08/14 00:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/08/14 00:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/08/14 00:13	156-60-5	
Ethylbenzene	164	ug/m3	1.6	1.87		03/08/14 00:13	100-41-4	
Methylene Chloride	8.7	ug/m3	6.6	1.87		03/08/14 00:13	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/08/14 00:13	1634-04-4	
Naphthalene	ND	ug/m3	5.0	1.87		03/08/14 00:13	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/08/14 00:13	127-18-4	
Toluene	20000	ug/m3	230	299.2		03/09/14 19:04	108-88-3	A3
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/08/14 00:13	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/08/14 00:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/08/14 00:13	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/08/14 00:13	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/08/14 00:13	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.9	1.87		03/08/14 00:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/08/14 00:13	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/08/14 00:13	75-01-4	
m&p-Xylene	1030	ug/m3	527	299.2		03/09/14 19:04	179601-23-1	A3
o-Xylene	210	ug/m3	1.6	1.87		03/08/14 00:13	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-126-C-16		Lab ID: 10258805018	Collected: 02/24/14 18:19	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.79 ug/m3		0.57	1.74		03/07/14 20:16	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.74		03/07/14 20:16	56-23-5	
Chlorodifluoromethane	2.0 ug/m3		0.35	1.74		03/07/14 20:16	75-45-6	
Chloroform	ND ug/m3		1.7	1.74		03/07/14 20:16	67-66-3	
Dichlorodifluoromethane	2.3 ug/m3		1.8	1.74		03/07/14 20:16	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.74		03/07/14 20:16	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.71	1.74		03/07/14 20:16	107-06-2	
1,1,1-Trichloroethane	ND ug/m3		1.4	1.74		03/07/14 20:16	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.74		03/07/14 20:16	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.74		03/07/14 20:16	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.74		03/07/14 20:16	100-41-4	
Methylene Chloride	14.6 ug/m3		6.1	1.74		03/07/14 20:16	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.74		03/07/14 20:16	1634-04-4	
Naphthalene	3.4J ug/m3		4.6	1.74		03/07/14 20:16	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.74		03/07/14 20:16	127-18-4	
Toluene	6.0 ug/m3		1.3	1.74		03/07/14 20:16	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.6	1.74		03/07/14 20:16	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.74		03/07/14 20:16	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.96	1.74		03/07/14 20:16	79-00-5	
Trichloroethene	ND ug/m3		0.96	1.74		03/07/14 20:16	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.35	1.74		03/07/14 20:16	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.74		03/07/14 20:16	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.74		03/07/14 20:16	108-67-8	
Vinyl chloride	ND ug/m3		0.45	1.74		03/07/14 20:16	75-01-4	
m&p-Xylene	ND ug/m3		3.1	1.74		03/07/14 20:16	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.74		03/07/14 20:16	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-128-C-16		Lab ID: 10258805038	Collected: 02/24/14 19:13	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.84	ug/m3	0.61	1.87		03/07/14 18:48	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 18:48	56-23-5	
Chlorodifluoromethane	23.2	ug/m3	0.37	1.87		03/07/14 18:48	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 18:48	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.9	1.87		03/07/14 18:48	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 18:48	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 18:48	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 18:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 18:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 18:48	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 18:48	100-41-4	
Methylene Chloride	14.5	ug/m3	6.6	1.87		03/07/14 18:48	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 18:48	1634-04-4	
Naphthalene	3.9J	ug/m3	5.0	1.87		03/07/14 18:48	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 18:48	127-18-4	
Toluene	4.3	ug/m3	1.4	1.87		03/07/14 18:48	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/07/14 18:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 18:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 18:48	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 18:48	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 18:48	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 18:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 18:48	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 18:48	75-01-4	
m&p-Xylene	2.6J	ug/m3	3.3	1.87		03/07/14 18:48	179601-23-1	
o-Xylene	1.1J	ug/m3	1.6	1.87		03/07/14 18:48	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-130-C-16		Lab ID: 10258805012	Collected: 02/24/14 17:58	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.3 ug/m3		0.55	1.68		03/07/14 03:32	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/07/14 03:32	56-23-5	
Chlorodifluoromethane	4.0 ug/m3		0.34	1.68		03/07/14 03:32	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/07/14 03:32	67-66-3	
Dichlorodifluoromethane	2.4 ug/m3		1.7	1.68		03/07/14 03:32	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/07/14 03:32	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/07/14 03:32	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 03:32	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 03:32	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 03:32	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.68		03/07/14 03:32	100-41-4	
Methylene Chloride	14.1 ug/m3		5.9	1.68		03/07/14 03:32	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/07/14 03:32	1634-04-4	
Naphthalene	3.6J ug/m3		4.5	1.68		03/07/14 03:32	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/07/14 03:32	127-18-4	
Toluene	3.5 ug/m3		1.3	1.68		03/07/14 03:32	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.3	1.68		03/07/14 03:32	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/07/14 03:32	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/07/14 03:32	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/07/14 03:32	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.34	1.68		03/07/14 03:32	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.68		03/07/14 03:32	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/07/14 03:32	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/07/14 03:32	75-01-4	
m&p-Xylene	1.6J ug/m3		3.0	1.68		03/07/14 03:32	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.68		03/07/14 03:32	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-133-C-16		Lab ID: 10258805026	Collected: 02/24/14 18:40	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.93	ug/m3	0.55	1.68		03/07/14 19:47	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 19:47	56-23-5	
Chlorodifluoromethane	4.4	ug/m3	0.34	1.68		03/07/14 19:47	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 19:47	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.7	1.68		03/07/14 19:47	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 19:47	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 19:47	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 19:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 19:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 19:47	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 19:47	100-41-4	
Methylene Chloride	8.4	ug/m3	5.9	1.68		03/07/14 19:47	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 19:47	1634-04-4	
Naphthalene	3.7J	ug/m3	4.5	1.68		03/07/14 19:47	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 19:47	127-18-4	
Toluene	2.9	ug/m3	1.3	1.68		03/07/14 19:47	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 19:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 19:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 19:47	79-00-5	
Trichloroethene	1.2	ug/m3	0.92	1.68		03/07/14 19:47	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 19:47	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 19:47	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 19:47	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 19:47	75-01-4	
m&p-Xylene	2.1J	ug/m3	3.0	1.68		03/07/14 19:47	179601-23-1	
o-Xylene	0.84J	ug/m3	1.5	1.68		03/07/14 19:47	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-135-C-16		Lab ID: 10258805004	Collected: 02/24/14 16:54	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.80	ug/m3	0.58	1.8		03/06/14 22:39	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/06/14 22:39	56-23-5	
Chlorodifluoromethane	2.1	ug/m3	0.36	1.8		03/06/14 22:39	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/06/14 22:39	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.8	1.8		03/06/14 22:39	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/06/14 22:39	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/06/14 22:39	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/06/14 22:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/06/14 22:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/06/14 22:39	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.8		03/06/14 22:39	100-41-4	
Methylene Chloride	13.2	ug/m3	6.4	1.8		03/06/14 22:39	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/06/14 22:39	1634-04-4	
Naphthalene	ND	ug/m3	4.8	1.8		03/06/14 22:39	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/06/14 22:39	127-18-4	
Toluene	ND	ug/m3	1.4	1.8		03/06/14 22:39	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/06/14 22:39	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/06/14 22:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/06/14 22:39	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/06/14 22:39	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/06/14 22:39	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/06/14 22:39	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/06/14 22:39	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/06/14 22:39	75-01-4	
m&p-Xylene	ND	ug/m3	3.2	1.8		03/06/14 22:39	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.8		03/06/14 22:39	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-141-C-16		Lab ID: 10258805016	Collected: 02/24/14 18:14	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.92	ug/m3	0.57	1.74		03/07/14 19:17	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/07/14 19:17	56-23-5	
Chlorodifluoromethane	7.1	ug/m3	0.35	1.74		03/07/14 19:17	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/07/14 19:17	67-66-3	
Dichlorodifluoromethane	3.0	ug/m3	1.8	1.74		03/07/14 19:17	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/07/14 19:17	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/07/14 19:17	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 19:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 19:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 19:17	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/07/14 19:17	100-41-4	
Methylene Chloride	7.8	ug/m3	6.1	1.74		03/07/14 19:17	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/07/14 19:17	1634-04-4	
Naphthalene	ND	ug/m3	4.6	1.74		03/07/14 19:17	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/07/14 19:17	127-18-4	
Toluene	2.1	ug/m3	1.3	1.74		03/07/14 19:17	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.6	1.74		03/07/14 19:17	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/07/14 19:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/07/14 19:17	79-00-5	
Trichloroethene	ND	ug/m3	0.96	1.74		03/07/14 19:17	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/07/14 19:17	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 19:17	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 19:17	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/07/14 19:17	75-01-4	
m&p-Xylene	1.6J	ug/m3	3.1	1.74		03/07/14 19:17	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/07/14 19:17	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-142-C-16		Lab ID: 10258805008	Collected: 02/24/14 16:57	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.67	ug/m3	0.61	1.87		03/06/14 19:41	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/06/14 19:41	56-23-5	
Chlorodifluoromethane	1.9	ug/m3	0.37	1.87		03/06/14 19:41	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/06/14 19:41	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.9	1.87		03/06/14 19:41	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/06/14 19:41	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/06/14 19:41	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 19:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 19:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 19:41	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/06/14 19:41	100-41-4	
Methylene Chloride	3.8J	ug/m3	6.6	1.87		03/06/14 19:41	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/06/14 19:41	1634-04-4	
Naphthalene	3.4J	ug/m3	5.0	1.87		03/06/14 19:41	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/06/14 19:41	127-18-4	
Toluene	ND	ug/m3	1.4	1.87		03/06/14 19:41	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/06/14 19:41	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/06/14 19:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/06/14 19:41	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/06/14 19:41	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/06/14 19:41	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 19:41	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 19:41	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/06/14 19:41	75-01-4	
m&p-Xylene	1.7J	ug/m3	3.3	1.87		03/06/14 19:41	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.87		03/06/14 19:41	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-143-C-16		Lab ID: 10258805002		Collected: 02/24/14 16:44		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
Benzene	0.81	ug/m3	0.58	1.8		03/07/14 04:01	71-43-2		
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/07/14 04:01	56-23-5		
Chlorodifluoromethane	2.5	ug/m3	0.36	1.8		03/07/14 04:01	75-45-6		
Chloroform	ND	ug/m3	1.8	1.8		03/07/14 04:01	67-66-3		
Dichlorodifluoromethane	2.4	ug/m3	1.8	1.8		03/07/14 04:01	75-71-8		
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/07/14 04:01	75-34-3		
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 04:01	107-06-2		
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 04:01	75-35-4		
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 04:01	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 04:01	156-60-5		
Ethylbenzene	ND	ug/m3	1.6	1.8		03/07/14 04:01	100-41-4		
Methylene Chloride	6.1J	ug/m3	6.4	1.8		03/07/14 04:01	75-09-2		
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 04:01	1634-04-4		
Naphthalene	4.4J	ug/m3	4.8	1.8		03/07/14 04:01	91-20-3		
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/07/14 04:01	127-18-4		
Toluene	ND	ug/m3	1.4	1.8		03/07/14 04:01	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 04:01	120-82-1		
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/07/14 04:01	71-55-6		
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 04:01	79-00-5		
Trichloroethene	ND	ug/m3	0.99	1.8		03/07/14 04:01	79-01-6		
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/07/14 04:01	526-73-8		
1,2,4-Trimethylbenzene	1.2J	ug/m3	1.8	1.8		03/07/14 04:01	95-63-6		
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 04:01	108-67-8		
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 04:01	75-01-4		
m&p-Xylene	ND	ug/m3	3.2	1.8		03/07/14 04:01	179601-23-1		
o-Xylene	ND	ug/m3	1.6	1.8		03/07/14 04:01	95-47-6		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-144-C-16		Lab ID: 10258805043	Collected: 02/24/14 19:37	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.71	ug/m3	0.61	1.87		03/06/14 23:38	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/06/14 23:38	56-23-5	
Chlorodifluoromethane	18.0	ug/m3	0.37	1.87		03/06/14 23:38	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/06/14 23:38	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.9	1.87		03/06/14 23:38	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/06/14 23:38	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/06/14 23:38	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 23:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 23:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 23:38	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/06/14 23:38	100-41-4	
Methylene Chloride	6.6	ug/m3	6.6	1.87		03/06/14 23:38	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/06/14 23:38	1634-04-4	
Naphthalene	3.6J	ug/m3	5.0	1.87		03/06/14 23:38	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/06/14 23:38	127-18-4	
Toluene	3.5	ug/m3	1.4	1.87		03/06/14 23:38	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/06/14 23:38	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/06/14 23:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/06/14 23:38	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/06/14 23:38	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/06/14 23:38	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 23:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 23:38	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/06/14 23:38	75-01-4	
m&p-Xylene	2.3J	ug/m3	3.3	1.87		03/06/14 23:38	179601-23-1	
o-Xylene	0.88J	ug/m3	1.6	1.87		03/06/14 23:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-145-C-16		Lab ID: 10258805039	Collected: 02/24/14 19:20	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	3.6 ug/m3		0.61	1.87		03/07/14 23:15	71-43-2	
Carbon tetrachloride	1.4 ug/m3		1.2	1.87		03/07/14 23:15	56-23-5	
Chlorodifluoromethane	37.2 ug/m3		0.37	1.87		03/07/14 23:15	75-45-6	
Chloroform	ND ug/m3		1.9	1.87		03/07/14 23:15	67-66-3	
Dichlorodifluoromethane	4.8 ug/m3		1.9	1.87		03/07/14 23:15	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.87		03/07/14 23:15	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.77	1.87		03/07/14 23:15	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.5	1.87		03/07/14 23:15	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.87		03/07/14 23:15	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.5	1.87		03/07/14 23:15	156-60-5	
Ethylbenzene	1.7 ug/m3		1.6	1.87		03/07/14 23:15	100-41-4	
Methylene Chloride	1140 ug/m3		222	62.83		03/09/14 17:26	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.4	1.87		03/07/14 23:15	1634-04-4	
Naphthalene	4.1J ug/m3		5.0	1.87		03/07/14 23:15	91-20-3	
Tetrachloroethene	ND ug/m3		1.3	1.87		03/07/14 23:15	127-18-4	
Toluene	16.2 ug/m3		1.4	1.87		03/07/14 23:15	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		7.0	1.87		03/07/14 23:15	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.1	1.87		03/07/14 23:15	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.0	1.87		03/07/14 23:15	79-00-5	
Trichloroethene	ND ug/m3		1.0	1.87		03/07/14 23:15	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.37	1.87		03/07/14 23:15	526-73-8	
1,2,4-Trimethylbenzene	3.4 ug/m3		1.9	1.87		03/07/14 23:15	95-63-6	
1,3,5-Trimethylbenzene	1.0J ug/m3		1.9	1.87		03/07/14 23:15	108-67-8	
Vinyl chloride	ND ug/m3		0.49	1.87		03/07/14 23:15	75-01-4	
m&p-Xylene	6.1 ug/m3		3.3	1.87		03/07/14 23:15	179601-23-1	
o-Xylene	2.3 ug/m3		1.6	1.87		03/07/14 23:15	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-146-C-16		Lab ID: 10258805040	Collected: 02/24/14 19:18	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.76	ug/m3	0.58	1.8		03/07/14 15:58	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/07/14 15:58	56-23-5	
Chlorodifluoromethane	54.2	ug/m3	0.36	1.8		03/07/14 15:58	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/07/14 15:58	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.8	1.8		03/07/14 15:58	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/07/14 15:58	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 15:58	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 15:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 15:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 15:58	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.8		03/07/14 15:58	100-41-4	
Methylene Chloride	6.7	ug/m3	6.4	1.8		03/07/14 15:58	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 15:58	1634-04-4	
Naphthalene	3.7J	ug/m3	4.8	1.8		03/07/14 15:58	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/07/14 15:58	127-18-4	
Toluene	2.5	ug/m3	1.4	1.8		03/07/14 15:58	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 15:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/07/14 15:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 15:58	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/07/14 15:58	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/07/14 15:58	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 15:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 15:58	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 15:58	75-01-4	
m&p-Xylene	2.3J	ug/m3	3.2	1.8		03/07/14 15:58	179601-23-1	
o-Xylene	0.88J	ug/m3	1.6	1.8		03/07/14 15:58	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-147-C-16		Lab ID: 10258805041	Collected: 02/24/14 19:25	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.80	ug/m3	0.61	1.87		03/07/14 03:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 03:03	56-23-5	
Chlorodifluoromethane	18.2	ug/m3	0.37	1.87		03/07/14 03:03	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 03:03	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.9	1.87		03/07/14 03:03	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 03:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 03:03	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 03:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 03:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 03:03	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 03:03	100-41-4	
Methylene Chloride	19.1	ug/m3	6.6	1.87		03/07/14 03:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 03:03	1634-04-4	
Naphthalene	4.9J	ug/m3	5.0	1.87		03/07/14 03:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 03:03	127-18-4	
Toluene	5.4	ug/m3	1.4	1.87		03/07/14 03:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/07/14 03:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 03:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 03:03	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 03:03	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 03:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 03:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 03:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 03:03	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.3	1.87		03/07/14 03:03	179601-23-1	
o-Xylene	1.1J	ug/m3	1.6	1.87		03/07/14 03:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-148-C-16		Lab ID: 10258805042	Collected: 02/24/14 19:15	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.61	ug/m3	0.61	1.87		03/07/14 21:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 21:03	56-23-5	
Chlorodifluoromethane	24.4	ug/m3	6.6	1.87		03/07/14 21:03	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 21:03	67-66-3	
Dichlorodifluoromethane	2.7	ug/m3	1.9	1.87		03/07/14 21:03	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 21:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 21:03	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 21:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 21:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 21:03	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 21:03	100-41-4	
Methylene Chloride	11.0	ug/m3	6.6	1.87		03/07/14 21:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 21:03	1634-04-4	
Naphthalene	1.2J	ug/m3	2.0	1.87		03/07/14 21:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 21:03	127-18-4	
Toluene	2.9	ug/m3	1.4	1.87		03/07/14 21:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/07/14 21:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 21:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 21:03	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 21:03	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 21:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 21:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 21:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 21:03	75-01-4	
m&p-Xylene	2.3J	ug/m3	3.3	1.87		03/07/14 21:03	179601-23-1	
o-Xylene	0.93J	ug/m3	1.6	1.87		03/07/14 21:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-DUP1-C-16		Lab ID: 10258805046		Collected: 02/24/14 00:00		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
Benzene	0.83	ug/m3	0.55	1.68		03/06/14 22:10	71-43-2		
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 22:10	56-23-5		
Chlorodifluoromethane	3.9	ug/m3	0.34	1.68		03/06/14 22:10	75-45-6		
Chloroform	ND	ug/m3	1.7	1.68		03/06/14 22:10	67-66-3		
Dichlorodifluoromethane	2.3	ug/m3	1.7	1.68		03/06/14 22:10	75-71-8		
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 22:10	75-34-3		
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 22:10	107-06-2		
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 22:10	75-35-4		
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 22:10	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 22:10	156-60-5		
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 22:10	100-41-4		
Methylene Chloride	1.9J	ug/m3	5.9	1.68		03/06/14 22:10	75-09-2		
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 22:10	1634-04-4		
Naphthalene	3.5J	ug/m3	4.5	1.68		03/06/14 22:10	91-20-3		
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 22:10	127-18-4		
Toluene	2.4	ug/m3	1.3	1.68		03/06/14 22:10	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 22:10	120-82-1		
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 22:10	71-55-6		
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 22:10	79-00-5		
Trichloroethene	1.4	ug/m3	0.92	1.68		03/06/14 22:10	79-01-6		
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/06/14 22:10	526-73-8		
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 22:10	95-63-6		
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 22:10	108-67-8		
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 22:10	75-01-4		
m&p-Xylene	1.9J	ug/m3	3.0	1.68		03/06/14 22:10	179601-23-1		
o-Xylene	ND	ug/m3	1.5	1.68		03/06/14 22:10	95-47-6		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-DUP2-C-16		Lab ID: 10258805047	Collected: 02/24/14 00:00	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.89	ug/m3	0.55	1.68		03/07/14 05:30	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 05:30	56-23-5	
Chlorodifluoromethane	3.1	ug/m3	0.34	1.68		03/07/14 05:30	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 05:30	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/07/14 05:30	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 05:30	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 05:30	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 05:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 05:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 05:30	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 05:30	100-41-4	
Methylene Chloride	5.1J	ug/m3	5.9	1.68		03/07/14 05:30	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 05:30	1634-04-4	
Naphthalene	3.2J	ug/m3	4.5	1.68		03/07/14 05:30	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 05:30	127-18-4	
Toluene	ND	ug/m3	1.3	1.68		03/07/14 05:30	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 05:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 05:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 05:30	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/07/14 05:30	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 05:30	526-73-8	
1,2,4-Trimethylbenzene	0.94J	ug/m3	1.7	1.68		03/07/14 05:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 05:30	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 05:30	75-01-4	
m&p-Xylene	3.4	ug/m3	3.0	1.68		03/07/14 05:30	179601-23-1	
o-Xylene	1.2J	ug/m3	1.5	1.68		03/07/14 05:30	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-033-B-16		Lab ID: 10258805023	Collected: 02/24/14 12:18	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2	ug/m3	0.55	1.68		03/07/14 23:44	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 23:44	56-23-5	
Chlorodifluoromethane	32.6	ug/m3	0.34	1.68		03/07/14 23:44	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 23:44	67-66-3	
Dichlorodifluoromethane	3.4	ug/m3	1.7	1.68		03/07/14 23:44	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 23:44	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 23:44	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 23:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 23:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 23:44	156-60-5	
Ethylbenzene	3.1	ug/m3	1.5	1.68		03/07/14 23:44	100-41-4	
Methylene Chloride	10.5	ug/m3	5.9	1.68		03/07/14 23:44	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 23:44	1634-04-4	
Naphthalene	10.4	ug/m3	4.5	1.68		03/07/14 23:44	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 23:44	127-18-4	
Toluene	36.1	ug/m3	1.3	1.68		03/07/14 23:44	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 23:44	120-82-1	
1,1,1-Trichloroethane	88.6	ug/m3	1.9	1.68		03/07/14 23:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 23:44	79-00-5	
Trichloroethene	2.8	ug/m3	0.92	1.68		03/07/14 23:44	79-01-6	
1,2,3-Trimethylbenzene	5.2	ug/m3	0.34	1.68		03/07/14 23:44	526-73-8	
1,2,4-Trimethylbenzene	11.1	ug/m3	1.7	1.68		03/07/14 23:44	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 23:44	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 23:44	75-01-4	
m&p-Xylene	13.8	ug/m3	3.0	1.68		03/07/14 23:44	179601-23-1	
o-Xylene	4.9	ug/m3	1.5	1.68		03/07/14 23:44	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-060-C-16		Lab ID: 10258805013	Collected: 02/24/14 11:59	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.85	ug/m3	0.55	1.68		03/07/14 22:55	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 22:55	56-23-5	
Chlorodifluoromethane	5.8J	ug/m3	5.9	1.68		03/07/14 22:55	75-45-6	
Chloroform	3.1	ug/m3	1.7	1.68		03/07/14 22:55	67-66-3	
Dichlorodifluoromethane	2.8	ug/m3	1.7	1.68		03/07/14 22:55	75-71-8	
1,1-Dichloroethane	2.3	ug/m3	1.4	1.68		03/07/14 22:55	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 22:55	107-06-2	
1,1-Dichloroethene	0.86J	ug/m3	1.4	1.68		03/07/14 22:55	75-35-4	
cis-1,2-Dichloroethene	16.5	ug/m3	1.4	1.68		03/07/14 22:55	156-59-2	
trans-1,2-Dichloroethene	1.1J	ug/m3	1.4	1.68		03/07/14 22:55	156-60-5	
Ethylbenzene	96.5	ug/m3	1.5	1.68		03/07/14 22:55	100-41-4	
Methylene Chloride	10.7	ug/m3	5.9	1.68		03/07/14 22:55	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 22:55	1634-04-4	
Naphthalene	4.4	ug/m3	1.8	1.68		03/07/14 22:55	91-20-3	
Tetrachloroethene	2.2	ug/m3	1.2	1.68		03/07/14 22:55	127-18-4	
Toluene	13.1	ug/m3	1.3	1.68		03/07/14 22:55	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 22:55	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 22:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 22:55	79-00-5	
Trichloroethene	291	ug/m3	0.92	1.68		03/07/14 22:55	79-01-6	
1,2,3-Trimethylbenzene	0.91	ug/m3	0.34	1.68		03/07/14 22:55	526-73-8	
1,2,4-Trimethylbenzene	3.2	ug/m3	1.7	1.68		03/07/14 22:55	95-63-6	
1,3,5-Trimethylbenzene	2.2	ug/m3	1.7	1.68		03/07/14 22:55	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 22:55	75-01-4	
m&p-Xylene	561	ug/m3	29.6	16.8		03/08/14 16:32	179601-23-1	
o-Xylene	230	ug/m3	1.5	1.68		03/07/14 22:55	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-063-B-16		Lab ID: 10258805021	Collected: 02/24/14 12:14		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/07/14 02:33	71-43-2	
Carbon tetrachloride	16.3	ug/m3	1.1	1.68		03/07/14 02:33	56-23-5	
Chlorodifluoromethane	1.7	ug/m3	0.34	1.68		03/07/14 02:33	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 02:33	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/07/14 02:33	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 02:33	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 02:33	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 02:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 02:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 02:33	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 02:33	100-41-4	
Methylene Chloride	14.6	ug/m3	5.9	1.68		03/07/14 02:33	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 02:33	1634-04-4	
Naphthalene	3.3J	ug/m3	4.5	1.68		03/07/14 02:33	91-20-3	
Tetrachloroethene	3.3	ug/m3	1.2	1.68		03/07/14 02:33	127-18-4	
Toluene	2.4	ug/m3	1.3	1.68		03/07/14 02:33	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 02:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 02:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 02:33	79-00-5	
Trichloroethene	1.6	ug/m3	0.92	1.68		03/07/14 02:33	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 02:33	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.7	1.68		03/07/14 02:33	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 02:33	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 02:33	75-01-4	
m&p-Xylene	1.8J	ug/m3	3.0	1.68		03/07/14 02:33	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/07/14 02:33	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-065-C-16		Lab ID: 10258805019	Collected: 02/24/14 12:10	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/07/14 20:07	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 20:07	56-23-5	
Chlorodifluoromethane	7.9	ug/m3	5.9	1.68		03/07/14 20:07	75-45-6	
Chloroform	2.7	ug/m3	1.7	1.68		03/07/14 20:07	67-66-3	
Dichlorodifluoromethane	7.3	ug/m3	1.7	1.68		03/07/14 20:07	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 20:07	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 20:07	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:07	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 20:07	100-41-4	
Methylene Chloride	16.9	ug/m3	5.9	1.68		03/07/14 20:07	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 20:07	1634-04-4	
Naphthalene	6.9	ug/m3	1.8	1.68		03/07/14 20:07	91-20-3	
Tetrachloroethene	12.6	ug/m3	1.2	1.68		03/07/14 20:07	127-18-4	
Toluene	1.2J	ug/m3	1.3	1.68		03/07/14 20:07	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 20:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 20:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 20:07	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/07/14 20:07	79-01-6	
1,2,3-Trimethylbenzene	0.95	ug/m3	0.34	1.68		03/07/14 20:07	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.7	1.68		03/07/14 20:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 20:07	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 20:07	75-01-4	
m&p-Xylene	1.1J	ug/m3	3.0	1.68		03/07/14 20:07	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/07/14 20:07	95-47-6	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-088-C-16		Lab ID: 10258805005	Collected: 02/24/14 11:42	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2	ug/m3	0.55	1.68		03/08/14 03:46	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/08/14 03:46	56-23-5	
Chlorodifluoromethane	3.2	ug/m3	0.34	1.68		03/08/14 03:46	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/08/14 03:46	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	1.7	1.68		03/08/14 03:46	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/08/14 03:46	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/08/14 03:46	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/08/14 03:46	75-35-4	
cis-1,2-Dichloroethene	17.6	ug/m3	1.4	1.68		03/08/14 03:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/08/14 03:46	156-60-5	
Ethylbenzene	2.2	ug/m3	1.5	1.68		03/08/14 03:46	100-41-4	
Methylene Chloride	82.5	ug/m3	5.9	1.68		03/08/14 03:46	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/08/14 03:46	1634-04-4	
Naphthalene	22.3	ug/m3	4.5	1.68		03/08/14 03:46	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/08/14 03:46	127-18-4	
Toluene	ND	ug/m3	1.3	1.68		03/08/14 03:46	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/08/14 03:46	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/08/14 03:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/08/14 03:46	79-00-5	
Trichloroethene	70.6	ug/m3	0.92	1.68		03/08/14 03:46	79-01-6	
1,2,3-Trimethylbenzene	1.1	ug/m3	0.34	1.68		03/08/14 03:46	526-73-8	
1,2,4-Trimethylbenzene	1.8	ug/m3	1.7	1.68		03/08/14 03:46	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/08/14 03:46	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/08/14 03:46	75-01-4	
m&p-Xylene	10	ug/m3	3.0	1.68		03/08/14 03:46	179601-23-1	
o-Xylene	4.7	ug/m3	1.5	1.68		03/08/14 03:46	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-101-B-16		Lab ID: 10258805035	Collected: 02/24/14 12:40	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.57	1.74		03/08/14 01:44	71-43-2	
Carbon tetrachloride	2.6	ug/m3	1.1	1.74		03/08/14 01:44	56-23-5	
Chlorodifluoromethane	4.3	ug/m3	0.35	1.74		03/08/14 01:44	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/08/14 01:44	67-66-3	
Dichlorodifluoromethane	4.5	ug/m3	1.8	1.74		03/08/14 01:44	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/08/14 01:44	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/08/14 01:44	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/08/14 01:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/08/14 01:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/08/14 01:44	156-60-5	
Ethylbenzene	0.87J	ug/m3	1.5	1.74		03/08/14 01:44	100-41-4	
Methylene Chloride	14.3	ug/m3	6.1	1.74		03/08/14 01:44	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/08/14 01:44	1634-04-4	
Naphthalene	9.7	ug/m3	4.6	1.74		03/08/14 01:44	91-20-3	
Tetrachloroethene	45.9	ug/m3	1.2	1.74		03/08/14 01:44	127-18-4	
Toluene	12.5	ug/m3	1.3	1.74		03/08/14 01:44	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.6	1.74		03/08/14 01:44	120-82-1	
1,1,1-Trichloroethane	143	ug/m3	1.9	1.74		03/08/14 01:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/08/14 01:44	79-00-5	
Trichloroethene	79.2	ug/m3	0.96	1.74		03/08/14 01:44	79-01-6	
1,2,3-Trimethylbenzene	2.9	ug/m3	0.35	1.74		03/08/14 01:44	526-73-8	
1,2,4-Trimethylbenzene	3.4	ug/m3	1.7	1.74		03/08/14 01:44	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/08/14 01:44	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/08/14 01:44	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.1	1.74		03/08/14 01:44	179601-23-1	
o-Xylene	1.8	ug/m3	1.5	1.74		03/08/14 01:44	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-102-C-16		Lab ID: 10258805009	Collected: 02/24/14 11:49	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	7.5	ug/m3	0.55	1.68		03/07/14 21:15	71-43-2	
Carbon tetrachloride	3.1	ug/m3	1.1	1.68		03/07/14 21:15	56-23-5	
Chlorodifluoromethane	3.3	ug/m3	0.34	1.68		03/07/14 21:15	75-45-6	
Chloroform	71.9	ug/m3	1.7	1.68		03/07/14 21:15	67-66-3	
Dichlorodifluoromethane	5.8	ug/m3	1.7	1.68		03/07/14 21:15	75-71-8	
1,1-Dichloroethane	6760	ug/m3	220	268.8		03/09/14 19:29	75-34-3	A3
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 21:15	107-06-2	
1,1-Dichloroethene	2530	ug/m3	218	268.8		03/09/14 19:29	75-35-4	A3
cis-1,2-Dichloroethene	67.4	ug/m3	1.4	1.68		03/07/14 21:15	156-59-2	
trans-1,2-Dichloroethene	3.9	ug/m3	1.4	1.68		03/07/14 21:15	156-60-5	L1
Ethylbenzene	2140	ug/m3	237	268.8		03/09/14 19:29	100-41-4	A3
Methylene Chloride	46.3	ug/m3	5.9	1.68		03/07/14 21:15	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 21:15	1634-04-4	
Naphthalene	66.0	ug/m3	4.5	1.68		03/07/14 21:15	91-20-3	
Tetrachloroethene	2.2	ug/m3	1.2	1.68		03/07/14 21:15	127-18-4	
Toluene	128	ug/m3	1.3	1.68		03/07/14 21:15	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 21:15	120-82-1	
1,1,1-Trichloroethane	2070	ug/m3	298	268.8		03/09/14 19:29	71-55-6	A3
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 21:15	79-00-5	
Trichloroethene	2740	ug/m3	148	268.8		03/09/14 19:29	79-01-6	A3
1,2,3-Trimethylbenzene	90.4	ug/m3	0.34	1.68		03/07/14 21:15	526-73-8	
1,2,4-Trimethylbenzene	89.1	ug/m3	1.7	1.68		03/07/14 21:15	95-63-6	
1,3,5-Trimethylbenzene	39.7	ug/m3	1.7	1.68		03/07/14 21:15	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 21:15	75-01-4	
m&p-Xylene	11500	ug/m3	473	268.8		03/09/14 19:29	179601-23-1	A3
o-Xylene	4040	ug/m3	237	268.8		03/09/14 19:29	95-47-6	A3

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-105-Z-16		Lab ID: 10258805029	Collected: 02/24/14 12:29	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.5 ug/m3		0.55	1.68		03/08/14 04:20	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/08/14 04:20	56-23-5	
Chlorodifluoromethane	9.0 ug/m3		0.34	1.68		03/08/14 04:20	75-45-6	
Chloroform	2.5 ug/m3		1.7	1.68		03/08/14 04:20	67-66-3	
Dichlorodifluoromethane	ND ug/m3		1.7	1.68		03/08/14 04:20	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/08/14 04:20	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/08/14 04:20	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/08/14 04:20	75-35-4	
cis-1,2-Dichloroethene	36.3 ug/m3		1.4	1.68		03/08/14 04:20	156-59-2	
trans-1,2-Dichloroethene	5.5 ug/m3		1.4	1.68		03/08/14 04:20	156-60-5	L1
Ethylbenzene	5.3 ug/m3		1.5	1.68		03/08/14 04:20	100-41-4	
Methylene Chloride	621 ug/m3		5.9	1.68		03/08/14 04:20	75-09-2	C0,E
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/08/14 04:20	1634-04-4	
Naphthalene	4.9 ug/m3		4.5	1.68		03/08/14 04:20	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/08/14 04:20	127-18-4	
Toluene	59.6 ug/m3		1.3	1.68		03/08/14 04:20	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.3	1.68		03/08/14 04:20	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/08/14 04:20	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/08/14 04:20	79-00-5	
Trichloroethene	129 ug/m3		0.92	1.68		03/08/14 04:20	79-01-6	
1,2,3-Trimethylbenzene	1.8 ug/m3		0.34	1.68		03/08/14 04:20	526-73-8	
1,2,4-Trimethylbenzene	2.7 ug/m3		1.7	1.68		03/08/14 04:20	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/08/14 04:20	108-67-8	
Vinyl chloride	9.4 ug/m3		0.44	1.68		03/08/14 04:20	75-01-4	
m&p-Xylene	22.7 ug/m3		3.0	1.68		03/08/14 04:20	179601-23-1	
o-Xylene	4.8 ug/m3		1.5	1.68		03/08/14 04:20	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-113-C-16		Lab ID: 10258805027	Collected: 02/24/14 11:43	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.4	ug/m3	0.55	1.68		03/07/14 00:07	71-43-2	
Carbon tetrachloride	1.1	ug/m3	1.1	1.68		03/07/14 00:07	56-23-5	
Chlorodifluoromethane	10.7	ug/m3	0.34	1.68		03/07/14 00:07	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 00:07	67-66-3	
Dichlorodifluoromethane	3.8	ug/m3	1.7	1.68		03/07/14 00:07	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 00:07	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 00:07	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 00:07	75-35-4	
cis-1,2-Dichloroethene	0.73J	ug/m3	1.4	1.68		03/07/14 00:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 00:07	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 00:07	100-41-4	
Methylene Chloride	557	ug/m3	5.9	1.68		03/07/14 00:07	75-09-2	E
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 00:07	1634-04-4	
Naphthalene	ND	ug/m3	4.5	1.68		03/07/14 00:07	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 00:07	127-18-4	
Toluene	6.1	ug/m3	1.3	1.68		03/07/14 00:07	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 00:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 00:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 00:07	79-00-5	
Trichloroethene	7.0	ug/m3	0.92	1.68		03/07/14 00:07	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 00:07	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 00:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 00:07	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 00:07	75-01-4	
m&p-Xylene	2.4J	ug/m3	3.0	1.68		03/07/14 00:07	179601-23-1	
o-Xylene	0.83J	ug/m3	1.5	1.68		03/07/14 00:07	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-121-B-16		Lab ID: 10258805033	Collected: 02/24/14 12:39	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/07/14 02:04	71-43-2	
Carbon tetrachloride	4.4	ug/m3	1.2	1.8		03/07/14 02:04	56-23-5	
Chlorodifluoromethane	1.5	ug/m3	0.36	1.8		03/07/14 02:04	75-45-6	
Chloroform	26.4	ug/m3	1.8	1.8		03/07/14 02:04	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.8	1.8		03/07/14 02:04	75-71-8	
1,1-Dichloroethane	1.5J	ug/m3	1.5	1.8		03/07/14 02:04	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 02:04	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 02:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 02:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 02:04	156-60-5	
Ethylbenzene	1.5J	ug/m3	1.6	1.8		03/07/14 02:04	100-41-4	
Methylene Chloride	24.6	ug/m3	6.4	1.8		03/07/14 02:04	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 02:04	1634-04-4	
Naphthalene	85.8	ug/m3	4.8	1.8		03/07/14 02:04	91-20-3	
Tetrachloroethene	2.4	ug/m3	1.2	1.8		03/07/14 02:04	127-18-4	
Toluene	6.7	ug/m3	1.4	1.8		03/07/14 02:04	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 02:04	120-82-1	
1,1,1-Trichloroethane	1.5J	ug/m3	2.0	1.8		03/07/14 02:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 02:04	79-00-5	
Trichloroethene	203	ug/m3	0.99	1.8		03/07/14 02:04	79-01-6	
1,2,3-Trimethylbenzene	13.2	ug/m3	0.36	1.8		03/07/14 02:04	526-73-8	
1,2,4-Trimethylbenzene	32.0	ug/m3	1.8	1.8		03/07/14 02:04	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 02:04	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 02:04	75-01-4	
m&p-Xylene	7.2	ug/m3	3.2	1.8		03/07/14 02:04	179601-23-1	
o-Xylene	5.0	ug/m3	1.6	1.8		03/07/14 02:04	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-123-Z-16		Lab ID: 10258805031	Collected: 02/24/14 12:32	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/07/14 21:31	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 21:31	56-23-5	
Chlorodifluoromethane	ND	ug/m3	5.9	1.68		03/07/14 21:31	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 21:31	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	1.7	1.68		03/07/14 21:31	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 21:31	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 21:31	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 21:31	75-35-4	
cis-1,2-Dichloroethene	0.70J	ug/m3	1.4	1.68		03/07/14 21:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 21:31	156-60-5	
Ethylbenzene	3.9	ug/m3	1.5	1.68		03/07/14 21:31	100-41-4	
Methylene Chloride	8.2	ug/m3	5.9	1.68		03/07/14 21:31	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 21:31	1634-04-4	
Naphthalene	10.9	ug/m3	1.8	1.68		03/07/14 21:31	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 21:31	127-18-4	
Toluene	50.9	ug/m3	1.3	1.68		03/07/14 21:31	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 21:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 21:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 21:31	79-00-5	
Trichloroethene	37.5	ug/m3	0.92	1.68		03/07/14 21:31	79-01-6	
1,2,3-Trimethylbenzene	3.7	ug/m3	0.34	1.68		03/07/14 21:31	526-73-8	
1,2,4-Trimethylbenzene	1.7	ug/m3	1.7	1.68		03/07/14 21:31	95-63-6	
1,3,5-Trimethylbenzene	2.9	ug/m3	1.7	1.68		03/07/14 21:31	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 21:31	75-01-4	
m&p-Xylene	19.9	ug/m3	3.0	1.68		03/07/14 21:31	179601-23-1	
o-Xylene	4.3	ug/m3	1.5	1.68		03/07/14 21:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-126-C-16		Lab ID: 10258805017	Collected: 02/24/14 12:06	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	88.4	ug/m3	0.55	1.68		03/08/14 04:49	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/08/14 04:49	56-23-5	
Chlorodifluoromethane	ND	ug/m3	0.34	1.68		03/08/14 04:49	75-45-6	
Chloroform	0.84J	ug/m3	1.7	1.68		03/08/14 04:49	67-66-3	
Dichlorodifluoromethane	1.5J	ug/m3	1.7	1.68		03/08/14 04:49	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/08/14 04:49	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/08/14 04:49	107-06-2	
1,1-Dichloroethene	199	ug/m3	1.4	1.68		03/08/14 04:49	75-35-4	
cis-1,2-Dichloroethene	205	ug/m3	1.4	1.68		03/08/14 04:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/08/14 04:49	156-60-5	
Ethylbenzene	3.0	ug/m3	1.5	1.68		03/08/14 04:49	100-41-4	
Methylene Chloride	9.2	ug/m3	5.9	1.68		03/08/14 04:49	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/08/14 04:49	1634-04-4	
Naphthalene	70.6	ug/m3	4.5	1.68		03/08/14 04:49	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/08/14 04:49	127-18-4	
Toluene	14.7	ug/m3	1.3	1.68		03/08/14 04:49	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/08/14 04:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/08/14 04:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/08/14 04:49	79-00-5	
Trichloroethene	177	ug/m3	0.92	1.68		03/08/14 04:49	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.34	1.68		03/08/14 04:49	526-73-8	
1,2,4-Trimethylbenzene	4.3	ug/m3	1.7	1.68		03/08/14 04:49	95-63-6	
1,3,5-Trimethylbenzene	1.1J	ug/m3	1.7	1.68		03/08/14 04:49	108-67-8	
Vinyl chloride	11900	ug/m3	140	537.6		03/09/14 19:53	75-01-4	A3
m&p-Xylene	13.4	ug/m3	3.0	1.68		03/08/14 04:49	179601-23-1	
o-Xylene	5.7	ua/m3	1.5	1.68		03/08/14 04:49	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-128-C-16		Lab ID: 10258805037	Collected: 02/24/14 12:18	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	3.6	ug/m3	0.55	1.68		03/07/14 22:45	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 22:45	56-23-5	
Chlorodifluoromethane	6.1	ug/m3	0.34	1.68		03/07/14 22:45	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 22:45	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	1.7	1.68		03/07/14 22:45	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 22:45	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 22:45	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 22:45	75-35-4	
cis-1,2-Dichloroethene	6.5	ug/m3	1.4	1.68		03/07/14 22:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 22:45	156-60-5	
Ethylbenzene	2.0	ug/m3	1.5	1.68		03/07/14 22:45	100-41-4	
Methylene Chloride	9.6	ug/m3	5.9	1.68		03/07/14 22:45	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 22:45	1634-04-4	
Naphthalene	92.6	ug/m3	4.5	1.68		03/07/14 22:45	91-20-3	
Tetrachloroethene	1.6	ug/m3	1.2	1.68		03/07/14 22:45	127-18-4	
Toluene	5.8	ug/m3	1.3	1.68		03/07/14 22:45	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 22:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 22:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 22:45	79-00-5	
Trichloroethene	2.1	ug/m3	0.92	1.68		03/07/14 22:45	79-01-6	
1,2,3-Trimethylbenzene	1.2	ug/m3	0.34	1.68		03/07/14 22:45	526-73-8	
1,2,4-Trimethylbenzene	2.8	ug/m3	1.7	1.68		03/07/14 22:45	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 22:45	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 22:45	75-01-4	
m&p-Xylene	12.1	ug/m3	3.0	1.68		03/07/14 22:45	179601-23-1	
o-Xylene	3.6	ug/m3	1.5	1.68		03/07/14 22:45	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-130-C-16		Lab ID: 10258805011	Collected: 02/24/14 11:52	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	4.1	ug/m3	0.55	1.68		03/07/14 20:35	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 20:35	56-23-5	
Chlorodifluoromethane	1.7J	ug/m3	5.9	1.68		03/07/14 20:35	75-45-6	
Chloroform	1.8	ug/m3	1.7	1.68		03/07/14 20:35	67-66-3	
Dichlorodifluoromethane	3.1	ug/m3	1.7	1.68		03/07/14 20:35	75-71-8	
1,1-Dichloroethane	1.3J	ug/m3	1.4	1.68		03/07/14 20:35	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 20:35	107-06-2	
1,1-Dichloroethene	2.9	ug/m3	1.4	1.68		03/07/14 20:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:35	156-60-5	
Ethylbenzene	2.3	ug/m3	1.5	1.68		03/07/14 20:35	100-41-4	
Methylene Chloride	28.2	ug/m3	5.9	1.68		03/07/14 20:35	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 20:35	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/07/14 20:35	91-20-3	
Tetrachloroethene	3.3	ug/m3	1.2	1.68		03/07/14 20:35	127-18-4	
Toluene	12.2	ug/m3	1.3	1.68		03/07/14 20:35	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 20:35	120-82-1	
1,1,1-Trichloroethane	21.3	ug/m3	1.9	1.68		03/07/14 20:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 20:35	79-00-5	
Trichloroethene	3.4	ug/m3	0.92	1.68		03/07/14 20:35	79-01-6	
1,2,3-Trimethylbenzene	3.4	ug/m3	0.34	1.68		03/07/14 20:35	526-73-8	
1,2,4-Trimethylbenzene	9.9	ug/m3	1.7	1.68		03/07/14 20:35	95-63-6	
1,3,5-Trimethylbenzene	4.4	ug/m3	1.7	1.68		03/07/14 20:35	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 20:35	75-01-4	
m&p-Xylene	9.2	ug/m3	3.0	1.68		03/07/14 20:35	179601-23-1	
o-Xylene	7.5	ug/m3	1.5	1.68		03/07/14 20:35	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-133-C-16		Lab ID: 10258805025	Collected: 02/24/14 11:55	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.77	ug/m3	0.55	1.68		03/07/14 20:45	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 20:45	56-23-5	
Chlorodifluoromethane	4.3	ug/m3	0.34	1.68		03/07/14 20:45	75-45-6	
Chloroform	6.7	ug/m3	1.7	1.68		03/07/14 20:45	67-66-3	
Dichlorodifluoromethane	3.2	ug/m3	1.7	1.68		03/07/14 20:45	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 20:45	75-34-3	
1,2-Dichloroethane	0.92	ug/m3	0.69	1.68		03/07/14 20:45	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:45	75-35-4	
cis-1,2-Dichloroethene	8.4	ug/m3	1.4	1.68		03/07/14 20:45	156-59-2	
trans-1,2-Dichloroethene	3.6	ug/m3	1.4	1.68		03/07/14 20:45	156-60-5	L1
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 20:45	100-41-4	
Methylene Chloride	20.2	ug/m3	5.9	1.68		03/07/14 20:45	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 20:45	1634-04-4	
Naphthalene	4.7	ug/m3	4.5	1.68		03/07/14 20:45	91-20-3	
Tetrachloroethene	169	ug/m3	1.2	1.68		03/07/14 20:45	127-18-4	
Toluene	3.6	ug/m3	1.3	1.68		03/07/14 20:45	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 20:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 20:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 20:45	79-00-5	
Trichloroethene	10700	ug/m3	73.9	134.4		03/09/14 18:15	79-01-6	A3
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 20:45	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 20:45	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 20:45	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 20:45	75-01-4	
m&p-Xylene	1.8J	ug/m3	3.0	1.68		03/07/14 20:45	179601-23-1	
o-Xylene	0.81J	ug/m3	1.5	1.68		03/07/14 20:45	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-135-C-16		Lab ID: 10258805003	Collected: 02/24/14 11:35	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.33J	ug/m3	0.55	1.68		03/07/14 01:06	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 01:06	56-23-5	
Chlorodifluoromethane	2.1	ug/m3	0.34	1.68		03/07/14 01:06	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 01:06	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/07/14 01:06	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 01:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 01:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 01:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 01:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 01:06	156-60-5	
Ethylbenzene	4.2	ug/m3	1.5	1.68		03/07/14 01:06	100-41-4	
Methylene Chloride	2.1J	ug/m3	5.9	1.68		03/07/14 01:06	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 01:06	1634-04-4	
Naphthalene	3.8J	ug/m3	4.5	1.68		03/07/14 01:06	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 01:06	127-18-4	
Toluene	ND	ug/m3	1.3	1.68		03/07/14 01:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 01:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 01:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 01:06	79-00-5	
Trichloroethene	5.6	ug/m3	0.92	1.68		03/07/14 01:06	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 01:06	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 01:06	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 01:06	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 01:06	75-01-4	
m&p-Xylene	18.1	ug/m3	3.0	1.68		03/07/14 01:06	179601-23-1	
o-Xylene	4.3	ug/m3	1.5	1.68		03/07/14 01:06	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.,

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-141-C-16		Lab ID: 10258805015	Collected: 02/24/14 12:02	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.88	ug/m3	0.66	2.02		03/07/14 04:30	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.3	2.02		03/07/14 04:30	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.40	2.02		03/07/14 04:30	75-45-6	
Chloroform	ND	ug/m3	2.0	2.02		03/07/14 04:30	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	2.0	2.02		03/07/14 04:30	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.02		03/07/14 04:30	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.83	2.02		03/07/14 04:30	107-06-2	
1,1-Dichloroethene	1.7	ug/m3	1.6	2.02		03/07/14 04:30	75-35-4	
cis-1,2-Dichloroethene	2.2	ug/m3	1.6	2.02		03/07/14 04:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	2.02		03/07/14 04:30	156-60-5	
Ethylbenzene	2.2	ug/m3	1.8	2.02		03/07/14 04:30	100-41-4	
Methylene Chloride	39.1	ug/m3	7.1	2.02		03/07/14 04:30	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.5	2.02		03/07/14 04:30	1634-04-4	
Naphthalene	4.1J	ug/m3	5.4	2.02		03/07/14 04:30	91-20-3	
Tetrachloroethene	ND	ug/m3	1.4	2.02		03/07/14 04:30	127-18-4	
Toluene	3.7	ug/m3	1.6	2.02		03/07/14 04:30	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.6	2.02		03/07/14 04:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.2	2.02		03/07/14 04:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.1	2.02		03/07/14 04:30	79-00-5	
Trichloroethene	25.2	ug/m3	1.1	2.02		03/07/14 04:30	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.40	2.02		03/07/14 04:30	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.0	2.02		03/07/14 04:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.0	2.02		03/07/14 04:30	108-67-8	
Vinyl chloride	ND	ug/m3	0.53	2.02		03/07/14 04:30	75-01-4	
m&p-Xylene	11.6	ug/m3	3.6	2.02		03/07/14 04:30	179601-23-1	
o-Xylene	3.7	ug/m3	1.8	2.02		03/07/14 04:30	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-142-C-16		Lab ID: 10258805007	Collected: 02/24/14 11:40	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/06/14 20:41	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 20:41	56-23-5	
Chlorodifluoromethane	1.4	ug/m3	0.34	1.68		03/06/14 20:41	75-45-6	
Chloroform	15.0	ug/m3	1.7	1.68		03/06/14 20:41	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/06/14 20:41	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 20:41	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 20:41	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 20:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 20:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 20:41	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 20:41	100-41-4	
Methylene Chloride	7.5	ug/m3	5.9	1.68		03/06/14 20:41	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 20:41	1634-04-4	
Naphthalene	157	ug/m3	4.5	1.68		03/06/14 20:41	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 20:41	127-18-4	
Toluene	ND	ug/m3	1.3	1.68		03/06/14 20:41	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 20:41	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 20:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 20:41	79-00-5	
Trichloroethene	6.8	ug/m3	0.92	1.68		03/06/14 20:41	79-01-6	
1,2,3-Trimethylbenzene	0.71	ug/m3	0.34	1.68		03/06/14 20:41	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.7	1.68		03/06/14 20:41	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 20:41	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 20:41	75-01-4	
m&p-Xylene	5.1	ug/m3	3.0	1.68		03/06/14 20:41	179601-23-1	
o-Xylene	3.1	ua/m3	1.5	1.68		03/06/14 20:41	95-47-6	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-143-C-16		Lab ID: 10258805001	Collected: 02/24/14 16:32	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.8	ug/m3	1.4	4.22		03/07/14 19:09	71-43-2	
Carbon tetrachloride	133	ug/m3	2.7	4.22		03/07/14 19:09	56-23-5	
Chlorodifluoromethane	1.7J	ug/m3	14.9	4.22		03/07/14 19:09	75-45-6	
Chloroform	194	ug/m3	4.2	4.22		03/07/14 19:09	67-66-3	
Dichlorodifluoromethane	2.6J	ug/m3	4.3	4.22		03/07/14 19:09	75-71-8	
1,1-Dichloroethane	1.8J	ug/m3	3.5	4.22		03/07/14 19:09	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.7	4.22		03/07/14 19:09	107-06-2	
1,1-Dichloroethene	2.1J	ug/m3	3.4	4.22		03/07/14 19:09	75-35-4	
cis-1,2-Dichloroethene	5.7	ug/m3	3.4	4.22		03/07/14 19:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	3.4	4.22		03/07/14 19:09	156-60-5	
Ethylbenzene	ND	ug/m3	3.7	4.22		03/07/14 19:09	100-41-4	
Methylene Chloride	30.1	ug/m3	14.9	4.22		03/07/14 19:09	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	3.1	4.22		03/07/14 19:09	1634-04-4	
Naphthalene	19.3	ug/m3	4.5	4.22		03/07/14 19:09	91-20-3	
Tetrachloroethene	15.0	ug/m3	2.9	4.22		03/07/14 19:09	127-18-4	
Toluene	13.6	ug/m3	3.2	4.22		03/07/14 19:09	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.4	4.22		03/07/14 19:09	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	4.7	4.22		03/07/14 19:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.3	4.22		03/07/14 19:09	79-00-5	
Trichloroethene	33.1	ug/m3	2.3	4.22		03/07/14 19:09	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.84	4.22		03/07/14 19:09	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	4.2	4.22		03/07/14 19:09	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	4.2	4.22		03/07/14 19:09	108-67-8	
Vinyl chloride	ND	ug/m3	1.1	4.22		03/07/14 19:09	75-01-4	
m&p-Xylene	3.3J	ug/m3	7.4	4.22		03/07/14 19:09	179601-23-1	
o-Xylene	ND	ug/m3	3.7	4.22		03/07/14 19:09	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-DUP1-C-16		Lab ID: 10258805044	Collected: 02/24/14 00:00	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.87	ug/m3	0.55	1.68		03/08/14 00:42	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/08/14 00:42	56-23-5	
Chlorodifluoromethane	4.4	ug/m3	0.34	1.68		03/08/14 00:42	75-45-6	
Chloroform	6.2	ug/m3	1.7	1.68		03/08/14 00:42	67-66-3	
Dichlorodifluoromethane	3.0	ug/m3	1.7	1.68		03/08/14 00:42	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/08/14 00:42	75-34-3	
1,2-Dichloroethane	0.82	ug/m3	0.69	1.68		03/08/14 00:42	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/08/14 00:42	75-35-4	
cis-1,2-Dichloroethene	8.7	ug/m3	1.4	1.68		03/08/14 00:42	156-59-2	
trans-1,2-Dichloroethene	3.5	ug/m3	1.4	1.68		03/08/14 00:42	156-60-5	L1
Ethylbenzene	ND	ug/m3	1.5	1.68		03/08/14 00:42	100-41-4	
Methylene Chloride	13.0	ug/m3	5.9	1.68		03/08/14 00:42	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/08/14 00:42	1634-04-4	
Naphthalene	4.2J	ug/m3	4.5	1.68		03/08/14 00:42	91-20-3	
Tetrachloroethene	159	ug/m3	1.2	1.68		03/08/14 00:42	127-18-4	
Toluene	5.5	ug/m3	1.3	1.68		03/08/14 00:42	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/08/14 00:42	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/08/14 00:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/08/14 00:42	79-00-5	
Trichloroethene	8630	ug/m3	46.6	84.67		03/09/14 17:51	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/08/14 00:42	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/08/14 00:42	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/08/14 00:42	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/08/14 00:42	75-01-4	
m&p-Xylene	2.0J	ug/m3	3.0	1.68		03/08/14 00:42	179601-23-1	
o-Xylene	0.95J	ug/m3	1.5	1.68		03/08/14 00:42	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-DUP2-C-16		Lab ID: 10258805045	Collected: 02/24/14 00:00	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/06/14 23:08	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 23:08	56-23-5	
Chlorodifluoromethane	3.5	ug/m3	0.34	1.68		03/06/14 23:08	75-45-6	
Chloroform	1.8	ug/m3	1.7	1.68		03/06/14 23:08	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/06/14 23:08	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 23:08	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 23:08	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 23:08	75-35-4	
cis-1,2-Dichloroethene	31.7	ug/m3	1.4	1.68		03/06/14 23:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 23:08	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 23:08	100-41-4	
Methylene Chloride	12.5	ug/m3	5.9	1.68		03/06/14 23:08	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 23:08	1634-04-4	
Naphthalene	3.7J	ug/m3	4.5	1.68		03/06/14 23:08	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 23:08	127-18-4	
Toluene	1.7	ug/m3	1.3	1.68		03/06/14 23:08	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 23:08	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 23:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 23:08	79-00-5	
Trichloroethene	243	ug/m3	0.92	1.68		03/06/14 23:08	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/06/14 23:08	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 23:08	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 23:08	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 23:08	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.0	1.68		03/06/14 23:08	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/06/14 23:08	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-001-ER-1		Lab ID: 10259328003	Collected: 02/26/14 17:53	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.83	ug/m3	0.74	2.29		03/13/14 00:00	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.5	2.29		03/13/14 00:00	56-23-5	
Chlorodifluoromethane	4.8	ug/m3	1.6	2.29		03/13/14 00:00	75-45-6	
Chloroform	ND	ug/m3	2.3	2.29		03/13/14 00:00	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	2.3	2.29		03/13/14 00:00	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.9	2.29		03/13/14 00:00	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.94	2.29		03/13/14 00:00	107-06-2	
1,1,1-Trichloroethane	ND	ug/m3	1.9	2.29		03/13/14 00:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.9	2.29		03/13/14 00:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.9	2.29		03/13/14 00:00	156-60-5	
Ethylbenzene	ND	ug/m3	2.0	2.29		03/13/14 00:00	100-41-4	
Methylene Chloride	20.8	ug/m3	1.6	2.29		03/13/14 00:00	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.7	2.29		03/13/14 00:00	1634-04-4	
Naphthalene	ND	ug/m3	2.5	2.29		03/13/14 00:00	91-20-3	
Tetrachloroethene	ND	ug/m3	1.6	2.29		03/13/14 00:00	127-18-4	
Toluene	2.7	ug/m3	1.8	2.29		03/13/14 00:00	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	3.5	2.29		03/13/14 00:00	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.5	2.29		03/13/14 00:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.3	2.29		03/13/14 00:00	79-00-5	
Trichloroethene	ND	ug/m3	1.3	2.29		03/13/14 00:00	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	2.3	2.29		03/13/14 00:00	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.3	2.29		03/13/14 00:00	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.3	2.29		03/13/14 00:00	108-67-8	
Vinyl chloride	ND	ug/m3	0.60	2.29		03/13/14 00:00	75-01-4	
m&p-Xylene	ND	ug/m3	4.0	2.29		03/13/14 00:00	179601-23-1	
o-Xylene	ND	ug/m3	2.0	2.29		03/13/14 00:00	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-001-PB-1		Lab ID: 10259328001	Collected: 02/26/14 18:04	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.86	ug/m3	0.55	1.68		03/13/14 00:54	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 00:54	56-23-5	
Chlorodifluoromethane	2.8	ug/m3	0.34	1.68		03/13/14 00:54	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 00:54	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/13/14 00:54	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 00:54	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 00:54	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 00:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 00:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 00:54	156-60-5	
Ethylbenzene	1.6	ug/m3	1.5	1.68		03/13/14 00:54	100-41-4	
Methylene Chloride	9.6	ug/m3	1.2	1.68		03/13/14 00:54	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 00:54	1634-04-4	
Naphthalene	1.2J	ug/m3	1.8	1.68		03/13/14 00:54	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 00:54	127-18-4	
Toluene	1.4	ug/m3	1.3	1.68		03/13/14 00:54	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 00:54	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 00:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 00:54	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 00:54	79-01-6	
1,2,3-Trimethylbenzene	0.97	ug/m3	0.34	1.68		03/13/14 00:54	526-73-8	
1,2,4-Trimethylbenzene	1.7	ug/m3	1.7	1.68		03/13/14 00:54	95-63-6	
1,3,5-Trimethylbenzene	1.5J	ug/m3	1.7	1.68		03/13/14 00:54	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 00:54	75-01-4	
m&p-Xylene	2.9J	ug/m3	3.0	1.68		03/13/14 00:54	179601-23-1	
o-Xylene	0.95J	ug/m3	1.5	1.68		03/13/14 00:54	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-002-ER-1		Lab ID: 10259328004	Collected: 02/26/14 18:14	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1 ug/m3		0.58	1.8		03/12/14 23:31	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.8		03/12/14 23:31	56-23-5	
Chlorodifluoromethane	4.3 ug/m3		1.3	1.8		03/12/14 23:31	75-45-6	
Chloroform	ND ug/m3		1.8	1.8		03/12/14 23:31	67-66-3	
Dichlorodifluoromethane	2.5 ug/m3		1.8	1.8		03/12/14 23:31	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.8		03/12/14 23:31	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.74	1.8		03/12/14 23:31	107-06-2	
1,1,1-Trichloroethane	ND ug/m3		1.5	1.8		03/12/14 23:31	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/12/14 23:31	156-59-2	
trans-1,2-Dichloroethene	19.9 ug/m3		1.5	1.8		03/12/14 23:31	156-60-5	
Ethylbenzene	5.2 ug/m3		1.6	1.8		03/12/14 23:31	100-41-4	
Methylene Chloride	14.4 ug/m3		1.3	1.8		03/12/14 23:31	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.8		03/12/14 23:31	1634-04-4	
Naphthalene	ND ug/m3		1.9	1.8		03/12/14 23:31	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.8		03/12/14 23:31	127-18-4	
Toluene	14.8 ug/m3		1.4	1.8		03/12/14 23:31	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.7	1.8		03/12/14 23:31	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.0	1.8		03/12/14 23:31	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.99	1.8		03/12/14 23:31	79-00-5	
Trichloroethene	ND ug/m3		0.99	1.8		03/12/14 23:31	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.8	1.8		03/12/14 23:31	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.8	1.8		03/12/14 23:31	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.8	1.8		03/12/14 23:31	108-67-8	
Vinyl chloride	ND ug/m3		0.47	1.8		03/12/14 23:31	75-01-4	
m&p-Xylene	25.7 ug/m3		3.2	1.8		03/12/14 23:31	179601-23-1	
o-Xylene	8.9 ug/m3		1.6	1.8		03/12/14 23:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-002-PB-1		Lab ID: 10259328002	Collected: 02/26/14 18:01	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.65	ug/m3	0.58	1.8		03/12/14 20:38	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 20:38	56-23-5	
Chlorodifluoromethane	11.5	ug/m3	0.36	1.8		03/12/14 20:38	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 20:38	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.8	1.8		03/12/14 20:38	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 20:38	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 20:38	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 20:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 20:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 20:38	156-60-5	
Ethylbenzene	1.2J	ug/m3	1.6	1.8		03/12/14 20:38	100-41-4	
Methylene Chloride	11.3	ug/m3	1.3	1.8		03/12/14 20:38	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 20:38	1634-04-4	
Naphthalene	1.3J	ug/m3	1.9	1.8		03/12/14 20:38	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 20:38	127-18-4	
Toluene	3.9	ug/m3	1.4	1.8		03/12/14 20:38	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 20:38	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 20:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 20:38	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 20:38	79-01-6	
1,2,3-Trimethylbenzene	0.94	ug/m3	0.36	1.8		03/12/14 20:38	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.8	1.8		03/12/14 20:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 20:38	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 20:38	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.2	1.8		03/12/14 20:38	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.8		03/12/14 20:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-003-ER-1		Lab ID: 10259328005	Collected: 02/26/14 18:10	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.89 ug/m3		0.55	1.68		03/12/14 23:31	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/12/14 23:31	56-23-5	
Chlorodifluoromethane	4.5 ug/m3		0.34	1.68		03/12/14 23:31	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/12/14 23:31	67-66-3	
Dichlorodifluoromethane	2.0 ug/m3		1.7	1.68		03/12/14 23:31	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/12/14 23:31	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/12/14 23:31	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 23:31	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 23:31	156-59-2	
trans-1,2-Dichloroethene	17.4 ug/m3		1.4	1.68		03/12/14 23:31	156-60-5	
Ethylbenzene	5.0 ug/m3		1.5	1.68		03/12/14 23:31	100-41-4	
Methylene Chloride	605 ug/m3		1.2	1.68		03/12/14 23:31	75-09-2	C0,E
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/12/14 23:31	1634-04-4	
Naphthalene	1.1J ug/m3		1.8	1.68		03/12/14 23:31	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/12/14 23:31	127-18-4	
Toluene	14.6 ug/m3		1.3	1.68		03/12/14 23:31	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/12/14 23:31	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/12/14 23:31	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/12/14 23:31	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/12/14 23:31	79-01-6	
1,2,3-Trimethylbenzene	0.88 ug/m3		0.34	1.68		03/12/14 23:31	526-73-8	
1,2,4-Trimethylbenzene	1.3J ug/m3		1.7	1.68		03/12/14 23:31	95-63-6	
1,3,5-Trimethylbenzene	1.4J ug/m3		1.7	1.68		03/12/14 23:31	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/12/14 23:31	75-01-4	
m&p-Xylene	21.5 ug/m3		3.0	1.68		03/12/14 23:31	179601-23-1	
o-Xylene	7.8 ug/m3		1.5	1.68		03/12/14 23:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-093X-A-16		Lab ID: 10259328008	Collected: 02/26/14 17:10		Received: 03/04/14 10:00	Matrix: Air		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.58	ug/m3	0.57	1.74		03/12/14 22:31	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/12/14 22:31	56-23-5	
Chlorodifluoromethane	1.4	ug/m3	0.35	1.74		03/12/14 22:31	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/12/14 22:31	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.74		03/12/14 22:31	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/12/14 22:31	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/12/14 22:31	107-06-2	
1,1-Dichloroethene	0.75J	ug/m3	1.4	1.74		03/12/14 22:31	75-35-4	
cis-1,2-Dichloroethene	0.91J	ug/m3	1.4	1.74		03/12/14 22:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/12/14 22:31	156-60-5	
Ethylbenzene	1.1J	ug/m3	1.5	1.74		03/12/14 22:31	100-41-4	
Methylene Chloride	6.6	ug/m3	1.2	1.74		03/12/14 22:31	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/12/14 22:31	1634-04-4	
Naphthalene	1.7J	ug/m3	1.9	1.74		03/12/14 22:31	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/12/14 22:31	127-18-4	
Toluene	1.2J	ug/m3	1.3	1.74		03/12/14 22:31	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/12/14 22:31	120-82-1	
1,1,1-Trichloroethane	0.87J	ug/m3	1.9	1.74		03/12/14 22:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/12/14 22:31	79-00-5	
Trichloroethene	8.4	ug/m3	0.96	1.74		03/12/14 22:31	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/12/14 22:31	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.7	1.74		03/12/14 22:31	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:31	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/12/14 22:31	75-01-4	
m&p-Xylene	1.4J	ug/m3	3.1	1.74		03/12/14 22:31	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/12/14 22:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-117X-A-16		Lab ID: 10259328009	Collected: 02/26/14 17:13	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.44J	ug/m3	0.58	1.8		03/12/14 23:01	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 23:01	56-23-5	
Chlorodifluoromethane	1.5	ug/m3	0.36	1.8		03/12/14 23:01	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 23:01	67-66-3	
Dichlorodifluoromethane	1.4J	ug/m3	1.8	1.8		03/12/14 23:01	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 23:01	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 23:01	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:01	156-60-5	
Ethylbenzene	1.3J	ug/m3	1.6	1.8		03/12/14 23:01	100-41-4	
Methylene Chloride	89.7	ug/m3	1.3	1.8		03/12/14 23:01	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 23:01	1634-04-4	
Naphthalene	1.3J	ug/m3	1.9	1.8		03/12/14 23:01	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 23:01	127-18-4	
Toluene	15.7	ug/m3	1.4	1.8		03/12/14 23:01	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 23:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 23:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 23:01	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 23:01	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/12/14 23:01	526-73-8	
1,2,4-Trimethylbenzene	1.2J	ug/m3	1.8	1.8		03/12/14 23:01	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 23:01	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 23:01	75-01-4	
m&p-Xylene	1.9J	ug/m3	3.2	1.8		03/12/14 23:01	179601-23-1	
o-Xylene	0.74J	ug/m3	1.6	1.8		03/12/14 23:01	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-140-B-16		Lab ID: 10259328010	Collected: 02/26/14 17:15	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/12/14 22:32	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 22:32	56-23-5	
Chlorodifluoromethane	13.6	ug/m3	1.3	1.8		03/12/14 22:32	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 22:32	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.8	1.8		03/12/14 22:32	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 22:32	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 22:32	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:32	156-60-5	
Ethylbenzene	2.1	ug/m3	1.6	1.8		03/12/14 22:32	100-41-4	
Methylene Chloride	18.3	ug/m3	1.3	1.8		03/12/14 22:32	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 22:32	1634-04-4	
Naphthalene	6.5	ug/m3	1.9	1.8		03/12/14 22:32	91-20-3	CH
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 22:32	127-18-4	
Toluene	84.0	ug/m3	1.4	1.8		03/12/14 22:32	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 22:32	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 22:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 22:32	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 22:32	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 22:32	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 22:32	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 22:32	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 22:32	75-01-4	
m&p-Xylene	8.1	ug/m3	3.2	1.8		03/12/14 22:32	179601-23-1	
o-Xylene	2.6	ug/m3	1.6	1.8		03/12/14 22:32	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-DUP1-ER-1		Lab ID: 10259328007	Collected: 02/26/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.3	ug/m3	0.55	1.68		03/12/14 23:01	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/12/14 23:01	56-23-5	
Chlorodifluoromethane	12.9	ug/m3	1.2	1.68		03/12/14 23:01	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/12/14 23:01	67-66-3	
Dichlorodifluoromethane	2.9	ug/m3	1.7	1.68		03/12/14 23:01	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/12/14 23:01	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/12/14 23:01	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/12/14 23:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/12/14 23:01	156-59-2	
trans-1,2-Dichloroethene	70.1	ug/m3	1.4	1.68		03/12/14 23:01	156-60-5	
Ethylbenzene	17.1	ug/m3	1.5	1.68		03/12/14 23:01	100-41-4	
Methylene Chloride	22.2	ug/m3	1.2	1.68		03/12/14 23:01	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/12/14 23:01	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/12/14 23:01	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/12/14 23:01	127-18-4	
Toluene	44.7	ug/m3	1.3	1.68		03/12/14 23:01	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/12/14 23:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/12/14 23:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/12/14 23:01	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/12/14 23:01	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/12/14 23:01	526-73-8	
1,2,4-Trimethylbenzene	3.0	ug/m3	1.7	1.68		03/12/14 23:01	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/12/14 23:01	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/12/14 23:01	75-01-4	
m&p-Xylene	81.5	ug/m3	3.0	1.68		03/12/14 23:01	179601-23-1	
o-Xylene	29.5	ug/m3	1.5	1.68		03/12/14 23:01	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-DUP1-PB-1		Lab ID: 10259328006	Collected: 02/26/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.80	ug/m3	0.55	1.68		03/13/14 01:23	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 01:23	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.34	1.68		03/13/14 01:23	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 01:23	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/13/14 01:23	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 01:23	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 01:23	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 01:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 01:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 01:23	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/13/14 01:23	100-41-4	
Methylene Chloride	6.5	ug/m3	1.2	1.68		03/13/14 01:23	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 01:23	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/13/14 01:23	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 01:23	127-18-4	
Toluene	1.4	ug/m3	1.3	1.68		03/13/14 01:23	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 01:23	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 01:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 01:23	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 01:23	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/13/14 01:23	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/13/14 01:23	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/13/14 01:23	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 01:23	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.0	1.68		03/13/14 01:23	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/13/14 01:23	95-47-6	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-146-VLS-2		Lab ID: 10259329008	Collected: 02/26/14 18:31	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.66	ug/m3	0.61	1.87		03/12/14 21:06	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/12/14 21:06	56-23-5	
Chlorodifluoromethane	2.3	ug/m3	0.37	1.87		03/12/14 21:06	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/12/14 21:06	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.9	1.87		03/12/14 21:06	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/12/14 21:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/12/14 21:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/12/14 21:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/12/14 21:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/12/14 21:06	156-60-5	
Ethylbenzene	9.8	ug/m3	1.6	1.87		03/12/14 21:06	100-41-4	
Methylene Chloride	6.8	ug/m3	1.3	1.87		03/12/14 21:06	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/12/14 21:06	1634-04-4	
Naphthalene	1.4J	ug/m3	2.0	1.87		03/12/14 21:06	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/12/14 21:06	127-18-4	
Toluene	10	ug/m3	1.4	1.87		03/12/14 21:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/12/14 21:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/12/14 21:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/12/14 21:06	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/12/14 21:06	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.37	1.87		03/12/14 21:06	526-73-8	
1,2,4-Trimethylbenzene	2.6	ug/m3	1.9	1.87		03/12/14 21:06	95-63-6	
1,3,5-Trimethylbenzene	1.9J	ug/m3	1.9	1.87		03/12/14 21:06	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/12/14 21:06	75-01-4	
m&p-Xylene	26.1	ug/m3	3.3	1.87		03/12/14 21:06	179601-23-1	
o-Xylene	6.8	ug/m3	1.6	1.87		03/12/14 21:06	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-147-VLS-2		Lab ID: 10259329001	Collected: 02/26/14 18:28	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.5	ug/m3	0.55	1.68		03/13/14 03:00	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 03:00	56-23-5	
Chlorodifluoromethane	5.0	ug/m3	1.2	1.68		03/13/14 03:00	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 03:00	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.7	1.68		03/13/14 03:00	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 03:00	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 03:00	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 03:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 03:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 03:00	156-60-5	
Ethylbenzene	12.1	ug/m3	1.5	1.68		03/13/14 03:00	100-41-4	
Methylene Chloride	483	ug/m3	1.2	1.68		03/13/14 03:00	75-09-2	E
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 03:00	1634-04-4	
Naphthalene	71.0	ug/m3	1.8	1.68		03/13/14 03:00	91-20-3	CH
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 03:00	127-18-4	
Toluene	120	ug/m3	1.3	1.68		03/13/14 03:00	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 03:00	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 03:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 03:00	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 03:00	79-01-6	
1,2,3-Trimethylbenzene	1.3J	ug/m3	1.7	1.68		03/13/14 03:00	526-73-8	
1,2,4-Trimethylbenzene	4.1	ug/m3	1.7	1.68		03/13/14 03:00	95-63-6	
1,3,5-Trimethylbenzene	1.8	ug/m3	1.7	1.68		03/13/14 03:00	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 03:00	75-01-4	
m&p-Xylene	31.9	ug/m3	3.0	1.68		03/13/14 03:00	179601-23-1	
o-Xylene	8.5	ug/m3	1.5	1.68		03/13/14 03:00	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-148-VLS-2		Lab ID: 10259329003	Collected: 02/26/14 18:55		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.98	ug/m3	0.58	1.8		03/13/14 01:27	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/13/14 01:27	56-23-5	
Chlorodifluoromethane	3.2	ug/m3	1.3	1.8		03/13/14 01:27	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/13/14 01:27	67-66-3	
Dichlorodifluoromethane	2.7	ug/m3	1.8	1.8		03/13/14 01:27	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/13/14 01:27	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/13/14 01:27	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 01:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 01:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 01:27	156-60-5	
Ethylbenzene	17.9	ug/m3	1.6	1.8		03/13/14 01:27	100-41-4	
Methylene Chloride	21.9	ug/m3	1.3	1.8		03/13/14 01:27	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/13/14 01:27	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.8		03/13/14 01:27	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/13/14 01:27	127-18-4	
Toluene	17.4	ug/m3	1.4	1.8		03/13/14 01:27	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/13/14 01:27	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/13/14 01:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/13/14 01:27	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/13/14 01:27	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/13/14 01:27	526-73-8	
1,2,4-Trimethylbenzene	2.9	ug/m3	1.8	1.8		03/13/14 01:27	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/13/14 01:27	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/13/14 01:27	75-01-4	
m&p-Xylene	47.9	ug/m3	3.2	1.8		03/13/14 01:27	179601-23-1	
o-Xylene	12.0	ug/m3	1.6	1.8		03/13/14 01:27	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-149-VLS-2		Lab ID: 10259329006	Collected: 02/26/14 18:25	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.66	ug/m3	0.58	1.8		03/12/14 21:34	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 21:34	56-23-5	
Chlorodifluoromethane	2.0	ug/m3	0.36	1.8		03/12/14 21:34	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 21:34	67-66-3	
Dichlorodifluoromethane	1.8	ug/m3	1.8	1.8		03/12/14 21:34	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 21:34	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 21:34	107-06-2	
1,1,1-Trichloroethane	ND	ug/m3	1.5	1.8		03/12/14 21:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 21:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 21:34	156-60-5	
Ethylbenzene	10.5	ug/m3	1.6	1.8		03/12/14 21:34	100-41-4	
Methylene Chloride	11.7	ug/m3	1.3	1.8		03/12/14 21:34	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 21:34	1634-04-4	
Naphthalene	1.3J	ug/m3	1.9	1.8		03/12/14 21:34	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 21:34	127-18-4	
Toluene	9.5	ug/m3	1.4	1.8		03/12/14 21:34	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 21:34	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 21:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 21:34	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 21:34	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.36	1.8		03/12/14 21:34	526-73-8	
1,2,4-Trimethylbenzene	2.5	ug/m3	1.8	1.8		03/12/14 21:34	95-63-6	
1,3,5-Trimethylbenzene	1.9	ug/m3	1.8	1.8		03/12/14 21:34	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 21:34	75-01-4	
m&p-Xylene	27.4	ug/m3	3.2	1.8		03/12/14 21:34	179601-23-1	
o-Xylene	7.3	ug/m3	1.6	1.8		03/12/14 21:34	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-150-VLS-2		Lab ID: 10259329007	Collected: 02/26/14 18:34	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.67	ug/m3	0.58	1.8		03/12/14 22:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 22:03	56-23-5	
Chlorodifluoromethane	2.1	ug/m3	0.36	1.8		03/12/14 22:03	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 22:03	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.8		03/12/14 22:03	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 22:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 22:03	107-06-2	
1,1,1-Trichloroethane	ND	ug/m3	1.5	1.8		03/12/14 22:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:03	156-60-5	
Ethylbenzene	12.8	ug/m3	1.6	1.8		03/12/14 22:03	100-41-4	
Methylene Chloride	11.8	ug/m3	1.3	1.8		03/12/14 22:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 22:03	1634-04-4	
Naphthalene	1.3J	ug/m3	1.9	1.8		03/12/14 22:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 22:03	127-18-4	
Toluene	11.2	ug/m3	1.4	1.8		03/12/14 22:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 22:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 22:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 22:03	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 22:03	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.36	1.8		03/12/14 22:03	526-73-8	
1,2,4-Trimethylbenzene	2.7	ug/m3	1.8	1.8		03/12/14 22:03	95-63-6	
1,3,5-Trimethylbenzene	1.9	ug/m3	1.8	1.8		03/12/14 22:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 22:03	75-01-4	
m&p-Xylene	32.2	ug/m3	3.2	1.8		03/12/14 22:03	179601-23-1	
o-Xylene	8.8	ug/m3	1.6	1.8		03/12/14 22:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-151-VLS-2		Lab ID: 10259329005	Collected: 02/26/14 18:50	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.75 ug/m3		0.55	1.68		03/13/14 00:29	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/13/14 00:29	56-23-5	
Chlorodifluoromethane	2.7 ug/m3		1.2	1.68		03/13/14 00:29	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/13/14 00:29	67-66-3	
Dichlorodifluoromethane	2.4 ug/m3		1.7	1.68		03/13/14 00:29	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/13/14 00:29	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/13/14 00:29	107-06-2	
1,1,1-Trichloroethane	ND ug/m3		1.4	1.68		03/13/14 00:29	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 00:29	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 00:29	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.68		03/13/14 00:29	100-41-4	
Methylene Chloride	7.3 ug/m3		1.2	1.68		03/13/14 00:29	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/13/14 00:29	1634-04-4	
Naphthalene	ND ug/m3		1.8	1.68		03/13/14 00:29	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/13/14 00:29	127-18-4	
Toluene	5.0 ug/m3		1.3	1.68		03/13/14 00:29	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/13/14 00:29	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/13/14 00:29	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/13/14 00:29	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/13/14 00:29	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.7	1.68		03/13/14 00:29	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.68		03/13/14 00:29	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/13/14 00:29	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/13/14 00:29	75-01-4	
m&p-Xylene	ND ug/m3		3.0	1.68		03/13/14 00:29	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.68		03/13/14 00:29	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-152-VLS-2		Lab ID: 10259329004	Collected: 02/26/14 18:45	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.83	ug/m3	0.58	1.8		03/13/14 00:58	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/13/14 00:58	56-23-5	
Chlorodifluoromethane	3.8	ug/m3	1.3	1.8		03/13/14 00:58	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/13/14 00:58	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	1.8	1.8		03/13/14 00:58	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/13/14 00:58	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/13/14 00:58	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 00:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 00:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 00:58	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.8		03/13/14 00:58	100-41-4	
Methylene Chloride	19.3	ug/m3	1.3	1.8		03/13/14 00:58	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/13/14 00:58	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.8		03/13/14 00:58	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/13/14 00:58	127-18-4	
Toluene	4.4	ug/m3	1.4	1.8		03/13/14 00:58	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/13/14 00:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/13/14 00:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/13/14 00:58	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/13/14 00:58	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/13/14 00:58	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/13/14 00:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/13/14 00:58	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/13/14 00:58	75-01-4	
m&p-Xylene	ND	ug/m3	3.2	1.8		03/13/14 00:58	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.8		03/13/14 00:58	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-DUP1-VLS-2		Lab ID: 10259329002	Collected: 02/26/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.92	ug/m3	0.55	1.68		03/13/14 02:28	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 02:28	56-23-5	
Chlorodifluoromethane	4.6	ug/m3	1.2	1.68		03/13/14 02:28	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 02:28	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	1.7	1.68		03/13/14 02:28	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 02:28	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 02:28	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 02:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 02:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 02:28	156-60-5	
Ethylbenzene	14.7	ug/m3	1.5	1.68		03/13/14 02:28	100-41-4	
Methylene Chloride	11.7	ug/m3	1.2	1.68		03/13/14 02:28	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 02:28	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/13/14 02:28	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 02:28	127-18-4	
Toluene	18.9	ug/m3	1.3	1.68		03/13/14 02:28	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 02:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 02:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 02:28	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 02:28	79-01-6	
1,2,3-Trimethylbenzene	1.6J	ug/m3	1.7	1.68		03/13/14 02:28	526-73-8	
1,2,4-Trimethylbenzene	4.9	ug/m3	1.7	1.68		03/13/14 02:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/13/14 02:28	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 02:28	75-01-4	
m&p-Xylene	38.5	ug/m3	3.0	1.68		03/13/14 02:28	179601-23-1	
o-Xylene	10.3	ug/m3	1.5	1.68		03/13/14 02:28	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: BCK-1-16		Lab ID: 10259332027	Collected: 02/25/14 15:37	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.93	ug/m3	0.55	1.68		03/15/14 06:14	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/15/14 06:14	56-23-5	
Chlorodifluoromethane	10.8	ug/m3	0.34	1.68		03/15/14 06:14	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/15/14 06:14	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/15/14 06:14	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/15/14 06:14	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/15/14 06:14	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 06:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 06:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 06:14	156-60-5	
Ethylbenzene	1.2J	ug/m3	1.5	1.68		03/15/14 06:14	100-41-4	
Methylene Chloride	580	ug/m3	16.8	23.71		03/18/14 14:34	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/15/14 06:14	1634-04-4	
Naphthalene	1.3J	ug/m3	1.8	1.68		03/15/14 06:14	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/15/14 06:14	127-18-4	
Toluene	8.3	ug/m3	1.3	1.68		03/15/14 06:14	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/15/14 06:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/15/14 06:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/15/14 06:14	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/15/14 06:14	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/15/14 06:14	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.7	1.68		03/15/14 06:14	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/15/14 06:14	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/15/14 06:14	75-01-4	
m&p-Xylene	1.7J	ug/m3	3.0	1.68		03/15/14 06:14	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/15/14 06:14	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: BCK-2-16		Lab ID: 10259332028	Collected: 02/25/14 15:33	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.7	ug/m3	0.55	1.68		03/15/14 01:54	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/15/14 01:54	56-23-5	
Chlorodifluoromethane	2.7	ug/m3	0.34	1.68		03/15/14 01:54	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/15/14 01:54	67-66-3	
Dichlorodifluoromethane	3.4	ug/m3	1.7	1.68		03/15/14 01:54	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/15/14 01:54	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/15/14 01:54	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 01:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 01:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 01:54	156-60-5	
Ethylbenzene	2.6	ug/m3	1.5	1.68		03/15/14 01:54	100-41-4	
Methylene Chloride	23.4	ug/m3	1.2	1.68		03/15/14 01:54	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/15/14 01:54	1634-04-4	
Naphthalene	3.5	ug/m3	1.8	1.68		03/15/14 01:54	91-20-3	
Tetrachloroethene	1.9	ug/m3	1.2	1.68		03/15/14 01:54	127-18-4	
Toluene	24.0	ug/m3	1.3	1.68		03/15/14 01:54	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/15/14 01:54	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/15/14 01:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/15/14 01:54	79-00-5	
Trichloroethene	4.2	ug/m3	0.92	1.68		03/15/14 01:54	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.34	1.68		03/15/14 01:54	526-73-8	
1,2,4-Trimethylbenzene	2.8	ug/m3	1.7	1.68		03/15/14 01:54	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/15/14 01:54	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/15/14 01:54	75-01-4	
m&p-Xylene	5.8	ug/m3	3.0	1.68		03/15/14 01:54	179601-23-1	
o-Xylene	2.3	ug/m3	1.5	1.68		03/15/14 01:54	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: BCK-3-16		Lab ID: 10259332029	Collected: 02/25/14 15:32	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.78	ug/m3	0.55	1.68		03/15/14 00:56	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/15/14 00:56	56-23-5	
Chlorodifluoromethane	1.2	ug/m3	0.34	1.68		03/15/14 00:56	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/15/14 00:56	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/15/14 00:56	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/15/14 00:56	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/15/14 00:56	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 00:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 00:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 00:56	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/15/14 00:56	100-41-4	
Methylene Chloride	21.2	ug/m3	1.2	1.68		03/18/14 02:28	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/15/14 00:56	1634-04-4	
Naphthalene	1.4J	ug/m3	1.8	1.68		03/15/14 00:56	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/15/14 00:56	127-18-4	
Toluene	1.3J	ug/m3	1.3	1.68		03/15/14 00:56	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/15/14 00:56	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/15/14 00:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/15/14 00:56	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/15/14 00:56	79-01-6	
1,2,3-Trimethylbenzene	1.3	ug/m3	0.34	1.68		03/15/14 00:56	526-73-8	
1,2,4-Trimethylbenzene	2.2	ug/m3	1.7	1.68		03/15/14 00:56	95-63-6	
1,3,5-Trimethylbenzene	1.7	ug/m3	1.7	1.68		03/15/14 00:56	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/15/14 00:56	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.0	1.68		03/15/14 00:56	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/15/14 00:56	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: BCK-4-16		Lab ID: 10259332030	Collected: 02/25/14 15:29	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1	ug/m3	0.81	2.49		03/18/14 02:58	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.6	2.49		03/18/14 02:58	56-23-5	
Chlorodifluoromethane	1.8	ug/m3	0.50	2.49		03/18/14 02:58	75-45-6	
Chloroform	ND	ug/m3	2.5	2.49		03/18/14 02:58	67-66-3	
Dichlorodifluoromethane	2.9	ug/m3	2.5	2.49		03/18/14 02:58	75-71-8	
1,1-Dichloroethane	ND	ug/m3	2.0	2.49		03/18/14 02:58	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.0	2.49		03/18/14 02:58	107-06-2	
1,1-Dichloroethene	ND	ug/m3	2.0	2.49		03/18/14 02:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	2.0	2.49		03/18/14 02:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	2.0	2.49		03/18/14 02:58	156-60-5	
Ethylbenzene	ND	ug/m3	2.2	2.49		03/18/14 02:58	100-41-4	
Methylene Chloride	10	ug/m3	1.8	2.49		03/18/14 02:58	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.8	2.49		03/18/14 02:58	1634-04-4	
Naphthalene	ND	ug/m3	2.7	2.49		03/18/14 02:58	91-20-3	
Tetrachloroethene	ND	ug/m3	1.7	2.49		03/18/14 02:58	127-18-4	
Toluene	1.6J	ug/m3	1.9	2.49		03/18/14 02:58	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	3.8	2.49		03/18/14 02:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.8	2.49		03/18/14 02:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.4	2.49		03/18/14 02:58	79-00-5	
Trichloroethene	ND	ug/m3	1.4	2.49		03/18/14 02:58	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.50	2.49		03/18/14 02:58	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.5	2.49		03/18/14 02:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.5	2.49		03/18/14 02:58	108-67-8	
Vinyl chloride	ND	ug/m3	0.65	2.49		03/18/14 02:58	75-01-4	
m&p-Xylene	ND	ug/m3	4.4	2.49		03/18/14 02:58	179601-23-1	
o-Xylene	ND	ug/m3	2.2	2.49		03/18/14 02:58	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-015-A-16		Lab ID: 10259332002	Collected: 02/25/14 15:49	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2	ug/m3	0.55	1.68		03/12/14 21:34	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/12/14 21:34	56-23-5	
Chlorodifluoromethane	7.5	ug/m3	1.2	1.68		03/12/14 21:34	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/12/14 21:34	67-66-3	
Dichlorodifluoromethane	2.9	ug/m3	1.7	1.68		03/12/14 21:34	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/12/14 21:34	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/12/14 21:34	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/12/14 21:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/12/14 21:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/12/14 21:34	156-60-5	
Ethylbenzene	0.77J	ug/m3	1.5	1.68		03/12/14 21:34	100-41-4	
Methylene Chloride	13.7	ug/m3	1.2	1.68		03/12/14 21:34	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/12/14 21:34	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/12/14 21:34	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/12/14 21:34	127-18-4	
Toluene	15.6	ug/m3	1.3	1.68		03/12/14 21:34	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/12/14 21:34	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/12/14 21:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/12/14 21:34	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/12/14 21:34	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/12/14 21:34	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/12/14 21:34	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/12/14 21:34	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/12/14 21:34	75-01-4	
m&p-Xylene	3.3	ug/m3	3.0	1.68		03/12/14 21:34	179601-23-1	
o-Xylene	1.3J	ug/m3	1.5	1.68		03/12/14 21:34	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-018-A-16		Lab ID: 10259332022	Collected: 02/25/14 16:23	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.75	ug/m3	0.57	1.74		03/17/14 23:18	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/17/14 23:18	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.35	1.74		03/17/14 23:18	75-45-6	
Chloroform	1.4J	ug/m3	1.7	1.74		03/17/14 23:18	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.8	1.74		03/17/14 23:18	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/17/14 23:18	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/17/14 23:18	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/17/14 23:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/17/14 23:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/17/14 23:18	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/17/14 23:18	100-41-4	
Methylene Chloride	14.4	ug/m3	1.2	1.74		03/17/14 23:18	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/17/14 23:18	1634-04-4	
Naphthalene	2.8	ug/m3	1.9	1.74		03/17/14 23:18	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/17/14 23:18	127-18-4	
Toluene	1.7	ug/m3	1.3	1.74		03/17/14 23:18	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/17/14 23:18	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/17/14 23:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/17/14 23:18	79-00-5	
Trichloroethene	1.0	ug/m3	0.96	1.74		03/17/14 23:18	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/17/14 23:18	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/17/14 23:18	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/17/14 23:18	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/17/14 23:18	75-01-4	
m&p-Xylene	ND	ug/m3	3.1	1.74		03/17/14 23:18	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/17/14 23:18	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-075-A-16		Lab ID: 10259332018	Collected: 02/25/14 16:17	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	15.9	ug/m3	0.61	1.87		03/15/14 00:04	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/15/14 00:04	56-23-5	
Chlorodifluoromethane	3.9	ug/m3	0.37	1.87		03/15/14 00:04	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/15/14 00:04	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.9	1.87		03/15/14 00:04	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/15/14 00:04	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/15/14 00:04	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/15/14 00:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/15/14 00:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/15/14 00:04	156-60-5	
Ethylbenzene	0.87J	ug/m3	1.6	1.87		03/15/14 00:04	100-41-4	
Methylene Chloride	14.7	ug/m3	1.3	1.87		03/15/14 00:04	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/15/14 00:04	1634-04-4	
Naphthalene	3.6	ug/m3	2.0	1.87		03/15/14 00:04	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/15/14 00:04	127-18-4	
Toluene	49.3	ug/m3	1.4	1.87		03/15/14 00:04	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/15/14 00:04	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/15/14 00:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/15/14 00:04	79-00-5	
Trichloroethene	1.6	ug/m3	1.0	1.87		03/15/14 00:04	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/15/14 00:04	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/15/14 00:04	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/15/14 00:04	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/15/14 00:04	75-01-4	
m&p-Xylene	3.0J	ug/m3	3.3	1.87		03/15/14 00:04	179601-23-1	
o-Xylene	1.1J	ug/m3	1.6	1.87		03/15/14 00:04	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: IA-076-A-16		Lab ID: 10259332016	Collected: 02/25/14 16:12	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.96	ug/m3	0.61	1.87		03/14/14 23:05	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 23:05	56-23-5	
Chlorodifluoromethane	2.9	ug/m3	0.37	1.87		03/14/14 23:05	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/14/14 23:05	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.9	1.87		03/14/14 23:05	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 23:05	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 23:05	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 23:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 23:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 23:05	156-60-5	
Ethylbenzene	0.83J	ug/m3	1.6	1.87		03/14/14 23:05	100-41-4	
Methylene Chloride	9.8	ug/m3	1.3	1.87		03/14/14 23:05	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 23:05	1634-04-4	
Naphthalene	3.6	ug/m3	2.0	1.87		03/14/14 23:05	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 23:05	127-18-4	
Toluene	54.5	ug/m3	1.4	1.87		03/14/14 23:05	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 23:05	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 23:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 23:05	79-00-5	
Trichloroethene	1.9	ug/m3	1.0	1.87		03/14/14 23:05	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/14/14 23:05	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 23:05	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 23:05	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 23:05	75-01-4	
m&p-Xylene	2.9J	ug/m3	3.3	1.87		03/14/14 23:05	179601-23-1	
o-Xylene	1.2J	ug/m3	1.6	1.87		03/14/14 23:05	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: IA-079-A-16		Lab ID: 10259332010	Collected: 02/25/14 15:55	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.88	ug/m3	0.61	1.87		03/14/14 20:10	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 20:10	56-23-5	
Chlorodifluoromethane	4.8	ug/m3	0.37	1.87		03/14/14 20:10	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/14/14 20:10	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.9	1.87		03/14/14 20:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 20:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 20:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 20:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 20:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 20:10	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/14/14 20:10	100-41-4	
Methylene Chloride	12.7	ug/m3	1.3	1.87		03/14/14 20:10	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 20:10	1634-04-4	
Naphthalene	2.1	ug/m3	2.0	1.87		03/14/14 20:10	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 20:10	127-18-4	
Toluene	41.8	ug/m3	1.4	1.87		03/14/14 20:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 20:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 20:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 20:10	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/14/14 20:10	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/14/14 20:10	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 20:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 20:10	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 20:10	75-01-4	
m&p-Xylene	2.6J	ug/m3	3.3	1.87		03/14/14 20:10	179601-23-1	
o-Xylene	0.90J	ug/m3	1.6	1.87		03/14/14 20:10	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: IA-081-A-16		Lab ID: 10259332012	Collected: 02/25/14 16:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.4	ug/m3	0.86	2.66		03/17/14 22:44	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.7	2.66		03/17/14 22:44	56-23-5	
Chlorodifluoromethane	36.6	ug/m3	0.53	2.66		03/17/14 22:44	75-45-6	
Chloroform	ND	ug/m3	2.6	2.66		03/17/14 22:44	67-66-3	
Dichlorodifluoromethane	2.9	ug/m3	2.7	2.66		03/17/14 22:44	75-71-8	
1,1-Dichloroethane	ND	ug/m3	2.2	2.66		03/17/14 22:44	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.1	2.66		03/17/14 22:44	107-06-2	
1,1-Dichloroethene	ND	ug/m3	2.2	2.66		03/17/14 22:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	2.2	2.66		03/17/14 22:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	2.2	2.66		03/17/14 22:44	156-60-5	
Ethylbenzene	36.6	ug/m3	2.3	2.66		03/17/14 22:44	100-41-4	
Methylene Chloride	37.0	ug/m3	1.9	2.66		03/17/14 22:44	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.9	2.66		03/17/14 22:44	1634-04-4	
Naphthalene	3.7	ug/m3	2.8	2.66		03/17/14 22:44	91-20-3	
Tetrachloroethene	ND	ug/m3	1.8	2.66		03/17/14 22:44	127-18-4	
Toluene	163	ug/m3	2.0	2.66		03/17/14 22:44	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	4.0	2.66		03/17/14 22:44	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	3.0	2.66		03/17/14 22:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.5	2.66		03/17/14 22:44	79-00-5	
Trichloroethene	19.2	ug/m3	1.5	2.66		03/17/14 22:44	79-01-6	
1,2,3-Trimethylbenzene	3.6	ug/m3	0.53	2.66		03/17/14 22:44	526-73-8	
1,2,4-Trimethylbenzene	11.7	ug/m3	2.7	2.66		03/17/14 22:44	95-63-6	
1,3,5-Trimethylbenzene	4.9	ug/m3	2.7	2.66		03/17/14 22:44	108-67-8	
Vinyl chloride	ND	ug/m3	0.69	2.66		03/17/14 22:44	75-01-4	
m&p-Xylene	161	ug/m3	4.7	2.66		03/17/14 22:44	179601-23-1	
o-Xylene	48.5	ug/m3	2.3	2.66		03/17/14 22:44	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-093-A-16		Lab ID: 10259332026	Collected: 02/25/14 16:27	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.98	ug/m3	0.84	2.58		03/18/14 01:23	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.7	2.58		03/18/14 01:23	56-23-5	
Chlorodifluoromethane	4.4	ug/m3	0.52	2.58		03/18/14 01:23	75-45-6	
Chloroform	ND	ug/m3	2.6	2.58		03/18/14 01:23	67-66-3	
Dichlorodifluoromethane	3.1	ug/m3	2.6	2.58		03/18/14 01:23	75-71-8	
1,1-Dichloroethane	ND	ug/m3	2.1	2.58		03/18/14 01:23	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.1	2.58		03/18/14 01:23	107-06-2	
1,1-Dichloroethene	ND	ug/m3	2.1	2.58		03/18/14 01:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	2.1	2.58		03/18/14 01:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	2.1	2.58		03/18/14 01:23	156-60-5	
Ethylbenzene	ND	ug/m3	2.3	2.58		03/18/14 01:23	100-41-4	
Methylene Chloride	14.0	ug/m3	1.8	2.58		03/18/14 01:23	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.9	2.58		03/18/14 01:23	1634-04-4	
Naphthalene	2.8	ug/m3	2.8	2.58		03/18/14 01:23	91-20-3	
Tetrachloroethene	ND	ug/m3	1.8	2.58		03/18/14 01:23	127-18-4	
Toluene	3.0	ug/m3	2.0	2.58		03/18/14 01:23	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	3.9	2.58		03/18/14 01:23	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.9	2.58		03/18/14 01:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.4	2.58		03/18/14 01:23	79-00-5	
Trichloroethene	5.9	ug/m3	1.4	2.58		03/18/14 01:23	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.52	2.58		03/18/14 01:23	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.6	2.58		03/18/14 01:23	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.6	2.58		03/18/14 01:23	108-67-8	
Vinyl chloride	ND	ug/m3	0.67	2.58		03/18/14 01:23	75-01-4	
m&p-Xylene	ND	ug/m3	4.5	2.58		03/18/14 01:23	179601-23-1	
o-Xylene	ND	ug/m3	2.3	2.58		03/18/14 01:23	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-094-A-16		Lab ID: 10259332020	Collected: 02/25/14 16:19	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.93	ug/m3	0.57	1.74		03/15/14 01:37	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/15/14 01:37	56-23-5	
Chlorodifluoromethane	1.7	ug/m3	0.35	1.74		03/15/14 01:37	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/15/14 01:37	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.8	1.74		03/15/14 01:37	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/15/14 01:37	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/15/14 01:37	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/15/14 01:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/15/14 01:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/15/14 01:37	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/15/14 01:37	100-41-4	
Methylene Chloride	5.0	ug/m3	1.2	1.74		03/15/14 01:37	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/15/14 01:37	1634-04-4	
Naphthalene	2.2	ug/m3	1.9	1.74		03/15/14 01:37	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/15/14 01:37	127-18-4	
Toluene	1.6	ug/m3	1.3	1.74		03/15/14 01:37	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/15/14 01:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/15/14 01:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/15/14 01:37	79-00-5	
Trichloroethene	ND	ug/m3	0.96	1.74		03/15/14 01:37	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/15/14 01:37	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/15/14 01:37	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/15/14 01:37	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/15/14 01:37	75-01-4	
m&p-Xylene	ND	ug/m3	3.1	1.74		03/15/14 01:37	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/15/14 01:37	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: IA-108-A-16		Lab ID: 10259332004	Collected: 02/25/14 15:49	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.90	ug/m3	0.58	1.8		03/14/14 17:14	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 17:14	56-23-5	
Chlorodifluoromethane	4.0	ug/m3	0.36	1.8		03/14/14 17:14	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 17:14	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.8	1.8		03/14/14 17:14	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 17:14	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 17:14	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 17:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 17:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 17:14	156-60-5	
Ethylbenzene	0.94J	ug/m3	1.6	1.8		03/14/14 17:14	100-41-4	
Methylene Chloride	8.8	ug/m3	1.3	1.8		03/14/14 17:14	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 17:14	1634-04-4	
Naphthalene	2.2	ug/m3	1.9	1.8		03/14/14 17:14	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/14/14 17:14	127-18-4	
Toluene	43.8	ug/m3	1.4	1.8		03/14/14 17:14	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 17:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/14/14 17:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 17:14	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/14/14 17:14	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/14/14 17:14	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 17:14	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 17:14	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 17:14	75-01-4	
m&p-Xylene	3.4	ug/m3	3.2	1.8		03/14/14 17:14	179601-23-1	
o-Xylene	1.3J	ug/m3	1.6	1.8		03/14/14 17:14	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-117-A-16		Lab ID: 10259332008	Collected: 02/25/14 15:53		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.89	ug/m3	0.61	1.87		03/14/14 19:11	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 19:11	56-23-5	
Chlorodifluoromethane	3.5	ug/m3	0.37	1.87		03/14/14 19:11	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/14/14 19:11	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.9	1.87		03/14/14 19:11	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 19:11	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 19:11	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 19:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 19:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 19:11	156-60-5	
Ethylbenzene	0.84J	ug/m3	1.6	1.87		03/14/14 19:11	100-41-4	
Methylene Chloride	8.9	ug/m3	1.3	1.87		03/14/14 19:11	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 19:11	1634-04-4	
Naphthalene	2.2	ug/m3	2.0	1.87		03/14/14 19:11	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 19:11	127-18-4	
Toluene	67.5	ug/m3	1.4	1.87		03/14/14 19:11	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 19:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 19:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 19:11	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/14/14 19:11	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/14/14 19:11	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 19:11	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 19:11	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 19:11	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.3	1.87		03/14/14 19:11	179601-23-1	
o-Xylene	0.92J	ug/m3	1.6	1.87		03/14/14 19:11	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-118-A-16		Lab ID: 10259332006	Collected: 02/25/14 15:53	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.0	ug/m3	0.58	1.8		03/14/14 18:13	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 18:13	56-23-5	
Chlorodifluoromethane	12.4	ug/m3	0.36	1.8		03/14/14 18:13	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 18:13	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.8		03/14/14 18:13	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 18:13	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 18:13	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:13	156-60-5	
Ethylbenzene	1.4J	ug/m3	1.6	1.8		03/14/14 18:13	100-41-4	
Methylene Chloride	8.8	ug/m3	1.3	1.8		03/14/14 18:13	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 18:13	1634-04-4	
Naphthalene	2.2	ug/m3	1.9	1.8		03/14/14 18:13	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/14/14 18:13	127-18-4	
Toluene	16.5	ug/m3	1.4	1.8		03/14/14 18:13	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 18:13	120-82-1	
1,1,1-Trichloroethane	1.2J	ug/m3	2.0	1.8		03/14/14 18:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 18:13	79-00-5	
Trichloroethene	5.6	ug/m3	0.99	1.8		03/14/14 18:13	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/14/14 18:13	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 18:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 18:13	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 18:13	75-01-4	
m&p-Xylene	5.6	ug/m3	3.2	1.8		03/14/14 18:13	179601-23-1	
o-Xylene	2.0	ug/m3	1.6	1.8		03/14/14 18:13	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-136-A-16		Lab ID: 10259332014	Collected: 02/25/14 16:08	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.94	ug/m3	0.58	1.8		03/14/14 22:07	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 22:07	56-23-5	
Chlorodifluoromethane	3.3	ug/m3	0.36	1.8		03/14/14 22:07	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 22:07	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.8	1.8		03/14/14 22:07	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 22:07	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 22:07	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 22:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 22:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 22:07	156-60-5	
Ethylbenzene	0.75J	ug/m3	1.6	1.8		03/14/14 22:07	100-41-4	
Methylene Chloride	7.3	ug/m3	1.3	1.8		03/14/14 22:07	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 22:07	1634-04-4	
Naphthalene	2.9	ug/m3	1.9	1.8		03/14/14 22:07	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/14/14 22:07	127-18-4	
Toluene	53.6	ug/m3	1.4	1.8		03/14/14 22:07	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 22:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/14/14 22:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 22:07	79-00-5	
Trichloroethene	4.2	ug/m3	0.99	1.8		03/14/14 22:07	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/14/14 22:07	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 22:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 22:07	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 22:07	75-01-4	
m&p-Xylene	2.6J	ug/m3	3.2	1.8		03/14/14 22:07	179601-23-1	
o-Xylene	0.99J	ug/m3	1.6	1.8		03/14/14 22:07	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-138-A-16		Lab ID: 10259332024	Collected: 02/25/14 16:24	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1 ug/m3		0.84	2.58		03/18/14 00:19	71-43-2	
Carbon tetrachloride	ND ug/m3		1.7	2.58		03/18/14 00:19	56-23-5	
Chlorodifluoromethane	4.8 ug/m3		0.52	2.58		03/18/14 00:19	75-45-6	
Chloroform	ND ug/m3		2.6	2.58		03/18/14 00:19	67-66-3	
Dichlorodifluoromethane	3.0 ug/m3		2.6	2.58		03/18/14 00:19	75-71-8	
1,1-Dichloroethane	ND ug/m3		2.1	2.58		03/18/14 00:19	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.1	2.58		03/18/14 00:19	107-06-2	
1,1-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 00:19	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 00:19	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 00:19	156-60-5	
Ethylbenzene	ND ug/m3		2.3	2.58		03/18/14 00:19	100-41-4	
Methylene Chloride	17.2 ug/m3		1.8	2.58		03/18/14 00:19	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.9	2.58		03/18/14 00:19	1634-04-4	
Naphthalene	3.0 ug/m3		2.8	2.58		03/18/14 00:19	91-20-3	
Tetrachloroethene	ND ug/m3		1.8	2.58		03/18/14 00:19	127-18-4	
Toluene	2.5 ug/m3		2.0	2.58		03/18/14 00:19	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		3.9	2.58		03/18/14 00:19	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.9	2.58		03/18/14 00:19	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.4	2.58		03/18/14 00:19	79-00-5	
Trichloroethene	1.6 ug/m3		1.4	2.58		03/18/14 00:19	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.52	2.58		03/18/14 00:19	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.6	2.58		03/18/14 00:19	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.6	2.58		03/18/14 00:19	108-67-8	
Vinyl chloride	ND ug/m3		0.67	2.58		03/18/14 00:19	75-01-4	
m&p-Xylene	ND ug/m3		4.5	2.58		03/18/14 00:19	179601-23-1	
o-Xylene	ND ug/m3		2.3	2.58		03/18/14 00:19	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-DUP3-A-16		Lab ID: 10259332033	Collected: 02/25/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2	ug/m3	0.81	2.49		03/18/14 04:37	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.6	2.49		03/18/14 04:37	56-23-5	
Chlorodifluoromethane	8.2	ug/m3	0.50	2.49		03/18/14 04:37	75-45-6	
Chloroform	ND	ug/m3	2.5	2.49		03/18/14 04:37	67-66-3	
Dichlorodifluoromethane	3.2	ug/m3	2.5	2.49		03/18/14 04:37	75-71-8	
1,1-Dichloroethane	ND	ug/m3	2.0	2.49		03/18/14 04:37	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.0	2.49		03/18/14 04:37	107-06-2	
1,1-Dichloroethene	ND	ug/m3	2.0	2.49		03/18/14 04:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	2.0	2.49		03/18/14 04:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	2.0	2.49		03/18/14 04:37	156-60-5	
Ethylbenzene	ND	ug/m3	2.2	2.49		03/18/14 04:37	100-41-4	
Methylene Chloride	7.4	ug/m3	1.8	2.49		03/18/14 04:37	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.8	2.49		03/18/14 04:37	1634-04-4	
Naphthalene	2.1J	ug/m3	2.7	2.49		03/18/14 04:37	91-20-3	
Tetrachloroethene	ND	ug/m3	1.7	2.49		03/18/14 04:37	127-18-4	
Toluene	16.9	ug/m3	1.9	2.49		03/18/14 04:37	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	3.8	2.49		03/18/14 04:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.8	2.49		03/18/14 04:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.4	2.49		03/18/14 04:37	79-00-5	
Trichloroethene	ND	ug/m3	1.4	2.49		03/18/14 04:37	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.50	2.49		03/18/14 04:37	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.5	2.49		03/18/14 04:37	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.5	2.49		03/18/14 04:37	108-67-8	
Vinyl chloride	ND	ug/m3	0.65	2.49		03/18/14 04:37	75-01-4	
m&p-Xylene	3.4J	ug/m3	4.4	2.49		03/18/14 04:37	179601-23-1	
o-Xylene	1.4J	ug/m3	2.2	2.49		03/18/14 04:37	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-015-A-16		Lab ID: 10259332001	Collected: 02/25/14 09:48	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.64	ug/m3	0.61	1.87		03/12/14 21:04	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/12/14 21:04	56-23-5	
Chlorodifluoromethane	5.8	ug/m3	1.3	1.87		03/12/14 21:04	75-45-6	
Chloroform	64.7	ug/m3	1.9	1.87		03/12/14 21:04	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.9	1.87		03/12/14 21:04	75-71-8	
1,1-Dichloroethane	14.6	ug/m3	1.5	1.87		03/12/14 21:04	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/12/14 21:04	107-06-2	
1,1-Dichloroethene	369	ug/m3	60.6	74.8		03/14/14 01:00	75-35-4	A3
cis-1,2-Dichloroethene	1110	ug/m3	60.6	74.8		03/14/14 01:00	156-59-2	A3
trans-1,2-Dichloroethene	25.0	ug/m3	1.5	1.87		03/12/14 21:04	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/12/14 21:04	100-41-4	
Methylene Chloride	31.6	ug/m3	1.3	1.87		03/12/14 21:04	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/12/14 21:04	1634-04-4	
Naphthalene	ND	ug/m3	2.0	1.87		03/12/14 21:04	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/12/14 21:04	127-18-4	
Toluene	7.1	ug/m3	1.4	1.87		03/12/14 21:04	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/12/14 21:04	120-82-1	
1,1,1-Trichloroethane	76.3	ug/m3	2.1	1.87		03/12/14 21:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/12/14 21:04	79-00-5	
Trichloroethene	564	ug/m3	41.1	74.8		03/14/14 01:00	79-01-6	A3
1,2,3-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/12/14 21:04	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/12/14 21:04	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/12/14 21:04	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/12/14 21:04	75-01-4	
m&p-Xylene	3.1J	ug/m3	3.3	1.87		03/12/14 21:04	179601-23-1	
o-Xylene	1.6J	ug/m3	1.6	1.87		03/12/14 21:04	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-018-A-16		Lab ID: 10259332021	Collected: 02/25/14 10:30	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.96	ug/m3	0.66	2.02		03/15/14 07:38	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.3	2.02		03/15/14 07:38	56-23-5	
Chlorodifluoromethane	8.9	ug/m3	0.40	2.02		03/15/14 07:38	75-45-6	
Chloroform	1.7J	ug/m3	2.0	2.02		03/15/14 07:38	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	2.0	2.02		03/15/14 07:38	75-71-8	
1,1-Dichloroethane	3.1	ug/m3	1.7	2.02		03/15/14 07:38	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.83	2.02		03/15/14 07:38	107-06-2	
1,1-Dichloroethene	230	ug/m3	1.6	2.02		03/15/14 07:38	75-35-4	
cis-1,2-Dichloroethene	16.3	ug/m3	1.6	2.02		03/15/14 07:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	2.02		03/15/14 07:38	156-60-5	
Ethylbenzene	ND	ug/m3	1.8	2.02		03/15/14 07:38	100-41-4	
Methylene Chloride	19.8	ug/m3	1.4	2.02		03/15/14 07:38	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.5	2.02		03/15/14 07:38	1634-04-4	
Naphthalene	2.8	ug/m3	2.2	2.02		03/15/14 07:38	91-20-3	
Tetrachloroethene	ND	ug/m3	1.4	2.02		03/15/14 07:38	127-18-4	
Toluene	2.6	ug/m3	1.6	2.02		03/15/14 07:38	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	3.1	2.02		03/15/14 07:38	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.2	2.02		03/15/14 07:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.1	2.02		03/15/14 07:38	79-00-5	
Trichloroethene	174	ug/m3	1.1	2.02		03/15/14 07:38	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.40	2.02		03/15/14 07:38	526-73-8	
1,2,4-Trimethylbenzene	1.7J	ug/m3	2.0	2.02		03/15/14 07:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.0	2.02		03/15/14 07:38	108-67-8	
Vinyl chloride	0.57	ug/m3	0.53	2.02		03/15/14 07:38	75-01-4	
m&p-Xylene	2.0J	ug/m3	3.6	2.02		03/15/14 07:38	179601-23-1	
o-Xylene	ND	ug/m3	1.8	2.02		03/15/14 07:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-075-A-16		Lab ID: 10259332017	Collected: 02/25/14 10:20	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.79 ug/m3		0.55	1.68		03/14/14 23:34	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/14/14 23:34	56-23-5	
Chlorodifluoromethane	4.1 ug/m3		0.34	1.68		03/14/14 23:34	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/14/14 23:34	67-66-3	
Dichlorodifluoromethane	2.1 ug/m3		1.7	1.68		03/14/14 23:34	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/14/14 23:34	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/14/14 23:34	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/14/14 23:34	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/14/14 23:34	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/14/14 23:34	156-60-5	
Ethylbenzene	1.6 ug/m3		1.5	1.68		03/14/14 23:34	100-41-4	
Methylene Chloride	3.1 ug/m3		1.2	1.68		03/14/14 23:34	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/14/14 23:34	1634-04-4	
Naphthalene	259 ug/m3		1.8	1.68		03/14/14 23:34	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/14/14 23:34	127-18-4	
Toluene	7.8 ug/m3		1.3	1.68		03/14/14 23:34	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/14/14 23:34	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/14/14 23:34	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/14/14 23:34	79-00-5	
Trichloroethene	3.1 ug/m3		0.92	1.68		03/14/14 23:34	79-01-6	
1,2,3-Trimethylbenzene	59.2 ug/m3		0.34	1.68		03/14/14 23:34	526-73-8	
1,2,4-Trimethylbenzene	205 ug/m3		1.7	1.68		03/14/14 23:34	95-63-6	
1,3,5-Trimethylbenzene	107 ug/m3		1.7	1.68		03/14/14 23:34	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/14/14 23:34	75-01-4	
m&p-Xylene	9.0 ug/m3		3.0	1.68		03/14/14 23:34	179601-23-1	
o-Xylene	19.7 ug/m3		1.5	1.68		03/14/14 23:34	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-076-A-16		Lab ID: 10259332015	Collected: 02/25/14 10:08	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.61	1.87		03/14/14 22:36	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 22:36	56-23-5	
Chlorodifluoromethane	1.6	ug/m3	0.37	1.87		03/14/14 22:36	75-45-6	
Chloroform	1.7J	ug/m3	1.9	1.87		03/14/14 22:36	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.9	1.87		03/14/14 22:36	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 22:36	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 22:36	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 22:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 22:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 22:36	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/14/14 22:36	100-41-4	
Methylene Chloride	12.6	ug/m3	1.3	1.87		03/14/14 22:36	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 22:36	1634-04-4	
Naphthalene	94.9	ug/m3	2.0	1.87		03/14/14 22:36	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 22:36	127-18-4	
Toluene	3.8	ug/m3	1.4	1.87		03/14/14 22:36	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 22:36	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 22:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 22:36	79-00-5	
Trichloroethene	14.0	ug/m3	1.0	1.87		03/14/14 22:36	79-01-6	
1,2,3-Trimethylbenzene	20.8	ug/m3	0.37	1.87		03/14/14 22:36	526-73-8	
1,2,4-Trimethylbenzene	40.2	ug/m3	1.9	1.87		03/14/14 22:36	95-63-6	
1,3,5-Trimethylbenzene	14.0	ug/m3	1.9	1.87		03/14/14 22:36	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 22:36	75-01-4	
m&p-Xylene	4.4	ug/m3	3.3	1.87		03/14/14 22:36	179601-23-1	
o-Xylene	2.9	ug/m3	1.6	1.87		03/14/14 22:36	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-079-A-16		Lab ID: 10259332009	Collected: 02/25/14 10:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1	ug/m3	0.58	1.8		03/14/14 19:40	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 19:40	56-23-5	
Chlorodifluoromethane	2.7	ug/m3	0.36	1.8		03/14/14 19:40	75-45-6	
Chloroform	9.0	ug/m3	1.8	1.8		03/14/14 19:40	67-66-3	
Dichlorodifluoromethane	1.7J	ug/m3	1.8	1.8		03/14/14 19:40	75-71-8	
1,1-Dichloroethane	1.6	ug/m3	1.5	1.8		03/14/14 19:40	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 19:40	107-06-2	
1,1-Dichloroethene	2.7	ug/m3	1.5	1.8		03/14/14 19:40	75-35-4	
cis-1,2-Dichloroethene	2620	ug/m3	58.3	72		03/17/14 21:50	156-59-2	A3
trans-1,2-Dichloroethene	517	ug/m3	58.3	72		03/17/14 21:50	156-60-5	A3
Ethylbenzene	2.1	ug/m3	1.6	1.8		03/14/14 19:40	100-41-4	
Methylene Chloride	18.7	ug/m3	1.3	1.8		03/14/14 19:40	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 19:40	1634-04-4	
Naphthalene	27.9	ug/m3	1.9	1.8		03/14/14 19:40	91-20-3	
Tetrachloroethene	14.1	ug/m3	1.2	1.8		03/14/14 19:40	127-18-4	
Toluene	5.9	ug/m3	1.4	1.8		03/14/14 19:40	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 19:40	120-82-1	
1,1,1-Trichloroethane	2.1	ug/m3	2.0	1.8		03/14/14 19:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 19:40	79-00-5	
Trichloroethene	6090	ug/m3	39.6	72		03/17/14 21:50	79-01-6	A3
1,2,3-Trimethylbenzene	23.1	ug/m3	0.36	1.8		03/14/14 19:40	526-73-8	
1,2,4-Trimethylbenzene	12.3	ug/m3	1.8	1.8		03/14/14 19:40	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 19:40	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 19:40	75-01-4	
m&p-Xylene	5.2	ug/m3	3.2	1.8		03/14/14 19:40	179601-23-1	
o-Xylene	5.3	ug/m3	1.6	1.8		03/14/14 19:40	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-081-A-16		Lab ID: 10259332011	Collected: 02/25/14 10:04	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/14/14 20:39	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 20:39	56-23-5	
Chlorodifluoromethane	25.4	ug/m3	0.36	1.8		03/14/14 20:39	75-45-6	
Chloroform	2.8	ug/m3	1.8	1.8		03/14/14 20:39	67-66-3	
Dichlorodifluoromethane	1.8	ug/m3	1.8	1.8		03/14/14 20:39	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 20:39	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 20:39	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 20:39	75-35-4	
cis-1,2-Dichloroethene	6.1	ug/m3	1.5	1.8		03/14/14 20:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 20:39	156-60-5	
Ethylbenzene	57.9	ug/m3	1.6	1.8		03/14/14 20:39	100-41-4	
Methylene Chloride	15.4	ug/m3	1.3	1.8		03/14/14 20:39	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 20:39	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.8		03/14/14 20:39	91-20-3	
Tetrachloroethene	73.8	ug/m3	1.2	1.8		03/14/14 20:39	127-18-4	
Toluene	13.9	ug/m3	1.4	1.8		03/14/14 20:39	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 20:39	120-82-1	
1,1,1-Trichloroethane	6.4	ug/m3	2.0	1.8		03/14/14 20:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 20:39	79-00-5	
Trichloroethene	7.9	ug/m3	0.99	1.8		03/14/14 20:39	79-01-6	
1,2,3-Trimethylbenzene	4140	ug/m3	14.4	72		03/17/14 22:14	526-73-8	A3
1,2,4-Trimethylbenzene	6780	ug/m3	71.9	72		03/17/14 22:14	95-63-6	A3
1,3,5-Trimethylbenzene	3500	ug/m3	71.9	72		03/17/14 22:14	108-67-8	A3
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 20:39	75-01-4	
m&p-Xylene	480	ug/m3	127	72		03/17/14 22:14	179601-23-1	A3
o-Xylene	228	ug/m3	1.6	1.8		03/14/14 20:39	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-093-A-16		Lab ID: 10259332025	Collected: 02/25/14 16:27	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2	ug/m3	0.92	2.82		03/18/14 00:49	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.8	2.82		03/18/14 00:49	56-23-5	
Chlorodifluoromethane	14.6	ug/m3	0.56	2.82		03/18/14 00:49	75-45-6	
Chloroform	ND	ug/m3	2.8	2.82		03/18/14 00:49	67-66-3	
Dichlorodifluoromethane	3.9	ug/m3	2.8	2.82		03/18/14 00:49	75-71-8	
1,1-Dichloroethane	ND	ug/m3	2.3	2.82		03/18/14 00:49	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.2	2.82		03/18/14 00:49	107-06-2	
1,1-Dichloroethene	ND	ug/m3	2.3	2.82		03/18/14 00:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	2.3	2.82		03/18/14 00:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	2.3	2.82		03/18/14 00:49	156-60-5	
Ethylbenzene	ND	ug/m3	2.5	2.82		03/18/14 00:49	100-41-4	
Methylene Chloride	415	ug/m3	2.0	2.82		03/18/14 00:49	75-09-2	E
Methyl-tert-butyl ether	ND	ug/m3	2.1	2.82		03/18/14 00:49	1634-04-4	
Naphthalene	3.5	ug/m3	3.0	2.82		03/18/14 00:49	91-20-3	
Tetrachloroethene	ND	ug/m3	1.9	2.82		03/18/14 00:49	127-18-4	
Toluene	6.8	ug/m3	2.2	2.82		03/18/14 00:49	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	4.3	2.82		03/18/14 00:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	3.1	2.82		03/18/14 00:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.6	2.82		03/18/14 00:49	79-00-5	
Trichloroethene	7.0	ug/m3	1.6	2.82		03/18/14 00:49	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.56	2.82		03/18/14 00:49	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.8	2.82		03/18/14 00:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.8	2.82		03/18/14 00:49	108-67-8	
Vinyl chloride	ND	ug/m3	0.73	2.82		03/18/14 00:49	75-01-4	
m&p-Xylene	ND	ug/m3	5.0	2.82		03/18/14 00:49	179601-23-1	
o-Xylene	ND	ug/m3	2.5	2.82		03/18/14 00:49	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-094-A-16		Lab ID: 10259332019	Collected: 02/25/14 10:26	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1 ug/m3		0.58	1.8		03/15/14 00:33	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.8		03/15/14 00:33	56-23-5	
Chlorodifluoromethane	3.6 ug/m3		0.36	1.8		03/15/14 00:33	75-45-6	
Chloroform	ND ug/m3		1.8	1.8		03/15/14 00:33	67-66-3	
Dichlorodifluoromethane	2.3 ug/m3		1.8	1.8		03/15/14 00:33	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.8		03/15/14 00:33	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.74	1.8		03/15/14 00:33	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.5	1.8		03/15/14 00:33	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/15/14 00:33	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/15/14 00:33	156-60-5	
Ethylbenzene	ND ug/m3		1.6	1.8		03/15/14 00:33	100-41-4	
Methylene Chloride	59.8 ug/m3		1.3	1.8		03/15/14 00:33	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.8		03/15/14 00:33	1634-04-4	
Naphthalene	2.5 ug/m3		1.9	1.8		03/15/14 00:33	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.8		03/15/14 00:33	127-18-4	
Toluene	2.3 ug/m3		1.4	1.8		03/15/14 00:33	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.7	1.8		03/15/14 00:33	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.0	1.8		03/15/14 00:33	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.99	1.8		03/15/14 00:33	79-00-5	
Trichloroethene	ND ug/m3		0.99	1.8		03/15/14 00:33	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.36	1.8		03/15/14 00:33	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.8	1.8		03/15/14 00:33	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.8	1.8		03/15/14 00:33	108-67-8	
Vinyl chloride	ND ug/m3		0.47	1.8		03/15/14 00:33	75-01-4	
m&p-Xylene	ND ug/m3		3.2	1.8		03/15/14 00:33	179601-23-1	
o-Xylene	ND ug/m3		1.6	1.8		03/15/14 00:33	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-108-A-16		Lab ID: 10259332003	Collected: 02/25/14 09:51	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.88	ug/m3	0.57	1.74		03/12/14 22:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/12/14 22:03	56-23-5	
Chlorodifluoromethane	12.3	ug/m3	1.3	1.74		03/12/14 22:03	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/12/14 22:03	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	1.8	1.74		03/12/14 22:03	75-71-8	
1,1-Dichloroethane	2.1	ug/m3	1.4	1.74		03/12/14 22:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/12/14 22:03	107-06-2	
1,1-Dichloroethene	7.7	ug/m3	1.4	1.74		03/12/14 22:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/12/14 22:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/12/14 22:03	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/12/14 22:03	100-41-4	
Methylene Chloride	12.4	ug/m3	1.2	1.74		03/12/14 22:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/12/14 22:03	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.74		03/12/14 22:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/12/14 22:03	127-18-4	
Toluene	17.3	ug/m3	1.3	1.74		03/12/14 22:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/12/14 22:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/12/14 22:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/12/14 22:03	79-00-5	
Trichloroethene	0.94J	ug/m3	0.96	1.74		03/12/14 22:03	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/12/14 22:03	75-01-4	
m&p-Xylene	2.9J	ug/m3	3.1	1.74		03/12/14 22:03	179601-23-1	
o-Xylene	1.2J	ug/m3	1.5	1.74		03/12/14 22:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-117-A-16		Lab ID: 10259332007	Collected: 02/25/14 09:59	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/14/14 18:42	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 18:42	56-23-5	
Chlorodifluoromethane	0.80	ug/m3	0.36	1.8		03/14/14 18:42	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 18:42	67-66-3	
Dichlorodifluoromethane	1.5J	ug/m3	1.8	1.8		03/14/14 18:42	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 18:42	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 18:42	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:42	156-60-5	
Ethylbenzene	2.1	ug/m3	1.6	1.8		03/14/14 18:42	100-41-4	
Methylene Chloride	40.4	ug/m3	1.3	1.8		03/14/14 18:42	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 18:42	1634-04-4	
Naphthalene	95.1	ug/m3	1.9	1.8		03/14/14 18:42	91-20-3	
Tetrachloroethene	10.3	ug/m3	1.2	1.8		03/14/14 18:42	127-18-4	
Toluene	9.9	ug/m3	1.4	1.8		03/14/14 18:42	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 18:42	120-82-1	
1,1,1-Trichloroethane	5.1	ug/m3	2.0	1.8		03/14/14 18:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 18:42	79-00-5	
Trichloroethene	109	ug/m3	0.99	1.8		03/14/14 18:42	79-01-6	
1,2,3-Trimethylbenzene	4.5	ug/m3	0.36	1.8		03/14/14 18:42	526-73-8	
1,2,4-Trimethylbenzene	5.8	ug/m3	1.8	1.8		03/14/14 18:42	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 18:42	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 18:42	75-01-4	
m&p-Xylene	9.7	ug/m3	3.2	1.8		03/14/14 18:42	179601-23-1	
o-Xylene	8.3	ug/m3	1.6	1.8		03/14/14 18:42	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-118-A-16		Lab ID: 10259332005	Collected: 02/25/14 09:55		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.8	ug/m3	0.61	1.87		03/14/14 17:43	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 17:43	56-23-5	
Chlorodifluoromethane	5.2	ug/m3	0.37	1.87		03/14/14 17:43	75-45-6	
Chloroform	106	ug/m3	1.9	1.87		03/14/14 17:43	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.9	1.87		03/14/14 17:43	75-71-8	
1,1-Dichloroethane	90.3	ug/m3	1.5	1.87		03/14/14 17:43	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 17:43	107-06-2	
1,1-Dichloroethene	1670	ug/m3	60.6	74.8		03/17/14 21:25	75-35-4	A3
cis-1,2-Dichloroethene	477	ug/m3	60.6	74.8		03/17/14 21:25	156-59-2	A3
trans-1,2-Dichloroethene	18.1	ug/m3	1.5	1.87		03/14/14 17:43	156-60-5	
Ethylbenzene	27.2	ug/m3	1.6	1.87		03/14/14 17:43	100-41-4	
Methylene Chloride	15.0	ug/m3	1.3	1.87		03/14/14 17:43	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 17:43	1634-04-4	
Naphthalene	20.7	ug/m3	2.0	1.87		03/14/14 17:43	91-20-3	
Tetrachloroethene	1.6	ug/m3	1.3	1.87		03/14/14 17:43	127-18-4	
Toluene	3.8	ug/m3	1.4	1.87		03/14/14 17:43	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 17:43	120-82-1	
1,1,1-Trichloroethane	26.2	ug/m3	2.1	1.87		03/14/14 17:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 17:43	79-00-5	
Trichloroethene	5860	ug/m3	41.1	74.8		03/17/14 21:25	79-01-6	A3
1,2,3-Trimethylbenzene	18.1	ug/m3	0.37	1.87		03/14/14 17:43	526-73-8	
1,2,4-Trimethylbenzene	34.1	ug/m3	1.9	1.87		03/14/14 17:43	95-63-6	
1,3,5-Trimethylbenzene	23.2	ug/m3	1.9	1.87		03/14/14 17:43	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 17:43	75-01-4	
m&p-Xylene	156	ug/m3	3.3	1.87		03/14/14 17:43	179601-23-1	
o-Xylene	65.2	ug/m3	1.6	1.87		03/14/14 17:43	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-136-A-16		Lab ID: 10259332013	Collected: 02/25/14 09:10	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	6.7	ug/m3	0.61	1.87		03/14/14 21:37	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 21:37	56-23-5	
Chlorodifluoromethane	ND	ug/m3	0.37	1.87		03/14/14 21:37	75-45-6	
Chloroform	217	ug/m3	1.9	1.87		03/14/14 21:37	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.9	1.87		03/14/14 21:37	75-71-8	
1,1-Dichloroethane	1.7	ug/m3	1.5	1.87		03/14/14 21:37	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 21:37	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 21:37	75-35-4	
cis-1,2-Dichloroethene	55.2	ug/m3	1.5	1.87		03/14/14 21:37	156-59-2	
trans-1,2-Dichloroethene	25.3	ug/m3	1.5	1.87		03/14/14 21:37	156-60-5	
Ethylbenzene	1.7	ug/m3	1.6	1.87		03/14/14 21:37	100-41-4	
Methylene Chloride	13.5	ug/m3	1.3	1.87		03/14/14 21:37	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 21:37	1634-04-4	
Naphthalene	9.3	ug/m3	2.0	1.87		03/14/14 21:37	91-20-3	
Tetrachloroethene	15.1	ug/m3	1.3	1.87		03/14/14 21:37	127-18-4	
Toluene	11.7	ug/m3	1.4	1.87		03/14/14 21:37	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 21:37	120-82-1	
1,1,1-Trichloroethane	3.4	ug/m3	2.1	1.87		03/14/14 21:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 21:37	79-00-5	
Trichloroethene	91000	ug/m3	658	1196.8		03/17/14 16:34	79-01-6	A3
1,2,3-Trimethylbenzene	6.1	ug/m3	0.37	1.87		03/14/14 21:37	526-73-8	
1,2,4-Trimethylbenzene	6.8	ug/m3	1.9	1.87		03/14/14 21:37	95-63-6	
1,3,5-Trimethylbenzene	5.4	ug/m3	1.9	1.87		03/14/14 21:37	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 21:37	75-01-4	
m&p-Xylene	4.2	ug/m3	3.3	1.87		03/14/14 21:37	179601-23-1	
o-Xylene	3.4	ug/m3	1.6	1.87		03/14/14 21:37	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-138-A-16		Lab ID: 10259332023	Collected: 02/25/14 10:35	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.6	ug/m3	0.93	2.87		03/17/14 23:50	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.8	2.87		03/17/14 23:50	56-23-5	
Chlorodifluoromethane	9.6	ug/m3	0.57	2.87		03/17/14 23:50	75-45-6	
Chloroform	ND	ug/m3	2.8	2.87		03/17/14 23:50	67-66-3	
Dichlorodifluoromethane	3.3	ug/m3	2.9	2.87		03/17/14 23:50	75-71-8	
1,1-Dichloroethane	2.6	ug/m3	2.4	2.87		03/17/14 23:50	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.2	2.87		03/17/14 23:50	107-06-2	
1,1-Dichloroethene	6.4	ug/m3	2.3	2.87		03/17/14 23:50	75-35-4	
cis-1,2-Dichloroethene	5.6	ug/m3	2.3	2.87		03/17/14 23:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	2.3	2.87		03/17/14 23:50	156-60-5	
Ethylbenzene	1.9J	ug/m3	2.5	2.87		03/17/14 23:50	100-41-4	
Methylene Chloride	17.5	ug/m3	2.0	2.87		03/17/14 23:50	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	2.1	2.87		03/17/14 23:50	1634-04-4	
Naphthalene	23.1	ug/m3	3.1	2.87		03/17/14 23:50	91-20-3	
Tetrachloroethene	2.7	ug/m3	2.0	2.87		03/17/14 23:50	127-18-4	
Toluene	10.3	ug/m3	2.2	2.87		03/17/14 23:50	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	4.3	2.87		03/17/14 23:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	3.2	2.87		03/17/14 23:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.6	2.87		03/17/14 23:50	79-00-5	
Trichloroethene	80.3	ug/m3	1.6	2.87		03/17/14 23:50	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.57	2.87		03/17/14 23:50	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.9	2.87		03/17/14 23:50	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.9	2.87		03/17/14 23:50	108-67-8	
Vinyl chloride	ND	ug/m3	0.75	2.87		03/17/14 23:50	75-01-4	
m&p-Xylene	6.1	ug/m3	5.1	2.87		03/17/14 23:50	179601-23-1	
o-Xylene	1.6J	ug/m3	2.5	2.87		03/17/14 23:50	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-DUP3-A-16		Lab ID: 10259332032	Collected: 02/25/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.90	2.77		03/18/14 04:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.8	2.77		03/18/14 04:03	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.55	2.77		03/18/14 04:03	75-45-6	
Chloroform	93.6	ug/m3	2.7	2.77		03/18/14 04:03	67-66-3	
Dichlorodifluoromethane	2.3J	ug/m3	2.8	2.77		03/18/14 04:03	75-71-8	
1,1-Dichloroethane	21.6	ug/m3	2.3	2.77		03/18/14 04:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.1	2.77		03/18/14 04:03	107-06-2	
1,1-Dichloroethene	473	ug/m3	89.7	110.7		03/18/14 17:31	75-35-4	A3
cis-1,2-Dichloroethene	1260	ug/m3	89.7	110.7		03/18/14 17:31	156-59-2	A3
trans-1,2-Dichloroethene	37.7	ug/m3	2.2	2.77		03/18/14 04:03	156-60-5	
Ethylbenzene	ND	ug/m3	2.4	2.77		03/18/14 04:03	100-41-4	
Methylene Chloride	18.6	ug/m3	2.0	2.77		03/18/14 04:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	2.0	2.77		03/18/14 04:03	1634-04-4	
Naphthalene	ND	ug/m3	3.0	2.77		03/18/14 04:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.9	2.77		03/18/14 04:03	127-18-4	
Toluene	4.6	ug/m3	2.1	2.77		03/18/14 04:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	4.2	2.77		03/18/14 04:03	120-82-1	
1,1,1-Trichloroethane	112	ug/m3	3.1	2.77		03/18/14 04:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.5	2.77		03/18/14 04:03	79-00-5	
Trichloroethene	619	ug/m3	60.9	110.7		03/18/14 17:31	79-01-6	A3
1,2,3-Trimethylbenzene	ND	ug/m3	0.55	2.77		03/18/14 04:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.8	2.77		03/18/14 04:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.8	2.77		03/18/14 04:03	108-67-8	
Vinyl chloride	1.5	ug/m3	0.72	2.77		03/18/14 04:03	75-01-4	
m&p-Xylene	ND	ug/m3	4.9	2.77		03/18/14 04:03	179601-23-1	
o-Xylene	1.4J	ug/m3	2.4	2.77		03/18/14 04:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-DUP4-A-16		Lab ID: 10259332034	Collected: 02/25/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.77	ug/m3	0.57	1.74		03/15/14 05:15	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/15/14 05:15	56-23-5	
Chlorodifluoromethane	7.1	ug/m3	0.35	1.74		03/15/14 05:15	75-45-6	
Chloroform	1.4J	ug/m3	1.7	1.74		03/15/14 05:15	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.74		03/15/14 05:15	75-71-8	
1,1-Dichloroethane	3.2	ug/m3	1.4	1.74		03/15/14 05:15	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/15/14 05:15	107-06-2	
1,1-Dichloroethene	192	ug/m3	1.4	1.74		03/15/14 05:15	75-35-4	
cis-1,2-Dichloroethene	13.7	ug/m3	1.4	1.74		03/15/14 05:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/15/14 05:15	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/15/14 05:15	100-41-4	
Methylene Chloride	17.8	ug/m3	1.2	1.74		03/15/14 05:15	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/15/14 05:15	1634-04-4	
Naphthalene	3.1	ug/m3	1.9	1.74		03/15/14 05:15	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/15/14 05:15	127-18-4	
Toluene	2.0	ug/m3	1.3	1.74		03/15/14 05:15	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/15/14 05:15	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/15/14 05:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/15/14 05:15	79-00-5	
Trichloroethene	150	ug/m3	0.96	1.74		03/15/14 05:15	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/15/14 05:15	526-73-8	
1,2,4-Trimethylbenzene	1.5J	ug/m3	1.7	1.74		03/15/14 05:15	95-63-6	
1,3,5-Trimethylbenzene	1.4J	ug/m3	1.7	1.74		03/15/14 05:15	108-67-8	
Vinyl chloride	0.59	ug/m3	0.45	1.74		03/15/14 05:15	75-01-4	
m&p-Xylene	1.7J	ug/m3	3.1	1.74		03/15/14 05:15	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/15/14 05:15	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: 112IC06279 MRC SV/IAQ

Pace Project No.: 10263934

Sample: IA-081-A-16R		Lab ID: 10263934001	Collected: 04/17/14 16:35	Received: 04/18/14 09:05	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.44	ug/m3	0.44	1.34		04/30/14 15:25	71-43-2	
Carbon tetrachloride	ND	ug/m3	0.86	1.34		04/30/14 15:25	56-23-5	
Chlorodifluoromethane	28.0	ug/m3	0.96	1.34		04/30/14 15:25	75-45-6	
Chloroform	ND	ug/m3	1.3	1.34		04/30/14 15:25	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.4	1.34		04/30/14 15:25	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.1	1.34		04/30/14 15:25	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.55	1.34		04/30/14 15:25	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.1	1.34		04/30/14 15:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.1	1.34		04/30/14 15:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.1	1.34		04/30/14 15:25	156-60-5	
Ethylbenzene	8.0	ug/m3	1.2	1.34		04/30/14 15:25	100-41-4	
Methylene Chloride	1.9J	ug/m3	4.7	1.34		04/30/14 15:25	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	0.98	1.34		04/30/14 15:25	1634-04-4	
Naphthalene	ND	ug/m3	3.6	1.34		04/30/14 15:25	91-20-3	
Tetrachloroethene	1.6	ug/m3	0.92	1.34		04/30/14 15:25	127-18-4	
Toluene	20.4	ug/m3	1.0	1.34		04/30/14 15:25	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	5.1	1.34		04/30/14 15:25	120-82-1	
1,1,1-Trichloroethane	0.81J	ug/m3	1.5	1.34		04/30/14 15:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.74	1.34		04/30/14 15:25	79-00-5	
Trichloroethene	4.1	ug/m3	0.74	1.34		04/30/14 15:25	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.3	1.34		04/30/14 15:25	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.3	1.34		04/30/14 15:25	95-63-6	
1,3,5-Trimethylbenzene	1.2J	ug/m3	3.3	1.34		04/30/14 15:25	108-67-8	
Vinyl chloride	ND	ug/m3	0.35	1.34		04/30/14 15:25	75-01-4	
m&p-Xylene	38.2	ug/m3	2.4	1.34		04/30/14 15:25	179601-23-1	
o-Xylene	11.6	ug/m3	1.2	1.34		04/30/14 15:25	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 112IC06279 MRC SV/IAQ

Pace Project No.: 10263934

Sample: IA-113-C-16R		Lab ID: 10263934002	Collected: 04/17/14 16:43	Received: 04/18/14 09:05	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.52	1.61		04/30/14 15:53	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.0	1.61		04/30/14 15:53	56-23-5	
Chlorodifluoromethane	4.0	ug/m3	1.2	1.61		04/30/14 15:53	75-45-6	
Chloroform	ND	ug/m3	1.6	1.61		04/30/14 15:53	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	1.6	1.61		04/30/14 15:53	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.3	1.61		04/30/14 15:53	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.66	1.61		04/30/14 15:53	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.3	1.61		04/30/14 15:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		04/30/14 15:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		04/30/14 15:53	156-60-5	
Ethylbenzene	1.2J	ug/m3	1.4	1.61		04/30/14 15:53	100-41-4	
Methylene Chloride	3.1J	ug/m3	5.7	1.61		04/30/14 15:53	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.61		04/30/14 15:53	1634-04-4	
Naphthalene	2.1J	ug/m3	4.3	1.61		04/30/14 15:53	91-20-3	
Tetrachloroethene	1.6	ug/m3	1.1	1.61		04/30/14 15:53	127-18-4	
Toluene	5.1	ug/m3	1.2	1.61		04/30/14 15:53	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.1	1.61		04/30/14 15:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.61		04/30/14 15:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.89	1.61		04/30/14 15:53	79-00-5	
Trichloroethene	ND	ug/m3	0.89	1.61		04/30/14 15:53	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.6	1.61		04/30/14 15:53	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.6	1.61		04/30/14 15:53	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	4.0	1.61		04/30/14 15:53	108-67-8	
Vinyl chloride	ND	ug/m3	0.42	1.61		04/30/14 15:53	75-01-4	
m&p-Xylene	2.0J	ug/m3	2.8	1.61		04/30/14 15:53	179601-23-1	
o-Xylene	0.90J	ug/m3	1.4	1.61		04/30/14 15:53	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

APPENDIX D—DATA VALIDATION REPORTS



Tetra Tech

INTERNAL CORRESPONDENCE

TO: M. MARTIN **DATE: APRIL 24, 2014**
FROM: A. COGNETTI **COPIES: DV FILE**
SUBJECT: ORGANIC DATA VALIDATION – VOC
MIDDLE RIVER CENTER
SAMPLE DELIVERY GROUP (SDG) – 10258805

SAMPLES: 47/Air/VOC

IA-033-B-16	IA-060-C-16	IA-063-B-16	IA-065-C-16
IA-088-C-16	IA-101-B-16	IA-102-C-16	IA-105-Z-16
IA-113-C-16	IA-121-B-16	IA-123-Z-16	IA-126-C-16
IA-128-C-16	IA-130-C-16	IA-133-C-16	IA-135-C-16
IA-141-C-16	IA-142-C-16	IA-143-C-16	IA-144-C-16
IA-145-C-16	IA-146-C-16	IA-147-C-16	IA-148-C-16
IA-DUP1-C-16	IA-DUP2-C-16	SV-033-B-16	SV-060-C-16
SV-063-B-16	SV-065-C-16	SV-088-C-16	SV-101-B-16
SV-102-C-16	SV-105-Z-16	SV-113-C-16	SV-121-B-16
SV-123-Z-16	SV-126-C-16	SV-128-C-16	SV-130-C-16
SV-133-C-16	SV-135-C-16	SV-141-C-16	SV-142-C-16
SV-143-C-16	SV-DUP1-C-16	SV-DUP2-C-16	

Overview

The sample set for Middle River Center, SDG 10258805 consisted of forty-seven (47) air samples. All samples were analyzed for volatile organic compounds (VOC). There are four (4) field duplicate pairs included in this SDG: IA-DUP1-C-16/ IA-133-C-16, IA-DUP2-C-16/ IA-113-C-16, SV-DUP1-C-16/ SV-133-C-16 and SV-DUP2-C-16/ SV-113-C-16.

The samples were collected by Tetra Tech on February 24, 2014 and analyzed by PACE Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, field duplicate precision and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

- The continuing calibration percent difference (%D) for 1,2,4-trichlorobenzene was greater than the 30% quality control limit on March 9, 2014 @ 10:55 on instrument 10AIR0. The nondetected 1,2,4-trichlorobenzene results in samples IA-088-C-16 and IA-113-C-16 reported from this analytical sequence were qualified as estimated (UJ).
- The laboratory control sample (LCS) percent recoveries (%Rs) of trans-1,2-dichloroethene were greater than the upper quality control limit in batches 1635646 and 1635821 (19607 and 19617). The detected

TO: M. Martin
FROM: A. Cognetti
SDG: 10258805
DATE: April 24, 2014

PAGE 2

trans-1,2-dichloroethene results in the affected samples SV-102-C-16, SV-133-C-16, SV-105-Z-16 and SV-DUP1-C-16 were qualified as estimated (J+).

- The internal standard area of chlorobenzene-d5 was outside quality control limits in sample IA-088-C-16. The nondetected results quantitated using this internal standard were qualified as estimated (UJ).
- The concentration of methylene chloride in sample SV-113-C-16 and SV-105-Z-16 exceeded instrument calibration range. The detected methylene chloride results were qualified as estimated (J).
- Field duplicate imprecision was noted in the field duplicate pair IA-DUP1-C-16 and IA-133-C-16. The relative percent difference (RPD) for methylene chloride exceeded the 50% quality control limit. The detected methylene chloride results were qualified as estimated (J).
- Field duplicate imprecision was noted in the field duplicate pair IA-DUP2-C-16 and IA-113-C-16. The RPDs for chlorodifluoromethane and m&p xylenes exceeded the 50% quality control limit. The variance for methylene chloride and o-xylene was greater than 2X the reporting limit. The detected chlorodifluoromethane, m&p xylenes, methylene chloride and o-xylene results were qualified as estimated (J).
- Field duplicate imprecision was noted in the field duplicate pair SV-DUP1-C-16 and SV-133-C-16. The RPDs for methylene chloride and toluene exceeded the 50% quality control limit. The detected methylene chloride and toluene results were qualified as estimated (J).
- Field duplicate imprecision was noted in the field duplicate pair SV-DUP2-C-16 and SV-113-C-16. The RPDs for chlorodifluoromethane, dichlorodifluoromethane, methylene chloride, toluene and trichloroethene exceeded the 50% quality control limit. The variance for cis-1,2-dichloroethene was greater than 2X the reporting limit. The detected chlorodifluoromethane, dichlorodifluoromethane, methylene chloride, toluene, cis-1,2-dichloroethene and trichloroethene results were qualified as estimated (J).

Notes

The laboratory control sample (LCS) percent recovery (%R) of 1,2,4-trichlorobenzene was greater than the upper quality control limit in batch 1638294. No action was taken on the nondetected 1,2,4-trichlorobenzene results in the affected samples.

The laboratory did not report detections between the reporting limit and the method detection limit. The laboratory was required to revise and resubmit all sample results.

Nondetected results were reported to the method detection limit.

Executive Summary

Laboratory Performance: The laboratory did not initially report detections between the reporting limit and method detection limit. The continuing calibration %Ds for 1,2,4-trichlorobenzene was greater than the 30% quality control limit. The concentration of methylene chloride in samples SV-113-C-16 and SV-105-Z-16 exceeded instrument calibration range. The internal standard area of chlorobenzene-d5 was outside quality control limits in sample IA-088-C-16. The LCS %R of trans-1,2-dichloroethene exceeded the upper quality control limit.

Other Factors Affecting Data Quality: Field duplicate imprecision was noted in all field duplicate pairs.

TO: M. Martin
FROM: A. Cognetti
SDG: 10258805
DATE: April 24, 2014

PAGE 3

The data for these analyses were reviewed with reference to USEPA National Functional Guidelines for Organic Data Validation (June 2008) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cognetti
Chemist/Data Validator
Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

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

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-033-B-16	IA-060-C-16	IA-063-B-16	IA-065-C-16	
	LAB_ID	10258805024	10258805014	10258805022	10258805020	
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014	
	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
1,1,1-TRICHLOROETHANE		2 U			2.3 U	1.9 U
1,1,2-TRICHLOROETHANE		0.99 U			1.2 U	0.92 U
1,1-DICHLOROETHANE		1.5 U			1.7 U	1.4 U
1,1-DICHLOROETHENE		1.5 U			1.7 U	1.4 U
1,2,3-TRIMETHYLBENZENE		0.36 U			0.42 U	0.34 U
1,2,4-TRICHLOROBENZENE		6.8 U			7.9 U	6.3 U
1,2,4-TRIMETHYLBENZENE		1.4 J	P		1.1 J	1.7 U
1,2-DICHLOROETHANE		0.74 U			0.86 U	0.69 U
1,3,5-TRIMETHYLBENZENE		1.8 U			2.1 U	1.7 U
BENZENE		0.87			0.68 U	0.64
CARBON TETRACHLORIDE		1.2 U			1.3 U	1.1 U
CHLORODIFLUOROMETHANE		42.6			6.9	23.9
CHLOROFORM		1.8 U			2.1 U	1.7 U
CIS-1,2-DICHLOROETHENE		1.5 U			1.7 U	1.4 U
DICHLORODIFLUOROMETHANE		3.1			2.5	2.3
ETHYLBENZENE		1.7			1.8 U	1.5 U
M+P-XYLENES		7.4		P	2.7 J	3 U
METHYL TERT-BUTYL ETHER		1.3 U			1.5 U	1.2 U
METHYLENE CHLORIDE		12.6			4.9 J	5.8 J
NAPHTHALENE		4 J	P		5.6 U	5.1
O-XYLENE		2.5		P	0.95 J	1.5 U
TETRACHLOROETHENE		1.2 U			1.4 U	1.2 U
TOLUENE		44.1			15.1	2.1
TRANS-1,2-DICHLOROETHENE		1.5 U			1.7 U	1.4 U
TRICHLOROETHENE		0.99 U			1.2 U	0.92 U
VINYL CHLORIDE		0.47 U			0.55 U	0.44 U

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-088-C-16	IA-101-B-16	IA-102-C-16	IA-105-Z-16	
	LAB_ID	10258805006	10258805036	10258805010	10258805030	
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014	
	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
1,1,1-TRICHLOROETHANE	40.4 U			2.1 U	2.2 U	2 U
1,1,2-TRICHLOROETHANE	20 U			1 U	1.1 U	0.99 U
1,1-DICHLOROETHANE	29.8 U			1.5 U	1.6 U	1.5 U
1,1-DICHLOROETHENE	29.5 U			1.5 U	1.6 U	1.5 U
1,2,3-TRIMETHYLBENZENE	7.3 UJ	N		0.37 U	0.39 U	0.36 U
1,2,4-TRICHLOROBENZENE	137 UJ	CN		2.8 U	2.9 U	6.8 U
1,2,4-TRIMETHYLBENZENE	36.3 UJ	N		1.9 U	1.9 U	1.7 J P
1,2-DICHLOROETHANE	14.9 U			0.77 U	0.8 U	0.74 U
1,3,5-TRIMETHYLBENZENE	36.3 UJ	N		1.9 U	1.9 U	1.8 U
BENZENE	11.8 U			0.65	0.61 J	1.6
CARBON TETRACHLORIDE	23.3 U			1.2 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	7.3 U			18.9	1.8 J	1.4
CHLOROFORM	36 U			1.9 U	1.9 U	1.8 U
CIS-1,2-DICHLOROETHENE	29.5 U			1.5 U	1.6 U	1.5 U
DICHLORODIFLUOROMETHANE	36.7 U			2.7	2.6	1.8
ETHYLBENZENE	32 UJ	N		1.6 U	1.7 U	113
M+P-XYLENES	64 UJ	N		2.5 J	1.9 J	476
METHYL TERT-BUTYL ETHER	26.5 U			1.4 U	1.4 U	1.3 U
METHYLENE CHLORIDE	33.6 J	P		11.5	8.6	14.8
NAPHTHALENE	96.7 UJ	N		1.3 J	1.1 J	3.2 J P
O-XYLENE	32 UJ	N		0.95 J	1.7 U	142
TETRACHLOROETHENE	25.1 U			1.3 U	1.3 U	1.2 U
TOLUENE	28 U			17.1	3.2	9300
TRANS-1,2-DICHLOROETHENE	29.5 U			1.5 U	1.6 U	1.5 U
TRICHLOROETHENE	20 U			1 U	1.1 U	0.99 U
VINYL CHLORIDE	9.5 U			0.49 U	0.5 U	0.47 U

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-113-C-16	IA-121-B-16	IA-123-Z-16	IA-126-C-16	
	LAB_ID	10258805028	10258805034	10258805032	10258805018	
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014	
	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
1,1,1-TRICHLOROETHANE	13.2				2.1 U	1.9 U
1,1,2-TRICHLOROETHANE		2.9 U			1 U	0.96 U
1,1-DICHLOROETHANE	43.7				1.5 U	1.4 U
1,1-DICHLOROETHENE	17.1				1.5 U	1.4 U
1,2,3-TRIMETHYLBENZENE	1.1 U				0.37 U	0.35 U
1,2,4-TRICHLOROBENZENE	20 UJ		C		7 U	6.6 U
1,2,4-TRIMETHYLBENZENE	3.2 J		P		1.3 J	1.7 U
1,2-DICHLOROETHANE	2.2 U				0.77 U	0.71 U
1,3,5-TRIMETHYLBENZENE	5.3 U				1.9 U	1.7 U
BENZENE	1.9				2.3	0.79
CARBON TETRACHLORIDE	3.4 U				1.2 U	1.1 U
CHLORODIFLUOROMETHANE	6.5 J		G		1.3	2
CHLOROFORM	5.3 U				1.9 U	1.7 U
CIS-1,2-DICHLOROETHENE	4.3 U				1.5 U	1.4 U
DICHLORODIFLUOROMETHANE	4.7 J		P		2.1	2.3
ETHYLBENZENE	4.7 U				164	1.5 U
M+P-XYLENES	76.6 J		G		1030	3.1 U
METHYL TERT-BUTYL ETHER	3.9 U				1.4 U	1.3 U
METHYLENE CHLORIDE	79.7 J		G		8.7	14.6
NAPHTHALENE	14.1 U				5 U	3.4 J
O-XYLENE	26.6 J		G		210	1.5 U
TETRACHLOROETHENE	3.7 U				1.3 U	1.2 U
TOLUENE	24.7				20000	6
TRANS-1,2-DICHLOROETHENE	4.3 U				1.5 U	1.4 U
TRICHLOROETHENE	20				1 U	0.96 U
VINYL CHLORIDE	1.4 U				0.49 U	0.45 U

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-128-C-16	IA-130-C-16	IA-133-C-16	IA-135-C-16	
	LAB_ID	10258805038	10258805012	10258805026	10258805004	
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014	
	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
1,1,1-TRICHLOROETHANE		2.1 U			1.9 U	2 U
1,1,2-TRICHLOROETHANE		1 U			0.92 U	0.99 U
1,1-DICHLOROETHANE		1.5 U			1.4 U	1.5 U
1,1-DICHLOROETHENE		1.5 U			1.4 U	1.5 U
1,2,3-TRIMETHYLBENZENE		0.37 U			0.34 U	0.36 U
1,2,4-TRICHLOROBENZENE		7 U			6.3 U	6.8 U
1,2,4-TRIMETHYLBENZENE		1.9 U			1.7 U	1.8 U
1,2-DICHLOROETHANE		0.77 U			0.69 U	0.74 U
1,3,5-TRIMETHYLBENZENE		1.9 U			1.7 U	1.8 U
BENZENE		0.84			0.93	0.8
CARBON TETRACHLORIDE		1.2 U			1.1 U	1.2 U
CHLORODIFLUOROMETHANE		23.2			4.4	2.1
CHLOROFORM		1.9 U			1.7 U	1.8 U
CIS-1,2-DICHLOROETHENE		1.5 U			1.4 U	1.5 U
DICHLORODIFLUOROMETHANE		2.4			2.4	2.3
ETHYLBENZENE		1.6 U			1.5 U	1.6 U
M+P-XYLENES		2.6 J	P		2.1 J	3.2 U
METHYL TERT-BUTYL ETHER		1.4 U			1.2 U	1.3 U
METHYLENE CHLORIDE		14.5			8.4 J	13.2
NAPHTHALENE		3.9 J	P		3.7 J	4.8 U
O-XYLENE		1.1 J	P		0.84 J	1.6 U
TETRACHLOROETHENE		1.3 U			1.2 U	1.2 U
TOLUENE		4.3			2.9	1.4 U
TRANS-1,2-DICHLOROETHENE		1.5 U			1.4 U	1.5 U
TRICHLOROETHENE		1 U			1.2	0.99 U
VINYL CHLORIDE		0.49 U			0.44 U	0.47 U

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-141-C-16	IA-142-C-16	IA-143-C-16	IA-144-C-16	
	LAB_ID	10258805016	10258805008	10258805002	10258805043	
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014	
	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
1,1,1-TRICHLOROETHANE		1.9 U			2.1 U	
1,1,2-TRICHLOROETHANE		0.96 U			0.99 U	
1,1-DICHLOROETHANE		1.4 U			1.5 U	
1,1-DICHLOROETHENE		1.4 U			1.5 U	
1,2,3-TRIMETHYLBENZENE		0.35 U			0.36 U	
1,2,4-TRICHLOROBENZENE		6.6 U			6.8 U	
1,2,4-TRIMETHYLBENZENE		1.7 U			1.2 J	P
1,2-DICHLOROETHANE		0.71 U			0.74 U	
1,3,5-TRIMETHYLBENZENE		1.7 U			1.8 U	
BENZENE		0.92			0.81	
CARBON TETRACHLORIDE		1.1 U			1.2 U	
CHLORODIFLUOROMETHANE		7.1			2.5	
CHLOROFORM		1.7 U			1.8 U	
CIS-1,2-DICHLOROETHENE		1.4 U			1.5 U	
DICHLORODIFLUOROMETHANE		3			2.4	
ETHYLBENZENE		1.5 U			1.6 U	
M+P-XYLENES		1.6 J	P		3.2 U	
METHYL TERT-BUTYL ETHER		1.3 U			1.3 U	
METHYLENE CHLORIDE		7.8			6.1 J	P
NAPHTHALENE		4.6 U			4.4 J	P
O-XYLENE		1.5 U			1.6 U	
TETRACHLOROETHENE		1.2 U			1.2 U	
TOLUENE		2.1			1.4 U	
TRANS-1,2-DICHLOROETHENE		1.4 U			1.5 U	
TRICHLOROETHENE		0.96 U			0.99 U	
VINYL CHLORIDE		0.45 U			0.47 U	

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-145-C-16	IA-146-C-16	IA-147-C-16	IA-148-C-16						
	LAB_ID	10258805039	10258805040	10258805041	10258805042						
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014						
	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		
1,1,1-TRICHLOROETHANE		2.1 U			2 U			2.1 U		2.1 U	
1,1,2-TRICHLOROETHANE		1 U			0.99 U			1 U		1 U	
1,1-DICHLOROETHANE		1.5 U			1.5 U			1.5 U		1.5 U	
1,1-DICHLOROETHENE		1.5 U			1.5 U			1.5 U		1.5 U	
1,2,3-TRIMETHYLBENZENE		0.37 U			0.36 U			0.37 U		0.37 U	
1,2,4-TRICHLOROBENZENE		7 U			6.8 U			7 U		2.8 U	
1,2,4-TRIMETHYLBENZENE		3.4			1.8 U			1.9 U		1.9 U	
1,2-DICHLOROETHANE		0.77 U			0.74 U			0.77 U		0.77 U	
1,3,5-TRIMETHYLBENZENE		1 J	P		1.8 U			1.9 U		1.9 U	
BENZENE		3.6			0.76			0.8		0.61	
CARBON TETRACHLORIDE		1.4			1.2 U			1.2 U		1.2 U	
CHLORODIFLUOROMETHANE		37.2			54.2			18.2		24.4	
CHLOROFORM		1.9 U			1.8 U			1.9 U		1.9 U	
CIS-1,2-DICHLOROETHENE		1.5 U			1.5 U			1.5 U		1.5 U	
DICHLORODIFLUOROMETHANE		4.8			2.3			2.1		2.7	
ETHYLBENZENE		1.7			1.6 U			1.6 U		1.6 U	
M+P-XYLENES		6.1			2.3 J			2.7 J	P	2.3 J	P
METHYL TERT-BUTYL ETHER		1.4 U			1.3 U			1.4 U		1.4 U	
METHYLENE CHLORIDE		1140			6.7			19.1		11	
NAPHTHALENE		4.1 J	P		3.7 J			4.9 J	P	1.2 J	P
O-XYLENE		2.3			0.88 J			1.1 J	P	0.93 J	P
TETRACHLOROETHENE		1.3 U			1.2 U			1.3 U		1.3 U	
TOLUENE		16.2			2.5			5.4		2.9	
TRANS-1,2-DICHLOROETHENE		1.5 U			1.5 U			1.5 U		1.5 U	
TRICHLOROETHENE		1 U			0.99 U			1 U		1 U	
VINYL CHLORIDE		0.49 U			0.47 U			0.49 U		0.49 U	

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-DUP1-C-16	IA-DUP2-C-16	SV-033-B-16	SV-060-C-16				
	LAB_ID	10258805046	10258805047	10258805023	10258805013				
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014				
	QC_TYPE	NM	NM	NM	NM				
	UNITS	UG/M3	UG/M3	UG/M3	UG/M3				
	PCT_SOLIDS								
DUP_OF	IA-133-C-16	IA-113-C-16							
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1.9 U			1.9 U		88.6		1.9 U
1,1,2-TRICHLOROETHANE		0.92 U			0.92 U		0.92 U		0.92 U
1,1-DICHLOROETHANE		1.4 U			1.4 U		1.4 U		2.3
1,1-DICHLOROETHENE		1.4 U			1.4 U		1.4 U		0.86 J P
1,2,3-TRIMETHYLBENZENE		0.34 U			0.34 U		5.2		0.91
1,2,4-TRICHLOROBENZENE		6.3 U			6.3 U		6.3 U		2.5 U
1,2,4-TRIMETHYLBENZENE		1.7 U			0.94 J	P	11.1		3.2
1,2-DICHLOROETHANE		0.69 U			0.69 U		0.69 U		0.69 U
1,3,5-TRIMETHYLBENZENE		1.7 U			1.7 U		1.7 U		2.2
BENZENE		0.83			0.89		1.2		0.85
CARBON TETRACHLORIDE		1.1 U			1.1 U		1.1 U		1.1 U
CHLORODIFLUOROMETHANE		3.9			3.1 J	G	32.6		5.8 J P
CHLOROFORM		1.7 U			1.7 U		1.7 U		3.1
CIS-1,2-DICHLOROETHENE		1.4 U			1.4 U		1.4 U		16.5
DICHLORODIFLUOROMETHANE		2.3			2.1		3.4		2.8
ETHYLBENZENE		1.5 U			1.5 U		3.1		96.5
M+P-XYLENES		1.9 J	P		3.4 J	G	13.8		561
METHYL TERT-BUTYL ETHER		1.2 U			1.2 U		1.2 U		1.2 U
METHYLENE CHLORIDE		1.9 J	GP		5.1 J	GP	10.5		10.7
NAPHTHALENE		3.5 J	P		3.2 J	P	10.4		4.4
O-XYLENE		1.5 U			1.2 J	GP	4.9		230
TETRACHLOROETHENE		1.2 U			1.2 U		1.2 U		2.2
TOLUENE		2.4			1.3 U		36.1		13.1
TRANS-1,2-DICHLOROETHENE		1.4 U			1.4 U		1.4 U		1.1 J P
TRICHLOROETHENE		1.4			0.92 U		2.8		291
VINYL CHLORIDE		0.44 U			0.44 U		0.44 U		0.44 U

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-063-B-16	SV-065-C-16	SV-088-C-16	SV-101-B-16				
	LAB_ID	10258805021	10258805019	10258805005	10258805035				
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014				
	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
1,1,1-TRICHLOROETHANE		1.9 U			1.9 U			143	
1,1,2-TRICHLOROETHANE		0.92 U			0.92 U			0.96 U	
1,1-DICHLOROETHANE		1.4 U			1.4 U			1.4 U	
1,1-DICHLOROETHENE		1.4 U			1.4 U			1.4 U	
1,2,3-TRIMETHYLBENZENE		0.34 U			0.95			1.1	
1,2,4-TRICHLOROBENZENE		6.3 U			2.5 U			6.3 U	
1,2,4-TRIMETHYLBENZENE		1.4 J	P		1.3 J	P		1.8	
1,2-DICHLOROETHANE		0.69 U			0.69 U			0.69 U	
1,3,5-TRIMETHYLBENZENE		1.7 U			1.7 U			1.7 U	
BENZENE		0.55 U			0.55 U			1.2	
CARBON TETRACHLORIDE		16.3			1.1 U			1.1 U	
CHLORODIFLUOROMETHANE		1.7			7.9			3.2	
CHLOROFORM		1.7 U			2.7			1.7 U	
CIS-1,2-DICHLOROETHENE		1.4 U			1.4 U			17.6	
DICHLORODIFLUOROMETHANE		2.2			7.3			2.6	
ETHYLBENZENE		1.5 U			1.5 U			2.2	
M+P-XYLENES		1.8 J	P		1.1 J	P		10	
METHYL TERT-BUTYL ETHER		1.2 U			1.2 U			1.2 U	
METHYLENE CHLORIDE		14.6			16.9			82.5	
NAPHTHALENE		3.3 J	P		6.9			22.3	
O-XYLENE		1.5 U			1.5 U			4.7	
TETRACHLOROETHENE		3.3			12.6			1.2 U	
TOLUENE		2.4			1.2 J	P		1.3 U	
TRANS-1,2-DICHLOROETHENE		1.4 U			1.4 U			1.4 U	
TRICHLOROETHENE		1.6			0.92 U			70.6	
VINYL CHLORIDE		0.44 U			0.44 U			0.44 U	

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-102-C-16	SV-105-Z-16	SV-113-C-16	SV-121-B-16	
	LAB_ID	10258805009	10258805029	10258805027	10258805033	
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014	
	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
1,1,1-TRICHLOROETHANE	2070			1.9 U	1.5 J	P
1,1,2-TRICHLOROETHANE	0.92 U			0.92 U	0.99 U	
1,1-DICHLOROETHANE	6760			1.4 U	1.5 J	P
1,1-DICHLOROETHENE	2530			1.4 U	1.5 U	
1,2,3-TRIMETHYLBENZENE	90.4			0.34 U	13.2	
1,2,4-TRICHLOROBENZENE	6.3 U			6.3 U	6.8 U	
1,2,4-TRIMETHYLBENZENE	89.1			1.7 U	32	
1,2-DICHLOROETHANE	0.69 U			0.69 U	0.74 U	
1,3,5-TRIMETHYLBENZENE	39.7			1.7 U	1.8 U	
BENZENE	7.5			2.4	0.58 U	
CARBON TETRACHLORIDE	3.1			1.1	4.4	
CHLORODIFLUOROMETHANE	3.3			10.7 J	1.5	
CHLOROFORM	71.9			1.7 U	26.4	
CIS-1,2-DICHLOROETHENE	67.4			0.73 J	1.5 U	
DICHLORODIFLUOROMETHANE	5.8			3.8 J	2.3	
ETHYLBENZENE	2140			1.5 U	1.5 J	P
M+P-XYLENES	11500			2.4 J	7.2	
METHYL TERT-BUTYL ETHER	1.2 U			1.2 U	1.3 U	
METHYLENE CHLORIDE	46.3		L	557 J	24.6	
NAPHTHALENE	66			4.5 U	85.8	
O-XYLENE	4040			0.83 J	5	
TETRACHLOROETHENE	2.2			1.2 U	2.4	
TOLUENE	128			6.1 J	6.7	
TRANS-1,2-DICHLOROETHENE	3.9 J+	E	E	1.4 U	1.5 U	
TRICHLOROETHENE	2740			7 J	203	
VINYL CHLORIDE	0.44 U			0.44 U	0.47 U	

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-123-Z-16	SV-126-C-16	SV-128-C-16	SV-130-C-16						
	LAB_ID	10258805031	10258805017	10258805037	10258805011						
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014						
	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		
1,1,1-TRICHLOROETHANE		1.9 U		1.9 U			1.9 U			21.3	
1,1,2-TRICHLOROETHANE		0.92 U		0.92 U			0.92 U			0.92 U	
1,1-DICHLOROETHANE		1.4 U		1.4 U			1.4 U			1.3 J	P
1,1-DICHLOROETHENE		1.4 U		199			1.4 U			2.9	
1,2,3-TRIMETHYLBENZENE		3.7		1.4			1.2			3.4	
1,2,4-TRICHLOROBENZENE		2.5 U		6.3 U			6.3 U			2.5 U	
1,2,4-TRIMETHYLBENZENE		1.7		4.3			2.8			9.9	
1,2-DICHLOROETHANE		0.69 U		0.69 U			0.69 U			0.69 U	
1,3,5-TRIMETHYLBENZENE		2.9		1.1 J	P		1.7 U			4.4	
BENZENE		0.55 U		88.4			3.6			4.1	
CARBON TETRACHLORIDE		1.1 U		1.1 U			1.1 U			1.1 U	
CHLORODIFLUOROMETHANE		5.9 U		0.34 U			6.1			1.7 J	P
CHLOROFORM		1.7 U		0.84 J	P		1.7 U			1.8	
CIS-1,2-DICHLOROETHENE		0.7 J	P	205			6.5			1.4 U	
DICHLORODIFLUOROMETHANE		2.6		1.5 J	P		2.5			3.1	
ETHYLBENZENE		3.9		3			2			2.3	
M+P-XYLENES		19.9		13.4			12.1			9.2	
METHYL TERT-BUTYL ETHER		1.2 U		1.2 U			1.2 U			1.2 U	
METHYLENE CHLORIDE		8.2		9.2			9.6			28.2	
NAPHTHALENE		10.9		70.6			92.6			1.8 U	
O-XYLENE		4.3		5.7			3.6			7.5	
TETRACHLOROETHENE		1.2 U		1.2 U			1.6			3.3	
TOLUENE		50.9		14.7			5.8			12.2	
TRANS-1,2-DICHLOROETHENE		1.4 U		1.4 U			1.4 U			1.4 U	
TRICHLOROETHENE		37.5		177			2.1			3.4	
VINYL CHLORIDE		0.44 U		11900			0.44 U			0.44 U	

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-133-C-16	SV-135-C-16	SV-141-C-16	SV-142-C-16					
	LAB_ID	10258805025	10258805003	10258805015	10258805007					
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014	2/24/2014					
	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	
1,1,1-TRICHLOROETHANE		1.9 U			1.9 U			2.2 U		1.9 U
1,1,2-TRICHLOROETHANE		0.92 U			0.92 U			1.1 U		0.92 U
1,1-DICHLOROETHANE		1.4 U			1.4 U			1.7 U		1.4 U
1,1-DICHLOROETHENE		1.4 U			1.4 U			1.7		1.4 U
1,2,3-TRIMETHYLBENZENE		0.34 U			0.34 U			0.4 U		0.71
1,2,4-TRICHLOROBENZENE		6.3 U			6.3 U			7.6 U		6.3 U
1,2,4-TRIMETHYLBENZENE		1.7 U			1.7 U			2 U		1.4 J P
1,2-DICHLOROETHANE		0.92			0.69 U			0.83 U		0.69 U
1,3,5-TRIMETHYLBENZENE		1.7 U			1.7 U			2 U		1.7 U
BENZENE		0.77			0.33 J	P		0.88		0.55 U
CARBON TETRACHLORIDE		1.1 U			1.1 U			1.3 U		1.1 U
CHLORODIFLUOROMETHANE		4.3			2.1			2.6		1.4
CHLOROFORM		6.7			1.7 U			2 U		15
CIS-1,2-DICHLOROETHENE		8.4			1.4 U			2.2		1.4 U
DICHLORODIFLUOROMETHANE		3.2			2.1			2.3		2.2
ETHYLBENZENE		1.5 U			4.2			2.2		1.5 U
M+P-XYLENES		1.8 J	P		18.1			11.6		5.1
METHYL TERT-BUTYL ETHER		1.2 U			1.2 U			1.5 U		1.2 U
METHYLENE CHLORIDE		20.2 J	G		2.1 J	P		39.1		7.5
NAPHTHALENE		4.7			3.8 J	P		4.1 J	P	157
O-XYLENE		0.81 J	P		4.3			3.7		3.1
TETRACHLOROETHENE		169			1.2 U			1.4 U		1.2 U
TOLUENE		3.6 J	G		1.3 U			3.7		1.3 U
TRANS-1,2-DICHLOROETHENE		3.6 J+	E		1.4 U			1.6 U		1.4 U
TRICHLOROETHENE		10700			5.6			25.2		6.8
VINYL CHLORIDE		0.44 U			0.44 U			0.53 U		0.44 U

PROJ_NO: 04792 SDG: 10258805 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-143-C-16	SV-DUP1-C-16	SV-DUP2-C-16		
	LAB_ID	10258805001	10258805044	10258805045		
	SAMP_DATE	2/24/2014	2/24/2014	2/24/2014		
	QC_TYPE	NM	NM	NM		
	UNITS	UG/M3	UG/M3	UG/M3		
	PCT_SOLIDS					
DUP_OF			SV-133-C-16	SV-113-C-16		
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	4.7 U			1.9 U	1.9 U	
1,1,2-TRICHLOROETHANE	2.3 U			0.92 U	0.92 U	
1,1-DICHLOROETHANE	1.8 J	P		1.4 U	1.4 U	
1,1-DICHLOROETHENE	2.1 J	P		1.4 U	1.4 U	
1,2,3-TRIMETHYLBENZENE	0.84 U			0.34 U	0.34 U	
1,2,4-TRICHLOROBENZENE	6.4 U			6.3 U	6.3 U	
1,2,4-TRIMETHYLBENZENE	4.2 U			1.7 U	1.7 U	
1,2-DICHLOROETHANE	1.7 U			0.82	0.69 U	
1,3,5-TRIMETHYLBENZENE	4.2 U			1.7 U	1.7 U	
BENZENE	1.8			0.87	0.55 U	
CARBON TETRACHLORIDE	133			1.1 U	1.1 U	
CHLORODIFLUOROMETHANE	1.7 J	P		4.4	3.5 J	G
CHLOROFORM	194			6.2	1.8	
CIS-1,2-DICHLOROETHENE	5.7			8.7	31.7 J	G
DICHLORODIFLUOROMETHANE	2.6 J	P		3	2.2 J	G
ETHYLBENZENE	3.7 U			1.5 U	1.5 U	
M+P-XYLENES	3.3 J	P		2 J	1.5 J	P
METHYL TERT-BUTYL ETHER	3.1 U			1.2 U	1.2 U	
METHYLENE CHLORIDE	30.1			13 J	12.5 J	G
NAPHTHALENE	19.3			4.2 J	3.7 J	P
O-XYLENE	3.7 U			0.95 J	1.5 U	
TETRACHLOROETHENE	15			159	1.2 U	
TOLUENE	13.6			5.5 J	1.7 J	G
TRANS-1,2-DICHLOROETHENE	3.4 U			3.5 J+	1.4 U	
TRICHLOROETHENE	33.1			8630	243 J	G
VINYL CHLORIDE	1.1 U			0.44 U	0.44 U	

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-033-B-16		Lab ID: 10258805024	Collected: 02/24/14 18:28	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.87	ug/m3	0.58	1.8		03/07/14 22:16	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/07/14 22:16	56-23-5	
Chlorodifluoromethane	42.6	ug/m3	0.36	1.8		03/07/14 22:16	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/07/14 22:16	67-66-3	
Dichlorodifluoromethane	3.1	ug/m3	1.8	1.8		03/07/14 22:16	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/07/14 22:16	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 22:16	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 22:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 22:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 22:16	156-60-5	
Ethylbenzene	1.7	ug/m3	1.6	1.8		03/07/14 22:16	100-41-4	
Methylene Chloride	12.6	ug/m3	6.4	1.8		03/07/14 22:16	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 22:16	1634-04-4	
Naphthalene	4.0J	ug/m3	4.8	1.8		03/07/14 22:16	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/07/14 22:16	127-18-4	
Toluene	44.1	ug/m3	1.4	1.8		03/07/14 22:16	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 22:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/07/14 22:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 22:16	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/07/14 22:16	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/07/14 22:16	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.8	1.8		03/07/14 22:16	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 22:16	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 22:16	75-01-4	
m&p-Xylene	7.4	ug/m3	3.2	1.8		03/07/14 22:16	179601-23-1	
o-Xylene	2.5	ug/m3	1.6	1.8		03/07/14 22:16	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-060-C-16		Lab ID: 10258805014	Collected: 02/24/14 18:00	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.81	ug/m3	0.57	1.74		03/07/14 05:01	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/07/14 05:01	56-23-5	
Chlorodifluoromethane	9.4	ug/m3	0.35	1.74		03/07/14 05:01	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/07/14 05:01	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.8	1.74		03/07/14 05:01	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/07/14 05:01	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/07/14 05:01	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 05:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 05:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 05:01	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/07/14 05:01	100-41-4	
Methylene Chloride	8.1	ug/m3	6.1	1.74		03/07/14 05:01	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/07/14 05:01	1634-04-4	
Naphthalene	3.6J	ug/m3	4.6	1.74		03/07/14 05:01	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/07/14 05:01	127-18-4	
Toluene	3.8	ug/m3	1.3	1.74		03/07/14 05:01	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.6	1.74		03/07/14 05:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/07/14 05:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/07/14 05:01	79-00-5	
Trichloroethene	ND	ug/m3	0.96	1.74		03/07/14 05:01	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/07/14 05:01	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 05:01	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 05:01	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/07/14 05:01	75-01-4	
m&p-Xylene	2.5J	ug/m3	3.1	1.74		03/07/14 05:01	179601-23-1	
o-Xylene	0.98J	ug/m3	1.5	1.74		03/07/14 05:01	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-063-B-16		Lab ID: 10258805022	Collected: 02/24/14 18:25	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.68	2.1		03/06/14 19:12	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.3	2.1		03/06/14 19:12	56-23-5	
Chlorodifluoromethane	6.9	ug/m3	0.42	2.1		03/06/14 19:12	75-45-6	
Chloroform	ND	ug/m3	2.1	2.1		03/06/14 19:12	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	2.1	2.1		03/06/14 19:12	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.1		03/06/14 19:12	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.86	2.1		03/06/14 19:12	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.7	2.1		03/06/14 19:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		03/06/14 19:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		03/06/14 19:12	156-60-5	
Ethylbenzene	ND	ug/m3	1.8	2.1		03/06/14 19:12	100-41-4	
Methylene Chloride	4.9J	ug/m3	7.4	2.1		03/06/14 19:12	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.5	2.1		03/06/14 19:12	1634-04-4	
Naphthalene	ND	ug/m3	5.6	2.1		03/06/14 19:12	91-20-3	
Tetrachloroethene	ND	ug/m3	1.4	2.1		03/06/14 19:12	127-18-4	
Toluene	15.1	ug/m3	1.6	2.1		03/06/14 19:12	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.9	2.1		03/06/14 19:12	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.3	2.1		03/06/14 19:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.2	2.1		03/06/14 19:12	79-00-5	
Trichloroethene	ND	ug/m3	1.2	2.1		03/06/14 19:12	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.42	2.1		03/06/14 19:12	526-73-8	
1,2,4-Trimethylbenzene	1.1J	ug/m3	2.1	2.1		03/06/14 19:12	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.1	2.1		03/06/14 19:12	108-67-8	
Vinyl chloride	ND	ug/m3	0.55	2.1		03/06/14 19:12	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.7	2.1		03/06/14 19:12	179601-23-1	
o-Xylene	0.95J	ug/m3	1.8	2.1		03/06/14 19:12	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-065-C-16		Lab ID: 10258805020	Collected: 02/24/14 18:23	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.64	ug/m3	0.55	1.68		03/06/14 21:10	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 21:10	56-23-5	
Chlorodifluoromethane	23.9	ug/m3	0.34	1.68		03/06/14 21:10	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/06/14 21:10	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.7	1.68		03/06/14 21:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 21:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 21:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 21:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 21:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 21:10	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 21:10	100-41-4	
Methylene Chloride	5.8J	ug/m3	5.9	1.68		03/06/14 21:10	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 21:10	1634-04-4	
Naphthalene	5.1	ug/m3	4.5	1.68		03/06/14 21:10	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 21:10	127-18-4	
Toluene	2.1	ug/m3	1.3	1.68		03/06/14 21:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 21:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 21:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 21:10	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/06/14 21:10	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/06/14 21:10	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 21:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 21:10	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 21:10	75-01-4	
m&p-Xylene	ND	ug/m3	3.0	1.68		03/06/14 21:10	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/06/14 21:10	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-088-C-16		Lab ID: 10258805006	Collected: 02/24/14 16:56	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	11.8	36.36		03/10/14 01:06	71-43-2	
Carbon tetrachloride	ND	ug/m3	23.3	36.36		03/10/14 01:06	56-23-5	
Chlorodifluoromethane	ND	ug/m3	7.3	36.36		03/10/14 01:06	75-45-6	
Chloroform	ND	ug/m3	36.0	36.36		03/10/14 01:06	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	36.7	36.36		03/10/14 01:06	75-71-8	D3
1,1-Dichloroethane	ND	ug/m3	29.8	36.36		03/10/14 01:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	14.9	36.36		03/10/14 01:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	29.5	36.36		03/10/14 01:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	29.5	36.36		03/10/14 01:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	29.5	36.36		03/10/14 01:06	156-60-5	
Ethylbenzene	ND	ug/m3	32.0	36.36		03/10/14 01:06	100-41-4	
Methylene Chloride	33.6J	ug/m3	128	36.36		03/10/14 01:06	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	26.5	36.36		03/10/14 01:06	1634-04-4	
Naphthalene	ND	ug/m3	96.7	36.36		03/10/14 01:06	91-20-3	
Tetrachloroethene	ND	ug/m3	25.1	36.36		03/10/14 01:06	127-18-4	
Toluene	ND	ug/m3	28.0	36.36		03/10/14 01:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	137	36.36		03/10/14 01:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	40.4	36.36		03/10/14 01:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	20.0	36.36		03/10/14 01:06	79-00-5	
Trichloroethene	ND	ug/m3	20.0	36.36		03/10/14 01:06	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	7.3	36.36		03/10/14 01:06	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	36.3	36.36		03/10/14 01:06	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	36.3	36.36		03/10/14 01:06	108-67-8	
Vinyl chloride	ND	ug/m3	9.5	36.36		03/10/14 01:06	75-01-4	
m&p-Xylene	ND	ug/m3	64.0	36.36		03/10/14 01:06	179601-23-1	
o-Xylene	ND	ug/m3	32.0	36.36		03/10/14 01:06	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-101-B-16 Lab ID: 10258805036 Collected: 02/24/14 19:03 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.65	ug/m3	0.61	1.87		03/07/14 22:27	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 22:27	56-23-5	
Chlorodifluoromethane	18.9	ug/m3	6.6	1.87		03/07/14 22:27	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 22:27	67-66-3	
Dichlorodifluoromethane	2.7	ug/m3	1.9	1.87		03/07/14 22:27	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 22:27	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 22:27	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 22:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 22:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 22:27	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 22:27	100-41-4	
Methylene Chloride	11.5	ug/m3	6.6	1.87		03/07/14 22:27	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 22:27	1634-04-4	
Naphthalene	1.3J	ug/m3	2.0	1.87		03/07/14 22:27	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 22:27	127-18-4	
Toluene	17.1	ug/m3	1.4	1.87		03/07/14 22:27	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/07/14 22:27	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 22:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 22:27	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 22:27	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 22:27	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 22:27	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 22:27	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 22:27	75-01-4	
m&p-Xylene	2.5J	ug/m3	3.3	1.87		03/07/14 22:27	179601-23-1	
o-Xylene	0.95J	ug/m3	1.6	1.87		03/07/14 22:27	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-102-C-16		Lab ID: 10258805010	Collected: 02/24/14 17:03	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.61J	ug/m3	0.63	1.94		03/07/14 21:59	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.94		03/07/14 21:59	56-23-5	
Chlorodifluoromethane	1.8J	ug/m3	6.9	1.94		03/07/14 21:59	75-45-6	
Chloroform	ND	ug/m3	1.9	1.94		03/07/14 21:59	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	2.0	1.94		03/07/14 21:59	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.6	1.94		03/07/14 21:59	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.80	1.94		03/07/14 21:59	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.94		03/07/14 21:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		03/07/14 21:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		03/07/14 21:59	156-60-5	
Ethylbenzene	ND	ug/m3	1.7	1.94		03/07/14 21:59	100-41-4	
Methylene Chloride	8.6	ug/m3	6.9	1.94		03/07/14 21:59	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.94		03/07/14 21:59	1634-04-4	
Naphthalene	1.1J	ug/m3	2.1	1.94		03/07/14 21:59	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.94		03/07/14 21:59	127-18-4	
Toluene	3.2	ug/m3	1.5	1.94		03/07/14 21:59	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.9	1.94		03/07/14 21:59	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.2	1.94		03/07/14 21:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.1	1.94		03/07/14 21:59	79-00-5	
Trichloroethene	ND	ug/m3	1.1	1.94		03/07/14 21:59	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.39	1.94		03/07/14 21:59	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.94		03/07/14 21:59	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.94		03/07/14 21:59	108-67-8	
Vinyl chloride	ND	ug/m3	0.50	1.94		03/07/14 21:59	75-01-4	
m&p-Xylene	1.9J	ug/m3	3.4	1.94		03/07/14 21:59	179601-23-1	
o-Xylene	ND	ug/m3	1.7	1.94		03/07/14 21:59	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-105-Z-16		Lab ID: 10258805030	Collected: 02/24/14 18:48	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.6 ug/m3		0.58	1.8		03/08/14 02:13	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.8		03/08/14 02:13	56-23-5	
Chlorodifluoromethane	1.4 ug/m3		0.36	1.8		03/08/14 02:13	75-45-6	
Chloroform	ND ug/m3		1.8	1.8		03/08/14 02:13	67-66-3	
Dichlorodifluoromethane	1.8 ug/m3		1.8	1.8		03/08/14 02:13	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.8		03/08/14 02:13	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.74	1.8		03/08/14 02:13	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.5	1.8		03/08/14 02:13	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/08/14 02:13	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/08/14 02:13	156-60-5	
Ethylbenzene	113 ug/m3		1.6	1.8		03/08/14 02:13	100-41-4	
Methylene Chloride	14.8 ug/m3		6.4	1.8		03/08/14 02:13	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.8		03/08/14 02:13	1634-04-4	
Naphthalene	3.2J ug/m3		4.8	1.8		03/08/14 02:13	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.8		03/08/14 02:13	127-18-4	
Toluene	9300 ug/m3		111	144		03/09/14 18:40	108-88-3	A3
1,2,4-Trichlorobenzene	ND ug/m3		6.8	1.8		03/08/14 02:13	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.0	1.8		03/08/14 02:13	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.99	1.8		03/08/14 02:13	79-00-5	
Trichloroethene	ND ug/m3		0.99	1.8		03/08/14 02:13	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.36	1.8		03/08/14 02:13	526-73-8	
1,2,4-Trimethylbenzene	1.7J ug/m3		1.8	1.8		03/08/14 02:13	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.8	1.8		03/08/14 02:13	108-67-8	
Vinyl chloride	ND ug/m3		0.47	1.8		03/08/14 02:13	75-01-4	
m&p-Xylene	476 ug/m3		253	144		03/09/14 18:40	179601-23-1	A3
o-Xylene	142 ug/m3		1.6	1.8		03/08/14 02:13	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-113-C-16		Lab ID: 10258805028	Collected: 02/24/14 16:59		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.9	ug/m3	1.7	5.31		03/10/14 01:35	71-43-2	
Carbon tetrachloride	ND	ug/m3	3.4	5.31		03/10/14 01:35	56-23-5	
Chlorodifluoromethane	6.5	ug/m3	1.1	5.31		03/10/14 01:35	75-45-6	
Chloroform	ND	ug/m3	5.3	5.31		03/10/14 01:35	67-66-3	
Dichlorodifluoromethane	4.7J	ug/m3	5.4	5.31		03/10/14 01:35	75-71-8	
1,1-Dichloroethane	43.7	ug/m3	4.4	5.31		03/10/14 01:35	75-34-3	
1,2-Dichloroethane	ND	ug/m3	2.2	5.31		03/10/14 01:35	107-06-2	
1,1-Dichloroethene	17.1	ug/m3	4.3	5.31		03/10/14 01:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	4.3	5.31		03/10/14 01:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	4.3	5.31		03/10/14 01:35	156-60-5	
Ethylbenzene	ND	ug/m3	4.7	5.31		03/10/14 01:35	100-41-4	
Methylene Chloride	79.7	ug/m3	18.7	5.31		03/10/14 01:35	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	3.9	5.31		03/10/14 01:35	1634-04-4	
Naphthalene	ND	ug/m3	14.1	5.31		03/10/14 01:35	91-20-3	
Tetrachloroethene	ND	ug/m3	3.7	5.31		03/10/14 01:35	127-18-4	
Toluene	24.7	ug/m3	4.1	5.31		03/10/14 01:35	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	20.0	5.31		03/10/14 01:35	120-82-1	
1,1,1-Trichloroethane	13.2	ug/m3	5.9	5.31		03/10/14 01:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.9	5.31		03/10/14 01:35	79-00-5	
Trichloroethene	20.0	ug/m3	2.9	5.31		03/10/14 01:35	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.1	5.31		03/10/14 01:35	526-73-8	
1,2,4-Trimethylbenzene	3.2J	ug/m3	5.3	5.31		03/10/14 01:35	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	5.3	5.31		03/10/14 01:35	108-67-8	
Vinyl chloride	ND	ug/m3	1.4	5.31		03/10/14 01:35	75-01-4	
m&p-Xylene	76.6	ug/m3	9.3	5.31		03/10/14 01:35	179601-23-1	
o-Xylene	26.6	ug/m3	4.7	5.31		03/10/14 01:35	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-121-B-16 Lab ID: 10258805034 Collected: 02/24/14 19:02 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.78	ug/m3	0.61	1.87		03/07/14 01:35	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 01:35	56-23-5	
Chlorodifluoromethane	37.5	ug/m3	0.37	1.87		03/07/14 01:35	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 01:35	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.9	1.87		03/07/14 01:35	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 01:35	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 01:35	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 01:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 01:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 01:35	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 01:35	100-41-4	
Methylene Chloride	4.5J	ug/m3	6.6	1.87		03/07/14 01:35	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 01:35	1634-04-4	
Naphthalene	3.4J	ug/m3	5.0	1.87		03/07/14 01:35	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 01:35	127-18-4	
Toluene	19.4	ug/m3	1.4	1.87		03/07/14 01:35	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/07/14 01:35	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 01:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 01:35	79-00-5	
Trichloroethene	1.1	ug/m3	1.0	1.87		03/07/14 01:35	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 01:35	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 01:35	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 01:35	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 01:35	75-01-4	
m&p-Xylene	2.8J	ug/m3	3.3	1.87		03/07/14 01:35	179601-23-1	
o-Xylene	1.1J	ug/m3	1.6	1.87		03/07/14 01:35	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-123-Z-16		Lab ID: 10258805032	Collected: 02/24/14 18:49	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.3	ug/m3	0.61	1.87		03/08/14 00:13	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/08/14 00:13	56-23-5	
Chlorodifluoromethane	1.3	ug/m3	0.37	1.87		03/08/14 00:13	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/08/14 00:13	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.9	1.87		03/08/14 00:13	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/08/14 00:13	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/08/14 00:13	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/08/14 00:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/08/14 00:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/08/14 00:13	156-60-5	
Ethylbenzene	164	ug/m3	1.6	1.87		03/08/14 00:13	100-41-4	
Methylene Chloride	8.7	ug/m3	6.6	1.87		03/08/14 00:13	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/08/14 00:13	1634-04-4	
Naphthalene	ND	ug/m3	5.0	1.87		03/08/14 00:13	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/08/14 00:13	127-18-4	
Toluene	20000	ug/m3	230	299.2		03/09/14 19:04	108-88-3	A3
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/08/14 00:13	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/08/14 00:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/08/14 00:13	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/08/14 00:13	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/08/14 00:13	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.9	1.87		03/08/14 00:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/08/14 00:13	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/08/14 00:13	75-01-4	
m&p-Xylene	1030	ug/m3	527	299.2		03/09/14 19:04	179601-23-1	A3
o-Xylene	210	ug/m3	1.6	1.87		03/08/14 00:13	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-126-C-16		Lab ID: 10258805018	Collected: 02/24/14 18:19	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.79	ug/m3	0.57	1.74		03/07/14 20:16	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/07/14 20:16	56-23-5	
Chlorodifluoromethane	2.0	ug/m3	0.35	1.74		03/07/14 20:16	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/07/14 20:16	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.8	1.74		03/07/14 20:16	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/07/14 20:16	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/07/14 20:16	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 20:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 20:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 20:16	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/07/14 20:16	100-41-4	
Methylene Chloride	14.6	ug/m3	6.1	1.74		03/07/14 20:16	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/07/14 20:16	1634-04-4	
Naphthalene	3.4J	ug/m3	4.6	1.74		03/07/14 20:16	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/07/14 20:16	127-18-4	
Toluene	6.0	ug/m3	1.3	1.74		03/07/14 20:16	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.6	1.74		03/07/14 20:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/07/14 20:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/07/14 20:16	79-00-5	
Trichloroethene	ND	ug/m3	0.96	1.74		03/07/14 20:16	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/07/14 20:16	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 20:16	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 20:16	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/07/14 20:16	75-01-4	
m&p-Xylene	ND	ug/m3	3.1	1.74		03/07/14 20:16	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/07/14 20:16	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-128-C-16 Lab ID: 10258805038 Collected: 02/24/14 19:13 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.84	ug/m3	0.61	1.87		03/07/14 18:48	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 18:48	56-23-5	
Chlorodifluoromethane	23.2	ug/m3	0.37	1.87		03/07/14 18:48	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 18:48	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.9	1.87		03/07/14 18:48	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 18:48	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 18:48	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 18:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 18:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 18:48	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 18:48	100-41-4	
Methylene Chloride	14.5	ug/m3	6.6	1.87		03/07/14 18:48	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 18:48	1634-04-4	
Naphthalene	3.9J	ug/m3	5.0	1.87		03/07/14 18:48	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 18:48	127-18-4	
Toluene	4.3	ug/m3	1.4	1.87		03/07/14 18:48	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/07/14 18:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 18:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 18:48	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 18:48	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 18:48	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 18:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 18:48	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 18:48	75-01-4	
m&p-Xylene	2.6J	ug/m3	3.3	1.87		03/07/14 18:48	179601-23-1	
o-Xylene	1.1J	ug/m3	1.6	1.87		03/07/14 18:48	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-130-C-16		Lab ID: 10258805012	Collected: 02/24/14 17:58	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.3	ug/m3	0.55	1.68		03/07/14 03:32	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 03:32	56-23-5	
Chlorodifluoromethane	4.0	ug/m3	0.34	1.68		03/07/14 03:32	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 03:32	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.7	1.68		03/07/14 03:32	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 03:32	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 03:32	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 03:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 03:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 03:32	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 03:32	100-41-4	
Methylene Chloride	14.1	ug/m3	5.9	1.68		03/07/14 03:32	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 03:32	1634-04-4	
Naphthalene	3.6J	ug/m3	4.5	1.68		03/07/14 03:32	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 03:32	127-18-4	
Toluene	3.5	ug/m3	1.3	1.68		03/07/14 03:32	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 03:32	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 03:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 03:32	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/07/14 03:32	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 03:32	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 03:32	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 03:32	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 03:32	75-01-4	
m&p-Xylene	1.6J	ug/m3	3.0	1.68		03/07/14 03:32	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/07/14 03:32	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-133-C-16 **Lab ID: 10258805026** Collected: 02/24/14 18:40 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.93	ug/m3	0.55	1.68		03/07/14 19:47	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 19:47	56-23-5	
Chlorodifluoromethane	4.4	ug/m3	0.34	1.68		03/07/14 19:47	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 19:47	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.7	1.68		03/07/14 19:47	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 19:47	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 19:47	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 19:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 19:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 19:47	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 19:47	100-41-4	
Methylene Chloride	8.4	ug/m3	5.9	1.68		03/07/14 19:47	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 19:47	1634-04-4	
Naphthalene	3.7J	ug/m3	4.5	1.68		03/07/14 19:47	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 19:47	127-18-4	
Toluene	2.9	ug/m3	1.3	1.68		03/07/14 19:47	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 19:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 19:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 19:47	79-00-5	
Trichloroethene	1.2	ug/m3	0.92	1.68		03/07/14 19:47	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 19:47	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 19:47	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 19:47	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 19:47	75-01-4	
m&p-Xylene	2.1J	ug/m3	3.0	1.68		03/07/14 19:47	179601-23-1	
o-Xylene	0.84J	ug/m3	1.5	1.68		03/07/14 19:47	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-135-C-16		Lab ID: 10258805004	Collected: 02/24/14 16:54	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.80	ug/m3	0.58	1.8		03/06/14 22:39	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/06/14 22:39	56-23-5	
Chlorodifluoromethane	2.1	ug/m3	0.36	1.8		03/06/14 22:39	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/06/14 22:39	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.8	1.8		03/06/14 22:39	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/06/14 22:39	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/06/14 22:39	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/06/14 22:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/06/14 22:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/06/14 22:39	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.8		03/06/14 22:39	100-41-4	
Methylene Chloride	13.2	ug/m3	6.4	1.8		03/06/14 22:39	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/06/14 22:39	1634-04-4	
Naphthalene	ND	ug/m3	4.8	1.8		03/06/14 22:39	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/06/14 22:39	127-18-4	
Toluene	ND	ug/m3	1.4	1.8		03/06/14 22:39	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/06/14 22:39	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/06/14 22:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/06/14 22:39	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/06/14 22:39	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/06/14 22:39	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/06/14 22:39	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/06/14 22:39	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/06/14 22:39	75-01-4	
m&p-Xylene	ND	ug/m3	3.2	1.8		03/06/14 22:39	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.8		03/06/14 22:39	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-141-C-16		Lab ID: 10258805016	Collected: 02/24/14 18:14	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.92	ug/m3	0.57	1.74		03/07/14 19:17	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/07/14 19:17	56-23-5	
Chlorodifluoromethane	7.1	ug/m3	0.35	1.74		03/07/14 19:17	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/07/14 19:17	67-66-3	
Dichlorodifluoromethane	3.0	ug/m3	1.8	1.74		03/07/14 19:17	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/07/14 19:17	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/07/14 19:17	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 19:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 19:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/07/14 19:17	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/07/14 19:17	100-41-4	
Methylene Chloride	7.8	ug/m3	6.1	1.74		03/07/14 19:17	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/07/14 19:17	1634-04-4	
Naphthalene	ND	ug/m3	4.6	1.74		03/07/14 19:17	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/07/14 19:17	127-18-4	
Toluene	2.1	ug/m3	1.3	1.74		03/07/14 19:17	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.6	1.74		03/07/14 19:17	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/07/14 19:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/07/14 19:17	79-00-5	
Trichloroethene	ND	ug/m3	0.96	1.74		03/07/14 19:17	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/07/14 19:17	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 19:17	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/07/14 19:17	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/07/14 19:17	75-01-4	
m&p-Xylene	1.6J	ug/m3	3.1	1.74		03/07/14 19:17	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/07/14 19:17	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-142-C-16		Lab ID: 10258805008	Collected: 02/24/14 16:57	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.67	ug/m3	0.61	1.87		03/06/14 19:41	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/06/14 19:41	56-23-5	
Chlorodifluoromethane	1.9	ug/m3	0.37	1.87		03/06/14 19:41	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/06/14 19:41	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.9	1.87		03/06/14 19:41	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/06/14 19:41	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/06/14 19:41	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 19:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 19:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 19:41	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/06/14 19:41	100-41-4	
Methylene Chloride	3.8J	ug/m3	6.6	1.87		03/06/14 19:41	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/06/14 19:41	1634-04-4	
Naphthalene	3.4J	ug/m3	5.0	1.87		03/06/14 19:41	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/06/14 19:41	127-18-4	
Toluene	ND	ug/m3	1.4	1.87		03/06/14 19:41	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/06/14 19:41	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/06/14 19:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/06/14 19:41	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/06/14 19:41	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/06/14 19:41	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 19:41	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 19:41	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/06/14 19:41	75-01-4	
m&p-Xylene	1.7J	ug/m3	3.3	1.87		03/06/14 19:41	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.87		03/06/14 19:41	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-143-C-16		Lab ID: 10258805002	Collected: 02/24/14 16:44	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.81	ug/m3	0.58	1.8		03/07/14 04:01	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/07/14 04:01	56-23-5	
Chlorodifluoromethane	2.5	ug/m3	0.36	1.8		03/07/14 04:01	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/07/14 04:01	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.8	1.8		03/07/14 04:01	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/07/14 04:01	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 04:01	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 04:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 04:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 04:01	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.8		03/07/14 04:01	100-41-4	
Methylene Chloride	6.1J	ug/m3	6.4	1.8		03/07/14 04:01	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 04:01	1634-04-4	
Naphthalene	4.4J	ug/m3	4.8	1.8		03/07/14 04:01	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/07/14 04:01	127-18-4	
Toluene	ND	ug/m3	1.4	1.8		03/07/14 04:01	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 04:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/07/14 04:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 04:01	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/07/14 04:01	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/07/14 04:01	526-73-8	
1,2,4-Trimethylbenzene	1.2J	ug/m3	1.8	1.8		03/07/14 04:01	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 04:01	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 04:01	75-01-4	
m&p-Xylene	ND	ug/m3	3.2	1.8		03/07/14 04:01	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.8		03/07/14 04:01	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: IA-144-C-16		Lab ID: 10258805043	Collected: 02/24/14 19:37	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.71	ug/m3	0.61	1.87		03/06/14 23:38	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/06/14 23:38	56-23-5	
Chlorodifluoromethane	18.0	ug/m3	0.37	1.87		03/06/14 23:38	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/06/14 23:38	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.9	1.87		03/06/14 23:38	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/06/14 23:38	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/06/14 23:38	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 23:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 23:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/06/14 23:38	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/06/14 23:38	100-41-4	
Methylene Chloride	6.6	ug/m3	6.6	1.87		03/06/14 23:38	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/06/14 23:38	1634-04-4	
Naphthalene	3.6J	ug/m3	5.0	1.87		03/06/14 23:38	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/06/14 23:38	127-18-4	
Toluene	3.5	ug/m3	1.4	1.87		03/06/14 23:38	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/06/14 23:38	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/06/14 23:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/06/14 23:38	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/06/14 23:38	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/06/14 23:38	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 23:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/06/14 23:38	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/06/14 23:38	75-01-4	
m&p-Xylene	2.3J	ug/m3	3.3	1.87		03/06/14 23:38	179601-23-1	
o-Xylene	0.88J	ug/m3	1.6	1.87		03/06/14 23:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-145-C-16		Lab ID: 10258805039	Collected: 02/24/14 19:20		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	3.6	ug/m3	0.61	1.87		03/07/14 23:15	71-43-2	
Carbon tetrachloride	1.4	ug/m3	1.2	1.87		03/07/14 23:15	56-23-5	
Chlorodifluoromethane	37.2	ug/m3	0.37	1.87		03/07/14 23:15	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 23:15	67-66-3	
Dichlorodifluoromethane	4.8	ug/m3	1.9	1.87		03/07/14 23:15	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 23:15	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 23:15	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 23:15	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 23:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 23:15	156-60-5	
Ethylbenzene	1.7	ug/m3	1.6	1.87		03/07/14 23:15	100-41-4	
Methylene Chloride	1140	ug/m3	222	62.83		03/09/14 17:26	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 23:15	1634-04-4	
Naphthalene	4.1J	ug/m3	5.0	1.87		03/07/14 23:15	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 23:15	127-18-4	
Toluene	16.2	ug/m3	1.4	1.87		03/07/14 23:15	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/07/14 23:15	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 23:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 23:15	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 23:15	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 23:15	526-73-8	
1,2,4-Trimethylbenzene	3.4	ug/m3	1.9	1.87		03/07/14 23:15	95-63-6	
1,3,5-Trimethylbenzene	1.0J	ug/m3	1.9	1.87		03/07/14 23:15	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 23:15	75-01-4	
m&p-Xylene	6.1	ug/m3	3.3	1.87		03/07/14 23:15	179601-23-1	
o-Xylene	2.3	ug/m3	1.6	1.87		03/07/14 23:15	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-146-C-16		Lab ID: 10258805040	Collected: 02/24/14 19:18		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.76	ug/m3	0.58	1.8		03/07/14 15:58	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/07/14 15:58	56-23-5	
Chlorodifluoromethane	54.2	ug/m3	0.36	1.8		03/07/14 15:58	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/07/14 15:58	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.8	1.8		03/07/14 15:58	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/07/14 15:58	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 15:58	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 15:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 15:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 15:58	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.8		03/07/14 15:58	100-41-4	
Methylene Chloride	6.7	ug/m3	6.4	1.8		03/07/14 15:58	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 15:58	1634-04-4	
Naphthalene	3.7J	ug/m3	4.8	1.8		03/07/14 15:58	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/07/14 15:58	127-18-4	
Toluene	2.5	ug/m3	1.4	1.8		03/07/14 15:58	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 15:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/07/14 15:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 15:58	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/07/14 15:58	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/07/14 15:58	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 15:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 15:58	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 15:58	75-01-4	
m&p-Xylene	2.3J	ug/m3	3.2	1.8		03/07/14 15:58	179601-23-1	
o-Xylene	0.88J	ug/m3	1.6	1.8		03/07/14 15:58	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-147-C-16		Lab ID: 10258805041	Collected: 02/24/14 19:25	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.80	ug/m3	0.61	1.87		03/07/14 03:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 03:03	56-23-5	
Chlorodifluoromethane	18.2	ug/m3	0.37	1.87		03/07/14 03:03	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 03:03	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.9	1.87		03/07/14 03:03	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 03:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 03:03	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 03:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 03:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 03:03	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 03:03	100-41-4	
Methylene Chloride	19.1	ug/m3	6.6	1.87		03/07/14 03:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 03:03	1634-04-4	
Naphthalene	4.9J	ug/m3	5.0	1.87		03/07/14 03:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 03:03	127-18-4	
Toluene	5.4	ug/m3	1.4	1.87		03/07/14 03:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.0	1.87		03/07/14 03:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 03:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 03:03	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 03:03	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 03:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 03:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 03:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 03:03	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.3	1.87		03/07/14 03:03	179601-23-1	
o-Xylene	1.1J	ug/m3	1.6	1.87		03/07/14 03:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-148-C-16		Lab ID: 10258805042	Collected: 02/24/14 19:15		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.61	ug/m3	0.61	1.87		03/07/14 21:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/07/14 21:03	56-23-5	
Chlorodifluoromethane	24.4	ug/m3	6.6	1.87		03/07/14 21:03	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/07/14 21:03	67-66-3	
Dichlorodifluoromethane	2.7	ug/m3	1.9	1.87		03/07/14 21:03	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/07/14 21:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/07/14 21:03	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 21:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 21:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/07/14 21:03	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/07/14 21:03	100-41-4	
Methylene Chloride	11.0	ug/m3	6.6	1.87		03/07/14 21:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/07/14 21:03	1634-04-4	
Naphthalene	1.2J	ug/m3	2.0	1.87		03/07/14 21:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/07/14 21:03	127-18-4	
Toluene	2.9	ug/m3	1.4	1.87		03/07/14 21:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/07/14 21:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/07/14 21:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/07/14 21:03	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/07/14 21:03	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/07/14 21:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 21:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/07/14 21:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/07/14 21:03	75-01-4	
m&p-Xylene	2.3J	ug/m3	3.3	1.87		03/07/14 21:03	179601-23-1	
o-Xylene	0.93J	ug/m3	1.6	1.87		03/07/14 21:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-DUP1-C-16 Lab ID: 10258805046 Collected: 02/24/14 00:00 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.83	ug/m3	0.55	1.68		03/06/14 22:10	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 22:10	56-23-5	
Chlorodifluoromethane	3.9	ug/m3	0.34	1.68		03/06/14 22:10	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/06/14 22:10	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.7	1.68		03/06/14 22:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 22:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 22:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 22:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 22:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 22:10	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 22:10	100-41-4	
Methylene Chloride	1.9J	ug/m3	5.9	1.68		03/06/14 22:10	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 22:10	1634-04-4	
Naphthalene	3.5J	ug/m3	4.5	1.68		03/06/14 22:10	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 22:10	127-18-4	
Toluene	2.4	ug/m3	1.3	1.68		03/06/14 22:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 22:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 22:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 22:10	79-00-5	
Trichloroethene	1.4	ug/m3	0.92	1.68		03/06/14 22:10	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/06/14 22:10	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 22:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 22:10	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 22:10	75-01-4	
m&p-Xylene	1.9J	ug/m3	3.0	1.68		03/06/14 22:10	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/06/14 22:10	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: IA-DUP2-C-16 **Lab ID:** 10258805047 **Collected:** 02/24/14 00:00 **Received:** 02/26/14 08:12 **Matrix:** Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.89	ug/m3	0.55	1.68		03/07/14 05:30	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 05:30	56-23-5	
Chlorodifluoromethane	3.1	ug/m3	0.34	1.68		03/07/14 05:30	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 05:30	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/07/14 05:30	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 05:30	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 05:30	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 05:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 05:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 05:30	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 05:30	100-41-4	
Methylene Chloride	5.1J	ug/m3	5.9	1.68		03/07/14 05:30	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 05:30	1634-04-4	
Naphthalene	3.2J	ug/m3	4.5	1.68		03/07/14 05:30	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 05:30	127-18-4	
Toluene	ND	ug/m3	1.3	1.68		03/07/14 05:30	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 05:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 05:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 05:30	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/07/14 05:30	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 05:30	526-73-8	
1,2,4-Trimethylbenzene	0.94J	ug/m3	1.7	1.68		03/07/14 05:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 05:30	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 05:30	75-01-4	
m&p-Xylene	3.4	ug/m3	3.0	1.68		03/07/14 05:30	179601-23-1	
o-Xylene	1.2J	ug/m3	1.5	1.68		03/07/14 05:30	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-033-B-16		Lab ID: 10258805023	Collected: 02/24/14 12:18	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2 ug/m3		0.55	1.68		03/07/14 23:44	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/07/14 23:44	56-23-5	
Chlorodifluoromethane	32.6 ug/m3		0.34	1.68		03/07/14 23:44	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/07/14 23:44	67-66-3	
Dichlorodifluoromethane	3.4 ug/m3		1.7	1.68		03/07/14 23:44	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/07/14 23:44	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/07/14 23:44	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 23:44	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 23:44	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 23:44	156-60-5	
Ethylbenzene	3.1 ug/m3		1.5	1.68		03/07/14 23:44	100-41-4	
Methylene Chloride	10.5 ug/m3		5.9	1.68		03/07/14 23:44	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/07/14 23:44	1634-04-4	
Naphthalene	10.4 ug/m3		4.5	1.68		03/07/14 23:44	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/07/14 23:44	127-18-4	
Toluene	36.1 ug/m3		1.3	1.68		03/07/14 23:44	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.3	1.68		03/07/14 23:44	120-82-1	
1,1,1-Trichloroethane	88.6 ug/m3		1.9	1.68		03/07/14 23:44	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/07/14 23:44	79-00-5	
Trichloroethene	2.8 ug/m3		0.92	1.68		03/07/14 23:44	79-01-6	
1,2,3-Trimethylbenzene	5.2 ug/m3		0.34	1.68		03/07/14 23:44	526-73-8	
1,2,4-Trimethylbenzene	11.1 ug/m3		1.7	1.68		03/07/14 23:44	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/07/14 23:44	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/07/14 23:44	75-01-4	
m&p-Xylene	13.8 ug/m3		3.0	1.68		03/07/14 23:44	179601-23-1	
o-Xylene	4.9 ug/m3		1.5	1.68		03/07/14 23:44	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-060-C-16		Lab ID: 10258805013	Collected: 02/24/14 11:59	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.85	ug/m3	0.55	1.68		03/07/14 22:55	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 22:55	56-23-5	
Chlorodifluoromethane	5.8J	ug/m3	5.9	1.68		03/07/14 22:55	75-45-6	
Chloroform	3.1	ug/m3	1.7	1.68		03/07/14 22:55	67-66-3	
Dichlorodifluoromethane	2.8	ug/m3	1.7	1.68		03/07/14 22:55	75-71-8	
1,1-Dichloroethane	2.3	ug/m3	1.4	1.68		03/07/14 22:55	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 22:55	107-06-2	
1,1-Dichloroethene	0.86J	ug/m3	1.4	1.68		03/07/14 22:55	75-35-4	
cis-1,2-Dichloroethene	16.5	ug/m3	1.4	1.68		03/07/14 22:55	156-59-2	
trans-1,2-Dichloroethene	1.1J	ug/m3	1.4	1.68		03/07/14 22:55	156-60-5	
Ethylbenzene	96.5	ug/m3	1.5	1.68		03/07/14 22:55	100-41-4	
Methylene Chloride	10.7	ug/m3	5.9	1.68		03/07/14 22:55	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 22:55	1634-04-4	
Naphthalene	4.4	ug/m3	1.8	1.68		03/07/14 22:55	91-20-3	
Tetrachloroethene	2.2	ug/m3	1.2	1.68		03/07/14 22:55	127-18-4	
Toluene	13.1	ug/m3	1.3	1.68		03/07/14 22:55	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 22:55	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 22:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 22:55	79-00-5	
Trichloroethene	291	ug/m3	0.92	1.68		03/07/14 22:55	79-01-6	
1,2,3-Trimethylbenzene	0.91	ug/m3	0.34	1.68		03/07/14 22:55	526-73-8	
1,2,4-Trimethylbenzene	3.2	ug/m3	1.7	1.68		03/07/14 22:55	95-63-6	
1,3,5-Trimethylbenzene	2.2	ug/m3	1.7	1.68		03/07/14 22:55	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 22:55	75-01-4	
m&p-Xylene	561	ug/m3	29.6	16.8		03/08/14 16:32	179601-23-1	
o-Xylene	230	ug/m3	1.5	1.68		03/07/14 22:55	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-063-B-16		Lab ID: 10258805021	Collected: 02/24/14 12:14		Received: 02/26/14 08:12		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/07/14 02:33	71-43-2	
Carbon tetrachloride	16.3	ug/m3	1.1	1.68		03/07/14 02:33	56-23-5	
Chlorodifluoromethane	1.7	ug/m3	0.34	1.68		03/07/14 02:33	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 02:33	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/07/14 02:33	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 02:33	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 02:33	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 02:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 02:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 02:33	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 02:33	100-41-4	
Methylene Chloride	14.6	ug/m3	5.9	1.68		03/07/14 02:33	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 02:33	1634-04-4	
Naphthalene	3.3J	ug/m3	4.5	1.68		03/07/14 02:33	91-20-3	
Tetrachloroethene	3.3	ug/m3	1.2	1.68		03/07/14 02:33	127-18-4	
Toluene	2.4	ug/m3	1.3	1.68		03/07/14 02:33	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 02:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 02:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 02:33	79-00-5	
Trichloroethene	1.6	ug/m3	0.92	1.68		03/07/14 02:33	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 02:33	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.7	1.68		03/07/14 02:33	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 02:33	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 02:33	75-01-4	
m&p-Xylene	1.8J	ug/m3	3.0	1.68		03/07/14 02:33	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/07/14 02:33	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-065-C-16		Lab ID: 10258805019	Collected: 02/24/14 12:10	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/07/14 20:07	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 20:07	56-23-5	
Chlorodifluoromethane	7.9	ug/m3	5.9	1.68		03/07/14 20:07	75-45-6	
Chloroform	2.7	ug/m3	1.7	1.68		03/07/14 20:07	67-66-3	
Dichlorodifluoromethane	7.3	ug/m3	1.7	1.68		03/07/14 20:07	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 20:07	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 20:07	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:07	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 20:07	100-41-4	
Methylene Chloride	16.9	ug/m3	5.9	1.68		03/07/14 20:07	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 20:07	1634-04-4	
Naphthalene	6.9	ug/m3	1.8	1.68		03/07/14 20:07	91-20-3	
Tetrachloroethene	12.6	ug/m3	1.2	1.68		03/07/14 20:07	127-18-4	
Toluene	1.2J	ug/m3	1.3	1.68		03/07/14 20:07	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 20:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 20:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 20:07	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/07/14 20:07	79-01-6	
1,2,3-Trimethylbenzene	0.95	ug/m3	0.34	1.68		03/07/14 20:07	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.7	1.68		03/07/14 20:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 20:07	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 20:07	75-01-4	
m&p-Xylene	1.1J	ug/m3	3.0	1.68		03/07/14 20:07	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/07/14 20:07	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-088-C-16		Lab ID: 10258805005	Collected: 02/24/14 11:42	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2 ug/m3		0.55	1.68		03/08/14 03:46	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/08/14 03:46	56-23-5	
Chlorodifluoromethane	3.2 ug/m3		0.34	1.68		03/08/14 03:46	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/08/14 03:46	67-66-3	
Dichlorodifluoromethane	2.6 ug/m3		1.7	1.68		03/08/14 03:46	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/08/14 03:46	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/08/14 03:46	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/08/14 03:46	75-35-4	
cis-1,2-Dichloroethene	17.6 ug/m3		1.4	1.68		03/08/14 03:46	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/08/14 03:46	156-60-5	
Ethylbenzene	2.2 ug/m3		1.5	1.68		03/08/14 03:46	100-41-4	
Methylene Chloride	82.5 ug/m3		5.9	1.68		03/08/14 03:46	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/08/14 03:46	1634-04-4	
Naphthalene	22.3 ug/m3		4.5	1.68		03/08/14 03:46	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/08/14 03:46	127-18-4	
Toluene	ND ug/m3		1.3	1.68		03/08/14 03:46	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.3	1.68		03/08/14 03:46	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/08/14 03:46	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/08/14 03:46	79-00-5	
Trichloroethene	70.6 ug/m3		0.92	1.68		03/08/14 03:46	79-01-6	
1,2,3-Trimethylbenzene	1.1 ug/m3		0.34	1.68		03/08/14 03:46	526-73-8	
1,2,4-Trimethylbenzene	1.8 ug/m3		1.7	1.68		03/08/14 03:46	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/08/14 03:46	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/08/14 03:46	75-01-4	
m&p-Xylene	10 ug/m3		3.0	1.68		03/08/14 03:46	179601-23-1	
o-Xylene	4.7 ug/m3		1.5	1.68		03/08/14 03:46	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-101-B-16		Lab ID: 10258805035	Collected: 02/24/14 12:40	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.57	1.74		03/08/14 01:44	71-43-2	
Carbon tetrachloride	2.6	ug/m3	1.1	1.74		03/08/14 01:44	56-23-5	
Chlorodifluoromethane	4.3	ug/m3	0.35	1.74		03/08/14 01:44	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/08/14 01:44	67-66-3	
Dichlorodifluoromethane	4.5	ug/m3	1.8	1.74		03/08/14 01:44	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/08/14 01:44	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/08/14 01:44	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/08/14 01:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/08/14 01:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/08/14 01:44	156-60-5	
Ethylbenzene	0.87J	ug/m3	1.5	1.74		03/08/14 01:44	100-41-4	
Methylene Chloride	14.3	ug/m3	6.1	1.74		03/08/14 01:44	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/08/14 01:44	1634-04-4	
Naphthalene	9.7	ug/m3	4.6	1.74		03/08/14 01:44	91-20-3	
Tetrachloroethene	45.9	ug/m3	1.2	1.74		03/08/14 01:44	127-18-4	
Toluene	12.5	ug/m3	1.3	1.74		03/08/14 01:44	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.6	1.74		03/08/14 01:44	120-82-1	
1,1,1-Trichloroethane	143	ug/m3	1.9	1.74		03/08/14 01:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/08/14 01:44	79-00-5	
Trichloroethene	79.2	ug/m3	0.96	1.74		03/08/14 01:44	79-01-6	
1,2,3-Trimethylbenzene	2.9	ug/m3	0.35	1.74		03/08/14 01:44	526-73-8	
1,2,4-Trimethylbenzene	3.4	ug/m3	1.7	1.74		03/08/14 01:44	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/08/14 01:44	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/08/14 01:44	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.1	1.74		03/08/14 01:44	179601-23-1	
o-Xylene	1.8	ug/m3	1.5	1.74		03/08/14 01:44	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-102-C-16		Lab ID: 10258805009	Collected: 02/24/14 11:49	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	7.5 ug/m3		0.55	1.68		03/07/14 21:15	71-43-2	
Carbon tetrachloride	3.1 ug/m3		1.1	1.68		03/07/14 21:15	56-23-5	
Chlorodifluoromethane	3.3 ug/m3		0.34	1.68		03/07/14 21:15	75-45-6	
Chloroform	71.9 ug/m3		1.7	1.68		03/07/14 21:15	67-66-3	
Dichlorodifluoromethane	5.8 ug/m3		1.7	1.68		03/07/14 21:15	75-71-8	
1,1-Dichloroethane	6760 ug/m3		220	268.8		03/09/14 19:29	75-34-3	A3
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/07/14 21:15	107-06-2	
1,1-Dichloroethene	2530 ug/m3		218	268.8		03/09/14 19:29	75-35-4	A3
cis-1,2-Dichloroethene	67.4 ug/m3		1.4	1.68		03/07/14 21:15	156-59-2	
trans-1,2-Dichloroethene	3.9 ug/m3		1.4	1.68		03/07/14 21:15	156-60-5	L1
Ethylbenzene	2140 ug/m3		237	268.8		03/09/14 19:29	100-41-4	A3
Methylene Chloride	46.3 ug/m3		5.9	1.68		03/07/14 21:15	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/07/14 21:15	1634-04-4	
Naphthalene	66.0 ug/m3		4.5	1.68		03/07/14 21:15	91-20-3	
Tetrachloroethene	2.2 ug/m3		1.2	1.68		03/07/14 21:15	127-18-4	
Toluene	128 ug/m3		1.3	1.68		03/07/14 21:15	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.3	1.68		03/07/14 21:15	120-82-1	
1,1,1-Trichloroethane	2070 ug/m3		298	268.8		03/09/14 19:29	71-55-6	A3
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/07/14 21:15	79-00-5	
Trichloroethene	2740 ug/m3		148	268.8		03/09/14 19:29	79-01-6	A3
1,2,3-Trimethylbenzene	90.4 ug/m3		0.34	1.68		03/07/14 21:15	526-73-8	
1,2,4-Trimethylbenzene	89.1 ug/m3		1.7	1.68		03/07/14 21:15	95-63-6	
1,3,5-Trimethylbenzene	39.7 ug/m3		1.7	1.68		03/07/14 21:15	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/07/14 21:15	75-01-4	
m&p-Xylene	11500 ug/m3		473	268.8		03/09/14 19:29	179601-23-1	A3
o-Xylene	4040 ug/m3		237	268.8		03/09/14 19:29	95-47-6	A3

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-105-Z-16		Lab ID: 10258805029	Collected: 02/24/14 12:29	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.5 ug/m3		0.55	1.68		03/08/14 04:20	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/08/14 04:20	56-23-5	
Chlorodifluoromethane	9.0 ug/m3		0.34	1.68		03/08/14 04:20	75-45-6	
Chloroform	2.5 ug/m3		1.7	1.68		03/08/14 04:20	67-66-3	
Dichlorodifluoromethane	ND ug/m3		1.7	1.68		03/08/14 04:20	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/08/14 04:20	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/08/14 04:20	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/08/14 04:20	75-35-4	
cis-1,2-Dichloroethene	36.3 ug/m3		1.4	1.68		03/08/14 04:20	156-59-2	
trans-1,2-Dichloroethene	5.5 ug/m3		1.4	1.68		03/08/14 04:20	156-60-5	L1
Ethylbenzene	5.3 ug/m3		1.5	1.68		03/08/14 04:20	100-41-4	
Methylene Chloride	621 ug/m3		5.9	1.68		03/08/14 04:20	75-09-2	C0,E
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/08/14 04:20	1634-04-4	
Naphthalene	4.9 ug/m3		4.5	1.68		03/08/14 04:20	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/08/14 04:20	127-18-4	
Toluene	59.6 ug/m3		1.3	1.68		03/08/14 04:20	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.3	1.68		03/08/14 04:20	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/08/14 04:20	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/08/14 04:20	79-00-5	
Trichloroethene	129 ug/m3		0.92	1.68		03/08/14 04:20	79-01-6	
1,2,3-Trimethylbenzene	1.8 ug/m3		0.34	1.68		03/08/14 04:20	526-73-8	
1,2,4-Trimethylbenzene	2.7 ug/m3		1.7	1.68		03/08/14 04:20	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/08/14 04:20	108-67-8	
Vinyl chloride	9.4 ug/m3		0.44	1.68		03/08/14 04:20	75-01-4	
m&p-Xylene	22.7 ug/m3		3.0	1.68		03/08/14 04:20	179601-23-1	
o-Xylene	4.8 ug/m3		1.5	1.68		03/08/14 04:20	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-113-C-16		Lab ID: 10258805027	Collected: 02/24/14 11:43	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.4	ug/m3	0.55	1.68		03/07/14 00:07	71-43-2	
Carbon tetrachloride	1.1	ug/m3	1.1	1.68		03/07/14 00:07	56-23-5	
Chlorodifluoromethane	10.7	ug/m3	0.34	1.68		03/07/14 00:07	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 00:07	67-66-3	
Dichlorodifluoromethane	3.8	ug/m3	1.7	1.68		03/07/14 00:07	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 00:07	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 00:07	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 00:07	75-35-4	
cis-1,2-Dichloroethene	0.73J	ug/m3	1.4	1.68		03/07/14 00:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 00:07	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 00:07	100-41-4	
Methylene Chloride	557	ug/m3	5.9	1.68		03/07/14 00:07	75-09-2	E
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 00:07	1634-04-4	
Naphthalene	ND	ug/m3	4.5	1.68		03/07/14 00:07	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 00:07	127-18-4	
Toluene	6.1	ug/m3	1.3	1.68		03/07/14 00:07	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 00:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 00:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 00:07	79-00-5	
Trichloroethene	7.0	ug/m3	0.92	1.68		03/07/14 00:07	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 00:07	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 00:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 00:07	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 00:07	75-01-4	
m&p-Xylene	2.4J	ug/m3	3.0	1.68		03/07/14 00:07	179601-23-1	
o-Xylene	0.83J	ug/m3	1.5	1.68		03/07/14 00:07	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-121-B-16		Lab ID: 10258805033	Collected: 02/24/14 12:39	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/07/14 02:04	71-43-2	
Carbon tetrachloride	4.4	ug/m3	1.2	1.8		03/07/14 02:04	56-23-5	
Chlorodifluoromethane	1.5	ug/m3	0.36	1.8		03/07/14 02:04	75-45-6	
Chloroform	26.4	ug/m3	1.8	1.8		03/07/14 02:04	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	1.8	1.8		03/07/14 02:04	75-71-8	
1,1-Dichloroethane	1.5J	ug/m3	1.5	1.8		03/07/14 02:04	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/07/14 02:04	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 02:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 02:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/07/14 02:04	156-60-5	
Ethylbenzene	1.5J	ug/m3	1.6	1.8		03/07/14 02:04	100-41-4	
Methylene Chloride	24.6	ug/m3	6.4	1.8		03/07/14 02:04	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/07/14 02:04	1634-04-4	
Naphthalene	85.8	ug/m3	4.8	1.8		03/07/14 02:04	91-20-3	
Tetrachloroethene	2.4	ug/m3	1.2	1.8		03/07/14 02:04	127-18-4	
Toluene	6.7	ug/m3	1.4	1.8		03/07/14 02:04	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.8	1.8		03/07/14 02:04	120-82-1	
1,1,1-Trichloroethane	1.5J	ug/m3	2.0	1.8		03/07/14 02:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/07/14 02:04	79-00-5	
Trichloroethene	203	ug/m3	0.99	1.8		03/07/14 02:04	79-01-6	
1,2,3-Trimethylbenzene	13.2	ug/m3	0.36	1.8		03/07/14 02:04	526-73-8	
1,2,4-Trimethylbenzene	32.0	ug/m3	1.8	1.8		03/07/14 02:04	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/07/14 02:04	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/07/14 02:04	75-01-4	
m&p-Xylene	7.2	ug/m3	3.2	1.8		03/07/14 02:04	179601-23-1	
o-Xylene	5.0	ug/m3	1.6	1.8		03/07/14 02:04	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-123-Z-16		Lab ID: 10258805031	Collected: 02/24/14 12:32	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/07/14 21:31	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 21:31	56-23-5	
Chlorodifluoromethane	ND	ug/m3	5.9	1.68		03/07/14 21:31	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 21:31	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	1.7	1.68		03/07/14 21:31	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 21:31	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 21:31	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 21:31	75-35-4	
cis-1,2-Dichloroethene	0.70J	ug/m3	1.4	1.68		03/07/14 21:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 21:31	156-60-5	
Ethylbenzene	3.9	ug/m3	1.5	1.68		03/07/14 21:31	100-41-4	
Methylene Chloride	8.2	ug/m3	5.9	1.68		03/07/14 21:31	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 21:31	1634-04-4	
Naphthalene	10.9	ug/m3	1.8	1.68		03/07/14 21:31	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 21:31	127-18-4	
Toluene	50.9	ug/m3	1.3	1.68		03/07/14 21:31	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 21:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 21:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 21:31	79-00-5	
Trichloroethene	37.5	ug/m3	0.92	1.68		03/07/14 21:31	79-01-6	
1,2,3-Trimethylbenzene	3.7	ug/m3	0.34	1.68		03/07/14 21:31	526-73-8	
1,2,4-Trimethylbenzene	1.7	ug/m3	1.7	1.68		03/07/14 21:31	95-63-6	
1,3,5-Trimethylbenzene	2.9	ug/m3	1.7	1.68		03/07/14 21:31	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 21:31	75-01-4	
m&p-Xylene	19.9	ug/m3	3.0	1.68		03/07/14 21:31	179601-23-1	
o-Xylene	4.3	ug/m3	1.5	1.68		03/07/14 21:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-126-C-16		Lab ID: 10258805017	Collected: 02/24/14 12:06	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	88.4	ug/m3	0.55	1.68		03/08/14 04:49	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/08/14 04:49	56-23-5	
Chlorodifluoromethane	ND	ug/m3	0.34	1.68		03/08/14 04:49	75-45-6	
Chloroform	0.84J	ug/m3	1.7	1.68		03/08/14 04:49	67-66-3	
Dichlorodifluoromethane	1.5J	ug/m3	1.7	1.68		03/08/14 04:49	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/08/14 04:49	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/08/14 04:49	107-06-2	
1,1-Dichloroethene	199	ug/m3	1.4	1.68		03/08/14 04:49	75-35-4	
cis-1,2-Dichloroethene	205	ug/m3	1.4	1.68		03/08/14 04:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/08/14 04:49	156-60-5	
Ethylbenzene	3.0	ug/m3	1.5	1.68		03/08/14 04:49	100-41-4	
Methylene Chloride	9.2	ug/m3	5.9	1.68		03/08/14 04:49	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/08/14 04:49	1634-04-4	
Naphthalene	70.6	ug/m3	4.5	1.68		03/08/14 04:49	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/08/14 04:49	127-18-4	
Toluene	14.7	ug/m3	1.3	1.68		03/08/14 04:49	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/08/14 04:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/08/14 04:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/08/14 04:49	79-00-5	
Trichloroethene	177	ug/m3	0.92	1.68		03/08/14 04:49	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.34	1.68		03/08/14 04:49	526-73-8	
1,2,4-Trimethylbenzene	4.3	ug/m3	1.7	1.68		03/08/14 04:49	95-63-6	
1,3,5-Trimethylbenzene	1.1J	ug/m3	1.7	1.68		03/08/14 04:49	108-67-8	
Vinyl chloride	11900	ug/m3	140	537.6		03/09/14 19:53	75-01-4	A3
m&p-Xylene	13.4	ug/m3	3.0	1.68		03/08/14 04:49	179601-23-1	
o-Xylene	5.7	ug/m3	1.5	1.68		03/08/14 04:49	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-128-C-16		Lab ID: 10258805037	Collected: 02/24/14 12:18	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	3.6 ug/m3		0.55	1.68		03/07/14 22:45	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/07/14 22:45	56-23-5	
Chlorodifluoromethane	6.1 ug/m3		0.34	1.68		03/07/14 22:45	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/07/14 22:45	67-66-3	
Dichlorodifluoromethane	2.5 ug/m3		1.7	1.68		03/07/14 22:45	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/07/14 22:45	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/07/14 22:45	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 22:45	75-35-4	
cis-1,2-Dichloroethene	6.5 ug/m3		1.4	1.68		03/07/14 22:45	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/07/14 22:45	156-60-5	
Ethylbenzene	2.0 ug/m3		1.5	1.68		03/07/14 22:45	100-41-4	
Methylene Chloride	9.6 ug/m3		5.9	1.68		03/07/14 22:45	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/07/14 22:45	1634-04-4	
Naphthalene	92.6 ug/m3		4.5	1.68		03/07/14 22:45	91-20-3	
Tetrachloroethene	1.6 ug/m3		1.2	1.68		03/07/14 22:45	127-18-4	
Toluene	5.8 ug/m3		1.3	1.68		03/07/14 22:45	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		6.3	1.68		03/07/14 22:45	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/07/14 22:45	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/07/14 22:45	79-00-5	
Trichloroethene	2.1 ug/m3		0.92	1.68		03/07/14 22:45	79-01-6	
1,2,3-Trimethylbenzene	1.2 ug/m3		0.34	1.68		03/07/14 22:45	526-73-8	
1,2,4-Trimethylbenzene	2.8 ug/m3		1.7	1.68		03/07/14 22:45	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/07/14 22:45	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/07/14 22:45	75-01-4	
m&p-Xylene	12.1 ug/m3		3.0	1.68		03/07/14 22:45	179601-23-1	
o-Xylene	3.6 ug/m3		1.5	1.68		03/07/14 22:45	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-130-C-16 Lab ID: 10258805011 Collected: 02/24/14 11:52 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	4.1	ug/m3	0.55	1.68		03/07/14 20:35	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 20:35	56-23-5	
Chlorodifluoromethane	1.7J	ug/m3	5.9	1.68		03/07/14 20:35	75-45-6	
Chloroform	1.8	ug/m3	1.7	1.68		03/07/14 20:35	67-66-3	
Dichlorodifluoromethane	3.1	ug/m3	1.7	1.68		03/07/14 20:35	75-71-8	
1,1-Dichloroethane	1.3J	ug/m3	1.4	1.68		03/07/14 20:35	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 20:35	107-06-2	
1,1-Dichloroethene	2.9	ug/m3	1.4	1.68		03/07/14 20:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:35	156-60-5	
Ethylbenzene	2.3	ug/m3	1.5	1.68		03/07/14 20:35	100-41-4	
Methylene Chloride	28.2	ug/m3	5.9	1.68		03/07/14 20:35	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 20:35	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/07/14 20:35	91-20-3	
Tetrachloroethene	3.3	ug/m3	1.2	1.68		03/07/14 20:35	127-18-4	
Toluene	12.2	ug/m3	1.3	1.68		03/07/14 20:35	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/07/14 20:35	120-82-1	
1,1,1-Trichloroethane	21.3	ug/m3	1.9	1.68		03/07/14 20:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 20:35	79-00-5	
Trichloroethene	3.4	ug/m3	0.92	1.68		03/07/14 20:35	79-01-6	
1,2,3-Trimethylbenzene	3.4	ug/m3	0.34	1.68		03/07/14 20:35	526-73-8	
1,2,4-Trimethylbenzene	9.9	ug/m3	1.7	1.68		03/07/14 20:35	95-63-6	
1,3,5-Trimethylbenzene	4.4	ug/m3	1.7	1.68		03/07/14 20:35	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 20:35	75-01-4	
m&p-Xylene	9.2	ug/m3	3.0	1.68		03/07/14 20:35	179601-23-1	
o-Xylene	7.5	ug/m3	1.5	1.68		03/07/14 20:35	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-133-C-16 Lab ID: 10258805025 Collected: 02/24/14 11:55 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.77	ug/m3	0.55	1.68		03/07/14 20:45	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 20:45	56-23-5	
Chlorodifluoromethane	4.3	ug/m3	0.34	1.68		03/07/14 20:45	75-45-6	
Chloroform	6.7	ug/m3	1.7	1.68		03/07/14 20:45	67-66-3	
Dichlorodifluoromethane	3.2	ug/m3	1.7	1.68		03/07/14 20:45	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 20:45	75-34-3	
1,2-Dichloroethane	0.92	ug/m3	0.69	1.68		03/07/14 20:45	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 20:45	75-35-4	
cis-1,2-Dichloroethene	8.4	ug/m3	1.4	1.68		03/07/14 20:45	156-59-2	
trans-1,2-Dichloroethene	3.6	ug/m3	1.4	1.68		03/07/14 20:45	156-60-5	L1
Ethylbenzene	ND	ug/m3	1.5	1.68		03/07/14 20:45	100-41-4	
Methylene Chloride	20.2	ug/m3	5.9	1.68		03/07/14 20:45	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 20:45	1634-04-4	
Naphthalene	4.7	ug/m3	4.5	1.68		03/07/14 20:45	91-20-3	
Tetrachloroethene	169	ug/m3	1.2	1.68		03/07/14 20:45	127-18-4	
Toluene	3.6	ug/m3	1.3	1.68		03/07/14 20:45	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 20:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 20:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 20:45	79-00-5	
Trichloroethene	10700	ug/m3	73.9	134.4		03/09/14 18:15	79-01-6	A3
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 20:45	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 20:45	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 20:45	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 20:45	75-01-4	
m&p-Xylene	1.8J	ug/m3	3.0	1.68		03/07/14 20:45	179601-23-1	
o-Xylene	0.81J	ug/m3	1.5	1.68		03/07/14 20:45	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-135-C-16 Lab ID: 10258805003 Collected: 02/24/14 11:35 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.33J	ug/m3	0.55	1.68		03/07/14 01:06	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/07/14 01:06	56-23-5	
Chlorodifluoromethane	2.1	ug/m3	0.34	1.68		03/07/14 01:06	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/07/14 01:06	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/07/14 01:06	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/07/14 01:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/07/14 01:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 01:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 01:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/07/14 01:06	156-60-5	
Ethylbenzene	4.2	ug/m3	1.5	1.68		03/07/14 01:06	100-41-4	
Methylene Chloride	2.1J	ug/m3	5.9	1.68		03/07/14 01:06	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/07/14 01:06	1634-04-4	
Naphthalene	3.8J	ug/m3	4.5	1.68		03/07/14 01:06	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/07/14 01:06	127-18-4	
Toluene	ND	ug/m3	1.3	1.68		03/07/14 01:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/07/14 01:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/07/14 01:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/07/14 01:06	79-00-5	
Trichloroethene	5.6	ug/m3	0.92	1.68		03/07/14 01:06	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/07/14 01:06	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 01:06	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/07/14 01:06	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/07/14 01:06	75-01-4	
m&p-Xylene	18.1	ug/m3	3.0	1.68		03/07/14 01:06	179601-23-1	
o-Xylene	4.3	ug/m3	1.5	1.68		03/07/14 01:06	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-141-C-16 Lab ID: 10258805015 Collected: 02/24/14 12:02 Received: 02/26/14 08:12 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.88	ug/m3	0.66	2.02		03/07/14 04:30	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.3	2.02		03/07/14 04:30	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.40	2.02		03/07/14 04:30	75-45-6	
Chloroform	ND	ug/m3	2.0	2.02		03/07/14 04:30	67-66-3	
Dichlorodifluoromethane	2.3	ug/m3	2.0	2.02		03/07/14 04:30	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.02		03/07/14 04:30	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.83	2.02		03/07/14 04:30	107-06-2	
1,1-Dichloroethene	1.7	ug/m3	1.6	2.02		03/07/14 04:30	75-35-4	
cis-1,2-Dichloroethene	2.2	ug/m3	1.6	2.02		03/07/14 04:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	2.02		03/07/14 04:30	156-60-5	
Ethylbenzene	2.2	ug/m3	1.8	2.02		03/07/14 04:30	100-41-4	
Methylene Chloride	39.1	ug/m3	7.1	2.02		03/07/14 04:30	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.5	2.02		03/07/14 04:30	1634-04-4	
Naphthalene	4.1J	ug/m3	5.4	2.02		03/07/14 04:30	91-20-3	
Tetrachloroethene	ND	ug/m3	1.4	2.02		03/07/14 04:30	127-18-4	
Toluene	3.7	ug/m3	1.6	2.02		03/07/14 04:30	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.6	2.02		03/07/14 04:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.2	2.02		03/07/14 04:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.1	2.02		03/07/14 04:30	79-00-5	
Trichloroethene	25.2	ug/m3	1.1	2.02		03/07/14 04:30	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.40	2.02		03/07/14 04:30	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.0	2.02		03/07/14 04:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.0	2.02		03/07/14 04:30	108-67-8	
Vinyl chloride	ND	ug/m3	0.53	2.02		03/07/14 04:30	75-01-4	
m&p-Xylene	11.6	ug/m3	3.6	2.02		03/07/14 04:30	179601-23-1	
o-Xylene	3.7	ug/m3	1.8	2.02		03/07/14 04:30	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-142-C-16		Lab ID: 10258805007	Collected: 02/24/14 11:40	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/06/14 20:41	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 20:41	56-23-5	
Chlorodifluoromethane	1.4	ug/m3	0.34	1.68		03/06/14 20:41	75-45-6	
Chloroform	15.0	ug/m3	1.7	1.68		03/06/14 20:41	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/06/14 20:41	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 20:41	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 20:41	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 20:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 20:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 20:41	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 20:41	100-41-4	
Methylene Chloride	7.5	ug/m3	5.9	1.68		03/06/14 20:41	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 20:41	1634-04-4	
Naphthalene	157	ug/m3	4.5	1.68		03/06/14 20:41	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 20:41	127-18-4	
Toluene	ND	ug/m3	1.3	1.68		03/06/14 20:41	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 20:41	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 20:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 20:41	79-00-5	
Trichloroethene	6.8	ug/m3	0.92	1.68		03/06/14 20:41	79-01-6	
1,2,3-Trimethylbenzene	0.71	ug/m3	0.34	1.68		03/06/14 20:41	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.7	1.68		03/06/14 20:41	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 20:41	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 20:41	75-01-4	
m&p-Xylene	5.1	ug/m3	3.0	1.68		03/06/14 20:41	179601-23-1	
o-Xylene	3.1	ug/m3	1.5	1.68		03/06/14 20:41	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-143-C-16		Lab ID: 10258805001	Collected: 02/24/14 16:32	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.8	ug/m3	1.4	4.22		03/07/14 19:09	71-43-2	
Carbon tetrachloride	133	ug/m3	2.7	4.22		03/07/14 19:09	56-23-5	
Chlorodifluoromethane	1.7J	ug/m3	14.9	4.22		03/07/14 19:09	75-45-6	
Chloroform	194	ug/m3	4.2	4.22		03/07/14 19:09	67-66-3	
Dichlorodifluoromethane	2.6J	ug/m3	4.3	4.22		03/07/14 19:09	75-71-8	
1,1-Dichloroethane	1.8J	ug/m3	3.5	4.22		03/07/14 19:09	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.7	4.22		03/07/14 19:09	107-06-2	
1,1-Dichloroethene	2.1J	ug/m3	3.4	4.22		03/07/14 19:09	75-35-4	
cis-1,2-Dichloroethene	5.7	ug/m3	3.4	4.22		03/07/14 19:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	3.4	4.22		03/07/14 19:09	156-60-5	
Ethylbenzene	ND	ug/m3	3.7	4.22		03/07/14 19:09	100-41-4	
Methylene Chloride	30.1	ug/m3	14.9	4.22		03/07/14 19:09	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	3.1	4.22		03/07/14 19:09	1634-04-4	
Naphthalene	19.3	ug/m3	4.5	4.22		03/07/14 19:09	91-20-3	
Tetrachloroethene	15.0	ug/m3	2.9	4.22		03/07/14 19:09	127-18-4	
Toluene	13.6	ug/m3	3.2	4.22		03/07/14 19:09	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.4	4.22		03/07/14 19:09	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	4.7	4.22		03/07/14 19:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.3	4.22		03/07/14 19:09	79-00-5	
Trichloroethene	33.1	ug/m3	2.3	4.22		03/07/14 19:09	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.84	4.22		03/07/14 19:09	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	4.2	4.22		03/07/14 19:09	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	4.2	4.22		03/07/14 19:09	108-67-8	
Vinyl chloride	ND	ug/m3	1.1	4.22		03/07/14 19:09	75-01-4	
m&p-Xylene	3.3J	ug/m3	7.4	4.22		03/07/14 19:09	179601-23-1	
o-Xylene	ND	ug/m3	3.7	4.22		03/07/14 19:09	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV

Pace Project No.: 10258805

Sample: SV-DUP1-C-16		Lab ID: 10258805044	Collected: 02/24/14 00:00	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.87	ug/m3	0.55	1.68		03/08/14 00:42	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/08/14 00:42	56-23-5	
Chlorodifluoromethane	4.4	ug/m3	0.34	1.68		03/08/14 00:42	75-45-6	
Chloroform	6.2	ug/m3	1.7	1.68		03/08/14 00:42	67-66-3	
Dichlorodifluoromethane	3.0	ug/m3	1.7	1.68		03/08/14 00:42	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/08/14 00:42	75-34-3	
1,2-Dichloroethane	0.82	ug/m3	0.69	1.68		03/08/14 00:42	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/08/14 00:42	75-35-4	
cis-1,2-Dichloroethene	8.7	ug/m3	1.4	1.68		03/08/14 00:42	156-59-2	
trans-1,2-Dichloroethene	3.5	ug/m3	1.4	1.68		03/08/14 00:42	156-60-5	L1
Ethylbenzene	ND	ug/m3	1.5	1.68		03/08/14 00:42	100-41-4	
Methylene Chloride	13.0	ug/m3	5.9	1.68		03/08/14 00:42	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/08/14 00:42	1634-04-4	
Naphthalene	4.2J	ug/m3	4.5	1.68		03/08/14 00:42	91-20-3	
Tetrachloroethene	159	ug/m3	1.2	1.68		03/08/14 00:42	127-18-4	
Toluene	5.5	ug/m3	1.3	1.68		03/08/14 00:42	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/08/14 00:42	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/08/14 00:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/08/14 00:42	79-00-5	
Trichloroethene	8630	ug/m3	46.6	84.67		03/09/14 17:51	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/08/14 00:42	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/08/14 00:42	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/08/14 00:42	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/08/14 00:42	75-01-4	
m&p-Xylene	2.0J	ug/m3	3.0	1.68		03/08/14 00:42	179601-23-1	
o-Xylene	0.95J	ug/m3	1.5	1.68		03/08/14 00:42	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 1121C06221 REV
Pace Project No.: 10258805

Sample: SV-DUP2-C-16		Lab ID: 10258805045	Collected: 02/24/14 00:00	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/06/14 23:08	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/06/14 23:08	56-23-5	
Chlorodifluoromethane	3.5	ug/m3	0.34	1.68		03/06/14 23:08	75-45-6	
Chloroform	1.8	ug/m3	1.7	1.68		03/06/14 23:08	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/06/14 23:08	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/06/14 23:08	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/06/14 23:08	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 23:08	75-35-4	
cis-1,2-Dichloroethene	31.7	ug/m3	1.4	1.68		03/06/14 23:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/06/14 23:08	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/06/14 23:08	100-41-4	
Methylene Chloride	12.5	ug/m3	5.9	1.68		03/06/14 23:08	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/06/14 23:08	1634-04-4	
Naphthalene	3.7J	ug/m3	4.5	1.68		03/06/14 23:08	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/06/14 23:08	127-18-4	
Toluene	1.7	ug/m3	1.3	1.68		03/06/14 23:08	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/06/14 23:08	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/06/14 23:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/06/14 23:08	79-00-5	
Trichloroethene	243	ug/m3	0.92	1.68		03/06/14 23:08	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/06/14 23:08	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 23:08	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/06/14 23:08	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/06/14 23:08	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.0	1.68		03/06/14 23:08	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/06/14 23:08	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

PROJECT NARRATIVE

Project: 1121C06221
Pace Project No.: 10258805

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 15, 2014

General Information:

47 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/19607

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results may be biased high.

- LCS (Lab ID: 1635646)
- trans-1,2-Dichloroethene

QC Batch: AIR/19617

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 1635821)
- trans-1,2-Dichloroethene

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: AIR/19607

R1: RPD value was outside control limits.

- DUP (Lab ID: 1635819)
- Methylene Chloride

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 1121C06221
Pace Project No.: 10258805

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 15, 2014

QC Batch: AIR/19607

R1: RPD value was outside control limits.
• Trichloroethene

Additional Comments:

Analyte Comments:

QC Batch: AIR/19598

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
• SV-113-C-16 (Lab ID: 10258805027)
• Methylene Chloride

QC Batch: AIR/19607

A3: The sample was analyzed by serial dilution.

- IA-105-Z-16 (Lab ID: 10258805030)
 - m&p-Xylene
 - Toluene
- IA-123-Z-16 (Lab ID: 10258805032)
 - m&p-Xylene
 - Toluene
- SV-102-C-16 (Lab ID: 10258805009)
 - 1,1-Dichloroethane
 - 1,1-Dichloroethene
 - 1,1,1-Trichloroethane
 - Ethylbenzene
 - m&p-Xylene
 - o-Xylene
 - Trichloroethene
- SV-126-C-16 (Lab ID: 10258805017)
 - Vinyl chloride
- SV-133-C-16 (Lab ID: 10258805025)
 - Trichloroethene

C0: Result confirmed by second analysis.

- SV-105-Z-16 (Lab ID: 10258805029)
 - Methylene Chloride

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- DUP (Lab ID: 1635819)
 - Trichloroethene
- SV-105-Z-16 (Lab ID: 10258805029)
 - Methylene Chloride

QC Batch: AIR/19617

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- IA-088-C-16 (Lab ID: 10258805006)
 - Dichlorodifluoromethane

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 1121C06221

Pace Project No.: 10258805

Method: TO-15

Description: TO15 MSV AIR

Client: Tetra Tech GEO - Maryland

Date: March 15, 2014

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: 1121C06221
Pace Project No.: 10258805

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10258805001	SV-143-C-16	Air	02/24/14 16:32	02/26/14 08:12
10258805002	IA-143-C-16	Air	02/24/14 16:44	02/26/14 08:12
10258805003	SV-135-C-16	Air	02/24/14 11:35	02/26/14 08:12
10258805004	IA-135-C-16	Air	02/24/14 16:54	02/26/14 08:12
10258805005	SV-088-C-16	Air	02/24/14 11:42	02/26/14 08:12
10258805006	IA-088-C-16	Air	02/24/14 16:56	02/26/14 08:12
10258805007	SV-142-C-16	Air	02/24/14 11:40	02/26/14 08:12
10258805008	IA-142-C-16	Air	02/24/14 16:57	02/26/14 08:12
10258805009	SV-102-C-16	Air	02/24/14 11:49	02/26/14 08:12
10258805010	IA-102-C-16	Air	02/24/14 17:03	02/26/14 08:12
10258805011	SV-130-C-16	Air	02/24/14 11:52	02/26/14 08:12
10258805012	IA-130-C-16	Air	02/24/14 17:58	02/26/14 08:12
10258805013	SV-060-C-16	Air	02/24/14 11:59	02/26/14 08:12
10258805014	IA-060-C-16	Air	02/24/14 18:00	02/26/14 08:12
10258805015	SV-141-C-16	Air	02/24/14 12:02	02/26/14 08:12
10258805016	IA-141-C-16	Air	02/24/14 18:14	02/26/14 08:12
10258805017	SV-126-C-16	Air	02/24/14 12:06	02/26/14 08:12
10258805018	IA-126-C-16	Air	02/24/14 18:19	02/26/14 08:12
10258805019	SV-065-C-16	Air	02/24/14 12:10	02/26/14 08:12
10258805020	IA-065-C-16	Air	02/24/14 18:23	02/26/14 08:12
10258805021	SV-063-B-16	Air	02/24/14 12:14	02/26/14 08:12
10258805022	IA-063-B-16	Air	02/24/14 18:25	02/26/14 08:12
10258805023	SV-033-B-16	Air	02/24/14 12:18	02/26/14 08:12
10258805024	IA-033-B-16	Air	02/24/14 18:28	02/26/14 08:12
10258805025	SV-133-C-16	Air	02/24/14 11:55	02/26/14 08:12
10258805026	IA-133-C-16	Air	02/24/14 18:40	02/26/14 08:12
10258805027	SV-113-C-16	Air	02/24/14 11:43	02/26/14 08:12
10258805028	IA-113-C-16	Air	02/24/14 16:59	02/26/14 08:12
10258805029	SV-105-Z-16	Air	02/24/14 12:29	02/26/14 08:12
10258805030	IA-105-Z-16	Air	02/24/14 18:48	02/26/14 08:12
10258805031	SV-123-Z-16	Air	02/24/14 12:32	02/26/14 08:12
10258805032	IA-123-Z-16	Air	02/24/14 18:49	02/26/14 08:12
10258805033	SV-121-B-16	Air	02/24/14 12:39	02/26/14 08:12
10258805034	IA-121-B-16	Air	02/24/14 19:02	02/26/14 08:12
10258805035	SV-101-B-16	Air	02/24/14 12:40	02/26/14 08:12
10258805036	IA-101-B-16	Air	02/24/14 19:03	02/26/14 08:12
10258805037	SV-128-C-16	Air	02/24/14 12:18	02/26/14 08:12

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: 1121C06221

Pace Project No.: 10258805

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10258805038	IA-128-C-16	Air	02/24/14 19:13	02/26/14 08:12
10258805039	IA-145-C-16	Air	02/24/14 19:20	02/26/14 08:12
10258805040	IA-146-C-16	Air	02/24/14 19:18	02/26/14 08:12
10258805041	IA-147-C-16	Air	02/24/14 19:25	02/26/14 08:12
10258805042	IA-148-C-16	Air	02/24/14 19:15	02/26/14 08:12
10258805043	IA-144-C-16	Air	02/24/14 19:37	02/26/14 08:12
10258805044	SV-DUP1-C-16	Air	02/24/14 00:00	02/26/14 08:12
10258805045	SV-DUP2-C-16	Air	02/24/14 00:00	02/26/14 08:12
10258805046	IA-DUP1-C-16	Air	02/24/14 00:00	02/26/14 08:12
10258805047	IA-DUP2-C-16	Air	02/24/14 00:00	02/26/14 08:12
10258805048	Unused Can#1163	Air	02/24/14 00:00	02/26/14 08:12
10258805049	Unused Can#2476	Air	02/24/14 00:00	02/26/14 08:12

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ORIGINAL



The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Company: **Petra Tech**
Address: **20351 Century Blvd Ste 200**
City: **Germanatown, MD 20874**
Email To: **TCay. Aponevage@petrotech.com**
Phone: **_____** Fax: **_____**

Section B
Required Project Information:

Report To: **_____**
Copy To: **_____**
Purchase Order No.: **_____**
Project Name: **_____**

Section C
Invoice Information:

Attention: **_____**
Company Name: **_____**
Address: **_____**
Pace Quote Reference: **_____**
Pace Project Manager/Sales Rep: **_____**
Pace Profile #: **1121C06021**

14856

Page: 2 of 4

Program

☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act

☒ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other

Location of Sampling by State

MD

Reporting Units

ug/m³ _____
ppmv _____
PPMV _____
Other _____

Report Level

II. _____ III. _____ IV. _____

Other _____

Valid Media Codes

Media

CODE

Tedlar Bag TB

1 Liter Summa Can 1LC

6 Liter Summa Can 6LC

Low Volume Puff LVP

High Volume Puff HVP

Other PM10

Section D Required Client Information

AIR SAMPLE ID

Sample IDs MUST BE UNIQUE

Item #

SV-060-C-16

IA-060-C-16

SV-141-C-16

IA-141-C-16

SV-126-C-16

IA-126-C-16

SV-065-C-16

IA-065-C-16

SV-063-B-16

IA-063-B-16

SV-033-B-16

IA-033-B-16

COLLECTED

PID Reading (Client only)

MEDIA CODE

DATE

TIME

DATE

TIME

COMPOSITE - ENDURAS

COMPOSITE - TIME

Canister Pressure (Initial Field - psig)

Canister Pressure (Final Field - psig)

Summa Can Number

Flow Control Number

Method:

PM10

3C - Fixed Gas (%)

TO-3M (Methane)

TO-4 (PCBs)

TO-13 (PAH)

TO-14

TO-15

TO-15 Short List

Pace Lab ID

013

014

015

016

017

018

019

020

021

022

023

024

RELINQUISHED BY / AFFILIATION

DATE

TIME

ACCEPTED BY / AFFILIATION

DATE

TIME

Comments:

Canister Manual - 21554 1420

space

Temp in °C

Received on Ice

Custody Sealed Cooler

Samples Intact

Temp in °C

Received on Ice

Custody Sealed Cooler

Samples Intact

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER

SIGNATURE SAMPLER

DATE Signed (MM/DD/YY)

DAVID MONICO

DAVID MONICO

2/24/14



The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

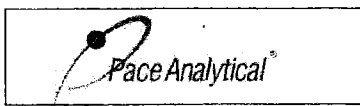
ORIGINAL



AIK: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ORIGINAL



Document Name:
Air Sample Condition Upon Receipt
Document No.:
F-MN-A-106-rev.09

Document Revised: 26Dec2013
Page 1 of 1
Issuing Authority:
Pace Minnesota Quality Office

10

Air Sample Condition
Upon Receipt

Client Name:
tetra tech

Project #:

WO#: 10258805



Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number: *on other sheet*

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No
Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other: Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): Corrected Temp (°C): Thermom. Used: ☐ B88A912167504 ☐ 72337080
☐ B88A9132521491 ☐ 80512447

Temp should be above freezing to 6°C Correction Factor: Date & Initials of Person Examining Contents: *2/22/14*

Type of ice Received ☐ Blue ☐ Wet ☒ None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media: <i>air can</i>		11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received:

Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
SV-143-C-16	2477 / 0204	SV-130-C-16	1176 / 0336	SV-063-B-16	2498 / 0182
IA-143-C-16	2020 / 0408	IA-130-C-16	1338 / 0435	IA-063-B-16	2449 / 0149
SV-135-C-16	2271 / 0339	SV-060-C-16	1016 / 0057	SV-033-B-16	1778 / 0174
IA-135-C-16	1030 / 0148	IA-060-C-16	2003 / 0150	IA-033-B-16	1786 / 0524
SV-088-C-16	1348 / 0219	SV-141-C-16	2461 / 0336	SV-133-B-16	2290 / 0183
IA-088-C-16	1784 / 0444	IA-141-C-16	2075 / 0147	IA-133-B-16	1020 / 0124
SV-142-C-16	2574 / 0167	SV-126-C-16	1177 / 0128	SV-113-B-16	2523 / 0170
IA-142-C-16	2581 / 0536	SV-126-C-16	0902 / 0434	IA-113-B-16	2448 / 0277
SV-102-C-16	0766 / 0038	SV-065-C-16	1330 / 0199	SV-105-B-16	0828 / 0037
IA-102-C-16	2269 / 0017	IA-065-C-16	1023 / 0521	IA-105-B-16	0922 / 0454

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review:

Date: *2/26/14*

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:
Air Sample Condition Upon Receipt
Document No.:
F-MN-A-106-rev.09

Document Revised: 26Dec2013
Page 1 of 1
Issuing Authority:
Pace Minnesota Quality Office

②

Air Sample Condition
Upon Receipt

Client Name:

Project #:

10258805

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present?

☐ Yes ☐ No

Seals Intact?

☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material:

☐ Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other: _____

Temp Blank rec: ☐ Yes ☐ No

Temp. (TO17 and TO13 samples only) (°C): _____

Corrected Temp (°C): _____

Thermom. Used:

☐ B88A912167504
☐ B88A9132521491

☐ 72337080
☐ 80512447

Temp should be above freezing to 6°C

Correction Factor: _____

Date & Initials of Person Examining Contents: _____

Type of ice Received ☐ Blue ☐ Wet ☐ None

Comments:

Chain of Custody Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media:		11.
Sample Labels Match COC?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received:

Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
8V-123-2-16	2398 / 0239	IA-147-C-16	1334 / 0512		
IA-123-2-16	2537 / 0146	IA-148-C-16	1161 / 0544		
SU-121-B-16	2497 / 0129	IA-144-C-16	2261 / 0141		
IA-121-B-16	2558 / 0433	SU-Dup 1-C-16	2544 / 0183		
SU-101-B-16	2441 / 0196	SU-Dup 2-C-16	2582 / 0183		
IA-101-B-16	1332 / 0535	IA-Dup 1-C-16	0888 / -		
SU-128-C-16	2407 / 0308	IA-Dup 2-C-16	1299 / -		
IA-128-C-16	0891 / 0453	unused	1163 / 0073		
IA-145-C-16	2421 / 0445	unused	2476		
IA-146-C-16	2321 / 0519				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____

Date/Time: _____

Comments/Resolution: SSE ①

Project Manager Review: [Signature]

Date: 2/26/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

ANALYTE	IA-DUP1-C-16	IA-133-C-16	RPD	VARIANCE
BENZENE	0.83	0.93	11.36	0.1
CHLORODIFLUOROMETHANE	3.9	4.4	12.05	0.5
DICHLORODIFLUOROMETHANE	2.3	2.4	4.26	0.1
M+P-XYLENES	1.9	2.1	10	0.2
METHYLENE CHLORIDE	1.9	8.4	126.21	6.5
NAPHTHALENE	3.5	3.7	5.56	0.2
O-XYLENE	ND	0.84	200	0.66
TOLUENE	2.4	2.9	18.87	0.5
TRICHLOROETHENE	1.4	1.2	15.38	0.2

ANALYTE	IA-DUP2-C-16	IA-113-C-16	RPD	VARIANCE
1,1,1-TRICHLOROETHANE	ND	13.2	200	11.3
1,1-DICHLOROETHANE	ND	43.7	200	42.3
1,1-DICHLOROETHENE	ND	17.1	200	15.7
1,2,4-TRIMETHYLBENZENE	0.94	3.2	109.18	2.26
BENZENE	0.89	1.9	72.40	1.01
CHLORODIFLUOROMETHANE	3.1	6.5	70.83	3.4
DICHLORODIFLUOROMETHANE	2.1	4.7	200	0.66
M+P-XYLENES	3.4	76.6	183.00	73.2
METHYLENE CHLORIDE	5.1	79.7	175.94	74.6
NAPHTHALENE	3.2	ND	200	10.9
O-XYLENE	1.2	26.6	182.73	25.4
TOLUENE	ND	24.7	200	23.4
TRICHLOROETHENE	ND	20	200	19.8

ANALYTE	SV-DUP1-C-16	SV-133-C-16	RPD	VARIANCE
1,2-DICHLOROETHANE	0.82	0.92	11.49	0.1
BENZENE	0.87	0.77	12.20	0.1
CHLORODIFLUOROMETHANE	4.4	4.3	2.30	0.1
CHLOROFORM	6.2	6.7	7.75	0.5
CIS-1,2-DICHLOROETHENE	8.7	8.4	3.51	0.3
DICHLORODIFLUOROMETHANE	3	3.2	6.45	0.2
M+P-XYLENES	2	1.8	10.53	0.2
METHYLENE CHLORIDE	13	20.2	43.37	7.2
NAPHTHALENE	4.2	4.7	11.24	0.5
O-XYLENE	0.95	0.81	15.91	0.14
TETRACHLOROETHENE	159	169	6.10	10
TOLUENE	5.5	3.6	41.76	1.9
TRANS-1,2-DICHLOROETHENE	3.5	3.6	2.82	0.1
TRICHLOROETHENE	8630	10700	21.42	2070

ANALYTE	SV-DUP2-C-16	SV-113-C-16	RPD	VARIANCE
BENZENE	ND	2.4	200	1.85
CARBON TETRACHLORIDE	ND	1.1	200	0
CHLORODIFLUOROMETHANE	3.5	10.7	101.41	7.2
CHLOROFORM	1.8	ND	200	0.1
CIS-1,2-DICHLOROETHENE	31.7	0.73	191.00	30.97
DICHLORODIFLUOROMETHANE	2.2	3.8	53.33	1.6
M+P-XYLENES	1.5	2.4	46.15	0.9
METHYLENE CHLORIDE	12.5	557	191.22	544.5
NAPHTHALENE	3.7	ND	200	0.8
O-XYLENE	ND	0.83	200	0.67
TOLUENE	1.7	6.1	112.82	4.4
TRICHLOROETHENE	243	7	188.80	236

Instrument: 10A1R0 Method: Misc. Prep. Info: Surrogate Lot: 10288-3-16
 Column: J&W DB-5 0.32mm Helium Tune Standard: 10288-3-16 ISTD Lot: 10288-3-16 Cal. Standard: 10288-8-3

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06501BFB.D	BFB	L/	Tune	1		TUNE	3/06/14 10:00	JAM	
06502.D	CCV	G/	CCal	1		TO15_061-14	3/06/14 10:30	JAM	
06503.D	CCV	G/	CCal	1		TO15_061-14	3/06/14 11:09	JAM	
06504.D	BFB	L/	Tune	1		TUNE	3/06/14 11:48	JAM	
06505.D	CAL1	G/	Ical	1		TO15_065-14	3/06/14 12:12	JAM	
06506.D	CAL2	G/	Ical	1		TO15_065-14	3/06/14 12:37	JAM	
06507.D	CAL3	G/	Ical	1		TO15_065-14	3/06/14 13:02	JAM	
06508.D	CAL4	G/	Ical	1		TO15_065-14	3/06/14 13:29	JAM	
06509.D	CAL5	G/	Ical	1		TO15_065-14	3/06/14 13:59	JAM	
06510.D	CAL6	G/	Ical	1		TO15_065-14	3/06/14 14:28	JAM	
06511.D	CAL7	G/	Ical	1		TO15_065-14	3/06/14 15:00	JAM	
06512.D	ICV ADDL	G/	LCS	1		TO15_065-14	3/06/14 15:26	JAM	
06513.D	ICV	G/	LCS	1		TO15_065-14	3/06/14 15:53	JAM	
06514.D	LCS	G/	LCS	1		TO15_065-14	3/06/14 16:20	JAM	
06514_19598.D	1634996	G/19598	LCS	1		TO15_065-14	3/06/14 16:20	JAM	
06515.D	0	G/	Sample	1		TO15_065-14	3/06/14 16:44	JAM	
06516.D	BLANK	G/	Blank	1		TO15_065-14	3/06/14 17:13	JAM	
06517.D	BLANK	G/	Blank	1		TO15_065-14	3/06/14 17:43	JAM	
06518_19598.D	BLANK	G/	Blank	1		TO15_065-14	3/06/14 18:12	JAM	
06518.D	BLANK	G/	Blank	1		TO15_065-14	3/06/14 18:12	JAM	
06518_19598.D	1634995	G/19598	Blank	1		TO15_065-14	3/06/14 18:12	JAM	
06519.D	60163440001	G/19576	Sample	1	1.44	TO15_065-14	3/06/14 18:43	JAM	
06520.D	10258805022	G/19598	Sample	2	1	TO15_065-14	3/06/14 19:12	JAM	
06521.D	10258805008	G/19598	Sample	1	1.87	TO15_065-14	3/06/14 19:41	JAM	
06522.D	-DUP	G/19598	Duplicate	1	1.87	TO15_065-14	3/06/14 20:12	JAM	
06523.D	10258805007	G/19598	Sample	1	1.68	TO15_065-14	3/06/14 20:41	JAM	
06524.D	10258805020	G/19598	Sample	1	1.68	TO15_065-14	3/06/14 21:10	JAM	
06525.D	1635564	G/19598	Duplicate	1	1.68	TO15_065-14	3/06/14 21:41	JAM	
06526.D	10258805004	G/19598	Sample	1	1.68	TO15_065-14	3/06/14 22:10	JAM	
06527.D	10258805004	G/19598	Sample	1	1.8	TO15_065-14	3/06/14 22:39	JAM	
06528.D	10258805045	G/19598	Sample	1	1.68	TO15_065-14	3/06/14 23:08	JAM	
06529.D	10258805043	G/19598	Sample	1	1.87	TO15_065-14	3/06/14 23:38	JAM	
06530.D	10258805027	G/19598	Sample	1	1.68	TO15_065-14	3/07/14 00:07	JAM	
06531.D	10258805040	G/19598	Sample	1	1.8	TO15_065-14	3/07/14 00:36	JAM	
06532.D	10258805003	G/19598	Sample	1	1.68	TO15_065-14	3/07/14 01:06	JAM	
06533.D	10258805034	G/19598	Sample	1	1.87	TO15_065-14	3/07/14 01:35	JAM	
06534.D	10258805033	G/19598	Sample	1	1.68	TO15_065-14	3/07/14 02:04	JAM	
06535.D	10258805021	G/19598	Sample	1	1.68	TO15_065-14	3/07/14 02:33	JAM	
06536.D	10258805041	G/19598	Sample	1	1.87	TO15_065-14	3/07/14 03:03	JAM	
06537.D	10258805012	G/19598	Sample	1	1.68	TO15_065-14	3/07/14 03:32	JAM	
06538.D	10258805002	G/19598	Sample	1	1.8	TO15_065-14	3/07/14 04:01	JAM	
06539.D	10258805015	G/19598	Sample	2	2.02	TO15_065-14	3/07/14 04:30	JAM	
06540.D	10258805014	G/19598	Sample	1	1.74	TO15_065-14	3/07/14 05:01	JAM	
06541.D	10258805047	G/19598	Sample	1	1.68	TO15_065-14	3/07/14 05:30	JAM	
06542.D	10258700001	G/19576	Sample	2	1.44	TO15_065-14	3/07/14 05:55	JAM	
06543.D	0	G/	Sample	1		TO15_065-14	3/07/14 06:19	JAM	



Instrument Run Log

2

Instrument: 10AIR0 Method: Misc. Prep. Info: Surrogate Lot: 10288-3-16
Cplum: J&W DB-5 0.32mm Helium Tune Standard: 10288-3-16 ISTD Lot: 10288-3-16 Cal. Standard: 10288-8-3

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06544.D	IC	G/	Sample	1		TO15_065-14	3/07/14 06:49	JAM	
06545.D	IC	G/	Sample	1		TO15_065-14	3/07/14 07:22	JAM	
06546.D	IC	G/	Sample	1		TO15_065-14	3/07/14 07:56	JAM	
06547.D	10256665001	G/	Sample	1		TO15_065-14	3/07/14 09:40	JAM	

Check Maintenance Items Performed:

Changed septum
Cleaned liner
Replaced/Cleaned gold seal
Additional Comments:

Clipped column
Changed trap - Lot #
Cleaned MS Source

Changed column - Lot #
Other minor parts replaced
No maintenance performed today

File Path 1: U:\10AIR0\1030614.B
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
Run order verified:
Report Date: 03/07/2014 16:42
Reviewed By/Date:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10258805

Lab File ID: 06504.D

BFB Injection Date: 03/06/2014

Instrument ID: 10AIR0

BFB Injection Time: 11:48

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.70
75	30.00 - 66.00% of mass 95	53.61
96	5.00 - 9.00% of mass 95	6.57
173	Less than 2.00% of mass 174	0.82 (0.98)
174	50.00 - 120.00% of mass 95	83.77
175	4.00 - 9.00% of mass 174	6.26 (7.48)
176	93.00 - 101.00% of mass 174	81.89 (97.76)
177	5.00 - 9.00% of mass 176	5.27 (6.44)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	06505.D	03/06/2014	12:12
2	CAL2	CAL2	06506.D	03/06/2014	12:37
3	CAL3	CAL3	06507.D	03/06/2014	13:02
4	CAL4	CAL4	06508.D	03/06/2014	13:29
5	CAL5	CAL5	06509.D	03/06/2014	13:59
6	CAL6	CAL6	06510.D	03/06/2014	14:28
7	CAL7	CAL7	06511.D	03/06/2014	15:00
8	ICVADDL (LCS)	ICVADDL	06512.D	03/06/2014	15:26
9	ICV (LCS)	ICV	06513.D	03/06/2014	15:53
10	LCS (LCS)	LCS	06514.D	03/06/2014	16:20
11	LCS for HBN 288599 [AIR/	1634996	06514_19598.D	03/06/2014	16:20
12	BLANK (BLK)	BLANK	06518_BLANK.	03/06/2014	18:12
13	BLANK for HBN 288599 [AI	1634995	06518_19598.D	03/06/2014	18:12
14	IA-063-B-16	10258805022	06520.D	03/06/2014	19:12
15	IA-142-C-16	10258805008	06521.D	03/06/2014	19:41
16	SV-142-C-16	10258805007	06523.D	03/06/2014	20:41
17	IA-065-C-16	10258805020	06524.D	03/06/2014	21:10
18	IA-065-C-16(1630530DUP)	1635564-DUP	06525.D	03/06/2014	21:41
19	IA-DUP1-C-16	10258805046	06526.D	03/06/2014	22:10
20	IA-135-C-16	10258805004	06527.D	03/06/2014	22:39
21	SV-DUP2-C-16	10258805045	06528.D	03/06/2014	23:08
22	IA-144-C-16	10258805043	06529.D	03/06/2014	23:38
23	SV-113-C-16	10258805027	06530.D	03/07/2014	00:07
24	SV-135-C-16	10258805003	06532.D	03/07/2014	01:06
25	IA-121-B-16	10258805034	06533.D	03/07/2014	01:35

26	SV-121-B-16	10258805033	06534.D	03/07/2014	02:04
27	SV-063-B-16	10258805021	06535.D	03/07/2014	02:33
28	IA-147-C-16	10258805041	06536.D	03/07/2014	03:03
29	IA-130-C-16	10258805012	06537.D	03/07/2014	03:32
30	IA-143-C-16	10258805002	06538.D	03/07/2014	04:01
31	SV-141-C-16	10258805015	06539.D	03/07/2014	04:30
32	IA-060-C-16	10258805014	06540.D	03/07/2014	05:01
33	IA-DUP2-C-16	10258805047	06541.D	03/07/2014	05:30

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10258805

Lab File ID: 06501BFB.D

BFB Injection Date: 03/06/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:00

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	23.76
75	30.00 - 66.00% of mass 95	55.59
96	5.00 - 9.00% of mass 95	6.71
173	Less than 2.00% of mass 174	1.01 (1.27)
174	50.00 - 120.00% of mass 95	79.71
175	4.00 - 9.00% of mass 174	6.86 (8.60)
176	93.00 - 101.00% of mass 174	77.93 (97.78)
177	5.00 - 9.00% of mass 176	5.60 (7.19)

Report Date : 11-Mar-2014 16:22

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air0.i\030614.b\06505.D
 Level 2: \\192.168.10.12\chem\10air0.i\030614.b\06506.D
 Level 3: \\192.168.10.12\chem\10air0.i\030614.b\06507.D
 Level 4: \\192.168.10.12\chem\10air0.i\030614.b\06508.D
 Level 5: \\192.168.10.12\chem\10air0.i\030614.b\06509.D
 Level 6: \\192.168.10.12\chem\10air0.i\030614.b\06510.D
 Level 7: \\192.168.10.12\chem\10air0.i\030614.b\06511.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
1 Chlorodifluoromethane	+++++	1.99394	2.06314	2.13353	2.91016	2.98294				
	3.05157						AVRG		2.52255	20.08817
2 Propylene	6.61965	6.86849	8.15922	8.38875	8.09575	8.29533				
	8.41833						AVRG		7.83508	9.66848
3 Dichlorodifluoromethane	1.03207	1.17016	1.25096	1.28051	1.32394	1.39911				
	1.47209						AVRG		1.27555	11.41730
4 Dichlorotetrafluoroethane	1.27217	1.46714	1.63486	1.64058	1.70061	1.79592				
	1.88956						AVRG		1.62869	12.64715

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
5 Chloromethane	3.50245 5.34801	4.12677	4.36948	4.51623	4.65970	5.01769	AVRG		4.50576		13.32894
6 Vinyl chloride	4.14126 4.61739	4.60201	4.83093	5.06430	4.72505	4.69410	AVRG		4.66786		6.00805
7 1,3-Butadiene	6.58073 6.90758	7.34353	7.65434	7.06121	6.98929	6.95432	AVRG		7.07014		4.83799
8 Bromomethane	3.90165 4.57447	4.32151	4.76856	4.88310	4.65741	4.59706	AVRG		4.52911		7.22568
9 Chloroethane	8.51242 10.11957	10.22763	10.32200	10.64026	10.26343	10.19563	AVRG		10.04013		6.91131
10 Ethanol	1022 243387	1591	3275	7481	76561	150543	LINR	0.01071	14.11944		0.99869
11 Vinyl Bromide	3.74626 4.76964	4.55610	4.83656	4.92854	4.65708	4.66924	AVRG		4.59506		8.57333

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\T015_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
12 Isopentane	4.20189 5.70649	4.45193	4.89405	5.05568	5.05451	5.34369	AVRG		4.95832	10.28292
13 Acrolein	12.23369 16.79430	13.85625	15.63713	15.83521	16.81645	16.25000	AVRG		15.34643	11.06501
14 Trichlorofluoromethane	0.98200 1.47074	1.06762	1.21300	1.23746	1.26431	1.35663	AVRG		1.22740	13.44237
15 Acetone	++++ 3.17716	1.91456	2.36380	2.43167	3.07427	3.15082	AVRG		2.68538	19.50439
16 Isopropyl Alcohol	2.90900 3.56995	3.84386	3.13160	3.32005	3.46797	3.51013	AVRG		3.39322	9.01810
17 Acrylonitrile	1146 391488	2272	4989	10306	131057	266571	LNLR	0.00228	8.53814	0.99962
18 1,1-Dichloroethene	2.36456 3.22729	2.64841	2.81867	2.84767	2.90286	3.03206	AVRG		2.83450	9.70329

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
19 Tert Butyl Alcohol (TBA)	1.66798	1.88614	1.78484	1.82113	2.18144	2.37155					
	2.53263						AVRG		2.03510		16.14245
20 Freon 113	1.80808	2.07409	2.14862	2.23486	2.38202	2.53849					
	2.68246						AVRG		2.26695		13.01632
21 Methylene chloride	5016	8551	18603	35798	262633	480633					
	677881						LINR	-0.05779	4.94221		0.99658
22 Allyl Chloride	12.04933	11.62305	12.86250	11.62522	10.39540	10.24300					
	10.55409						AVRG		11.33608		8.59489
23 Carbon Disulfide	1.54270	1.57976	1.78236	1.80081	1.70709	1.68785					
	1.70403						AVRG		1.68637		5.68057
24 trans-1,2-dichloroethene	4.75120	5.70443	5.42253	5.31115	4.78672	4.79488					
	4.83799						AVRG		5.08699		7.58945
25 Methyl Tert Butyl Ether	1.21421	1.39056	1.46186	1.49258	1.46754	1.51982					
	1.59695						AVRG		1.44907		8.35048

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
26 Vinyl Acetate	5143	8939	20621	39824	582987	1143838					
	++++						LINR	0.00836	1.93143		0.99964
27 1,1-Dichloroethane	1.91184	2.08888	2.42742	2.44870	2.39959	2.48296			2.33452		10.32058
	2.58224						AVRG				
29 Methyl Ethyl Ketone	1139	1658	4499	8069	109102	223053					
	329063						LINR	0.00457	10.16832		0.99970
30 Di-isopropyl Ether	1.16119	1.34941	1.46679	1.57247	1.64380	1.79166					
	1.92482						AVRG		1.55859		16.69031
31 n-Hexane	2.48255	2.88327	3.18505	3.37983	3.19024	3.37878					
	3.61340						AVRG		3.15902		11.83595
32 Ethyl Acetate	2.32189	2.66964	2.88208	2.58970	2.26677	2.37571					
	2.47458						AVRG		2.51148		8.66430
33 cis-1,2-Dichloroethene	5.07887	5.09485	4.98313	5.05377	4.58561	4.61095					
	4.61863						AVRG		4.86083		4.97823

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
34 Ethyl Tert-Butyl Ether	1.08216	1.22960	1.36441	1.38447	1.38263	1.44649					
	1.51482						AVRG		1.34351		10.73792
35 Chloroform	1.44979	1.58775	1.73567	1.81129	1.77346	1.87196					
	1.95438						AVRG		1.74061		9.86740
36 Tetrahydrofuran	3.83219	4.20493	4.89183	4.91089	4.62708	4.59962					
	4.49320						AVRG		4.50854		8.49921
37 1,1,1-Trichloroethane	1.33482	1.34866	1.53043	1.55117	1.53437	1.65420					
	1.75455						AVRG		1.52974		9.88845
38 1,2-Dichloroethane	1.97771	2.13701	2.27218	2.28069	2.23229	2.40844					
	2.55506						AVRG		2.26620		8.15612
39 Benzene	1.17090	1.39666	1.49783	1.53469	1.53357	1.65304					
	1.76249						AVRG		1.50703		12.51109
40 Carbon tetrachloride	1.31708	1.45154	1.53322	1.57726	1.54399	1.73023					
	1.91251						AVRG		1.58082		12.17510

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
41 Cyclohexane	3.01802 4.54478	3.02078	3.19202	3.30375	3.46895	4.05973	AVRG		3.51543		16.42123
42 Tert Amyl Methyl Ether	++++ 1.48708	0.70297	1.04520	1.26261	1.38716	1.43824	AVRG		1.22054		24.48574
44 2,2,4-Trimethylpentane	0.78493 1.10769	0.96676	0.99173	1.02631	1.00969	1.05438	AVRG		0.99164		10.27430
45 Heptane	2.34622 3.21512	2.81857	2.77673	2.89820	2.84188	3.04927	AVRG		2.84943		9.45559
46 1,2-Dichloropropane	2.71563 4.70515	3.41398	4.07622	4.00249	4.09797	4.40908	AVRG		3.91722		16.88557
47 Trichloroethene	2.84541 3.46202	3.39290	3.66439	3.73324	3.38692	3.43703	AVRG		3.41741		8.37798
48 1,4-Dioxane	4.42444 8.64949	6.74415	7.17187	7.24726	8.43221	9.19682	AVRG		7.40946		21.49120

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
49 Bromodichloromethane	1.40028	1.48438	1.61431	1.58326	1.50491	1.64206					
	1.75519						AVRG		1.56920		7.44977
50 Methylcyclohexane	5.78194	6.38188	6.68888	6.30144	5.89249	5.92933					
	5.90373						AVRG		6.12567		5.47175
51 Methyl Isobutyl Ketone	1.89309	2.31897	2.62752	2.55257	1.96760	2.02466					
	2.08264						AVRG		2.20958		13.23749
52 cis-1,3-Dichloropropene	4178	6801	18213	37222	474286	963452					
	1440669						LTNR	0.00670	2.33059		0.99991
53 trans-1,3-Dichloropropene	3642	6693	16109	35590	525674	1082753					
	1619092						LTNR	0.01396	2.06940		0.99986
55 1,1,2-Trichloroethane	2.20829	2.69023	3.19524	3.44456	3.36067	3.54856					
	3.60777						AVRG		3.15076		16.38860
56 Toluene	1.02143	1.14792	1.22565	1.25370	1.23122	1.29645					
	1.35389						AVRG		1.21861		8.84325

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
57 Methyl Butyl Ketone	1.204231	1.528177	1.778211	1.898768	1.325371	1.447971					
	1.513121						AVRG		1.527981		15.864931
58 Dibromochloromethane	1.126521	1.178631	1.271661	1.231361	1.087021	1.167891					
	1.237951						AVRG		1.185861		5.530961
59 1,2-Dibromoethane	1.391571	1.472411	1.500101	1.469011	1.281201	1.386941					
	1.484451						AVRG		1.426521		5.474141
60 Tetrachloroethene	1.207451	1.421421	1.543491	1.593741	1.484501	1.598201					
	1.684851						AVRG		1.504611		10.377781
62 Chlorobenzene	0.849901	0.987661	1.098781	1.128021	1.031791	1.102031					
	1.137121						AVRG		1.047901		9.777701
63 Ethyl Benzene	0.572291	0.608881	0.661591	0.640361	0.581921	0.642661					
	0.686431						AVRG		0.627731		6.664901
64 m&p-Xylene	0.702701	0.785711	0.810431	0.758011	0.702661	0.773271					
	0.816231						AVRG		0.764141		6.090691

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
65 Styrene	1.15986	1.36481	1.40499	1.29881	1.13054	1.25896					
	1.33737						AVRG		1.27934		8.05215
66 Bromoform	1.14877	1.30228	1.28934	1.22929	1.06572	1.17937					
	1.26322						AVRG		1.21114		7.03113
67 o-Xylene	0.66132	0.71841	0.73033	0.7344	0.68390	0.77018					
	0.82125						AVRG		0.73139		7.26329
68 1,1,2,2-Tetrachloroethane	0.95266	1.04570	1.13681	1.12300	1.06207	1.15652					
	1.20700						AVRG		1.09768		7.67518
69 Isopropylbenzene	0.50074	0.57332	0.59961	0.59942	0.55739	0.60271					
	0.63880						AVRG		0.58171		7.54289
70 N-Propylbenzene	0.45957	0.54012	0.53440	0.50102	0.46409	0.51703					
	0.54137						AVRG		0.50823		6.63748
71 4-Ethyltoluene	0.59354	0.66955	0.65825	0.62901	0.57151	0.62319					
	0.65128						AVRG		0.62805		5.66172

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
72 1,3,5-Trimethylbenzene	0.55933 0.67303	0.61547	0.65071	0.62861	0.61320	0.63636	AVRG		0.62525	5.71203
73 Tert-Butyl Benzene	0.65686 0.78403	0.71647	0.73446	0.70874	0.68116	0.73590	AVRG		0.71680	5.73060
74 1,2,4-Trimethylbenzene	0.66029 0.76908	0.66653	0.70338	0.66337	0.65338	0.71823	AVRG		0.69061	6.11786
75 Sec- Butylbenzene	0.61674 0.60468	0.63704	0.53093	0.50987	0.51042	0.56662	AVRG		0.56804	9.24782
76 1,3-Dichlorobenzene	1.01574 1.18788	1.11958	1.18492	1.14373	1.06745	1.13642	AVRG		1.12225	5.54710
78 Benzyl Chloride	6894 ++++	11849	26930	63132	906494	1772277	LNK	0.00240	0.87137	0.99801
79 1,4-Dichlorobenzene	0.86937 1.19457	1.02461	1.07234	1.13717	1.06270	1.13912	AVRG		1.07141	9.87502

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
80 p-Isopropyltoluene	0.68670 0.70197	0.88073	0.87312	0.66861	0.61444	0.66014	AVRG		0.72653		14.62976
81 1,2,3-Trimethylbenzene	0.82096 0.77209	0.72462	0.70352	0.72032	0.67965	0.74075	AVRG		0.73742		6.34488
82 1,2-Dichlorobenzene	1.29322 1.21001	1.35244	1.32132	1.26050	1.11319	1.15111	AVRG		1.24311		7.14408
83 N-Butylbenzene	8877 ++++	15862	37059	78807	1133898	2261151	LTNR	0.00391	0.68519		0.99878
84 1,2,4-Trichlorobenzene	3449 ++++	5623	13239	25785	389072	872794	LTNR	0.01858	1.80104		0.99935
85 Naphthalene	6360 ++++	10326	23952	48481	705917	1629119	LTNR	0.02130	0.96839		0.99864
86 Hexachlorobutadiene	0.98831 ++++	1.19805	1.35122	1.36299	1.69274	1.69296	AVRG		1.38105		20.05058

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
\$ 28 Hexane-d14 (S)	2.14027	2.20137	2.15063	2.09929	2.13387	2.10359					
	2.02046						AVRG		2.12135		2.63539
\$ 54 Toluene-d8 (S)	1.02720	1.04013	1.02437	1.02593	1.02977	0.96452					
	0.92933						AVRG		1.00589		4.16137
\$ 77 1,4-dichlorobenzene-d4 (S)	1.92251	2.03560	2.00074	1.88797	1.77087	1.56444					
	1.33861						AVRG		1.78868		14.19634

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10258805

Lab File ID: 06601BFB.D

BFB Injection Date: 03/07/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:28

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	17.92
75	30.00 - 66.00% of mass 95	49.42
96	5.00 - 9.00% of mass 95	6.93
173	Less than 2.00% of mass 174	0.25 (0.28)
174	50.00 - 120.00% of mass 95	86.50
175	4.00 - 9.00% of mass 174	6.71 (7.76)
176	93.00 - 101.00% of mass 174	83.93 (97.03)
177	5.00 - 9.00% of mass 176	5.62 (6.70)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS (LCS)	LCS	06602_LCS.D	03/07/2014	10:54
2	CCV	CCV	06602.D	03/07/2014	10:54
3	LCS for HBN 288687 [AIR/	1635646	06602_19607.D	03/07/2014	10:54
4	BLANK (BLK)	BLANK	06604_BLANK.	03/07/2014	12:15
5	BLANK for HBN 288687 [AI	1635645	06604_19607.D	03/07/2014	12:15
6	IA-146-C-16	10258805040	06610.D	03/07/2014	15:58
7	IA-128-C-16	10258805038	06616.D	03/07/2014	18:48
8	IA-141-C-16	10258805016	06617.D	03/07/2014	19:17
9	IA-133-C-16	10258805026	06618.D	03/07/2014	19:47
10	IA-126-C-16	10258805018	06619.D	03/07/2014	20:16
11	SV-133-C-16	10258805025	06620.D	03/07/2014	20:45
12	SV-102-C-16	10258805009	06621.D	03/07/2014	21:15
13	IA-033-B-16	10258805024	06623.D	03/07/2014	22:16
14	SV-128-C-16	10258805037	06624.D	03/07/2014	22:45
15	IA-145-C-16	10258805039	06625.D	03/07/2014	23:15
16	SV-033-B-16	10258805023	06626.D	03/07/2014	23:44
17	IA-123-Z-16	10258805032	06627.D	03/08/2014	00:13
18	SV-DUP1-C-16	10258805044	06628.D	03/08/2014	00:42
19	SV-DUP1-C-16(1630565D	1635819-DUP	06629.D	03/08/2014	01:15
20	SV-101-B-16	10258805035	06630.D	03/08/2014	01:44
21	IA-105-Z-16	10258805030	06631.D	03/08/2014	02:13
22	SV-088-C-16	10258805005	06634.D	03/08/2014	03:46
23	SV-105-Z-16	10258805029	06635.D	03/08/2014	04:20
24	SV-126-C-16	10258805017	06636.D	03/08/2014	04:49

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 07-MAR-2014 10:54
Lab File ID: 06602.D Init. Cal. Date(s): 06-MAR-2014 06-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:12 15:00
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.52255	2.44149	2.44149	0.010	-3.21306	30.00000	Averaged
2 Propylene	7.83508	6.24839	6.24839	0.010	-20.25110	30.00000	Averaged
3 Dichlorodifluoromethane	1.27555	1.16865	1.16865	0.010	-8.38060	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.62869	1.40680	1.40680	0.010	-13.62402	30.00000	Averaged
5 Chloromethane	4.50576	3.80321	3.80321	0.010	-15.59231	30.00000	Averaged
6 Vinyl chloride	4.66786	3.65600	3.65600	0.010	-21.67714	30.00000	Averaged
7 1,3-Butadiene	7.07014	5.44492	5.44492	0.010	-22.98717	30.00000	Averaged
8 Bromomethane	4.52911	3.63781	3.63781	0.010	-19.67945	30.00000	Averaged
9 Chloroethane	10.04013	7.97862	7.97862	0.010	-20.53270	30.00000	Averaged
10 Ethanol	10.00000	13.05769	10.90252	0.010	30.57691	30.00000	Linear
11 Vinyl Bromide	4.59506	3.71507	3.71507	0.010	-19.15075	30.00000	Averaged
12 Isopentane	4.95832	4.13450	4.13450	0.010	-16.61495	30.00000	Averaged
13 Acrolein	15.34643	12.73236	12.73236	0.010	-17.03374	30.00000	Averaged
14 Trichlorodifluoromethane	1.22740	1.13812	1.13812	0.010	-7.27328	30.00000	Averaged
15 Acetone	2.68538	2.54622	2.54622	0.010	-5.18218	30.00000	Averaged
16 Isopropyl Alcohol	3.39322	2.57609	2.57609	0.010	-24.08140	30.00000	Averaged
17 Acrylonitrile	10.00000	13.10993	6.52406	0.010	31.09926	30.00000	Linear
18 1,1-Dichloroethene	2.83450	2.53244	2.53244	0.010	-10.65665	30.00000	Averaged
19 Tert Butyl Alcohol (TBA)	2.03510	1.70092	1.70092	0.100	-16.42084	30.00000	Averaged
20 Freon 113	2.26695	2.00080	2.00080	0.010	-11.74017	30.00000	Averaged
21 Methylene chloride	10.00000	12.63174	3.74138	0.010	26.31741	30.00000	Linear
22 Allyl Chloride	11.33608	8.20756	8.20756	0.010	-27.59793	30.00000	Averaged
23 Carbon Disulfide	1.68637	1.36295	1.36295	0.010	-19.17840	30.00000	Averaged
24 trans-1,2-dichloroethene	5.08699	3.80734	3.80734	0.010	-25.15537	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.44907	1.21559	1.21559	0.300	-16.11287	30.00000	Averaged
26 Vinyl Acetate	10.00000	12.10209	1.60705	0.010	21.02090	30.00000	Linear
27 1,1-Dichloroethane	2.33452	2.01826	2.01826	0.010	-13.54707	30.00000	Averaged
28 Hexane-d14(S)	2.12135	2.12273	2.12273	0.200	0.06510	30.00000	Averaged
29 Methyl Ethyl Ketone	10.00000	12.77598	7.98753	0.010	27.75982	30.00000	Linear
30 Di-isopropyl Ether	1.55859	1.39075	1.39075	0.010	-10.76871	30.00000	Averaged
31 n-Hexane	3.15902	2.63758	2.63758	0.010	-16.50627	30.00000	Averaged
32 Ethyl Acetate	2.51148	1.86973	1.86973	0.010	-25.55290	30.00000	Averaged
33 cis-1,2-Dichloroethene	4.86083	3.69229	3.69229	0.010	-24.03989	30.00000	Averaged
34 Ethyl Tert-Butyl Ether	1.34351	1.13954	1.13954	0.010	-15.18156	30.00000	Averaged
35 Chloroform	1.74061	1.54554	1.54554	0.010	-11.20749	30.00000	Averaged
36 Tetrahydrofuran	4.50854	3.65686	3.65686	0.010	-18.89039	30.00000	Averaged
37 1,1,1-Trichloroethane	1.52974	1.38036	1.38036	0.010	-9.76554	30.00000	Averaged
38 1,2-Dichloroethane	2.26620	2.05070	2.05070	0.010	-9.50905	30.00000	Averaged
39 Benzene	1.50703	1.22173	1.22173	0.300	-18.93116	30.00000	Averaged
40 Carbon tetrachloride	1.58082	1.41553	1.41553	0.010	-10.45565	30.00000	Averaged
41 Cyclohexane	3.51543	2.84793	2.84793	0.010	-18.98780	30.00000	Averaged
42 Tert Amyl Methyl Ether	1.22054	1.14578	1.14578	0.010	-6.12554	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06602.D
Report Date: 07-Mar-2014 11:24

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 07-MAR-2014 10:54
Lab File ID: 06602.D Init. Cal. Date(s): 06-MAR-2014 06-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:12 15:00
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	0.99164	0.81925	0.81925	0.010	-17.38465	30.00000	Averaged
45 Heptane	2.84943	2.36394	2.36394	0.010	-17.03802	30.00000	Averaged
46 1,2-Dichloropropane	3.91722	3.34514	3.34514	0.010	-14.60413	30.00000	Averaged
47 Trichloroethene	3.41741	2.66554	2.66554	0.010	-22.00117	30.00000	Averaged
48 1,4-Dioxane	7.40946	6.10977	6.10977	0.010	-17.54102	30.00000	Averaged
49 Bromodichloromethane	1.56920	1.34579	1.34579	0.010	-14.23722	30.00000	Averaged
50 Methylcyclohexane	6.12567	4.61159	4.61159	0.010	-24.71696	30.00000	Averaged
51 Methyl Isobutyl Ketone	2.20958	1.63123	1.63123	0.010	-26.17458	30.00000	Averaged
52 cis-1,3-Dichloropropene	10.00000	12.49629	1.87508	0.010	24.96286	30.00000	Linear
53 trans-1,3-Dichloropropene	10.00000	11.97414	1.74861	0.010	19.74139	30.00000	Linear
54 Toluene-d8 (S)	1.00589	0.99814	0.99814	0.200	-0.77104	30.00000	Averaged
55 1,1,2-Trichloroethane	3.15076	2.76555	2.76555	0.010	-12.22612	30.00000	Averaged
56 Toluene	1.21861	0.99881	0.99881	0.300	-18.03721	30.00000	Averaged
57 Methyl Butyl Ketone	1.52798	1.15794	1.15794	0.010	-24.21708	30.00000	Averaged
58 Dibromochloromethane	1.18586	0.94485	0.94485	0.010	-20.32367	30.00000	Averaged
59 1,2-Dibromoethane	1.42652	1.09646	1.09646	0.010	-23.13735	30.00000	Averaged
60 Tetrachloroethene	1.50481	1.22212	1.22212	0.010	-18.78538	30.00000	Averaged
62 Chlorobenzene	1.04790	0.83849	0.83849	0.010	-19.98400	30.00000	Averaged
63 Ethyl Benzene	0.62773	0.49388	0.49388	0.300	-21.32339	30.00000	Averaged
64 m,p-Xylene	0.76414	0.58920	0.58920	0.300	-22.89389	30.00000	Averaged
65 Styrene	1.27934	0.94725	0.94725	0.010	-25.95785	30.00000	Averaged
66 Bromoform	1.21114	0.92771	0.92771	0.010	-23.40201	30.00000	Averaged
67 o-Xylene	0.73139	0.59010	0.59010	0.300	-19.31738	30.00000	Averaged
68 1,1,2,2-Tetrachloroethane	1.09768	0.89922	0.89922	0.010	-18.07967	30.00000	Averaged
69 Isopropylbenzene	0.58171	0.46384	0.46384	0.010	-20.26390	30.00000	Averaged
70 N-Propylbenzene	0.50823	0.39348	0.39348	0.010	-22.57825	30.00000	Averaged
71 4-Ethyltoluene	0.62805	0.47371	0.47371	0.010	-24.57373	30.00000	Averaged
72 1,3,5-Trimethylbenzene	0.62525	0.51817	0.51817	0.010	-17.12495	30.00000	Averaged
73 Tert-Butyl Benzene	0.71680	0.57762	0.57762	0.010	-19.41739	30.00000	Averaged
74 1,2,4-Trimethylbenzene	0.69061	0.56231	0.56231	0.010	-18.57708	30.00000	Averaged
75 Sec- Butylbenzene	0.56804	0.44006	0.44006	0.010	-22.53012	30.00000	Averaged
76 1,3-Dichlorobenzene	1.12225	0.89791	0.89791	0.010	-19.98985	30.00000	Averaged
77 1,4-dichlorobenzene-d4 (S)	1.78868	1.77736	1.77736	0.200	-0.63243	30.00000	Averaged
78 Benzyl Chloride	10.00000	12.61207	0.69222	0.010	26.12069	30.00000	Linear
79 1,4-Dichlorobenzene	1.07141	0.87879	0.87879	0.010	-17.97799	30.00000	Averaged
80 p-Isopropyltoluene	0.72653	0.52106	0.52106	0.010	-28.28139	30.00000	Averaged
81 1,2,3-Trimethylbenzene	0.73742	0.57733	0.57733	0.010	-21.70861	30.00000	Averaged
82 1,2-Dichlorobenzene	1.24311	0.89655	0.89655	0.010	-27.87879	30.00000	Averaged
83 N-Butylbenzene	10.00000	12.30814	0.55847	0.010	23.08138	30.00000	Linear
84 1,2,4-Trichlorobenzene	10.00000	12.41305	1.47297	0.010	24.13051	30.00000	Linear
85 Naphthalene	10.00000	12.42256	0.79314	0.010	24.22560	30.00000	Linear
86 Hexachlorobutadiene	1.38105	1.36826	1.36826	0.010	-0.92546	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06602.D
Report Date: 07-Mar-2014 11:24

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 07-MAR-2014 10:54
Lab File ID: 06602.D Init. Cal. Date(s): 06-MAR-2014 06-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:12 15:00
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m

Average %D / Drift Results.	
=====	
Calculated Average %D/Drift =	18.27763
Maximum Average %D/Drift =	30.00000
* Passed Average %D/Drift Test.	

Instrument Run Log

1

Instrument: 10A1R0
 Column: J&W DB-5 0.32mm Helium Tune Standard:

Method:
 Misc. Prep. Info:
 ISTD Lot: 8137-74-13

Surrogate Lot: 8137-74-13
 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06601BFB.D	BFB	L	Tune	1		TUNE	3/07/14 10:28	JAM	
06602.LCS.D	LCS	G/	LCS	1		TO15_065-14	3/07/14 10:54	JAM	
06602.D	CCV	G/	CCal	1		TO15_065-14	3/07/14 10:54	JAM	
06602_19607.D	1635646	G/19607	LCS	1		TO15_065-14	3/07/14 10:54	JAM	
06603.D	0	G/	Sample	1		TO15_065-14	3/07/14 11:45	JAM	
06604.D	CERT	G/	Sample	1		TO15_065-14	3/07/14 12:15	JAM	
06604_BLANK.D	BLANK	G/	Blank	1		TO15_065-14	3/07/14 12:15	JAM	
06604_19607.D	1635645	G/19607	Blank	1		TO15_065-14	3/07/14 12:15	JAM	
06605.D	CERT	G/	Sample	1		TO15_065-14	3/07/14 12:55	JAM	
06606.D	10259049013	G/19580	Sample	58.464		TO15_065-14	3/07/14 13:38	AH2	
06607.D	IC	G/	Sample	1		TO15_065-14	3/07/14 14:29	AH2	
06608.D	IC	G/	Sample	1		TO15_065-14	3/07/14 14:58	AH2	
06609.D	IC	G/	Sample	1		TO15_065-14	3/07/14 15:27	AH2	
06610.D	10258805040	G/19607	Sample	1.8		TO15_065-14	3/07/14 15:58	AH2	
06612.D	IC	G/	Sample	1		TO15_065-14	3/07/14 16:51	AH2	
06613.D	IC	G/	Sample	1		TO15_065-14	3/07/14 17:20	AH2	
06614.D	IC	G/	Sample	1		TO15_065-14	3/07/14 17:49	AH2	
06615.D	IC	G/	Sample	1		TO15_065-14	3/07/14 18:19	AH2	
06616.D	10258805038	G/19607	Sample	1.87		TO15_065-14	3/07/14 18:48	AH2	
06617.D	10258805016	G/19607	Sample	1.74		TO15_065-14	3/07/14 19:17	AH2	
06618.D	10258805026	G/19607	Sample	1.68		TO15_065-14	3/07/14 19:47	AH2	
06619.D	10258805018	G/19607	Sample	1.74		TO15_065-14	3/07/14 20:16	AH2	
06620.D	10258805025	G/19607	Sample	1.68		TO15_065-14	3/07/14 20:45	AH2	
06621.D	10258805009	G/19607	Sample	1.68		TO15_065-14	3/07/14 21:15	AH2	
06622.D	10258805028	G/19607	Sample	1.68		TO15_065-14	3/07/14 21:47	AH2	
06623.D	10258805024	G/19607	Sample	1.8		TO15_065-14	3/07/14 22:16	AH2	
06624.D	10258805037	G/19607	Sample	1.68		TO15_065-14	3/07/14 22:45	AH2	
06625.D	10258805039	G/19607	Sample	1.87		TO15_065-14	3/07/14 23:15	AH2	
06626.D	10258805023	G/19607	Sample	1.68		TO15_065-14	3/07/14 23:44	AH2	
06627.D	10258805032	G/19607	Sample	1.87		TO15_065-14	3/08/14 00:13	AH2	
06628.D	10258805044	G/19607	Sample	1.68		TO15_065-14	3/08/14 00:42	AH2	
06629.D	1635819	G/19607	Duplicate	1.68		TO15_065-14	3/08/14 01:15	AH2	
06630.D	10258805035	G/19607	Sample	1.74		TO15_065-14	3/08/14 01:44	AH2	
06631.D	10258805030	G/19607	Sample	1.8		TO15_065-14	3/08/14 02:13	AH2	
06632.D	-DUP	G/19607	Sample	2.02		TO15_065-14	3/08/14 02:48	AH2	
06633.D	10258805006	G/19607	Sample	1.68		TO15_065-14	3/08/14 03:17	AH2	
06634.D	10258805005	G/19607	Sample	1.68		TO15_065-14	3/08/14 03:46	AH2	
06635.D	10258805029	G/19607	Sample	1.68		TO15_065-14	3/08/14 04:20	AH2	
06636.D	10258805017	G/19607	Sample	1.68		TO15_065-14	3/08/14 04:49	AH2	
06637.D	IC	G/	Sample	1		TO15_065-14	3/08/14 05:14	AH2	
06638.D	IC	G/	Sample	1		TO15_065-14	3/08/14 05:49	AH2	



Instrument Run Log

2

Instrument: 10AIR0 Method: Misc. Prep. Info: Surrogate Lot: 8137-74-13
Column: J&W DB-5 0.32mm Helium Tune Standard: ISTD Lot: 8137-74-13 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
Check Maintenance Items Performed:									
Changed septum		Clipped column			Changed column - Lot #				
Cleaned liner		Changed trap - Lot #			Other minor parts replaced				
Replaced/Cleaned gold seal		Cleaned MS Source			No maintenance performed today				
Additional Comments:									

File Path 1: U:\10AIR0\1030714.B\ Report Date: 03/11/2014 13:13
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one Run order verified: Reviewed By/Date:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10258805

Lab File ID: 06801BFB.D

BFB Injection Date: 03/09/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:29

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.15
75	30.00 - 66.00% of mass 95	52.39
96	5.00 - 9.00% of mass 95	6.49
173	Less than 2.00% of mass 174	0.52 (0.60)
174	50.00 - 120.00% of mass 95	86.50
175	4.00 - 9.00% of mass 174	6.18 (7.15)
176	93.00 - 101.00% of mass 174	83.96 (97.07)
177	5.00 - 9.00% of mass 176	5.27 (6.27)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS (LCS)	LCS	06802LCS.D	03/09/2014	10:55
2	CCV	CCV	06802.D	03/09/2014	10:55
3	LCS for HBN 288713 [AIR/	1635821	06802_19617.D	03/09/2014	10:55
4	BLANK (BLK)	BLANK	06808_BLANK.	03/09/2014	14:02
5	BLANK for HBN 288713 [AI	1635820	06808_19617.D	03/09/2014	14:02
6	IA-145-C-16	10258805039	06814.D	03/09/2014	17:26
7	SV-DUP1-C-16	10258805044	06815.D	03/09/2014	17:51
8	SV-133-C-16	10258805025	06816.D	03/09/2014	18:15
9	IA-105-Z-16	10258805030	06817.D	03/09/2014	18:40
10	IA-123-Z-16	10258805032	06818.D	03/09/2014	19:04
11	SV-102-C-16	10258805009	06819.D	03/09/2014	19:29
12	SV-126-C-16	10258805017	06820.D	03/09/2014	19:53
13	IA-088-C-16	10258805006	06831.D	03/10/2014	01:06
14	IA-113-C-16	10258805028	06832.D	03/10/2014	01:35
15	IA-T-1-7(1633543DUP)	1636060-DUP	06836.D	03/10/2014	03:39

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06802.D
Report Date: 09-Mar-2014 11:14

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 09-MAR-2014 10:55
Lab File ID: 06802.D Init. Cal. Date(s): 06-MAR-2014 06-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:12 15:00
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.52255	2.33783	2.33783	0.010	-7.32262	30.00000	Averaged
2 Propylene	7.83508	6.29801	6.29801	0.010	-19.61773	30.00000	Averaged
3 Dichlorodifluoromethane	1.27555	1.05824	1.05824	0.010	-17.03640	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.62869	1.34497	1.34497	0.010	-17.42012	30.00000	Averaged
5 Chloromethane	4.50576	3.72458	3.72458	0.010	-17.33739	30.00000	Averaged
6 Vinyl chloride	4.66786	3.75615	3.75615	0.010	-19.53177	30.00000	Averaged
7 1,3-Butadiene	7.07014	5.46396	5.46396	0.010	-22.71785	30.00000	Averaged
8 Bromomethane	4.52911	3.64163	3.64163	0.010	-19.59494	30.00000	Averaged
9 Chloroethane	10.04013	8.26800	8.26800	0.010	-17.65055	30.00000	Averaged
10 Ethanol	10.00000	15.53264	9.15327	0.010	55.32644	30.00000	Linear
11 Vinyl Bromide	4.59506	3.64915	3.64915	0.010	-20.58533	30.00000	Averaged
12 Isopentane	4.95832	4.09572	4.09572	0.010	-17.39703	30.00000	Averaged
13 Acrolein	15.34643	13.27838	13.27838	0.010	-13.47576	30.00000	Averaged
14 Trichlorofluoromethane	1.22740	1.03246	1.03246	0.010	-15.88244	30.00000	Averaged
15 Acetone	2.68538	2.45533	2.45533	0.010	-8.56682	30.00000	Averaged
16 Isopropyl Alcohol	3.39322	2.26114	2.26114	0.010	-33.36304	30.00000	Averaged<-
17 Acrylonitrile	10.00000	13.29989	6.43072	0.010	32.99890	30.00000	Linear
18 1,1-Dichloroethene	2.83450	2.33714	2.33714	0.010	-17.54671	30.00000	Averaged
19 Tert Butyl Alcohol (TBA)	2.03510	1.50040	1.50040	0.100	-26.27377	30.00000	Averaged
20 Freon 113	2.26695	1.89640	1.89640	0.010	-16.34568	30.00000	Averaged
21 Methylene chloride	10.00000	12.75262	3.70745	0.010	27.52625	30.00000	Linear
22 Allyl Chloride	11.33608	8.18534	8.18534	0.010	-27.79391	30.00000	Averaged
23 Carbon Disulfide	1.68637	1.34319	1.34319	0.010	-20.35004	30.00000	Averaged
24 trans-1,2-dichloroethene	5.08699	3.70571	3.70571	0.010	-27.15313	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.44907	1.16361	1.16361	0.300	-19.69953	30.00000	Averaged
26 Vinyl Acetate	10.00000	12.43014	1.56435	0.010	24.30143	30.00000	Linear
27 1,1-Dichloroethane	2.33452	1.94573	1.94573	0.010	-16.65396	30.00000	Averaged
28 Hexane-d14(S)	2.12135	2.22389	2.22389	0.200	4.83401	30.00000	Averaged
29 Methyl Ethyl Ketone	10.00000	12.99554	7.85210	0.010	29.95544	30.00000	Linear
30 Di-isopropyl Ether	1.55859	1.34071	1.34071	0.010	-13.97956	30.00000	Averaged
31 n-Hexane	3.15902	2.58359	2.58359	0.010	-18.21544	30.00000	Averaged
32 Ethyl Acetate	2.51148	1.84965	1.84965	0.010	-26.35240	30.00000	Averaged
33 cis-1,2-Dichloroethene	4.86083	3.68065	3.68065	0.010	-24.27949	30.00000	Averaged
34 Ethyl Tert-Butyl Ether	1.34351	1.10223	1.10223	0.010	-17.95858	30.00000	Averaged
35 Chloroform	1.74061	1.44616	1.44616	0.010	-16.91649	30.00000	Averaged
36 Tetrahydrofuran	4.50854	3.76540	3.76540	0.010	-16.48284	30.00000	Averaged
37 1,1,1-Trichloroethane	1.52974	1.24122	1.24122	0.010	-18.86071	30.00000	Averaged
38 1,2-Dichloroethane	2.26620	1.85036	1.85036	0.010	-18.34932	30.00000	Averaged
39 Benzene	1.50703	1.21909	1.21909	0.300	-19.10642	30.00000	Averaged
40 Carbon tetrachloride	1.58082	1.25412	1.25412	0.010	-20.66664	30.00000	Averaged
41 Cyclohexane	3.51543	2.82871	2.82871	0.010	-19.53453	30.00000	Averaged
42 Tert Amyl Methyl Ether	1.22054	1.09701	1.09701	0.010	-10.12112	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06802.D
Report Date: 09-Mar-2014 11:14

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 09-MAR-2014 10:55
Lab File ID: 06802.D Init. Cal. Date(s): 06-MAR-2014 06-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:12 15:00
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
144 2,2,4-Trimethylpentane	0.99164	0.82000	0.82000	0.010	-17.30850	30.00000	Averaged
145 Heptane	2.84943	2.37331	2.37331	0.010	-16.70919	30.00000	Averaged
146 1,2-Dichloropropane	3.91722	3.33642	3.33642	0.010	-14.82683	30.00000	Averaged
147 Trichloroethene	3.41741	2.63082	2.63082	0.010	-23.01711	30.00000	Averaged
148 1,4-Dioxane	7.40946	5.29181	5.29181	0.010	-28.58039	30.00000	Averaged
149 Bromodichloromethane	1.56920	1.23970	1.23970	0.010	-20.99819	30.00000	Averaged
150 Methylcyclohexane	6.12567	4.66409	4.66409	0.010	-23.65989	30.00000	Averaged
151 Methyl Isobutyl Ketone	2.20958	1.58333	1.58333	0.010	-28.34217	30.00000	Averaged
152 cis-1,3-Dichloropropene	10.00000	12.71123	1.84321	0.010	27.11228	30.00000	Linear
153 trans-1,3-Dichloropropene	10.00000	12.15329	1.72254	0.010	21.53288	30.00000	Linear
154 Toluene-d8 (S)	1.00589	1.01169	1.01169	0.200	0.57650	30.00000	Averaged
155 1,1,2-Trichloroethane	3.15076	2.66406	2.66406	0.010	-15.44699	30.00000	Averaged
156 Toluene	1.21861	0.96313	0.96313	0.300	-20.96529	30.00000	Averaged
157 Methyl Butyl Ketone	1.52798	1.12886	1.12886	0.010	-26.12076	30.00000	Averaged
158 Dibromochloromethane	1.18586	0.87084	0.87084	0.010	-26.56464	30.00000	Averaged
159 1,2-Dibromoethane	1.42652	1.04599	1.04599	0.010	-26.67559	30.00000	Averaged
160 Tetrachloroethene	1.50481	1.16138	1.16138	0.010	-22.82170	30.00000	Averaged
162 Chlorobenzene	1.04790	0.81314	0.81314	0.010	-22.40334	30.00000	Averaged
163 Ethyl Benzene	0.62773	0.47039	0.47039	0.300	-25.06514	30.00000	Averaged
164 m,p-Xylene	0.76414	0.56363	0.56363	0.300	-26.24019	30.00000	Averaged
165 Styrene	1.27934	0.89400	0.89400	0.010	-30.12020	30.00000	Averaged<-
166 Bromoform	1.21114	0.86001	0.86001	0.010	-28.99142	30.00000	Averaged
167 o-Xylene	0.73139	0.55659	0.55659	0.300	-23.89941	30.00000	Averaged
168 1,1,2,2-Tetrachloroethane	1.09768	0.87335	0.87335	0.010	-20.43686	30.00000	Averaged
169 Isopropylbenzene	0.58171	0.44499	0.44499	0.010	-23.50297	30.00000	Averaged
170 N-Propylbenzene	0.50823	0.38232	0.38232	0.010	-24.77344	30.00000	Averaged
171 4-Ethyltoluene	0.62805	0.45974	0.45974	0.010	-26.79910	30.00000	Averaged
172 1,3,5-Trimethylbenzene	0.62525	0.49700	0.49700	0.010	-20.51075	30.00000	Averaged
173 Tert-Butyl Benzene	0.71680	0.53947	0.53947	0.010	-24.73938	30.00000	Averaged
174 1,2,4-Trimethylbenzene	0.69061	0.52212	0.52212	0.010	-24.39744	30.00000	Averaged
175 Sec- Butylbenzene	0.56804	0.40912	0.40912	0.010	-27.97793	30.00000	Averaged
176 1,3-Dichlorobenzene	1.12225	0.84508	0.84508	0.010	-24.69705	30.00000	Averaged
177 1,4-dichlorobenzene-d4 (S)	1.78868	1.49584	1.49584	0.200	-16.37139	30.00000	Averaged
178 Benzyl Chloride	10.00000	13.47510	0.64781	0.010	34.75100	30.00000	Linear
179 1,4-Dichlorobenzene	1.07141	0.82883	0.82883	0.010	-22.64098	30.00000	Averaged
180 p-Isopropyltoluene	0.72653	0.48907	0.48907	0.010	-32.68387	30.00000	Averaged<-
181 1,2,3-Trimethylbenzene	0.73742	0.55000	0.55000	0.010	-25.41555	30.00000	Averaged
182 1,2-Dichlorobenzene	1.24311	0.86065	0.86065	0.010	-30.76687	30.00000	Averaged<-
183 N-Butylbenzene	10.00000	12.89534	0.53296	0.010	28.95339	30.00000	Linear
184 1,2,4-Trichlorobenzene	10.00000	13.06117	1.39882	0.010	30.61171	30.00000	Linear
185 Naphthalene	10.00000	12.85453	0.76604	0.010	28.54527	30.00000	Linear
186 Hexachlorobutadiene	1.38105	1.29119	1.29119	0.010	-6.50640	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06802.D
Report Date: 09-Mar-2014 11:14

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 09-MAR-2014 10:55
Lab File ID: 06802.D Init. Cal. Date(s): 06-MAR-2014 06-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:12 15:00
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 22.00408

Maximun Average %D/Drift = 30.00300

* Passed Average %D/Drift Test.



Instrument Run Log

1

Instrument: 10AIFR0 Method: J&W DB-5 0.32mm Helium Tune Standard:

Misc. Prep. Info: ISTD Lot: 8137-74-13

Surrogate Lot: 8137-74-13 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06801BFB.D	BFB	L/	Tune	1		TUNE	3/09/14 10:29	AH2	
06802LCS.D	LCS	G/	LCS	1		TO15_065-14	3/09/14 10:55	AH2	
06802.D	CCV	G/	CCal	1		TO15_065-14	3/09/14 10:55	AH2	
06802_19617.D	1635821	G/19617	LCS	1		TO15_065-14	3/09/14 10:55	AH2	
06803.D	0	G/	Sample	1		TO15_065-14	3/09/14 11:37	AH2	
06804.D	CERT	G/	Sample	1		TO15_065-14	3/09/14 12:06	AH2	
06805.D	CERT	G/	Sample	1		TO15_065-14	3/09/14 12:35	AH2	
06806.D	CERT	G/	Sample	1		TO15_065-14	3/09/14 13:04	AH2	
06807.D	CERT	G/	Sample	1		TO15_065-14	3/09/14 13:33	AH2	
06808_BLANK.D	BLANK	G/	Blank	1		TO15_065-14	3/09/14 14:02	AH2	
06808.D	CERT	G/	Sample	1		TO15_065-14	3/09/14 14:02	AH2	
06808_19617.D	1635820	G/19617	Blank	1		TO15_065-14	3/09/14 14:02	AH2	
06809.D	10259098003	G/19612	Sample	1,9966		TO15_065-14	3/09/14 14:32	JAM	
06810.D	10259098005	G/19612	Sample	1,9966		TO15_065-14	3/09/14 15:01	JAM	
06811.D	10259098007	G/19612	Sample	1,9966		TO15_065-14	3/09/14 15:30	JAM	
06812.D	10258805035	G/19607	Sample	1,74		TO15_065-14	3/09/14 16:31	JAM	
06813.D	10258805029	G/19607	Sample	2,8224		TO15_065-14	3/09/14 17:01	JAM	
06814.D	10258805039	G/19607	Sample	62,832		TO15_065-14	3/09/14 17:26	JAM	
06815.D	10258805044	G/19607	Sample	84,672		TO15_065-14	3/09/14 17:51	JAM	
06816.D	10258805025	G/19607	Sample	134,4		TO15_065-14	3/09/14 18:15	JAM	
06817.D	10258805030	G/19607	Sample	144		TO15_065-14	3/09/14 18:40	JAM	
06818.D	10258805032	G/19607	Sample	299,2		TO15_065-14	3/09/14 19:04	JAM	
06819.D	10258805009	G/19607	Sample	268,8		TO15_065-14	3/09/14 19:29	JAM	
06820.D	10258805017	G/19607	Sample	537,6		TO15_065-14	3/09/14 19:53	JAM	
06821.D	0	G/	Sample	1		TO15_065-14	3/09/14 20:18	JAM	
06822.D	IC	G/	Sample	1		TO15_065-14	3/09/14 20:47	JAM	
06823.D	IC	G/	Sample	1		TO15_065-14	3/09/14 21:16	JAM	
06824.D	IC	G/	Sample	1		TO15_065-14	3/09/14 21:46	JAM	
06825.D	IC	G/	Sample	1		TO15_065-14	3/09/14 22:15	JAM	
06826.D	IC	G/	Sample	1		TO15_065-14	3/09/14 22:44	JAM	
06827.D	IC	G/	Sample	1		TO15_065-14	3/09/14 23:13	JAM	
06828.D	IC	G/	Sample	1		TO15_065-14	3/09/14 23:43	JAM	
06829.D	IC	G/	Sample	1		TO15_065-14	3/10/14 00:12	JAM	
06830.D	IC	G/	Sample	1		TO15_065-14	3/10/14 00:41	JAM	
06831.D	10258805006	G/19617	Sample	36,36		TO15_065-14	3/10/14 01:06	JAM	
06832.D	10258805028	G/19617	Sample	5,3088		TO15_065-14	3/10/14 01:35	JAM	
06833.D	10259331017	G/19617	Sample	1,68		TO15_065-14	3/10/14 02:04	JAM	
06834.D	-DUP	G/19617	Duplicate	1,68		TO15_065-14	3/10/14 02:35	JAM	
06835.D	10259331010	G/19617	Sample	1,68		TO15_065-14	3/10/14 03:04	JAM	
06836.D	1636060	G/19617	Duplicate	1,68		TO15_065-14	3/10/14 03:39	JAM	
06837.D	10259331007	G/19617	Sample	1,68		TO15_065-14	3/10/14 04:00	JAM	
06838.D	10259331020	G/19617	Sample	1,68		TO15_065-14	3/10/14 04:40	JAM	
06839.D	10259331008	G/19617	Sample	1,68		TO15_065-14	3/10/14 05:14	JAM	
06840.D	10259331004	G/19617	Sample	1,94		TO15_065-14	3/10/14 05:44	JAM	
06841.D	10259331005	G/19617	Sample	1,74		TO15_065-14	3/10/14 06:18	JAM	
06842.D	10259331022	G/19617	Sample	1,57		TO15_065-14	3/10/14 06:48	JAM	

Instrument Run Log

2

Instrument: 10A1R0 Method: Misc. Prep. Info: Surrogate Lot: 8137-74-13
 Column: J&W DB-5 0.32mm Helium Tune Standard: ISTD Lot: 8137-74-13 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06843.D	10259331006	G/19617	Sample	2.36		TO15_065-14	3/10/14 07:22	JAM	
06844.D	10259331021	G/19617	Sample	1.57		TO15_065-14	3/10/14 07:57	JAM	
06845.D	10259331003	G/19617	Sample	1.68		TO15_065-14	3/10/14 08:28	JAM	
06846.D	10259331002	G/19617	Sample	1.74		TO15_065-14	3/10/14 08:58	JAM	

Check Maintenance Items Performed:

Changed septum
 Changed liner
 Replaced/Cleaned gold seal
 Additional Comments:

Clipped column
 Changed trap - Lot #
 Cleaned MS Source

Changed column - Lot #
 Other minor parts replaced
 No maintenance performed today

File Path 1: U:\10A1R0.1030914.B1
 Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one
 Run order verified:
 Report Date: 03/11/2014 13:16
 Reviewed By/Date:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10258805

Lab File ID: 06601BFB.D

BFB Injection Date: 03/07/2014

Instrument ID: 10AIRD

BFB Injection Time: 08:10

GC Column: J&W DB-5

ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.98
75	30.00 - 66.00% of mass 95	53.36
96	5.00 - 9.00% of mass 95	6.55
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	90.33
175	4.00 - 9.00% of mass 174	5.73 (6.34)
176	93.00 - 101.00% of mass 174	84.73 (93.81)
177	5.00 - 9.00% of mass 176	5.64 (6.65)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL5	CAL5	06704.D	03/07/2014	10:27
2	CAL6	CAL6	06705.D	03/07/2014	10:56
3	CAL1	CAL1	06708.D	03/07/2014	12:19
4	CAL2	CAL2	06709.D	03/07/2014	12:46
5	CAL3	CAL3	06710.D	03/07/2014	13:14
6	CAL4	CAL4	06711.D	03/07/2014	13:41
7	ICVADD (LCS)	ICVADD	06712.D	03/07/2014	14:09
8	ICV (LCS)	ICV	06713.D	03/07/2014	14:36
9	LCS for HBN 288692 [AIR/	1635689	06714L.D	03/07/2014	15:04
10	LCS (LCS)	LCS	06714.D	03/07/2014	15:04
11	BLANK for HBN 288692 [AI	1635688	06717L.D	03/07/2014	16:39
12	IC	IC	06717.D	03/07/2014	16:39
13	SV-143-C-16	10258805001	06722.D	03/07/2014	19:09
14	SV-065-C-16	10258805019	06724.D	03/07/2014	20:07
15	SV-130-C-16	10258805011	06725.D	03/07/2014	20:35
16	IA-148-C-16	10258805042	06726.D	03/07/2014	21:03
17	SV-123-Z-16	10258805031	06727.D	03/07/2014	21:31
18	IA-102-C-16	10258805010	06728.D	03/07/2014	21:59
19	IA-101-B-16	10258805036	06729.D	03/07/2014	22:27
20	SV-060-C-16	10258805013	06730.D	03/07/2014	22:55
21	K1500022214(1631141DU	1635784-DUP	06735.D	03/08/2014	01:15

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10258805

Lab File ID: 06701BFB.D

BFB Injection Date: 03/08/2014

Instrument ID: 10AIRD

BFB Injection Time: 09:31

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	21.61
75	30.00 - 66.00% of mass 95	57.15
96	5.00 - 9.00% of mass 95	6.80
173	Less than 2.00% of mass 174	0.81 (0.93)
174	50.00 - 120.00% of mass 95	87.48
175	4.00 - 9.00% of mass 174	6.43 (7.36)
176	93.00 - 101.00% of mass 174	82.36 (94.14)
177	5.00 - 9.00% of mass 176	5.46 (6.63)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS (LCS)	LCS	06702LCS.D	03/08/2014	09:58
2	CCV	CCV	06702.D	03/08/2014	09:58
3	SV-060-C-16	10258805013	06715.D	03/08/2014	16:32

Instrument: 10AIRD
Cblumn: J&W DB-5 0.32mm Helium Tune Standard:

Method:
Tune Standard:

Misc. Prep. Info:
ISTD Lot: 10288-3-7

Surrogate Lot: 10288-3-7

Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06601BFB.D	BFB	L	Tune	1		50ng. bfb	3/07/14 08:10	AH2	
06702.D	CCV	G/	CCal	1		TO15_063-14	3/07/14 08:37	AH2	
06703.D	CAL4	G/	Ical	1		TO15_067-14	3/07/14 09:19	AH2	
06704.D	CAL5	G/	Ical	1		TO15_067-14	3/07/14 10:27	AH2	
06705.D	CAL6	G/	Ical	1		TO15_067-14	3/07/14 10:56	AH2	
06706.D	0	G/	Sample	1		TO15_067-14	3/07/14 11:24	AH2	
06707.D	CAL1	G/	Sample	1		TO15_067-14	3/07/14 11:51	AH2	
06708.D	CAL1	G/	Ical	1		TO15_067-14	3/07/14 12:19	AH2	
06709.D	CAL2	G/	Ical	1		TO15_067-14	3/07/14 12:46	AH2	
06710.D	CAL3	G/	Ical	1		TO15_067-14	3/07/14 13:14	AH2	
06711.D	CAL4	G/	Ical	1		TO15_067-14	3/07/14 13:41	AH2	
06712.D	ICVADD	G/	LCS	1		TO15_067-14	3/07/14 14:09	AH2	
06713.D	ICV	G/	LCS	1		TO15_067-14	3/07/14 14:36	AH2	
06714B.D	1635807	G/19614	LCS	1		TO15_067-14	3/07/14 15:04	AH2	
06714L.D	1635689	G/19608	LCS	1		TO15_067-14	3/07/14 15:04	AH2	
06714PTAMB.D	1636348	G/19629	LCS	1		TO15_067-14	3/07/14 15:04	AH2	
06714.D	LCS	G/	LCS	1		TO15_067-14	3/07/14 15:04	AH2	
06714PT.D	1636346	G/19628	LCS	1		TO15_067-14	3/07/14 15:04	AH2	
06715.D	0	G/	Sample	1		TO15_067-14	3/07/14 15:38	AH2	
06716.D	BLANK	G/	Sample	1		TO15_067-14	3/07/14 16:05	AH2	
0671PT.D	1636345	G/19628	Blank	1		TO15_067-14	3/07/14 16:39	AH2	
0671PTAMB.D	1636347	G/19629	Blank	1		TO15_067-14	3/07/14 16:39	AH2	
06717L.D	1635688	G/19608	Blank	1		TO15_067-14	3/07/14 16:39	AH2	
06717B.D	1635806	G/19614	Blank	1		TO15_067-14	3/07/14 16:39	AH2	
06717.D	IC	G/	Sample	1		TO15_067-14	3/07/14 16:39	AH2	
06718.D	10258905002	G/19591	Sample	26939		TO15_067-14	3/07/14 17:18	AH2	
06719PTAMB.D	10256665001	G/19629	Sample	1		TO15_067-14	3/07/14 17:46	AH2	
06719.D	10256665001	G/19628	Sample	1		TO15_067-14	3/07/14 17:46	AH2	
06720.D	10258609001	G/19589	Sample	27.8		TO15_067-14	3/07/14 18:14	AH2	
06721.D	10258697001	G/19622	Sample	476.8		TO15_067-14	3/07/14 18:41	AH2	
06722.D	10258805001	G/19608	Sample	4.22		TO15_067-14	3/07/14 19:09	AH2	
06723.D	-DUP	G/19608	Duplicate	4.22		TO15_067-14	3/07/14 19:39	AH2	
06724.D	10258805019	G/19608	Sample	1.68		TO15_067-14	3/07/14 20:07	AH2	
06725.D	10258805011	G/19608	Sample	1.68		TO15_067-14	3/07/14 20:35	AH2	
06726.D	10258805042	G/19608	Sample	1.87		TO15_067-14	3/07/14 21:03	AH2	
06727.D	10258805031	G/19608	Sample	1.68		TO15_067-14	3/07/14 21:31	AH2	
06728.D	10258805010	G/19608	Sample	1.94		TO15_067-14	3/07/14 21:59	AH2	
06729.D	10258805036	G/19608	Sample	1.87		TO15_067-14	3/07/14 22:27	AH2	
06730.D	10258805013	G/19608	Sample	1.68		TO15_067-14	3/07/14 22:55	AH2	
06731.D	92191346001	G/19622	Sample	6860.8		TO15_067-14	3/07/14 23:23	AH2	
06732.D	0	G/	Sample	1		TO15_067-14	3/07/14 23:50	AH2	
06733.D	IC	G/	Sample	1		TO15_067-14	3/08/14 00:20	AH2	
06734.D	10258895001	G/19608	Sample	1		TO15_067-14	3/08/14 00:47	AH2	
06735.D	1635784	G/19608	Duplicate	1		TO15_067-14	3/08/14 01:15	AH2	
06736.D	10258904001	G/19608	Sample	1.34		TO15_067-14	3/08/14 01:43	AH2	
06737.D	10258904002	G/19608	Sample	1.39		TO15_067-14	3/08/14 02:11	AH2	

Instrument Run Log

2

Instrument: 10AIRD Method: Misc. Prep. Info: Surrogate Lot: 10288-3-7
 Column: J&W DB-5 0.32mm Helium Tune Standard: ISTD Lot: 10288-3-7 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06738.D	10259499001	G/19614	Sample	1.74		TO15_067-14	3/08/14 02:39	AH2	
06738B.D	10259500001	G/19608	Sample	1.74		TO15_067-14	3/08/14 02:39	AH2	
06739.D	1635808	G/19614	Duplicate	1.74		TO15_067-14	3/08/14 03:09	AH2	
06740.D	35129079002	G/19608	Sample	1.34		TO15_067-14	3/08/14 03:37	AH2	
06741.D	35129079001	G/19608	Sample	1.49		TO15_067-14	3/08/14 04:05	AH2	
06742.D	35129079003	G/19608	Sample	1.68		TO15_067-14	3/08/14 04:33	AH2	
06743.D	35129079004	G/19608	Sample	36.6		TO15_067-14	3/08/14 05:00	AH2	
06744.D	10259118003	G/19609	Sample	1.34		TO15_067-14	3/08/14 05:30	AH2	
06745.D	10259118001	G/19608	Sample	1.34		TO15_067-14	3/08/14 05:58	AH2	
06746.D	10259118002	G/19609	Sample	27.8		TO15_067-14	3/08/14 06:25	AH2	
06747.D	10259118004	G/19612	Sample	214.4		TO15_067-14	3/08/14 06:52	AH2	
06748.D	0	G/	Sample	1		TO15_067-14	3/08/14 07:20	AH2	
06749.D	IC	G/	Sample	1		TO15_067-14	3/08/14 07:48	AH2	

Check Maintenance Items Performed:

Changed septum
 Changed column - Lot #
 Cleaned liner
 Other minor parts replaced
 Replaced/Cleaned gold seal
 Cleaned MS Source
 Additional Comments:
 No maintenance performed today

File Path 1: U:\10AIRD\1030714.B\ Report Date: 03/12/2014 16:35
 Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one Run order verified: Reviewed By/Date:

Report Date : 07-Mar-2014 14:24

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 07-MAR-2014 10:27
 End Cal Date : 07-MAR-2014 13:41
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Last Edit : 07-Mar-2014 14:19 10airD.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\030714.b\06708.d
 Level 2: \\192.168.10.12\chem\10airD.i\030714.b\06709.d
 Level 3: \\192.168.10.12\chem\10airD.i\030714.b\06710.d
 Level 4: \\192.168.10.12\chem\10airD.i\030714.b\06711.d
 Level 5: \\192.168.10.12\chem\10airD.i\030714.b\06704.d
 Level 6: \\192.168.10.12\chem\10airD.i\030714.b\06705.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	7218	12155	55994	436384	1227139	1451178	LNLR	-0.01670	1.02663		0.99697
2 Propylene	2.29298	2.92478	3.01479	3.19635	2.51568	2.86817	AVRG		2.80212		11.95735
3 Dichlorodifluoromethane	0.34284	0.38749	0.42851	0.44395	0.63944	0.47127	AVHG		0.45225		22.59224
4 Dichlorotetrafluoroethane	0.38962	0.45763	0.51879	0.52531	0.48881	0.52917	AVRG		0.48459		11.13600
5 Chloromethane	1.33104	1.36117	1.64144	1.68497	1.46881	1.69462	AVRG		1.53034		10.75191
6 Vinyl chloride	1.36815	1.51105	1.73133	1.79081	1.45794	1.68150	AVRG		1.59013		10.58178
7 1,3-Butadiene	2.21535	2.75667	2.85612	2.98848	2.33473	2.68892	AVRG		2.64004		11.45993
8 Bromomethane	0.99666	1.21450	1.44830	1.47031	1.27546	1.38699	AVRG		1.29870		13.70866
9 Chloroethane	2.78696	2.83909	3.89806	3.79872	3.18315	3.68705	AVRG		3.36551		14.67578
10 Ethanol	2.47391	3.12093	3.74676	3.71450	3.04962	5.36807	AVRG		3.57896		27.82503
11 Vinyl Bromide	1.17790	1.19292	1.46009	1.47137	1.29649	1.41160	AVRG		1.33506		9.84978
12 Isopentane	1.31706	1.66317	1.97757	1.88916	1.55499	1.89325	AVHG		1.71587		14.69039
13 Trichlorofluoromethane	0.33372	0.38619	0.42549	0.44005	0.44781	0.46911	AVRG		0.41706		11.82087
14 Acrolein	++++	3.91025	4.23816	5.84286	4.93493	5.63151	AVRG		4.91254		17.16269

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 07-MAR-2014 10:27
 End Cal Date : 07-MAR-2014 13:41
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Last Edit : 07-Mar-2014 14:19 10airD.i

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	+++++	0.56519	0.69785	0.96689	0.88211	1.00751	AVRG		0.82391		22.73632
16 Isopropyl Alcohol	0.88233	1.06675	1.25789	1.14091	0.94918	1.33641	AVRG		1.10558		15.85029
17 1,1-Dichloroethene	0.70567	0.95764	0.98058	1.04010	0.93414	1.02929	AVRG		0.94124		13.00217
18 Tert Butyl Alcohol	0.59057	0.72494	0.73710	0.77315	0.65383	0.84004	AVRG		0.71994		12.21742
19 Acrylonitrile	2.94897	3.25268	2.78477	2.73763	2.16572	2.55960	AVRG		2.74156		13.36065
20 Freon 113	0.61788	0.65438	0.72313	0.73862	0.69690	0.76047	AVRG		0.69863		7.7452
21 Methylene chloride	7267	11456	43584	290760	862586	950638	QUAD	-0.00014	0.77571	-0.04637	0.99334
22 Allyl Chloride	2.29065	2.91752	3.61251	3.48839	3.02705	3.43092	AVRG		3.12784		15.74082
23 Carbon Disulfide	0.35464	0.42814	0.48155	0.50346	0.43265	0.48358	AVRG		0.44734		12.16708
24 trans-1,2-dichloroethene	1.13782	1.32528	1.45476	1.43945	1.21614	1.36626	AVRG		1.32328		9.46920
25 Methyl Tert Butyl Ether	0.41383	0.48241	0.51155	0.52570	0.44335	0.49772	AVRG		0.47910		8.91478
26 Vinyl Acetate	0.58400	0.62983	0.69926	0.66867	0.55680	0.65058	AVRG		0.63152		8.43192
27 1,1-Dichloroethane	0.62035	0.70057	0.82318	0.83491	0.72809	0.83229	AVRG		0.75656		11.64515
29 Methyl Ethyl Ketone	2.73463	2.81613	3.21428	3.41052	2.77698	3.25356	AVRG		3.03435		9.61528
30 n-Hexane	0.91635	1.11735	1.25988	1.28444	1.01472	1.25462	AVRG		1.14123		13.26509
31 Di-isopropyl Ether	0.45394	0.56601	0.59302	0.57701	0.45747	0.56591	AVRG		0.53556		11.69887
32 cis-1,2-Dichloroethene	1.15176	1.40114	1.59202	1.47873	1.24241	1.40279	AVRG		1.37814		11.54950
33 Ethyl Acetate	0.67801	0.70562	0.88486	0.80256	0.67539	0.80316	AVRG		0.75827		11.20364
34 Chloroform	0.43876	0.51772	0.58512	0.56589	0.53457	0.57529	AVRG		0.53623		10.09131
35 Ethyl Tert-Butyl Ether	0.46174	0.53383	0.57595	0.55297	0.47408	0.52843	AVRG		0.52117		8.57039
36 Tetrahydrofuran	1.56985	1.99115	2.07044	1.95518	1.56045	1.81801	AVRG		1.82751		11.98574
37 1,1,1-Trichloroethane	0.43229	0.50145	0.56641	0.54124	0.53361	0.54258	AVRG		0.51960		9.16352

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 07-MAR-2014 10:27
 End Cal Date : 07-MAR-2014 13:41
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030714.b\T015_067-14.m
 Last Edit : 07-Mar-2014 14:19 10airD.i

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	0.62377	0.77592	0.84350	0.80409	0.78342	0.80789	AVRG		0.77310		9.94226
39 Benzene	0.38343	0.46856	0.51270	0.50424	0.43639	0.47588	AVRG		0.46353		10.30341
40 Carbon tetrachloride	0.44893	0.52195	0.56096	0.56072	0.57423	0.61157	AVRG		0.54639		10.20231
41 Cyclohexane	1.18408	1.16690	1.38783	1.36163	1.11782	1.30643	AVRG		1.25745		8.71956
42 Tert Amyl Methyl Ether	0.29352	0.37697	0.55198	0.52219	0.46042	0.48593	AVRG		0.44850		21.57497
44 2,2,4-Trimethylpentane	0.35929	0.40027	0.43320	0.41199	0.35175	0.39503	AVRG		0.39192		7.95888
45 Heptane	0.98664	1.13475	1.20487	1.18687	0.98348	1.13431	AVRG		1.10515		8.79110
46 1,2-Dichloropropane	1.31323	1.48480	1.57697	1.49341	1.29780	1.43028	AVRG		1.43278		7.62615
47 Trichloroethene	1.06584	1.14330	1.46306	1.23612	1.10222	1.16559	AVRG		1.19602		11.96354
48 Bromodichloromethane	0.41168	0.50870	0.53658	0.49812	0.48674	0.50568	AVRG		0.49125		8.62040
49 1,4-Dioxane	1.77681	2.23815	2.58516	2.27845	2.06008	+++++	AVRG		2.18773		13.59556
50 Methyl cyclohexane	2.00929	2.34771	2.43386	2.31657	2.12993	2.18931	AVRG		2.23778		7.00679
51 Methyl Isobutyl Ketone	0.74638	0.79609	0.87686	0.81932	0.69091	0.76872	AVRG		0.78305		8.14210
52 cis-1,3-Dichloropropene	0.71939	0.77521	0.89285	0.80179	0.72349	0.76363	AVRG		0.77939		8.18884
53 trans-1,3-Dichloropropene	0.72856	0.81009	0.90320	0.71803	0.67556	0.71141	AVRG		0.75781		11.07642
55 Toluene	0.31197	0.38095	0.44580	0.40264	0.35453	0.37260	AVRG		0.37808		11.91841
56 1,1,2-Trichloroethane	0.98621	1.02399	1.27210	1.11319	0.97682	1.01010	AVRG		1.06374		10.62600
57 Methyl Butyl Ketone	0.48936	0.53898	0.56985	0.48588	0.43738	0.48077	AVRG		0.50037		9.37444
58 Dibromochloromethane	0.32616	0.34520	0.38100	0.34470	0.34784	0.35237	AVRG		0.34955		5.10079
59 1,2-Dibromoethane	0.34543	0.41390	0.42979	0.38847	0.36744	0.37760	AVRG		0.38711		7.96720
60 Tetrachloroethene	0.41036	0.43201	0.45837	0.44568	0.42187	0.42271	AVRG		0.43178		4.07206
62 Chlorobenzene	0.29879	0.31366	0.33604	0.31920	0.29545	0.32725	AVRG		0.31506		5.03222

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 07-MAR-2014 10:27
 End Cal Date : 07-MAR-2014 13:41
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Last Edit : 07-Mar-2014 14:19 10airD.i

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	0.16249	0.18435	0.19059	0.17522	0.16954	0.17401	AVRG		0.17603		5.74509 <-
64 m,p-Xylene	0.22223	0.24001	0.23769	0.21910	0.20774	0.21942	AVRG		0.22437		5.47735 <-
65 Bromoform	0.29527	0.33524	0.34237	0.30208	0.32566	0.30049	AVRG		0.31685		6.34194
66 Styrene	0.34099	0.39198	0.38203	0.32076	0.32953	0.29985	AVRG		0.34419		10.44045
67 o-Xylene	0.20858	0.22382	0.22372	0.21350	0.23384	0.21170	AVRG		0.21919		4.36503 <-
68 1,1,2,2-Tetrachloroethane	0.29725	0.31451	0.33514	0.31240	0.34795	0.30267	AVRG		0.31832		6.12266
69 Isopropylbenzene	0.16909	0.20406	0.18440	0.17373	0.19911	0.17399	AVRG		0.18406		7.90690
70 N-Propylbenzene	0.14507	0.15592	0.14983	0.13598	0.15843	0.13785	AVRG		0.14718		6.27916
71 4-Ethyltoluene	0.19030	0.19520	0.19042	0.17826	0.20634	0.17747	AVRG		0.18966		5.72060
72 1,3,5-Trimethylbenzene	0.20640	0.21846	0.21286	0.20158	0.23635	0.20022	AVRG		0.21264		6.34907
73 Tert-Butyl Benzene	0.23010	0.24023	0.24363	0.21386	0.26402	0.22113	AVRG		0.23549		7.60929
74 1,2,4-Trimethylbenzene	0.20789	0.22109	0.21419	0.20062	0.24098	0.20514	AVRG		0.21499		6.79434
75 1,3-Dichlorobenzene	0.31146	0.35208	0.35745	0.32477	0.38173	0.32614	AVRG		0.34227		7.61835
76 Sec- Butylbenzene	0.15286	0.16775	0.16389	0.14898	0.17817	0.15481	AVRG		0.16108		6.78739
78 Benzyl Chloride	9170	15623	77616	1114314	2559294	++++	LINE	-0.00996	0.27641		0.99521
79 1,4-Dichlorobenzene	0.29284	0.35054	0.37416	0.33512	0.38229	0.32372	AVRG		0.34311		9.68461
80 p-Isopropyltoluene	0.20495	0.24137	0.21812	0.19678	0.22966	0.19832	AVRG		0.21487		8.40554
81 1,2,3-Trimethylbenzene	0.20979	0.23793	0.24153	0.22009	0.25962	0.22186	AVRG		0.23180		7.78069
82 1,2-Dichlorobenzene	0.32434	0.39805	0.40749	0.35671	0.43277	0.35657	AVRG		0.37932		10.57993
83 N-Butylbenzene	0.20064	0.21858	0.20562	0.18330	0.22054	0.18716	AVRG		0.20264		7.64747
84 1,2,4-Trichlorobenzene	0.37722	0.51186	0.52047	0.49485	0.51303	0.46749	AVRG		0.48082		11.26981
85 Naphthalene	0.26813	0.34707	0.33389	0.32457	0.33998	0.30535	AVRG		0.31983		9.11622

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 07-MAR-2014 10:27
 End Cal Date : 07-MAR-2014 13:41
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Last Edit : 07-Mar-2014 14:19 10airD.i

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
86 Hexachlorobutadiene	0.29691	0.37450	0.41851	0.45802	0.51083	0.47249	AVRG		0.42188		18.25454
18 Hexane-d14 (S)	2.03073	2.23983	2.16907	2.25841	1.95951	2.19663	AVRG		2.14236		5.62156
54 Toluene-d8 (S)	1.04454	1.11625	1.11513	1.13345	1.07595	1.09204	AVRG		1.09623		2.95417
77 1,4-dichlorobenzene-d4 (S)	1.86589	1.93375	1.81940	1.88672	2.31962	1.92883	AVRG		1.95903		9.27228



Instrument Run Log

1

Instrument: 10AIRD
Cplumn: J&W DB-5 0.32mm Helium Tune Standard:

Method:
Misc. Prep. Info: 10288-3-7
ISTD Lot: 10288-3-7
Surrogate Lot: 10288-3-7
Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06701BFB.D	BFB	L/	Tune	1		50NG_BFB	3/08/14 09:31	AH2	
06702LCS.D	LCS	G/	LCS	1		TO15_067-14	3/08/14 09:58	AH2	
06702L.D	1635802	G/19612	LCS	1		TO15_067-14	3/08/14 09:58	AH2	
06702B.D	1635807	G/19614	LCS	1		TO15_067-14	3/08/14 09:58	AH2	
06702.D	CCV	G/	CCal	1		TO15_067-14	3/08/14 09:58	AH2	
06703.D	0	G/	Sample	1		TO15_067-14	3/08/14 10:52	AH2	
06704.D	CERT	G/	Sample	1		TO15_067-14	3/08/14 11:19	AH2	
06705.D	CERT	G/	Sample	1		TO15_067-14	3/08/14 11:47	AH2	
06706.D	IC	G/	Sample	1		TO15_067-14	3/08/14 12:15	AH2	
06707.D	IC	G/	Sample	1		TO15_067-14	3/08/14 12:43	AH2	
06707B.D	1635806	G/19614	Blank	1		TO15_067-14	3/08/14 12:43	AH2	
06707L.D	1635801	G/19612	Blank	1		TO15_067-14	3/08/14 12:43	AH2	
06708.D	10259118002	G/19612	Sample	1.39		TO15_067-14	3/08/14 13:15	AH2	
06709.D	10259118003	G/19612	Sample	1.7956		TO15_067-14	3/08/14 13:43	AH2	
06710B.D	10259500001	G/19614	Sample	3.654		TO15_067-14	3/08/14 14:11	AH2	
06710.D	10259499001	G/19614	Sample	3.654		TO15_067-14	3/08/14 14:11	AH2	
06711.D	1635808	G/19614	Duplicate	3.654		TO15_067-14	3/08/14 14:41	AH2	
06712.D	10259118004	G/19612	Sample	10.72		TO15_067-14	3/08/14 15:09	AH2	
06713.D	10258904002	G/19608	Sample	44.48		TO15_067-14	3/08/14 15:37	AH2	
06714.D	10258904002	G/19608	Sample	889.6		TO15_067-14	3/08/14 16:05	AH2	
06715.D	10258805013	G/19608	Sample	16.8		TO15_067-14	3/08/14 16:32	AH2	
06716.D	35129079001	G/19608	Sample	1.49		TO15_067-14	3/08/14 17:01	AH2	
06717.D	35129079002	G/19608	Sample	428.8		TO15_067-14	3/08/14 17:28	AH2	
06718.D	35129079003	G/19608	Sample	537.6		TO15_067-14	3/08/14 17:55	AH2	
06719.D	35129079004	G/19608	Sample	2342.4		TO15_067-14	3/08/14 18:23	AH2	
06720.D	0	G/	Sample	1		TO15_067-14	3/08/14 18:50	AH2	
06721.D	IC	G/	Sample	1		TO15_067-14	3/08/14 19:18	AH2	
06722.D	10259178002	G/19612	Sample	1.34		TO15_067-14	3/08/14 19:46	AH2	
06723.D	10259178003	G/19612	Sample	1.26		TO15_067-14	3/08/14 20:15	AH2	
06724.D	10259178001	G/19612	Sample	1.68		TO15_067-14	3/08/14 20:43	AH2	
06725.D	10259071001	G/19612	Sample	1.49		TO15_067-14	3/08/14 21:12	AH2	
06726.D	10259098003	G/19612	Sample	1.49		TO15_067-14	3/08/14 21:42	AH2	
06727.D	-DUP	G/19612	Sample	1.49		TO15_067-14	3/08/14 22:12	AH2	
06728.D	10259098009	G/19612	Sample	1.49		TO15_067-14	3/08/14 22:40	AH2	
06729.D	10259098006	G/19612	Sample	1.34		TO15_067-14	3/08/14 23:10	AH2	
06730.D	10259098005	G/19612	Sample	1.49		TO15_067-14	3/08/14 23:39	AH2	
06731.D	10259098007	G/19612	Sample	1.49		TO15_067-14	3/09/14 00:09	AH2	
06732.D	10259098004	G/19612	Sample	1.49		TO15_067-14	3/09/14 00:37	AH2	
06733.D	10259098002	G/19612	Sample	1.49		TO15_067-14	3/09/14 01:05	AH2	
06734.D	10259098001	G/19612	Sample	1.55		TO15_067-14	3/09/14 01:34	AH2	
06735.D	10259098008	G/19612	Sample	2.88		TO15_067-14	3/09/14 03:02	AH2	



Instrument Run Log

2

Instrument: 10AIRD Method: Misc. Prep. Info: Surrogate Lot: 10288-3-7
Column: J&W DB-5 0.32mm Helium Tune Standard: ISTD Lot: 10288-3-7 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
Check Maintenance Items Performed:									
Changed septum		Clipped column		Changed column - Lot #					
Cleaned liner		Changed trap - Lot #		Other minor parts replaced					
Replaced/Cleaned gold seal		Cleaned MS Source		No maintenance performed today					
Additional Comments:									

File Path 1: U:\10AIRD\1030814.B\ Report Date: 03/11/2014 13:56
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one Run order verified: Reviewed By/Date:

Data File: \\192.168.10.12\chem\10airD.i\030814.b\06702.d
Report Date: 08-Mar-2014 10:36

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 08-MAR-2014 09:58
Lab File ID: 06702.d Init. Cal. Date(s): 07-MAR-2014 07-MAR-2014
Analysis Type: AIR Init. Cal. Times: 10:27 13:41
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\030814.b\TO15_067-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	10.00000	11.37564	0.89115	0.010	13.75636	30.00000	Linear
2 Propylene	2.80212	2.75521	2.75521	0.010	-1.67418	30.00000	Averaged
3 Dichlorodifluoromethane	0.45225	0.36237	0.36237	0.010	-19.87343	30.00000	Averaged
4 Dichlorotetrafluoroethane	0.48489	0.43538	0.43538	0.010	-10.20964	30.00000	Averaged
5 Chloromethane	1.53034	1.42571	1.42571	0.010	-6.83714	30.00000	Averaged
6 Vinyl chloride	1.59013	1.49171	1.49171	0.010	-6.18945	30.00000	Averaged
7 1,3-Butadiene	2.64004	2.54864	2.54864	0.010	-3.46237	30.00000	Averaged
8 Bromomethane	1.29870	1.21203	1.21203	0.010	-6.67413	30.00000	Averaged
9 Chloroethane	3.36551	3.26406	3.26406	0.010	-3.01427	30.00000	Averaged
10 Ethanol	3.57896	3.43089	3.43089	0.100	-4.13734	30.00000	Averaged
11 Vinyl Bromide	1.33506	1.24895	1.24895	0.010	-6.45011	30.00000	Averaged
12 Isopentane	1.71587	1.62052	1.62052	0.010	-5.55695	30.00000	Averaged
13 Trichlorofluoromethane	0.41706	0.36083	0.36083	0.010	-13.48170	30.00000	Averaged
14 Acrolein	4.91154	5.00202	5.00202	0.010	1.84216	30.00000	Averaged
15 Acetone	0.82391	0.82097	0.82097	0.010	-0.35695	30.00000	Averaged
16 Isopropyl Alcohol	1.10558	1.01770	1.01770	0.010	-7.94870	30.00000	Averaged
17 1,1-Dichloroethene	0.94124	0.83893	0.83893	0.010	-10.86966	30.00000	Averaged
18 Tert Butyl Alcohol	0.71994	0.63707	0.63707	0.100	-11.51115	30.00000	Averaged
19 Acrylonitrile	2.74156	2.23294	2.23294	0.010	-18.55239	30.00000	Averaged
20 Freon 113	0.69863	0.62942	0.62942	0.010	-9.90670	30.00000	Averaged
21 Methylene chloride	10.00000	10.47262	1.31293	0.010	4.72616	30.00000	Quadratic
22 Allyl Chloride	3.12784	2.93765	2.93765	0.010	-6.08042	30.00000	Averaged
23 Carbon Disulfide	0.44734	0.42367	0.42367	0.010	-5.29049	30.00000	Averaged
24 trans-1,2-dichloroethene	1.32328	1.22904	1.22904	0.010	-7.12208	30.00000	Averaged
25 Methyl Tert Butyl Ether	0.47910	0.43814	0.43814	0.010	-8.54783	30.00000	Averaged
26 Vinyl Acetate	0.63152	0.57429	0.57429	0.010	-9.06293	30.00000	Averaged
27 1,1-Dichloroethane	0.75656	0.71472	0.71472	0.010	-5.53149	30.00000	Averaged
28 Hexane-d14(S)	2.14236	2.25980	2.25980	0.200	5.48196	30.00000	Averaged
29 Methyl Ethyl Ketone	3.03435	2.80767	2.80767	0.010	-7.47047	30.00000	Averaged
30 n-Hexane	1.14123	1.08019	1.08019	0.010	-5.34854	30.00000	Averaged
31 Di-isopropyl Ether	0.53556	0.49071	0.49071	0.010	-8.37324	30.00000	Averaged
32 cis-1,2-Dichloroethene	1.37814	1.29660	1.29660	0.010	-5.91700	30.00000	Averaged
33 Ethyl Acetate	0.75827	0.70678	0.70678	0.010	-6.79062	30.00000	Averaged
34 Chloroform	0.53623	0.47276	0.47276	0.010	-11.83518	30.00000	Averaged
35 Ethyl Tert-Butyl Ether	0.52117	0.46440	0.46440	0.010	-10.89236	30.00000	Averaged
36 Tetrahydrofuran	1.82751	1.68500	1.68500	0.010	-7.79838	30.00000	Averaged
37 1,1,1-Trichloroethane	0.51960	0.45369	0.45369	0.010	-12.68381	30.00000	Averaged
38 1,2-Dichloroethane	0.77310	0.65536	0.65536	0.010	-15.23010	30.00000	Averaged
39 Benzene	0.46353	0.42842	0.42842	0.300	-7.57469	30.00000	Averaged
40 Carbon tetrachloride	0.54639	0.47405	0.47405	0.010	-13.23997	30.00000	Averaged
41 Cyclohexane	1.25745	1.16092	1.16092	0.010	-7.67625	30.00000	Averaged
42 Tert Amyl Methyl Ether	0.44850	0.45444	0.45444	0.010	1.32466	30.00000	Averaged

Data File: \\192.168.10.12\chem\10airD.i\030814.b\06702.d
Report Date: 08-Mar-2014 10:36

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 08-MAR-2014 09:58
Lab File ID: 06702.d Init. Cal. Date(s): 07-MAR-2014 07-MAR-2014
Analysis Type: AIR Init. Cal. Times: 10:27 13:41
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\030814.b\TO15_067-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	0.39192	0.36379	0.36379	0.010	-7.17695	30.00000	Averaged
45 Heptane	1.10515	1.09445	1.09445	0.010	-0.96846	30.00000	Averaged
46 1,2-Dichloropropane	1.43275	1.27013	1.27013	0.010	-11.34988	30.00000	Averaged
47 Trichloroethene	1.19602	1.03641	1.03641	0.010	-13.34549	30.00000	Averaged
48 Bromodichloromethane	0.49125	0.41945	0.41945	0.010	-14.61583	30.00000	Averaged
49 1,4-Dioxane	2.18773	2.26611	2.26611	0.010	3.58253	30.00000	Averaged
50 Methylcyclohexane	2.23778	2.07237	2.07237	0.010	-7.39161	30.00000	Averaged
51 Methyl Isobutyl Ketone	0.78305	0.70585	0.70585	0.010	-9.85907	30.00000	Averaged
52 cis-1,3-Dichloropropene	0.77939	0.70663	0.70663	0.010	-9.33541	30.00000	Averaged
53 trans-1,3-Dichloropropene	0.75781	0.63107	0.63107	0.010	-16.72388	30.00000	Averaged
54 Toluene-d8 (S)	1.09623	1.10761	1.10761	0.200	1.03816	30.00000	Averaged
55 Toluene	0.37808	0.33389	0.33389	0.300	-11.68774	30.00000	Averaged
56 1,1,2-Trichloroethane	1.06374	0.91048	0.91048	0.010	-14.40753	30.00000	Averaged
57 Methyl Butyl Ketone	0.50037	0.40541	0.40541	0.010	-18.97820	30.00000	Averaged
58 Dibromochloromethane	0.34955	0.28258	0.28258	0.010	-19.15741	30.00000	Averaged
59 1,2-Dibromoethane	0.38711	0.32086	0.32086	0.010	-17.11244	30.00000	Averaged
60 Tetrachloroethene	0.43178	0.35973	0.35973	0.010	-16.68781	30.00000	Averaged
62 Chlorobenzene	0.31506	0.26833	0.26833	0.010	-14.83189	30.00000	Averaged
63 Ethyl Benzene	0.17603	0.14369	0.14369	0.300	-18.37504	30.00000	Averaged <-
64 m,p-Xylene	0.22437	0.17941	0.17941	0.300	-20.03551	30.00000	Averaged <-
65 Bromoform	0.31685	0.24412	0.24412	0.010	-22.95443	30.00000	Averaged
66 Styrene	0.34419	0.25901	0.25901	0.010	-24.74829	30.00000	Averaged
67 o-Xylene	0.21919	0.17299	0.17299	0.300	-21.08047	30.00000	Averaged <-
68 1,1,2,2-Tetrachloroethane	0.31832	0.25441	0.25441	0.010	-20.07676	30.00000	Averaged
69 Isopropylbenzene	0.18406	0.13865	0.13865	0.010	-24.67505	30.00000	Averaged
70 N-Propylbenzene	0.14718	0.11012	0.11012	0.010	-25.18210	30.00000	Averaged
71 4-Ethyltoluene	0.18966	0.14468	0.14468	0.010	-23.71983	30.00000	Averaged
72 1,3,5-Trimethylbenzene	0.21264	0.16486	0.16486	0.010	-22.46919	30.00000	Averaged
73 Tert-Butyl Benzene	0.23549	0.17400	0.17400	0.010	-26.11301	30.00000	Averaged
74 1,2,4-Trimethylbenzene	0.21499	0.15938	0.15938	0.010	-25.86458	30.00000	Averaged
75 1,3-Dichlorobenzene	0.34227	0.26356	0.26356	0.010	-22.99646	30.00000	Averaged
76 Sec- Butylbenzene	0.16108	0.11950	0.11950	0.010	-25.81331	30.00000	Averaged
77 1,4-dichlorobenzene-d4 (S)	1.95903	1.69292	1.69292	0.200	-13.58410	30.00000	Averaged
78 Benzyl Chloride	10.00000	13.76032	0.19943	0.010	37.60316	30.00000	Linear
79 1,4-Dichlorobenzene	0.34311	0.26481	0.26481	0.010	-22.92241	30.00000	Averaged
80 p-Isopropyltoluene	0.21487	0.15642	0.15642	0.010	-27.20312	30.00000	Averaged
81 1,2,3-Trimethylbenzene	0.23180	0.17580	0.17580	0.010	-24.15968	30.00000	Averaged
82 1,2-Dichlorobenzene	0.37932	0.29705	0.29705	0.010	-21.68933	30.00000	Averaged
83 N-Butylbenzene	0.20264	0.14700	0.14700	0.010	-27.45753	30.00000	Averaged
84 1,2,4-Trichlorobenzene	0.48082	0.38143	0.38143	0.010	-20.67177	30.00000	Averaged
85 Naphthalene	0.31983	0.24419	0.24419	0.010	-23.65037	30.00000	Averaged
86 Hexachlorobutadiene	0.42188	0.34787	0.34787	0.010	-17.54249	30.00000	Averaged

Data File: \\192.168.10.12\chem\10airD.i\030814.b\06702.d
Report Date: 08-Mar-2014 10:36

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 08-MAR-2014 09:58
Lab File ID: 06702.d Init. Cal. Date(s): 07-MAR-2014 07-MAR-2014
Analysis Type: AIR Init. Cal. Times: 10:27 13:41
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\030814.b\TO15_067-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 13.15526

Maximum Average %D/Drift = 30.00000

* Passed Average %D/Drift Test.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1121C06221

Pace Project No.: 10258805

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10258805001	SV-143-C-16	TO-15	AIR/19608		
10258805002	IA-143-C-16	TO-15	AIR/19598		
10258805003	SV-135-C-16	TO-15	AIR/19598		
10258805004	IA-135-C-16	TO-15	AIR/19598		
10258805005	SV-088-C-16	TO-15	AIR/19607		
→ 10258805006	IA-088-C-16	TO-15	AIR/19617		
10258805007	SV-142-C-16	TO-15	AIR/19598		
10258805008	IA-142-C-16	TO-15	AIR/19598		
10258805009	SV-102-C-16	TO-15	AIR/19607		
10258805010	IA-102-C-16	TO-15	AIR/19608		
10258805011	SV-130-C-16	TO-15	AIR/19608		
10258805012	IA-130-C-16	TO-15	AIR/19598		
10258805013	SV-060-C-16	TO-15	AIR/19608		
10258805014	IA-060-C-16	TO-15	AIR/19598		
10258805015	SV-141-C-16	TO-15	AIR/19598		
10258805016	IA-141-C-16	TO-15	AIR/19607		
10258805017	SV-126-C-16	TO-15	AIR/19607		
10258805018	IA-126-C-16	TO-15	AIR/19607		
10258805019	SV-065-C-16	TO-15	AIR/19608		
10258805020	IA-065-C-16	TO-15	AIR/19598		
10258805021	SV-063-B-16	TO-15	AIR/19598		
10258805022	IA-063-B-16	TO-15	AIR/19598		
10258805023	SV-033-B-16	TO-15	AIR/19607		
10258805024	IA-033-B-16	TO-15	AIR/19607		
10258805025	SV-133-C-16	TO-15	AIR/19607		
10258805026	IA-133-C-16	TO-15	AIR/19607		
10258805027	SV-113-C-16	TO-15	AIR/19598		
10258805028	IA-113-C-16	TO-15	AIR/19617		
10258805029	SV-105-Z-16	TO-15	AIR/19607		
10258805030	IA-105-Z-16	TO-15	AIR/19607		
10258805031	SV-123-Z-16	TO-15	AIR/19608		
10258805032	IA-123-Z-16	TO-15	AIR/19607		
10258805033	SV-121-B-16	TO-15	AIR/19598		
10258805034	IA-121-B-16	TO-15	AIR/19598		
10258805035	SV-101-B-16	TO-15	AIR/19607		
10258805036	IA-101-B-16	TO-15	AIR/19608		
10258805037	SV-128-C-16	TO-15	AIR/19607		
10258805038	IA-128-C-16	TO-15	AIR/19607		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1121C06221
Pace Project No.: 10258805

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10258805039	IA-145-C-16	TO-15	AIR/19607		
10258805040	IA-146-C-16	TO-15	AIR/19607		
10258805041	IA-147-C-16	TO-15	AIR/19598		
10258805042	IA-148-C-16	TO-15	AIR/19608		
10258805043	IA-144-C-16	TO-15	AIR/19598		
10258805044	SV-DUP1-C-16	TO-15	AIR/19607		
10258805045	SV-DUP2-C-16	TO-15	AIR/19598		
10258805046	IA-DUP1-C-16	TO-15	AIR/19598		
10258805047	IA-DUP2-C-16	TO-15	AIR/19598		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 1121C06221
Pace Project No.: 10258805

QC Batch:	AIR/19598	Analysis Method:	TO-15
QC Batch Method:	TO-15	Analysis Description:	TO15 MSV AIR Low Level
Associated Lab Samples:	10258805002, 10258805003, 10258805004, 10258805007, 10258805008, 10258805012, 10258805014, 10258805015, 10258805020, 10258805021, 10258805022, 10258805027, 10258805033, 10258805034, 10258805041, 10258805043, 10258805045, 10258805046, 10258805047		

METHOD BLANK: 1634995

Matrix: Air

Associated Lab Samples: 10258805002, 10258805003, 10258805004, 10258805007, 10258805008, 10258805012, 10258805014, 10258805015, 10258805020, 10258805021, 10258805022, 10258805027, 10258805033, 10258805034, 10258805041, 10258805043, 10258805045, 10258805046, 10258805047

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/06/14 18:12	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/06/14 18:12	
1,1-Dichloroethane	ug/m3	ND	0.82	03/06/14 18:12	
1,1-Dichloroethene	ug/m3	ND	0.81	03/06/14 18:12	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/06/14 18:12	
1,2,4-Trichlorobenzene	ug/m3	ND	3.8	03/06/14 18:12	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/06/14 18:12	
1,2-Dichloroethane	ug/m3	ND	0.41	03/06/14 18:12	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/06/14 18:12	
Benzene	ug/m3	ND	0.32	03/06/14 18:12	
Carbon tetrachloride	ug/m3	ND	0.64	03/06/14 18:12	
Chlorodifluoromethane	ug/m3	ND	0.20	03/06/14 18:12	
Chloroform	ug/m3	ND	0.99	03/06/14 18:12	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/06/14 18:12	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/06/14 18:12	
Ethylbenzene	ug/m3	ND	0.88	03/06/14 18:12	
m&p-Xylene	ug/m3	ND	1.8	03/06/14 18:12	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/06/14 18:12	
Methylene Chloride	ug/m3	ND	3.5	03/06/14 18:12	
Naphthalene	ug/m3	ND	2.7	03/06/14 18:12	
o-Xylene	ug/m3	ND	0.88	03/06/14 18:12	
Tetrachloroethene	ug/m3	ND	0.69	03/06/14 18:12	
Toluene	ug/m3	ND	0.77	03/06/14 18:12	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/06/14 18:12	
Trichloroethene	ug/m3	ND	0.55	03/06/14 18:12	
Vinyl chloride	ug/m3	ND	0.26	03/06/14 18:12	

LABORATORY CONTROL SAMPLE: 1634996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	56.0	101	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	55.5	100	72-130	
1,1-Dichloroethane	ug/m3	41.2	42.8	104	68-128	
1,1-Dichloroethene	ug/m3	40.3	41.4	103	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	56.9	114	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	83.8	111	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	55.2	110	71-140	
1,2-Dichloroethane	ug/m3	41.2	42.0	102	71-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/15/2014 01:43 PM

Page 57 of 76

10258805

Page 57 of 1988

QUALITY CONTROL DATA

Project: 1121C06221
Pace Project No.: 10258805

LABORATORY CONTROL SAMPLE: 1634996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3,5-Trimethylbenzene	ug/m3	50	53.3	107	73-136	
Benzene	ug/m3	32.5	35.2	108	69-134	
Carbon tetrachloride	ug/m3	64	65.2	102	66-134	
Chlorodifluoromethane	ug/m3	36	33.0	92	60-140	
Chloroform	ug/m3	49.7	49.9	100	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	46.3	115	71-135	
Dichlorodifluoromethane	ug/m3	50.3	49.5	98	69-125	
Ethylbenzene	ug/m3	44.2	49.9	113	73-139	
m&p-Xylene	ug/m3	44.2	50.3	114	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	39.2	107	72-132	
Methylene Chloride	ug/m3	35.3	39.7	112	64-134	
Naphthalene	ug/m3	53.3	58.6	110	61-150	
o-Xylene	ug/m3	44.2	48.1	109	71-138	
Tetrachloroethene	ug/m3	69	74.9	109	69-136	
Toluene	ug/m3	38.3	40.9	107	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	47.9	119	70-131	
Trichloroethene	ug/m3	54.6	60.4	111	70-135	
Vinyl chloride	ug/m3	26	28.8	111	69-132	

SAMPLE DUPLICATE: 1635564

Parameter	Units	10258805020 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	ND	ND		25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND		25	
Benzene	ug/m3	0.64	0.74	15	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	23.9	27.6	14	25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	2.3	2.1	10	25	
Ethylbenzene	ug/m3	ND	ND		25	
m&p-Xylene	ug/m3	ND	ND		25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	ND	7.4		25	
Naphthalene	ug/m3	5.1	4.3J		25	
o-Xylene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	ND	ND		25	
Toluene	ug/m3	2.1	2.4	12	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 1121C06221

Pace Project No.: 10258805

SAMPLE DUPLICATE: 1635564

Parameter	Units	10258805020 Result	Dup Result	RPD	Max RPD	Qualifiers
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 1121C06221
Pace Project No.: 10258805

QC Batch: AIR/19607 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10258805005, 10258805009, 10258805016, 10258805017, 10258805018, 10258805023, 10258805024,
10258805025, 10258805026, 10258805029, 10258805030, 10258805032, 10258805035, 10258805037,
10258805038, 10258805039, 10258805040, 10258805044

METHOD BLANK: 1635645

Matrix: Air

Associated Lab Samples: 10258805005, 10258805009, 10258805016, 10258805017, 10258805018, 10258805023, 10258805024,
10258805025, 10258805026, 10258805029, 10258805030, 10258805032, 10258805035, 10258805037,
10258805038, 10258805039, 10258805040, 10258805044

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/07/14 12:15	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/07/14 12:15	
1,1-Dichloroethane	ug/m3	ND	0.82	03/07/14 12:15	
1,1-Dichloroethene	ug/m3	ND	0.81	03/07/14 12:15	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/07/14 12:15	
1,2,4-Trichlorobenzene	ug/m3	ND	3.8	03/07/14 12:15	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/07/14 12:15	
1,2-Dichloroethane	ug/m3	ND	0.41	03/07/14 12:15	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/07/14 12:15	
Benzene	ug/m3	ND	0.32	03/07/14 12:15	
Carbon tetrachloride	ug/m3	ND	0.64	03/07/14 12:15	
Chlorodifluoromethane	ug/m3	ND	0.20	03/07/14 12:15	
Chloroform	ug/m3	ND	0.99	03/07/14 12:15	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/07/14 12:15	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/07/14 12:15	
Ethylbenzene	ug/m3	ND	0.88	03/07/14 12:15	
m&p-Xylene	ug/m3	ND	1.8	03/07/14 12:15	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/07/14 12:15	
Methylene Chloride	ug/m3	ND	3.5	03/07/14 12:15	
Naphthalene	ug/m3	ND	2.7	03/07/14 12:15	
o-Xylene	ug/m3	ND	0.88	03/07/14 12:15	
Tetrachloroethene	ug/m3	ND	0.69	03/07/14 12:15	
Toluene	ug/m3	ND	0.77	03/07/14 12:15	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/07/14 12:15	
Trichloroethene	ug/m3	ND	0.55	03/07/14 12:15	
Vinyl chloride	ug/m3	ND	0.26	03/07/14 12:15	

LABORATORY CONTROL SAMPLE: 1635646

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	61.5	111	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	63.2	114	72-130	
1,1-Dichloroethane	ug/m3	41.2	47.6	116	68-128	
1,1-Dichloroethene	ug/m3	40.3	45.1	112	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	63.8	128	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	93.6	124	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	61.4	123	71-140	
1,2-Dichloroethane	ug/m3	41.2	45.5	110	71-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/15/2014 01:43 PM

Page 60 of 76

10258805

Page 60 of 1988

QUALITY CONTROL DATA

Project: 1121C06221

Pace Project No.: 10258805

LABORATORY CONTROL SAMPLE: 1635646

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3,5-Trimethylbenzene	ug/m3	50	60.3	121	73-136	
Benzene	ug/m3	32.5	40.1	123	69-134	
Carbon tetrachloride	ug/m3	64	71.4	112	66-134	
Chlorodifluoromethane	ug/m3	36	37.1	103	60-140	
Chloroform	ug/m3	49.7	55.9	113	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	53.1	132	71-135	
Dichlorodifluoromethane	ug/m3	50.3	54.9	109	69-125	
Ethylbenzene	ug/m3	44.2	56.1	127	73-139	
m&p-Xylene	ug/m3	44.2	57.2	130	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	43.7	119	72-132	
Methylene Chloride	ug/m3	35.3	44.6	126	64-134	
Naphthalene	ug/m3	53.3	66.2	124	61-150	
o-Xylene	ug/m3	44.2	54.7	124	71-138	
Tetrachloroethene	ug/m3	69	84.9	123	69-136	
Toluene	ug/m3	38.3	46.7	122	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	53.9	134	70-131	L1
Trichloroethene	ug/m3	54.6	70.0	128	70-135	
Vinyl chloride	ug/m3	26	33.2	128	69-132	

SAMPLE DUPLICATE: 1635819

Parameter	Units	10258805044 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND			25
1,1,2-Trichloroethane	ug/m3	ND	ND			25
1,1-Dichloroethane	ug/m3	ND	ND			25
1,1-Dichloroethene	ug/m3	ND	ND			25
1,2,3-Trimethylbenzene	ug/m3	ND	ND			25
1,2,4-Trichlorobenzene	ug/m3	ND	ND			25
1,2,4-Trimethylbenzene	ug/m3	ND	ND			25
1,2-Dichloroethane	ug/m3	0.82	0.86	5		25
1,3,5-Trimethylbenzene	ug/m3	ND	ND			25
Benzene	ug/m3	0.87	0.93	7		25
Carbon tetrachloride	ug/m3	ND	ND			25
Chlorodifluoromethane	ug/m3	4.4	4.9	10		25
Chloroform	ug/m3	6.2	6.7	8		25
cis-1,2-Dichloroethene	ug/m3	8.7	9.1	4		25
Dichlorodifluoromethane	ug/m3	3.0	3.0	.7		25
Ethylbenzene	ug/m3	ND	ND			25
m&p-Xylene	ug/m3	ND	2J			25
Methyl-tert-butyl ether	ug/m3	ND	ND			25
Methylene Chloride	ug/m3	13.0	19.1	38		25 R1
Naphthalene	ug/m3	ND	4.2J			25
o-Xylene	ug/m3	ND	.9J			25
Tetrachloroethene	ug/m3	159	166	4		25
Toluene	ug/m3	5.5	4.6	19		25
trans-1,2-Dichloroethene	ug/m3	3.5	3.9	11		25 L1
Trichloroethene	ug/m3	8630	1930	127		25 E,R1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 1121C06221

Pace Project No.: 10258805

SAMPLE DUPLICATE: 1635819

Parameter	Units	10258805044 Result	Dup Result	RPD	Max RPD	Qualifiers
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/15/2014 01:43 PM

Page 62 of 76

10258805

Page 62 of 1988

QUALITY CONTROL DATA

Project: 1121C06221
Pace Project No.: 10258805

QC Batch: AIR/19608 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10258805001, 10258805010, 10258805011, 10258805013, 10258805019, 10258805031, 10258805036, 10258805042

METHOD BLANK: 1635688 Matrix: Air
Associated Lab Samples: 10258805001, 10258805010, 10258805011, 10258805013, 10258805019, 10258805031, 10258805036, 10258805042

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/07/14 16:39	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/07/14 16:39	
1,1-Dichloroethane	ug/m3	ND	0.82	03/07/14 16:39	
1,1-Dichloroethene	ug/m3	ND	0.81	03/07/14 16:39	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/07/14 16:39	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/07/14 16:39	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/07/14 16:39	
1,2-Dichloroethane	ug/m3	ND	0.41	03/07/14 16:39	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/07/14 16:39	
Benzene	ug/m3	ND	0.32	03/07/14 16:39	
Carbon tetrachloride	ug/m3	ND	0.64	03/07/14 16:39	
Chlorodifluoromethane	ug/m3	ND	3.5	03/07/14 16:39	
Chloroform	ug/m3	ND	0.99	03/07/14 16:39	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/07/14 16:39	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/07/14 16:39	
Ethylbenzene	ug/m3	ND	0.88	03/07/14 16:39	
m&p-Xylene	ug/m3	ND	1.8	03/07/14 16:39	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/07/14 16:39	
Methylene Chloride	ug/m3	ND	3.5	03/07/14 16:39	
Naphthalene	ug/m3	ND	1.1	03/07/14 16:39	
o-Xylene	ug/m3	ND	0.88	03/07/14 16:39	
Tetrachloroethene	ug/m3	ND	0.69	03/07/14 16:39	
Toluene	ug/m3	ND	0.77	03/07/14 16:39	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/07/14 16:39	
Trichloroethene	ug/m3	ND	0.55	03/07/14 16:39	
Vinyl chloride	ug/m3	ND	0.26	03/07/14 16:39	

LABORATORY CONTROL SAMPLE: 1635689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	56.4	102	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	56.6	102	72-130	
1,1-Dichloroethane	ug/m3	41.2	38.6	94	68-128	
1,1-Dichloroethene	ug/m3	40.3	39.1	97	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	53.8	108	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	79.5	105	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	56.4	113	71-140	
1,2-Dichloroethane	ug/m3	41.2	41.9	102	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	55.0	110	73-136	
Benzene	ug/m3	32.5	31.5	97	69-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 1121C06221

Pace Project No.: 10258805

LABORATORY CONTROL SAMPLE: 1635689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	64	64.5	101	66-134	
Chlorodifluoromethane	ug/m3	36	35.8	100	60-140	
Chloroform	ug/m3	49.7	48.5	98	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	39.1	97	71-135	
Dichlorodifluoromethane	ug/m3	50.3	54.3	108	69-125	
Ethylbenzene	ug/m3	44.2	44.9	102	73-139	
m&p-Xylene	ug/m3	44.2	45.4	103	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	36.8	100	72-132	
Methylene Chloride	ug/m3	35.3	31.6	90	64-134	
Naphthalene	ug/m3	53.3	57.5	108	61-150	
o-Xylene	ug/m3	44.2	46.7	106	71-138	
Tetrachloroethene	ug/m3	69	70.2	102	69-136	
Toluene	ug/m3	38.3	37.8	99	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	39.7	98	70-131	
Trichloroethene	ug/m3	54.6	55.2	101	70-135	
Vinyl chloride	ug/m3	26	24.1	93	69-132	

SAMPLE DUPLICATE: 1635784

Parameter	Units	10258895001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	ND	ND		25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND		25	
Benzene	ug/m3	0.52	0.55	5	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	0.43J	.49J		25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	2.9	2.8	1	25	
Ethylbenzene	ug/m3	ND	ND		25	
m&p-Xylene	ug/m3	0.47J	.47J		25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	1.0J	.99J		25	
Naphthalene	ug/m3	ND	ND		25	
o-Xylene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	ND	ND		25	
Toluene	ug/m3	0.83	0.85	2	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/15/2014 01:43 PM

Page 64 of 76

10258805

Page 64 of 1988

QUALITY CONTROL DATA

Project: 1121C06221

Pace Project No.: 10258805

QC Batch: AIR/19617

Analysis Method: TO-15

QC Batch Method: TO-15

Analysis Description: TO15 MSV AIR Low Level

Associated Lab Samples: 10258805006, 10258805028

METHOD BLANK: 1635820

Matrix: Air

Associated Lab Samples: 10258805006, 10258805028

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/09/14 14:02	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/09/14 14:02	
1,1-Dichloroethane	ug/m3	ND	0.82	03/09/14 14:02	
1,1-Dichloroethene	ug/m3	ND	0.81	03/09/14 14:02	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/09/14 14:02	
1,2,4-Trichlorobenzene	ug/m3	ND	3.8	03/09/14 14:02	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/09/14 14:02	
1,2-Dichloroethane	ug/m3	ND	0.41	03/09/14 14:02	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/09/14 14:02	
Benzene	ug/m3	ND	0.32	03/09/14 14:02	
Carbon tetrachloride	ug/m3	ND	0.64	03/09/14 14:02	
Chlorodifluoromethane	ug/m3	ND	0.20	03/09/14 14:02	
Chloroform	ug/m3	ND	0.99	03/09/14 14:02	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/09/14 14:02	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/09/14 14:02	
Ethylbenzene	ug/m3	ND	0.88	03/09/14 14:02	
m&p-Xylene	ug/m3	ND	1.8	03/09/14 14:02	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/09/14 14:02	
Methylene Chloride	ug/m3	ND	3.5	03/09/14 14:02	
Naphthalene	ug/m3	ND	2.7	03/09/14 14:02	
o-Xylene	ug/m3	ND	0.88	03/09/14 14:02	
Tetrachloroethene	ug/m3	ND	0.69	03/09/14 14:02	
Toluene	ug/m3	ND	0.77	03/09/14 14:02	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/09/14 14:02	
Trichloroethene	ug/m3	ND	0.55	03/09/14 14:02	
Vinyl chloride	ug/m3	ND	0.26	03/09/14 14:02	

LABORATORY CONTROL SAMPLE: 1635821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	68.4	123	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	65.6	118	72-130	
1,1-Dichloroethane	ug/m3	41.2	49.4	120	68-128	
1,1-Dichloroethene	ug/m3	40.3	48.9	121	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	67.0	134	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	98.5	131	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	66.1	132	71-140	
1,2-Dichloroethane	ug/m3	41.2	50.4	122	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	62.9	126	73-136	
Benzene	ug/m3	32.5	40.1	124	69-134	
Carbon tetrachloride	ug/m3	64	80.6	126	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/15/2014 01:43 PM

Page 65 of 76

10258805

Page 65 of 1988

QUALITY CONTROL DATA

Project: 1121C06221
Pace Project No.: 10258805

LABORATORY CONTROL SAMPLE: 1635821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	38.8	108	60-140	
Chloroform	ug/m3	49.7	59.7	120	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	53.2	132	71-135	
Dichlorodifluoromethane	ug/m3	50.3	60.6	120	69-125	
Ethylbenzene	ug/m3	44.2	58.9	133	73-139	
m&p-Xylene	ug/m3	44.2	59.8	136	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	45.6	124	72-132	
Methylene Chloride	ug/m3	35.3	45.0	127	64-134	
Naphthalene	ug/m3	53.3	68.5	128	61-150	
o-Xylene	ug/m3	44.2	58.0	131	71-138	
Tetrachloroethene	ug/m3	69	89.3	130	69-136	
Toluene	ug/m3	38.3	48.5	126	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	55.3	137	70-131 L3	
Trichloroethene	ug/m3	54.6	71.0	130	70-135	
Vinyl chloride	ug/m3	26	32.3	124	69-132	

SAMPLE DUPLICATE: 1636060

Parameter	Units	10259331010 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	ND	ND		25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	1.9	1.8	4	25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND		25	
Benzene	ug/m3	3.1	3.1	.05	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	ND	ND		25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	ND	ND		25	
Ethylbenzene	ug/m3	3.5	3.5	.8	25	
m&p-Xylene	ug/m3	13.9	13.1	6	25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	94.3	94.3	0	25	
Naphthalene	ug/m3	ND	4.2J		25	
o-Xylene	ug/m3	4.2	4.0	6	25	
Tetrachloroethene	ug/m3	ND	ND		25	
Toluene	ug/m3	14.8	14.8	0	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06722.d
 Report Date: 08-Mar-2014 11:12

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i
 Lab File ID: 06722.d
 Lab Smp Id: 10258805001
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: AH2
 Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Misc Info: 19608

Calibration Date: 07-MAR-2014
 Calibration Time: 13:41

Level: LOW
 Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	463391	278035	648747	390143	-15.81
61 Chlorobenzene - d	276321	165793	386849	241939	-12.44

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06538.D
Report Date: 07-Mar-2014 15:34

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 06538.D

Lab Smp Id: 10258805002

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\030614.b\T015_065-14.m

Misc Info: 19598

Calibration Date: 06-MAR-2014

Calibration Time: 13:59

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1131822	2.11
61 Chlorobenzene - d	739791	443875	1035707	777842	5.14

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.24	0.41

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06532.D
 Report Date: 07-Mar-2014 15:07

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 06532.D
 Lab Smp Id: 10258805003
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Misc Info: 19598

Calibration Date: 06-MAR-2014
 Calibration Time: 13:59

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1234766	11.40
61 Chlorobenzene - d	739791	443875	1035707	887050	19.91

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.22	0.20

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06527.D
 Report Date: 07-Mar-2014 13:55

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 06527.D
 Lab Smp Id: 10258805004
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Misc Info: 19598

Calibration Date: 06-MAR-2014
 Calibration Time: 13:59

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1282057	15.67
61 Chlorobenzene - d	739791	443875	1035707	699273	-5.48

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.25	0.54

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06634.D
 Report Date: 09-Mar-2014 14:22

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 06634.D
 Lab Smp Id: 10258805005
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: AH2
 Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
 Misc Info: 19607

Calibration Date: 07-MAR-2014
 Calibration Time: 10:54

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1157853	4.46
61 Chlorobenzene - d	739791	443875	1035707	868630	17.42

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.22	0.27

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06831.D
Report Date: 10-Mar-2014 09:43

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06831.D
Lab Smp Id: 10258805006
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
Misc Info: 19617

Calibration Date: 09-MAR-2014
Calibration Time: 10:55

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	665816	-39.93
61 Chlorobenzene - d	739791	443875	1035707	422299	-42.92

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06802.D
Report Date: 09-Mar-2014 11:14

						AMOUNTS		
		QUANT SIG						
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
=====								
24 trans-1,2-dichloroethene		96	4.738	4.744 (0.775)		240402	10.0000	13.7 (M)
25 Methyl Tert Butyl Ether		73	4.757	4.769 (0.778)		765598	10.0000	12.4 (M)
26 Vinyl Acetate		43	4.843	4.862 (0.792)		569476	10.0000	12.4
27 1,1-Dichloroethane		63	4.874	4.887 (0.797)		457854	10.0000	12.0
\$ 28 Hexane-d14 (S)		66	4.949	4.961 (0.809)		400586	10.0000	9.54
29 Methyl Ethyl Ketone		72	5.029	5.042 (0.822)		113455	10.0000	13.0 (M)
30 Di-isopropyl Ether		45	5.060	5.079 (0.828)		664470	10.0000	11.6
31 n-Hexane		57	5.048	5.054 (0.826)		344815	10.0000	12.2
32 Ethyl Acetate		43	5.191	5.203 (0.849)		481638	10.0000	13.6 (M)
33 cis-1,2-Dichloroethene		96	5.203	5.216 (0.851)		242039	10.0000	13.2 (M)
34 Ethyl Tert-Butyl Ether		59	5.296	5.309 (0.866)		808231	10.0000	12.2
35 Chloroform		83	5.327	5.340 (0.871)		616016	10.0000	12.0
36 Tetrahydrofuran		42	5.482	5.488 (0.897)		236591	10.0000	12.0
37 1,1,1-Trichloroethane		97	5.724	5.730 (0.936)		717727	10.0000	12.3
38 1,2-Dichloroethane		62	5.737	5.755 (0.938)		481451	10.0000	12.2 (M)
39 Benzene		78	5.966	5.979 (0.976)		730760	10.0000	12.4
40 Carbon tetrachloride		117	5.985	5.997 (0.979)		710349	10.0000	12.6
41 Cyclohexane		56	5.985	5.997 (0.979)		314935	10.0000	12.4 (M)
42 Tert Amyl Methyl Ether		73	6.096	6.109 (0.997)		812080	10.0000	11.1
* 43 1,4-Difluorobenzene		114	6.115	6.127 (1.000)		890860	10.0000	
44 2,2,4-Trimethylpentane		57	6.258	6.270 (1.023)		1086412	10.0000	12.1
45 Heptane		43	6.382	6.388 (1.044)		375366	10.0000	12.0
46 1,2-Dichloropropane		63	6.481	6.493 (1.060)		267011	10.0000	11.7 (M)
47 Trichloroethene		130	6.500	6.512 (1.063)		338624	10.0000	13.0
48 1,4-Dioxane		88	6.593	6.605 (1.078)		168347	10.0000	14.0 (M)
49 Bromodichloromethane		83	6.611	6.624 (1.081)		718612	10.0000	12.6
50 Methylcyclohexane		98	6.946	6.952 (1.136)		191004	10.0000	13.1
51 Methyl Isobutyl Ketone		43	7.052	7.076 (1.153)		562648	10.0000	14.0
52 cis-1,3-Dichloropropene		75	7.114	7.126 (1.163)		483321	10.0000	12.7
53 trans-1,3-Dichloropropene		75	7.523	7.535 (1.230)		517179	10.0000	12.2 (M)
\$ 54 Toluene-d8 (S)		98	7.604	7.616 (1.243)		880565	10.0000	9.94
55 1,1,2-Trichloroethane		97	7.691	7.703 (1.258)		334399	10.0000	11.8
56 Toluene		91	7.684	7.697 (1.257)		924968	10.0000	12.6
57 Methyl Butyl Ketone		43	7.908	7.932 (0.859)		537816	10.0000	13.5
58 Dibromochloromethane		129	8.236	8.249 (0.895)		697162	10.0000	13.6
59 1,2-Dibromoethane		107	8.472	8.491 (0.920)		580423	10.0000	13.6
60 Tetrachloroethene		166	8.528	8.534 (0.927)		522753	10.0000	13.0
* 61 Chlorobenzene - d5		117	9.204	9.216 (1.000)		607117	10.0000	
62 Chlorobenzene		112	9.248	9.260 (1.005)		746637	10.0000	12.9
63 Ethyl Benzene		91	9.489	9.502 (1.031)		1290664	10.0000	13.3
64 m&p-Xylene		91	9.632	9.651 (1.046)		1077154	10.0000	13.6
65 Styrene		104	10.073	10.091 (1.094)		679103	10.0000	14.3
66 Bromoform		173	10.073	10.091 (1.094)		705938	10.0000	14.1
67 o-Xylene		91	10.141	10.159 (1.102)		1090782	10.0000	13.1
68 1,1,2,2-Tetrachloroethane		83	10.414	10.438 (1.131)		695160	10.0000	12.6
69 Isopropylbenzene		105	10.724	10.742 (1.165)		1364327	10.0000	13.1
70 N-Propylbenzene		91	11.307	11.326 (1.228)		1587974	10.0000	13.3 (M)
71 4-Ethyltoluene		105	11.474	11.493 (1.247)		1320579	10.0000	13.7
72 1,3,5-Trimethylbenzene		105	11.555	11.580 (1.255)		1221556	10.0000	12.6
73 Tert-Butyl Benzene		119	12.039	12.057 (1.308)		1125393	10.0000	13.3
74 1,2,4-Trimethylbenzene		105	12.058	12.082 (1.310)		1162796	10.0000	13.2
75 Sec- Butylbenzene		105	12.349	12.380 (1.342)		1483969	10.0000	13.9
76 1,3-Dichlorobenzene		146	12.355	12.386 (1.342)		718410	10.0000	13.3
\$ 77 1,4-dichlorobenzene-d4 (S)		150	12.417	12.461 (1.349)		405869	10.0000	12.0 (M)

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06802.D
 Report Date: 09-Mar-2014 11:14

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
=====	=====	=====	=====	=====	=====	=====	=====
78 Benzyl Chloride	91	12.436	12.479	(1.351)	937190	10.0000	13.5
79 1,4-Dichlorobenzene	146	12.455	12.492	(1.353)	732495	10.0000	12.9(M)
80 p-Isopropyltoluene	119	12.541	12.579	(1.363)	1241367	10.0000	14.8(M)
81 1,2,3-Trimethylbenzene	105	12.597	12.634	(1.369)	1103854	10.0000	13.4
82 1,2-Dichlorobenzene	146	12.870	12.907	(1.398)	705420	10.0000	14.4
83 N-Butylbenzene	91	13.050	13.081	(1.418)	1139144	10.0000	12.9
84 1,2,4-Trichlorobenzene	180	14.855	14.867	(1.614)	434020	10.0000	13.1
85 Naphthalene	128	14.998	15.016	(1.629)	792538	10.0000	12.8
86 Hexachlorobutadiene	225	15.252	15.264	(1.657)	470200	10.0000	10.7

QC Flag Legend

- A - Target compound detected but, quantitated amount exceeded maximum amount.
 M - Compound response manually integrated.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06523.D
Report Date: 07-Mar-2014 13:35

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06523.D
Lab Smp Id: 10258805007
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1321041	19.19
61 Chlorobenzene - d	739791	443875	1035707	897961	21.38

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06521.D
 Report Date: 07-Mar-2014 13:11

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i	Calibration Date: 06-MAR-2014
Lab File ID: 06521.D	Calibration Time: 13:59
Lab Smp Id: 10258805008	
Analysis Type: VOA	Level: LOW
Quant Type: ISTD	Sample Type: AIR
Operator: JAM	
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m	
Misc Info: 19598	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	1147255	3.51
61 Chlorobenzene - d	739791	443875	1035707	791932	7.05

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.24	0.41

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06621.D
Report Date: 09-Mar-2014 13:45

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06621.D
Lab Smp Id: 10258805009
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1061510	-4.23
61 Chlorobenzene - d	739791	443875	1035707	735436	-0.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.12	-0.00
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06819.D
Report Date: 10-Mar-2014 08:57

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06819.D
Lab Smp Id: 10258805009
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 09-MAR-2014
Calibration Time: 10:55

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	823067	-25.74
61 Chlorobenzene - d	739791	443875	1035707	524516	-29.10

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06728.d
 Report Date: 08-Mar-2014 11:54

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i
 Lab File ID: 06728.d
 Lab Smp Id: 10258805010
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: AH2
 Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Misc Info: 19608

Calibration Date: 07-MAR-2014
 Calibration Time: 13:41

Level: LOW
 Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	463391	278035	648747	456274	-1.54
61 Chlorobenzene - d	276321	165793	386849	274842	-0.54

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	-0.00
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06725.d
Report Date: 08-Mar-2014 11:49

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 06725.d

Lab Smp Id: 10258805011

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m

Misc Info: 19608

Calibration Date: 07-MAR-2014

Calibration Time: 13:41

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	463391	278035	648747	409681	-11.59
61 Chlorobenzene - d	276321	165793	386849	245790	-11.05

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06537.D
Report Date: 07-Mar-2014 15:31

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06537.D
Lab Smp Id: 10258805012
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1135149	2.41
61 Chlorobenzene - d	739791	443875	1035707	792053	7.06

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06730.d
 Report Date: 08-Mar-2014 12:01

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i
 Lab File ID: 06730.d
 Lab Smp Id: 10258805013
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: AH2
 Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Misc Info: 19608

Calibration Date: 07-MAR-2014
 Calibration Time: 13:41

Level: LOW
 Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	463391	278035	648747	453195	-2.20
61 Chlorobenzene - d	276321	165793	386849	273088	-1.17

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	-0.00
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030814.b\06715.d
 Report Date: 09-Mar-2014 11:36

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i Calibration Date: 08-MAR-2014
 Lab File ID: 06715.d Calibration Time: 09:58
 Lab Smp Id: 10258805013
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: AIR
 Operator: AH2
 Method File: \\192.168.10.12\chem\10airD.i\030814.b\TO15_067-14.m
 Misc Info: 19608

Test Mode:
 Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	463391	278035	648747	318773	-31.21
61 Chlorobenzene - d	276321	165793	386849	195526	-29.24

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06540.D
Report Date: 07-Mar-2014 15:39

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06540.D
Lab Smp Id: 10258805014
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1080599	-2.51
61 Chlorobenzene - d	739791	443875	1035707	771722	4.32

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06539.D
 Report Date: 07-Mar-2014 15:37

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 06539.D
 Lab Smp Id: 10258805015
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\030614.b\T015_065-14.m
 Misc Info: 19598

Calibration Date: 06-MAR-2014
 Calibration Time: 13:59

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	1184461	6.86
61 Chlorobenzene - d	739791	443875	1035707	802844	8.52

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06617.D
Report Date: 09-Mar-2014 13:36

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06617.D
Lab Smp Id: 10258805016
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	987148	-10.94
61 Chlorobenzene - d	739791	443875	1035707	657505	-11.12

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06636.D
Report Date: 09-Mar-2014 14:28

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06636.D
Lab Smp Id: 10258805017
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1135597	2.45
61 Chlorobenzene - d	739791	443875	1035707	801388	8.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06820.D
Report Date: 10-Mar-2014 08:59

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06820.D
Lab Smp Id: 10258805017
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 09-MAR-2014
Calibration Time: 10:55

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	829497	-25.16
61 Chlorobenzene - d	739791	443875	1035707	525596	-28.95

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06619.D
Report Date: 09-Mar-2014 13:38

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06619.D
Lab Smp Id: 10258805018
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1024884	-7.53
61 Chlorobenzene - d	739791	443875	1035707	662054	-10.51

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.31
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.14

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06724.d
Report Date: 08-Mar-2014 11:26

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 06724.d
Lab Smp Id: 10258805019
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
Misc Info: 19608

Calibration Date: 07-MAR-2014
Calibration Time: 13:41

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	463391	278035	648747	392942	-15.20
61 Chlorobenzene - d	276321	165793	386849	243606	-11.84

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06524.D
Report Date: 07-Mar-2014 13:38

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06524.D
Lab Smp Id: 10258805020
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1302126	17.48
61 Chlorobenzene - d	739791	443875	1035707	859620	16.20

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06535.D
Report Date: 07-Mar-2014 15:17

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06535.D
Lab Smp Id: 10258805021
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1256779	13.39
61 Chlorobenzene - d	739791	443875	1035707	834923	12.86

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06520.D
Report Date: 07-Mar-2014 13:01

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06520.D
Lab Smp Id: 10258805022
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1131108	2.05
61 Chlorobenzene - d	739791	443875	1035707	775836	4.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06626.D
Report Date: 09-Mar-2014 14:02

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06626.D
Lab Smp Id: 10258805023
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1156982	4.38
61 Chlorobenzene - d	739791	443875	1035707	764601	3.35

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06623.D
Report Date: 09-Mar-2014 13:50

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06623.D
Lab Smp Id: 10258805024
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1184999	6.91
61 Chlorobenzene - d	739791	443875	1035707	795249	7.50

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06620.D
Report Date: 09-Mar-2014 13:41

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06620.D
Lab Smp Id: 10258805025
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1034780	-6.64
61 Chlorobenzene - d	739791	443875	1035707	679317	-8.17

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.12	0.00
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06816.D
Report Date: 10-Mar-2014 08:51

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06816.D
Lab Smp Id: 10258805025
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 09-MAR-2014
Calibration Time: 10:55

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	876987	-20.88
61 Chlorobenzene - d	739791	443875	1035707	548674	-25.83

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06618.D
Report Date: 09-Mar-2014 13:37

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06618.D
Lab Smp Id: 10258805026
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	1004767	-9.35
61 Chlorobenzene - d	739791	443875	1035707	648136	-12.39

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06530.D
 Report Date: 07-Mar-2014 14:58

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06530.D
Lab Smp Id: 10258805027
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	921750	-16.84
61 Chlorobenzene - d	739791	443875	1035707	758971	2.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06832.D
Report Date: 10-Mar-2014 09:10

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06832.D
Lab Smp Id: 10258805028
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
Misc Info: 19617

Calibration Date: 09-MAR-2014
Calibration Time: 10:55

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	717535	-35.26
61 Chlorobenzene - d	739791	443875	1035707	459459	-37.89

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06635.D
Report Date: 09-Mar-2014 14:24

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06635.D
Lab Smp Id: 10258805029
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1046617	-5.57
61 Chlorobenzene - d	739791	443875	1035707	783302	5.88

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06631.D
Report Date: 09-Mar-2014 14:14

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06631.D
Lab Smp Id: 10258805030
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	1070771	-3.39
61 Chlorobenzene - d	739791	443875	1035707	842420	13.87

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.13	0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.26	0.67

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06817.D
 Report Date: 10-Mar-2014 08:53

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 06817.D
 Lab Smp Id: 10258805030
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
 Misc Info: 19607

Calibration Date: 09-MAR-2014
 Calibration Time: 10:55

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	872271	-21.30
61 Chlorobenzene - d	739791	443875	1035707	546578	-26.12

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06727.d
 Report Date: 08-Mar-2014 11:53

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i Calibration Date: 07-MAR-2014
 Lab File ID: 06727.d Calibration Time: 13:41
 Lab Smp Id: 10258805031
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: AIR
 Operator: AH2
 Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
 Misc Info: 19608

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	463391	278035	648747	430642	-7.07
61 Chlorobenzene - d	276321	165793	386849	255624	-7.49

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06627.D
 Report Date: 09-Mar-2014 14:05

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 06627.D
 Lab Smp Id: 10258805032
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: AH2
 Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
 Misc Info: 19607

Calibration Date: 07-MAR-2014
 Calibration Time: 10:54

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1054564	-4.86
61 Chlorobenzene - d	739791	443875	1035707	848296	14.67

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.15	0.51
61 Chlorobenzene - d	9.20	8.87	9.53	9.30	1.15

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06818.D
Report Date: 10-Mar-2014 08:54

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 06818.D

Lab Smp Id: 10258805032

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m

Misc Info: 19607

Calibration Date: 09-MAR-2014

Calibration Time: 10:55

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	852137	-23.12
61 Chlorobenzene - d	739791	443875	1035707	543261	-26.57

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06534.D
Report Date: 07-Mar-2014 16:42

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06534.D
Lab Smp Id: 10258805033
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1264142	14.05
61 Chlorobenzene - d	739791	443875	1035707	850487	14.96

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06533.D
 Report Date: 07-Mar-2014 15:11

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 06533.D
 Lab Smp Id: 10258805034
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Misc Info: 19598

Calibration Date: 06-MAR-2014
 Calibration Time: 13:59

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	1232551	11.20
61 Chlorobenzene - d	739791	443875	1035707	829528	12.13

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06630.D
Report Date: 09-Mar-2014 14:11

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06630.D
Lab Smp Id: 10258805035
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1081307	-2.44
61 Chlorobenzene - d	739791	443875	1035707	744685	0.66

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06729.d
Report Date: 08-Mar-2014 11:56

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 06729.d
Lab Smp Id: 10258805036
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m
Misc Info: 19608

Calibration Date: 07-MAR-2014
Calibration Time: 13:41

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	463391	278035	648747	444893	-3.99
61 Chlorobenzene - d	276321	165793	386849	272825	-1.27

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	0.00
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06624.D
Report Date: 09-Mar-2014 13:52

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06624.D
Lab Smp Id: 10258805037
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1152535	3.98
61 Chlorobenzene - d	739791	443875	1035707	752854	1.77

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06616.D
Report Date: 09-Mar-2014 13:35

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06616.D
Lab Smp Id: 10258805038
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	975176	-12.02
61 Chlorobenzene - d	739791	443875	1035707	629994	-14.84

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06625.D
Report Date: 09-Mar-2014 14:00

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06625.D
Lab Smp Id: 10258805039
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	864899	-21.97
61 Chlorobenzene - d	739791	443875	1035707	672953	-9.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06814.D
Report Date: 10-Mar-2014 08:41

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06814.D
Lab Smp Id: 10258805039
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 09-MAR-2014
Calibration Time: 10:55

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	914897	-17.46
61 Chlorobenzene - d	739791	443875	1035707	575378	-22.22

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06610.D
Report Date: 09-Mar-2014 14:31

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06610.D
Lab Smp Id: 10258805040
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 07-MAR-2014
Calibration Time: 10:54

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	864915	-21.97
61 Chlorobenzene - d	739791	443875	1035707	633450	-14.37

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06536.D
Report Date: 07-Mar-2014 15:29

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06536.D
Lab Smp Id: 10258805041
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1176860	6.18
61 Chlorobenzene - d	739791	443875	1035707	795297	7.50

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030714.b\06726.d
Report Date: 08-Mar-2014 11:50

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 06726.d

Lab Smp Id: 10258805042

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\030714.b\TO15_067-14.m

Misc Info: 19608

Calibration Date: 07-MAR-2014

Calibration Time: 13:41

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	463391	278035	648747	429282	-7.36
61 Chlorobenzene - d	276321	165793	386849	251309	-9.05

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	-0.00
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06529.D
Report Date: 07-Mar-2014 14:55

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06529.D
Lab Smp Id: 10258805043
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	1108389	665033	1551745	1319580	19.05
61 Chlorobenzene - d	739791	443875	1035707	852185	15.19

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.12	0.00
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030714.b\06628.D
Report Date: 09-Mar-2014 14:08

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 06628.D

Lab Smp Id: 10258805044

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10air0.i\030714.b\TO15_065-14.m

Misc Info: 19607

Calibration Date: 07-MAR-2014

Calibration Time: 10:54

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1190701	7.43
61 Chlorobenzene - d	739791	443875	1035707	786257	6.28

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.12	0.00
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.07

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06815.D
Report Date: 10-Mar-2014 08:43

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06815.D
Lab Smp Id: 10258805044
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030914.b\TO15_065-14.m
Misc Info: 19607

Calibration Date: 09-MAR-2014
Calibration Time: 10:55

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	890349	-19.67
61 Chlorobenzene - d	739791	443875	1035707	560855	-24.19

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06528.D
Report Date: 07-Mar-2014 13:58

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 06528.D

Lab Smp Id: 10258805045

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m

Misc Info: 19598

Calibration Date: 06-MAR-2014

Calibration Time: 13:59

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1332037	20.18
61 Chlorobenzene - d	739791	443875	1035707	908009	22.74

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.11	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06526.D
Report Date: 07-Mar-2014 13:47

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 06526.D
Lab Smp Id: 10258805046
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
Misc Info: 19598

Calibration Date: 06-MAR-2014
Calibration Time: 13:59

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1265127	14.14
61 Chlorobenzene - d	739791	443875	1035707	844865	14.20

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\030614.b\06541.D
Report Date: 07-Mar-2014 15:41

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 06541.D

Lab Smp Id: 10258805047

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m

Misc Info: 19598

Calibration Date: 06-MAR-2014

Calibration Time: 13:59

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1108389	665033	1551745	1147791	3.55
61 Chlorobenzene - d	739791	443875	1035707	817194	10.46

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.12	5.79	6.45	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	0.07

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Sample Calculation

ANALYTICAL RESULTS

Project: 1121C06221
Pace Project No.: 10258805

Sample: SV-126-C-16		Lab ID: 10258805017	Collected: 02/24/14 12:06	Received: 02/26/14 08:12	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	88.4	ug/m3	0.55	1.68		03/08/14 04:49	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/08/14 04:49	56-23-5	
Chlorodifluoromethane	ND	ug/m3	0.34	1.68		03/08/14 04:49	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/08/14 04:49	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.7	1.68		03/08/14 04:49	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/08/14 04:49	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/08/14 04:49	107-06-2	
1,1-Dichloroethene	199	ug/m3	1.4	1.68		03/08/14 04:49	75-35-4	
cis-1,2-Dichloroethene	205	ug/m3	1.4	1.68		03/08/14 04:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/08/14 04:49	156-60-5	
Ethylbenzene	3.0	ug/m3	1.5	1.68		03/08/14 04:49	100-41-4	
Methylene Chloride	9.2	ug/m3	5.9	1.68		03/08/14 04:49	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/08/14 04:49	1634-04-4	
Naphthalene	70.6	ug/m3	4.5	1.68		03/08/14 04:49	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/08/14 04:49	127-18-4	
Toluene	14.7	ug/m3	1.3	1.68		03/08/14 04:49	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.3	1.68		03/08/14 04:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/08/14 04:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/08/14 04:49	79-00-5	
Trichloroethene	177	ug/m3	0.92	1.68		03/08/14 04:49	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.34	1.68		03/08/14 04:49	526-73-8	
1,2,4-Trimethylbenzene	4.3	ug/m3	1.7	1.68		03/08/14 04:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/08/14 04:49	108-67-8	
Vinyl chloride	11900	ug/m3	140	537.6		03/09/14 19:53	75-01-4	A3
m&p-Xylene	13.4	ug/m3	3.0	1.68		03/08/14 04:49	179601-23-1	
o-Xylene	5.7	ug/m3	1.5	1.68		03/08/14 04:49	95-47-6	

$$\frac{151082}{829497} * 537.6 * 10 \text{ ppbv} * 4.66786 = 4570.62 \text{ ppbv}$$

$$4570.62 \text{ ppbv} * \frac{62.50 \text{ g/mole}}{24.454 \text{ mole}} = 11683.6 \text{ ug/m}^3$$

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10air0.i\030914.b\06820.D
Report Date: 10-Mar-2014 08:59

Sample Calculation

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\030914.b\06820.D
Lab Smp Id: 10258805017 *SV-126-C-16*
Inj Date : 09-MAR-2014 19:53
Operator : JAM Inst ID: 10air0.i
Smp Info :
Misc Info : 19607
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\030914.b\TO15 065-14.m
Meth Date : 09-Mar-2014 11:10 ahamilton Quant Type: ISTD
Cal Date : 06-MAR-2014 15:00 Cal File: 06511.D
Als bottle: 20
Dil Factor: 537.60000
Integrator: HP RTE Compound Sublist: 10258805.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	537.600	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ppbv)	FINAL (ppbv)
1 Chlorodifluoromethane	51						
3 Dichlorodifluoromethane	85						
6 Vinyl chloride	62	3.690	3.696 (0.605)		151082	8.50190	4570
18 1,1-Dichloroethene	61	4.366	4.378 (0.716)		6240	0.21323	115
21 Methylene chloride	49						
24 trans-1,2-dichloroethene	96						
25 Methyl Tert Butyl Ether	73						
27 1,1-Dichloroethane	63						
\$ 28 Hexane-d14(S)	66	4.949	4.961 (0.812)		377909	9.66460	9.66
33 cis-1,2-Dichloroethene	96	5.191	5.216 (0.851)		2738	0.16045	86.2(±Q)
35 Chloroform	83						
37 1,1,1-Trichloroethane	97						
38 1,2-Dichloroethane	62						
39 Benzene	78	5.954	5.979 (0.977)		6181	0.11230	60.4 (±M)
40 Carbon tetrachloride	117						
* 43 1,4-Difluorobenzene	114	6.097	6.127 (1.000)		829497	10.0000	
47 Trichloroethene	130						
\$ 54 Toluene-d8 (S)	98	7.592	7.616 (1.245)		803634	9.74530	9.74
56 Toluene	91						
55 1,1,2-Trichloroethane	97						
60 Tetrachloroethene	166						
* 61 Chlorobenzene - d5	117	9.186	9.216 (1.000)		525596	10.0000	
63 Ethyl Benzene	91						
64 m&p-Xylene	91						

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-MAR-2014 12:12
 End Cal Date : 06-MAR-2014 15:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\030614.b\TO15_065-14.m
 Last Edit : 07-Mar-2014 10:13 10air0.i

Sample Calculation

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		WRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
5 Chloromethane	3.50245	4.12677	4.36948	4.51623	4.65970	5.01769				
	5.34801						AVRG		4.50576	13.32894
6 Vinyl chloride	4.14126	4.60201	4.83093	5.06430	4.72505	4.69410				
	4.61739						AVRG		4.66786	6.00805
7 1,3-Butadiene	6.58073	7.34353	7.65434	7.06121	6.98929	6.95432				
	6.90756						AVRG		7.07014	4.83799
8 Bromomethane	3.90165	4.32151	4.76856	4.88310	4.65741	4.59706				
	4.57447						AVRG		4.52911	7.22568
9 Chloroethane	8.51242	10.22763	10.32200	10.64026	10.26343	10.19563				
	10.11957						AVRG		10.04013	6.91131
10 Ethanol	1022	1591	3275	7481	7656	150543				
	243387						LINK	0.01071	14.11944	0.99869
11 Vinyl Bromide	3.74626	4.55810	4.83656	4.92854	4.65708	4.66924				
	4.76964						AVRG		4.59506	8.57333

TO: M. MARTIN **DATE: APRIL 24, 2014**

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

**SUBJECT: ORGANIC DATA VALIDATION – VOC
MIDDLE RIVER CENTER
SDG 10259328**

SAMPLES: 10/Air/VOC

IA-001-ER-1	IA-001-PB-1	IA-002-ER-1	IA-002-PB-1
IA-003-ER-1	IA-093X-A-16	IA-117X-A-16	IA-140-B-16
IA-DUP1-ER-1	IA-DUP1-PB-1		

Overview

The sample set for Middle River Center (MRC), SDG 10259328 consists of ten (10) indoor air environmental samples. There are two field duplicate pairs contained within this SDG: IA-003-ER-1 / IA-DUP1-ER-1 and IA-001-PB-1 / IA-DUP1-PB-1. Samples were analyzed for volatile organic compounds (VOC).

The samples were collected by Tetra Tech on February 26, 2014 and analyzed by Pace Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, field duplicate results, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

- None.

Minor

- The VOC continuing calibration percent differences (%Ds) were greater than the quality control limit of 30% for 1,2,4-trichlorobenzene and naphthalene for instrument 10AIR0 on 03/12/14 @ 12:31. The detected and nondetected results for 1,2,4-trichlorobenzene and naphthalene in the affected samples IA-140-B-16, IA-DUP1-ER-1, IA-001-ER-1, and IA-002-ER-1 were qualified as estimated (J) and (UJ), respectively.
- The compound methylene chloride exceeded the linear calibration range of the instrument in sample IA-003-ER-1. The detected methylene chloride result in sample IA-003-ER-1 has been qualified as estimated (J).
- The field duplicate precision exceeded the 50% relative percent difference (RPD) quality control limit for chlorodifluoromethane, ethylbenzene, m&p xylenes, methylene chloride, o-xylene, toluene, and trans-1,2-dichloroethene in the field duplicate pair IA-003-ER-1 / IA-DUP1-ER-1. Detected results for the aforementioned compounds in the duplicate samples IA-003-ER-1 / IA-DUP1-ER-1 were qualified as estimated (J).

- Positive results reported below the reporting limit but above the method detection limit were qualified as estimated, (J).

Notes

Positive results were not reported between the reporting limit and the method detection limit. The laboratory was required to re-submit and revise all sample results.

The following contaminant was detected in the laboratory method blank associated with batch AIR/19647 at the following maximum concentration:

<u>Analyte</u>	<u>Maximum Concentration</u>	<u>Action Level</u>
Methylene chloride	0.43 ug/m ³	4.3 ug/m ³

An action level of 10X for methylene chloride maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No action was taken on this basis because all methylene chloride results were greater than the action level.

The laboratory control sample (LCS) analyzed on 3/12/14 and associated with batch 19645 had a percent recovery greater than the laboratory control limit for 1,2,4-trichlorobenzene. No action was taken on this basis because 1,2,4-trichlorobenzene was not detected in any of the associated samples.

The laboratory stated in the case narrative that all surrogate recoveries were acceptable. The surrogate recoveries were not presented in the SDG for verification. No action was taken on this basis.

The laboratory reported the nondetected results to the reporting limit.

All samples were analyzed at dilutions ranging from 1.68 to 2.29. This accounts for the elevated detection limits for the nondetected compounds.

Executive Summary

Laboratory Performance: Continuing calibration %D noncompliance resulted in the qualification of data. One methylene chloride result was qualified due to an exceedance of the linear calibration range of the instrument.

Other Factors Affecting Data Quality: Positive results reported below the reporting limit but above the method detection limit were qualified as estimated. Field duplicate precision noncompliance resulted in the qualification of data.

The data for these analyses were reviewed with reference to EPA Compendium Method TO-15 (Jan. 1999) and USEPA National Functional Guidelines for Organic Data Validation (June 2008). The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Edward Sedlmyer
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 04792 SDG: 10259328 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-001-ER-1	IA-001-PB-1	IA-002-ER-1	IA-002-PB-1						
	LAB_ID	10259328003	10259328001	10259328004	10259328002						
	SAMP_DATE	2/26/2014	2/26/2014	2/26/2014	2/26/2014						
	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		
1,1,1-TRICHLOROETHANE		2.5 U			1.9 U			2 U		2 U	
1,1,2-TRICHLOROETHANE					0.92 U			0.99 U		0.99 U	
1,1-DICHLOROETHANE		1.9 U			1.4 U			1.5 U		1.5 U	
1,1-DICHLOROETHENE		1.9 U			1.4 U			1.5 U		1.5 U	
1,2,3-TRIMETHYLBENZENE		2.3 U			0.97			1.8 U		0.94	
1,2,4-TRICHLOROBENZENE		3.5 UJ	C		2.5 U			2.7 UJ	C	2.7 U	
1,2,4-TRIMETHYLBENZENE		2.3 U			1.7			1.8 U		1.4 J	P
1,2-DICHLOROETHANE		0.94 U			0.69 U			0.74 U		0.74 U	
1,3,5-TRIMETHYLBENZENE		2.3 U		P	1.5 J			1.8 U		1.8 U	
BENZENE		0.83			0.86			1.1		0.65	
CARBON TETRACHLORIDE		1.5 U			1.1 U			1.2 U		1.2 U	
CHLORODIFLUOROMETHANE		4.8			2.8			4.3		11.5	
CHLOROFORM		2.3 U			1.7 U			1.8 U		1.8 U	
CIS-1,2-DICHLOROETHENE		1.9 U			1.4 U			1.5 U		1.5 U	
DICHLORODIFLUOROMETHANE		2.5			2.2			2.5		2	
ETHYLBENZENE		2 U			1.6			5.2		1.2 J	P
M+P-XYLENES		4 U			2.9 J		P	25.7		1.5 J	P
METHYL TERT-BUTYL ETHER		1.7 U			1.2 U			1.3 U		1.3 U	
METHYLENE CHLORIDE		20.8			9.6			14.4		11.3	
NAPHTHALENE		2.5 UJ	C		1.2 J		P	1.9 UJ	C	1.3 J	P
O-XYLENE		2 U			0.95 J		P	8.9		1.6 U	
TETRACHLOROETHENE		1.6 U			1.2 U			1.2 U		1.2 U	
TOLUENE		2.7			1.4			14.8		3.9	
TRANS-1,2-DICHLOROETHENE		1.9 U			1.4 U			19.9		1.5 U	
TRICHLOROETHENE		1.3 U			0.92 U			0.99 U		0.99 U	
VINYL CHLORIDE		0.6 U			0.44 U			0.47 U		0.47 U	

PROJ NO: 04792 SDG: 10259328 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-003-ER-1	IA-093X-A-16	IA-117X-A-16	IA-140-B-16				
	LAB_ID	10259328005	10259328008	10259328009	10259328010				
	SAMP_DATE	2/26/2014	2/26/2014	2/26/2014	2/26/2014				
	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
1,1,1-TRICHLOROETHANE	1.9 U			0.87 J	P		2 U		
1,1,2-TRICHLOROETHANE	0.92 U			0.96 U			0.99 U		
1,1-DICHLOROETHANE	1.4 U			1.4 U			1.5 U		
1,1-DICHLOROETHENE	1.4 U			0.75 J	P		1.5 U		
1,2,3-TRIMETHYLBENZENE	0.88			0.35 U			0.36 U		
1,2,4-TRICHLOROBENZENE	2.5 U			2.6 U			2.7 U		C
1,2,4-TRIMETHYLBENZENE	1.3 J	P		1.3 J	P		1.2 J	P	
1,2-DICHLOROETHANE	0.69 U			0.71 U			0.74 U		
1,3,5-TRIMETHYLBENZENE	1.4 J	P		1.7 U			1.8 U		
BENZENE	0.89			0.58			0.44 J	P	
CARBON TETRACHLORIDE	1.1 U			1.1 U			1.2 U		
CHLORODIFLUOROMETHANE	4.5 J	G		1.4			1.5		
CHLOROFORM	1.7 U			1.7 U			1.8 U		
CIS-1,2-DICHLOROETHENE	1.4 U			0.91 J	P		1.5 U		
DICHLORODIFLUOROMETHANE	2			1.9			1.4 J	P	
ETHYLBENZENE	5 J	G		1.1 J	P		1.3 J	P	
M+P-XYLENES	21.5 J	G		1.4 J	P		1.9 J	P	
METHYL TERT-BUTYL ETHER	1.2 U			1.3 U			1.3 U		
METHYLENE CHLORIDE	605 J	GL		6.6			89.7		
NAPHTHALENE	1.1 J	P		1.7 J	P		1.3 J	P	C
O-XYLENE	7.8 J	G		1.5 U			0.74 J	P	
TETRACHLOROETHENE	1.2 U			1.2 U			1.2 U		
TOLUENE	14.6 J	G		1.2 J	P		15.7		84
TRANS-1,2-DICHLOROETHENE	17.4 J	G		1.4 U			1.5 U		
TRICHLOROETHENE	0.92 U			8.4			0.99 U		
VINYL CHLORIDE	0.44 U			0.45 U			0.47 U		

PROJ_NO: 04792 SDG: 10259328 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-DUP1-ER-1		IA-DUP1-PB-1		
	LAB_ID	10259328007		10259328006		
	SAMP_DATE	2/26/2014		2/26/2014		
	QC_TYPE	NM		NM		
	UNITS	UG/M3		UG/M3		
	PCT_SOLIDS					
DUP_OF	IA-003-ER-1		IA-001-PB-1			
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1.9 U			1.9 U	
1,1,2-TRICHLOROETHANE		0.92 U			0.92 U	
1,1-DICHLOROETHANE		1.4 U			1.4 U	
1,1-DICHLOROETHENE		1.4 U			1.4 U	
1,2,3-TRIMETHYLBENZENE		1.7 U			0.34 U	
1,2,4-TRICHLOROBENZENE		2.5 UJ	C		2.5 U	
1,2,4-TRIMETHYLBENZENE		3			1.7 U	
1,2-DICHLOROETHANE		0.69 U			0.69 U	
1,3,5-TRIMETHYLBENZENE		1.7 U			1.7 U	
BENZENE		1.3			0.8	
CARBON TETRACHLORIDE		1.1 U			1.1 U	
CHLORODIFLUOROMETHANE		129 J	G		26	
CHLOROFORM		1.7 U			1.7 U	
CIS-1,2-DICHLOROETHENE		1.4 U			1.4 U	
DICHLORODIFLUOROMETHANE		29			22	
ETHYLBENZENE		17.1 J	G		1.5 U	
M+P-XYLENES		81.5 J	G		1.5 J	P
METHYL TERT-BUTYL ETHER		1.2 U			1.2 U	
METHYLENE CHLORIDE		22.2 J	G		6.5	
NAPHTHALENE		1.8 UJ	C		1.8 U	
O-XYLENE		29.5 J	G		1.5 U	
TETRACHLOROETHENE		1.2 U			1.2 U	
TOLUENE		44.7 J	G		1.4	
TRANS-1,2-DICHLOROETHENE		70.1 J	G		1.4 U	
TRICHLOROETHENE		0.92 U			0.92 U	
VINYL CHLORIDE		0.44 U			0.44 U	

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

Sample: IA-001-ER-1		Lab ID: 10259328003	Collected: 02/26/14 17:53		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.83 ug/m3		0.74	2.29		03/13/14 00:00	71-43-2	
Carbon tetrachloride	ND ug/m3		1.5	2.29		03/13/14 00:00	56-23-5	
Chlorodifluoromethane	4.8 ug/m3		1.6	2.29		03/13/14 00:00	75-45-6	
Chloroform	ND ug/m3		2.3	2.29		03/13/14 00:00	67-66-3	
Dichlorodifluoromethane	2.5 ug/m3		2.3	2.29		03/13/14 00:00	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.9	2.29		03/13/14 00:00	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.94	2.29		03/13/14 00:00	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.9	2.29		03/13/14 00:00	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.9	2.29		03/13/14 00:00	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.9	2.29		03/13/14 00:00	156-60-5	
Ethylbenzene	ND ug/m3		2.0	2.29		03/13/14 00:00	100-41-4	
Methylene Chloride	20.8 ug/m3		1.6	2.29		03/13/14 00:00	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.7	2.29		03/13/14 00:00	1634-04-4	
Naphthalene	ND ug/m3		2.5	2.29		03/13/14 00:00	91-20-3	
Tetrachloroethene	ND ug/m3		1.6	2.29		03/13/14 00:00	127-18-4	
Toluene	2.7 ug/m3		1.8	2.29		03/13/14 00:00	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		3.5	2.29		03/13/14 00:00	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.5	2.29		03/13/14 00:00	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.3	2.29		03/13/14 00:00	79-00-5	
Trichloroethene	ND ug/m3		1.3	2.29		03/13/14 00:00	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		2.3	2.29		03/13/14 00:00	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.3	2.29		03/13/14 00:00	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.3	2.29		03/13/14 00:00	108-67-8	
Vinyl chloride	ND ug/m3		0.60	2.29		03/13/14 00:00	75-01-4	
m&p-Xylene	ND ug/m3		4.0	2.29		03/13/14 00:00	179601-23-1	
o-Xylene	ND ug/m3		2.0	2.29		03/13/14 00:00	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-001-PB-1		Lab ID: 10259328001	Collected: 02/26/14 18:04	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.86	ug/m3	0.55	1.68		03/13/14 00:54	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 00:54	56-23-5	
Chlorodifluoromethane	2.8	ug/m3	0.34	1.68		03/13/14 00:54	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 00:54	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/13/14 00:54	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 00:54	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 00:54	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 00:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 00:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 00:54	156-60-5	
Ethylbenzene	1.6	ug/m3	1.5	1.68		03/13/14 00:54	100-41-4	
Methylene Chloride	9.6	ug/m3	1.2	1.68		03/13/14 00:54	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 00:54	1634-04-4	
Naphthalene	1.2J	ug/m3	1.8	1.68		03/13/14 00:54	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 00:54	127-18-4	
Toluene	1.4	ug/m3	1.3	1.68		03/13/14 00:54	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 00:54	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 00:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 00:54	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 00:54	79-01-6	
1,2,3-Trimethylbenzene	0.97	ug/m3	0.34	1.68		03/13/14 00:54	526-73-8	
1,2,4-Trimethylbenzene	1.7	ug/m3	1.7	1.68		03/13/14 00:54	95-63-6	
1,3,5-Trimethylbenzene	1.5J	ug/m3	1.7	1.68		03/13/14 00:54	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 00:54	75-01-4	
m&p-Xylene	2.9J	ug/m3	3.0	1.68		03/13/14 00:54	179601-23-1	
o-Xylene	0.95J	ug/m3	1.5	1.68		03/13/14 00:54	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-002-ER-1		Lab ID: 10259328004	Collected: 02/26/14 18:14		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1	ug/m3	0.58	1.8		03/12/14 23:31	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 23:31	56-23-5	
Chlorodifluoromethane	4.3	ug/m3	1.3	1.8		03/12/14 23:31	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 23:31	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	1.8	1.8		03/12/14 23:31	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 23:31	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 23:31	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:31	156-59-2	
trans-1,2-Dichloroethene	19.9	ug/m3	1.5	1.8		03/12/14 23:31	156-60-5	
Ethylbenzene	5.2	ug/m3	1.6	1.8		03/12/14 23:31	100-41-4	
Methylene Chloride	14.4	ug/m3	1.3	1.8		03/12/14 23:31	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 23:31	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.8		03/12/14 23:31	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 23:31	127-18-4	
Toluene	14.8	ug/m3	1.4	1.8		03/12/14 23:31	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 23:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 23:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 23:31	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 23:31	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 23:31	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 23:31	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 23:31	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 23:31	75-01-4	
m&p-Xylene	25.7	ug/m3	3.2	1.8		03/12/14 23:31	179601-23-1	
o-Xylene	8.9	ug/m3	1.6	1.8		03/12/14 23:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-002-PB-1		Lab ID: 10259328002	Collected: 02/26/14 18:01		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.65	ug/m3	0.58	1.8		03/12/14 20:38	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 20:38	56-23-5	
Chlorodifluoromethane	11.5	ug/m3	0.36	1.8		03/12/14 20:38	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 20:38	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.8	1.8		03/12/14 20:38	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 20:38	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 20:38	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 20:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 20:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 20:38	156-60-5	
Ethylbenzene	1.2J	ug/m3	1.6	1.8		03/12/14 20:38	100-41-4	
Methylene Chloride	11.3	ug/m3	1.3	1.8		03/12/14 20:38	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 20:38	1634-04-4	
Naphthalene	1.3J	ug/m3	1.9	1.8		03/12/14 20:38	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 20:38	127-18-4	
Toluene	3.9	ug/m3	1.4	1.8		03/12/14 20:38	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 20:38	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 20:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 20:38	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 20:38	79-01-6	
1,2,3-Trimethylbenzene	0.94	ug/m3	0.36	1.8		03/12/14 20:38	526-73-8	
1,2,4-Trimethylbenzene	1.4J	ug/m3	1.8	1.8		03/12/14 20:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 20:38	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 20:38	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.2	1.8		03/12/14 20:38	179601-23-1	
o-Xylene	ND	ug/m3	1.6	1.8		03/12/14 20:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-003-ER-1		Lab ID: 10259328005	Collected: 02/26/14 18:10	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.89 ug/m3		0.55	1.68		03/12/14 23:31	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/12/14 23:31	56-23-5	
Chlorodifluoromethane	4.5 ug/m3		0.34	1.68		03/12/14 23:31	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/12/14 23:31	67-66-3	
Dichlorodifluoromethane	2.0 ug/m3		1.7	1.68		03/12/14 23:31	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/12/14 23:31	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/12/14 23:31	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 23:31	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 23:31	156-59-2	
trans-1,2-Dichloroethene	17.4 ug/m3		1.4	1.68		03/12/14 23:31	156-60-5	
Ethylbenzene	5.0 ug/m3		1.5	1.68		03/12/14 23:31	100-41-4	
Methylene Chloride	605 ug/m3		1.2	1.68		03/12/14 23:31	75-09-2	C0,E
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/12/14 23:31	1634-04-4	
Naphthalene	1.1J ug/m3		1.8	1.68		03/12/14 23:31	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/12/14 23:31	127-18-4	
Toluene	14.6 ug/m3		1.3	1.68		03/12/14 23:31	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/12/14 23:31	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/12/14 23:31	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/12/14 23:31	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/12/14 23:31	79-01-6	
1,2,3-Trimethylbenzene	0.88 ug/m3		0.34	1.68		03/12/14 23:31	526-73-8	
1,2,4-Trimethylbenzene	1.3J ug/m3		1.7	1.68		03/12/14 23:31	95-63-6	
1,3,5-Trimethylbenzene	1.4J ug/m3		1.7	1.68		03/12/14 23:31	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/12/14 23:31	75-01-4	
m&p-Xylene	21.5 ug/m3		3.0	1.68		03/12/14 23:31	179601-23-1	
o-Xylene	7.8 ug/m3		1.5	1.68		03/12/14 23:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-093X-A-16		Lab ID: 10259328008	Collected: 02/26/14 17:10		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.58	ug/m3	0.57	1.74		03/12/14 22:31	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/12/14 22:31	56-23-5	
Chlorodifluoromethane	1.4	ug/m3	0.35	1.74		03/12/14 22:31	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/12/14 22:31	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.74		03/12/14 22:31	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/12/14 22:31	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/12/14 22:31	107-06-2	
1,1-Dichloroethene	0.75J	ug/m3	1.4	1.74		03/12/14 22:31	75-35-4	
cis-1,2-Dichloroethene	0.91J	ug/m3	1.4	1.74		03/12/14 22:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/12/14 22:31	156-60-5	
Ethylbenzene	1.1J	ug/m3	1.5	1.74		03/12/14 22:31	100-41-4	
Methylene Chloride	6.6	ug/m3	1.2	1.74		03/12/14 22:31	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/12/14 22:31	1634-04-4	
Naphthalene	1.7J	ug/m3	1.9	1.74		03/12/14 22:31	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/12/14 22:31	127-18-4	
Toluene	1.2J	ug/m3	1.3	1.74		03/12/14 22:31	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/12/14 22:31	120-82-1	
1,1,1-Trichloroethane	0.87J	ug/m3	1.9	1.74		03/12/14 22:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/12/14 22:31	79-00-5	
Trichloroethene	8.4	ug/m3	0.96	1.74		03/12/14 22:31	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/12/14 22:31	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.7	1.74		03/12/14 22:31	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:31	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/12/14 22:31	75-01-4	
m&p-Xylene	1.4J	ug/m3	3.1	1.74		03/12/14 22:31	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/12/14 22:31	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-117X-A-16		Lab ID: 10259328009	Collected: 02/26/14 17:13	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.44J	ug/m3	0.58	1.8		03/12/14 23:01	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 23:01	56-23-5	
Chlorodifluoromethane	1.5	ug/m3	0.36	1.8		03/12/14 23:01	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 23:01	67-66-3	
Dichlorodifluoromethane	1.4J	ug/m3	1.8	1.8		03/12/14 23:01	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 23:01	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 23:01	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 23:01	156-60-5	
Ethylbenzene	1.3J	ug/m3	1.6	1.8		03/12/14 23:01	100-41-4	
Methylene Chloride	89.7	ug/m3	1.3	1.8		03/12/14 23:01	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 23:01	1634-04-4	
Naphthalene	1.3J	ug/m3	1.9	1.8		03/12/14 23:01	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 23:01	127-18-4	
Toluene	15.7	ug/m3	1.4	1.8		03/12/14 23:01	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 23:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 23:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 23:01	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 23:01	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/12/14 23:01	526-73-8	
1,2,4-Trimethylbenzene	1.2J	ug/m3	1.8	1.8		03/12/14 23:01	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 23:01	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 23:01	75-01-4	
m&p-Xylene	1.9J	ug/m3	3.2	1.8		03/12/14 23:01	179601-23-1	
o-Xylene	0.74J	ug/m3	1.6	1.8		03/12/14 23:01	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-140-B-16		Lab ID: 10259328010	Collected: 02/26/14 17:15	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/12/14 22:32	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 22:32	56-23-5	
Chlorodifluoromethane	13.6	ug/m3	1.3	1.8		03/12/14 22:32	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 22:32	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.8	1.8		03/12/14 22:32	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 22:32	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 22:32	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:32	156-60-5	
Ethylbenzene	2.1	ug/m3	1.6	1.8		03/12/14 22:32	100-41-4	
Methylene Chloride	18.3	ug/m3	1.3	1.8		03/12/14 22:32	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 22:32	1634-04-4	
Naphthalene	6.5	ug/m3	1.9	1.8		03/12/14 22:32	91-20-3	CH
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 22:32	127-18-4	
Toluene	84.0	ug/m3	1.4	1.8		03/12/14 22:32	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 22:32	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 22:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 22:32	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 22:32	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 22:32	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 22:32	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/12/14 22:32	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 22:32	75-01-4	
m&p-Xylene	8.1	ug/m3	3.2	1.8		03/12/14 22:32	179601-23-1	
o-Xylene	2.6	ug/m3	1.6	1.8		03/12/14 22:32	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-DUP1-ER-1		Lab ID: 10259328007	Collected: 02/26/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.3 ug/m3		0.55	1.68		03/12/14 23:01	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/12/14 23:01	56-23-5	
Chlorodifluoromethane	12.9 ug/m3		1.2	1.68		03/12/14 23:01	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/12/14 23:01	67-66-3	
Dichlorodifluoromethane	2.9 ug/m3		1.7	1.68		03/12/14 23:01	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/12/14 23:01	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/12/14 23:01	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 23:01	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 23:01	156-59-2	
trans-1,2-Dichloroethene	70.1 ug/m3		1.4	1.68		03/12/14 23:01	156-60-5	
Ethylbenzene	17.1 ug/m3		1.5	1.68		03/12/14 23:01	100-41-4	
Methylene Chloride	22.2 ug/m3		1.2	1.68		03/12/14 23:01	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/12/14 23:01	1634-04-4	
Naphthalene	ND ug/m3		1.8	1.68		03/12/14 23:01	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/12/14 23:01	127-18-4	
Toluene	44.7 ug/m3		1.3	1.68		03/12/14 23:01	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/12/14 23:01	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/12/14 23:01	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/12/14 23:01	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/12/14 23:01	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.7	1.68		03/12/14 23:01	526-73-8	
1,2,4-Trimethylbenzene	3.0 ug/m3		1.7	1.68		03/12/14 23:01	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/12/14 23:01	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/12/14 23:01	75-01-4	
m&p-Xylene	81.5 ug/m3		3.0	1.68		03/12/14 23:01	179601-23-1	
o-Xylene	29.5 ug/m3		1.5	1.68		03/12/14 23:01	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259328

Sample: IA-DUP1-PB-1		Lab ID: 10259328006	Collected: 02/26/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.80	ug/m3	0.55	1.68		03/13/14 01:23	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 01:23	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.34	1.68		03/13/14 01:23	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 01:23	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/13/14 01:23	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 01:23	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 01:23	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 01:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 01:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 01:23	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/13/14 01:23	100-41-4	
Methylene Chloride	6.5	ug/m3	1.2	1.68		03/13/14 01:23	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 01:23	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/13/14 01:23	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 01:23	127-18-4	
Toluene	1.4	ug/m3	1.3	1.68		03/13/14 01:23	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 01:23	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 01:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 01:23	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 01:23	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/13/14 01:23	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/13/14 01:23	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/13/14 01:23	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 01:23	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.0	1.68		03/13/14 01:23	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/13/14 01:23	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

MIDDLE RIVER AND TILLEY CHEMICAL

AIR DATA

10259328

FRACTION	CHEMICAL	IA-003-ER-1	UNITS	IA-DUP1-ER-1	RPD	D
OV-M3	1,2,3-TRIMETHYLBENZENE	0.88	UG/M3	ND	200.00	0.88
OV-M3	1,2,4-TRIMETHYLBENZENE	ND	UG/M3	3	200.00	3.00
OV-M3	BENZENE	0.89	UG/M3	1.3	37.44	0.41
OV-M3	CHLORODIFLUOROMETHANE	4.5	UG/M3	12.9	96.55	8.40
OV-M3	DICHLORODIFLUOROMETHANE	2	UG/M3	2.9	36.73	0.90
OV-M3	ETHYLBENZENE	5	UG/M3	17.1	109.50	12.10
OV-M3	M+P-XYLENES	21.5	UG/M3	81.5	116.50	60.00
OV-M3	METHYLENE CHLORIDE	605	UG/M3	22.2	185.84	582.80
OV-M3	O-XYLENE	7.8	UG/M3	29.5	116.35	21.70
OV-M3	TOLUENE	14.6	UG/M3	44.7	101.52	30.10
OV-M3	TRANS-1,2-DICHLOROETHENE	17.4	UG/M3	70.1	120.46	52.70

Current RPD Quality Control Limit: 50 %.

Shaded cells indicate RPDs that exceed the applicable quality control limit.

MIDDLE RIVER AND TILLEY CHEMICAL

AIR DATA

10259328

FRACTION	CHEMICAL	IA-001-PB-1	UNITS	IA-DUP1-PB-1	RPD	D
OV-M3	1,2,3-TRIMETHYLBENZENE	0.97	UG/M3	ND	200.00	0.97
OV-M3	1,2,4-TRIMETHYLBENZENE	1.7	UG/M3	ND	200.00	1.70
OV-M3	BENZENE	0.86	UG/M3	0.8	7.23	0.06
OV-M3	CHLORODIFLUOROMETHANE	2.8	UG/M3	2.6	7.41	0.20
OV-M3	DICHLORODIFLUOROMETHANE	2.2	UG/M3	2.2	0.00	0.00
OV-M3	ETHYLBENZENE	1.6	UG/M3	ND	200.00	1.60
OV-M3	METHYLENE CHLORIDE	9.6	UG/M3	6.5	38.51	3.10
OV-M3	TOLUENE	1.4	UG/M3	1.4	0.00	0.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

March 17, 2014

Tony Apanavage
Tetra Tech
20251 Century Blvd
Suite 200
Germantown, MD 20874

RE: Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

Dear Tony Apanavage:

Enclosed are the analytical results for sample(s) received by the laboratory on March 04, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Nicole Benjamin
nicole.benjamin@pacelabs.com
Project Manager

Enclosures

cc: Dawn Monico, Tetra Tech GEO



10259328

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10259328001	IA-001-PB-1	Air	02/26/14 18:04	03/04/14 10:00
10259328002	IA-002-PB-1	Air	02/26/14 18:01	03/04/14 10:00
10259328003	IA-001-ER-1	Air	02/26/14 17:53	03/04/14 10:00
10259328004	IA-002-ER-1	Air	02/26/14 18:14	03/04/14 10:00
10259328005	IA-003-ER-1	Air	02/26/14 18:10	03/04/14 10:00
10259328006	IA-DUP1-PB-1	Air	02/26/14 00:00	03/04/14 10:00
10259328007	IA-DUP1-ER-1	Air	02/26/14 00:00	03/04/14 10:00
10259328008	IA-093X-A-16	Air	02/26/14 17:10	03/04/14 10:00
10259328009	IA-117X-A-16	Air	02/26/14 17:13	03/04/14 10:00
10259328010	IA-140-B-16	Air	02/26/14 17:15	03/04/14 10:00
10259328011	Unused Can#2245	Air		03/04/14 10:00
10259328012	Unused Can#2566	Air		03/04/14 10:00
10259328013	Unused Can#1296	Air		03/04/14 10:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 17, 2014

General Information:

10 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/19645

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- DUP (Lab ID: 1638565)
 - Naphthalene
- IA-140-B-16 (Lab ID: 10259328010)
 - Naphthalene
- LCS (Lab ID: 1638294)
 - 1,2,4-Trichlorobenzene
 - Naphthalene

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/19645

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 1638294)
 - 1,2,4-Trichlorobenzene

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 17, 2014

Additional Comments:

Analyte Comments:

QC Batch: AIR/19647

C0: Result confirmed by second analysis.

- IA-003-ER-1 (Lab ID: 10259328005)
- Methylene Chloride

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- IA-003-ER-1 (Lab ID: 10259328005)
- Methylene Chloride

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|---|
| C0 | Result confirmed by second analysis. |
| CH | The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high. |
| E | Analyte concentration exceeded the calibration range. The reported result is estimated. |
| L3 | Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias. |

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

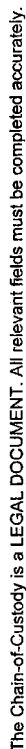
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10259328001	IA-001-PB-1	TO-15	AIR/19647		
10259328002	IA-002-PB-1	TO-15	AIR/19647		
10259328003	IA-001-ER-1	TO-15	AIR/19645		
10259328004	IA-002-ER-1	TO-15	AIR/19645		
10259328005	IA-003-ER-1	TO-15	AIR/19647		
10259328006	IA-DUP1-PB-1	TO-15	AIR/19647		
10259328007	IA-DUP1-ER-1	TO-15	AIR/19645		
10259328008	IA-093X-A-16	TO-15	AIR/19647		
10259328009	IA-117X-A-16	TO-15	AIR/19647		
10259328010	IA-140-B-16	TO-15	AIR/19645		

REPORT OF LABORATORY ANALYSIS


This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ORIGINAL

	Document Name: Air Sample Condition Upon Receipt	Document Revised: 26Dec2013 Page 1 of 1
	Document No.: F-MN-A-106-rev.09	Issuing Authority: Pace Minnesota Quality Office

**Air Sample Condition
Upon Receipt**

Client Name:

tetra tech

Project #:

WO#: 10259328



Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: *on other sheet*

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No
 Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other: _____

Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): _____

Corrected Temp (°C): _____

Thermom. Used:

☐ B88A912167504

☐ B88A9132521491

☐ 72337080

☐ 80512447

Temp should be above freezing to 6°C Correction Factor: _____

Date & Initials of Person Examining Contents: *3/5/14*

Type of ice Received ☐ Blue ☐ Wet ☒ None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media: <i>WTC</i>		11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received:

Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
001-PB-1	2434		0320	unused	2245 / 0176
002-PB-1	2528		0409	unused	2566 /
001-ER1	2226		0451	unused	1296 / 0040
002-ER1	2283		0533		
003-ER-1	2427		0222		
Dup1-PB-1	2451		—		
Dup1-ER-1	1323		—		
093X	2396		0528		
117X	2524		0458		
140 B	2267		0021		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

Project Manager Review:

Date: *3/5/14*

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259328

Lab File ID: 06903BFB.D

BFB Injection Date: 03/10/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:47

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.00
75	30.00 - 66.00% of mass 95	50.47
96	5.00 - 9.00% of mass 95	6.68
173	Less than 2.00% of mass 174	0.65 (0.74)
174	50.00 - 120.00% of mass 95	86.78
175	4.00 - 9.00% of mass 174	6.55 (7.55)
176	93.00 - 101.00% of mass 174	84.03 (96.83)
177	5.00 - 9.00% of mass 176	5.81 (6.91)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	06904.D	03/10/2014	11:12
2	CAL2	CAL2	06905.D	03/10/2014	11:36
3	CAL3	CAL3	06906.D	03/10/2014	12:01
4	CAL4	CAL4	06907.D	03/10/2014	12:28
5	CAL5	CAL5	06908.D	03/10/2014	12:54
6	CAL6	CAL6	06909.D	03/10/2014	13:23
7	CAL7	CAL7	06910.D	03/10/2014	13:55
8	ICVADDL (LCS)	ICVADDL	06911.D	03/10/2014	14:22
9	ICV (LCS)	ICV	06912.D	03/10/2014	14:48

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air0.i\031014.b\06904.D
 Level 2: \\192.168.10.12\chem\10air0.i\031014.b\06905.D
 Level 3: \\192.168.10.12\chem\10air0.i\031014.b\06906.D
 Level 4: \\192.168.10.12\chem\10air0.i\031014.b\06907.D
 Level 5: \\192.168.10.12\chem\10air0.i\031014.b\06908.D
 Level 6: \\192.168.10.12\chem\10air0.i\031014.b\06909.D
 Level 7: \\192.168.10.12\chem\10air0.i\031014.b\06910.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
1 Chlorodifluoromethane	1.79334	1.96113	1.99290	2.02763	2.03916	2.21306					
	2.29356						AVRG		2.04583		8.06742
2 Propylene	4.42343	5.25024	5.12097	5.51810	5.55487	6.00090					
	6.10678						AVRG		5.43647		10.78516
3 Dichlorodifluoromethane	0.76495	0.83410	0.87557	0.92208	0.92385	1.03516					
	1.13286						AVRG		0.92694		13.33317
4 Dichlorotetrafluoroethane	0.88918	1.03163	1.09640	1.13448	1.17610	1.31356					
	1.40435						AVRG		1.14938		14.95494

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
5 Chloromethane	2.73337 4.00112	2.95082	3.02944	3.11024	3.29718	3.68461	AVRG		3.25640		13.59974
6 Vinyl chloride	2.80004 3.44528	3.26841	3.17952	3.36648	3.28817	3.44421	AVRG		3.25602		6.84907
7 1,3-Butadiene	4.03477 5.10059	5.07494	4.90816	4.88217	4.82254	5.07005	AVRG		4.84187		7.68659
8 Bromomethane	2.64768 3.35210	3.07464	3.10006	3.27756	3.19326	3.34481	AVRG		3.14144		7.76394
9 Chloroethane	5.93482 7.42973	7.37708	7.07120	7.21214	7.08487	7.41352	AVRG		7.07477		7.41368
10 Ethanol	7.86650 10.37597	9.60682	10.18409	8.95570	8.11859	9.11464	AVRG		9.17462		10.46115
11 Vinyl Bromide	2.86110 3.47223	3.08453	3.17242	3.26826	3.15421	3.40488	AVRG		3.20252		6.39606

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
12 Isopentane	2.35717	2.79325	2.80360	2.92346	3.55224	3.93266					
	4.20716						AVRG		3.22421		21.11392
13 Acrolein	15.21182	16.17671	14.97296	15.01228	11.67974	12.23572					
	12.88044						AVRG		14.02424		12.32414
14 Trichlorofluoromethane	0.71541	0.83144	0.82954	0.84317	0.88790	1.01350					
	1.10566						AVRG		0.88952		14.62331
15 Acetone	+++++	1.43823	1.61026	1.72216	2.20660	2.22776					
	2.30702						AVRG		1.91867		19.41490
16 Isopropyl Alcohol	1.97508	2.63503	2.16594	2.16518	2.03899	2.38240					
	2.47554						AVRG		2.26259		10.67307
17 Acrylonitrile	6.94453	7.44144	6.58736	6.45656	5.64602	5.89274					
	6.50762						AVRG		6.49661		9.30261
18 1,1-Dichloroethene	1.76703	1.88434	1.94283	2.00893	2.04456	2.27191					
	2.41281						AVRG		2.04749		10.94912

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
19 Tert Butyl Alcohol (TBA)	1.27469 1.72470	1.38681	1.14962	1.22188	1.33666	1.63613	AVRG		1.39008		15.39550
20 Freon 113	1.30782 1.94919	1.43945	1.48336	1.53997	1.63905	1.85518	AVRG		1.60290		14.34583
21 Methylene chloride	2.44829 3.81825	3.04900	2.83347	2.87484	3.18380	3.50654	AVRG		3.10292		14.63965
22 Allyl Chloride	8.99304 7.89769	9.06240	8.30561	8.01340	7.30581	7.64392	AVRG		8.17455		8.07486
23 Carbon Disulfide	1.08017 1.25785	1.11722	1.13167	1.21676	1.16239	1.22848	AVRG		1.17065		5.59102
24 trans-1,2-dichloroethene	3.61936 3.49520	3.57832	3.78773	3.72750	3.26238	3.40143	AVRG		3.54599		5.16148
25 Methyl Tert Butyl Ether	0.84133 1.17268	0.96801	0.96981	0.98239	1.01531	1.10853	AVRG		1.00829		10.61789

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
26 Vinyl Acetate	1.74853 1.51459	1.87559	1.78057	1.79436	1.33253	1.43962	AVRG		1.64083		12.71786
27 1,1-Dichloroethane	1.42059 1.91757	1.63125	1.59147	1.63735	1.66636	1.83676	AVRG		1.67162		9.76995
29 Methyl Ethyl Ketone	6.97088 7.64896	9.91072	7.27006	7.02421	6.78266	7.32787	AVRG		7.56219		14.19117
30 Di-isopropyl Ether	0.81519 1.40572	1.01579	1.01117	1.05699	1.14732	1.30958	AVRG		1.10882		17.92531
31 n-Hexane	1.93758 2.64397	1.93908	2.10298	2.15944	2.19919	2.49212	AVRG		2.21062		12.10514
32 Ethyl Acetate	1.46477 1.80554	1.71527	1.90244	1.92231	1.57661	1.74783	AVRG		1.73354		9.61656
33 cis-1,2-Dichloroethene	3.74863 3.33480	3.23944	3.31346	3.23721	3.13147	3.31968	AVRG		3.33210		5.89942

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.3000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
34 Ethyl Tert-Butyl Ether	0.75949 1.11688	0.90849	0.90735	0.92644	0.95192	1.06601	AVRG		0.94808		10.30615
35 Chloroform	1.14391 1.44071	1.20832	1.15602	1.22451	1.23897	1.39267	AVRG		1.25787		9.11572
36 Tetrahydrofuran	2.77362 3.40923	3.27398	3.03990	3.22107	3.23700	3.41204	AVRG		3.19526		7.03644
37 1,1,1-Trichloroethane	1.00703 1.31211	0.98490	0.99377	1.05122	1.09410	1.23734	AVRG		1.09721		11.73008
38 1,2-Dichloroethane	1.69488 1.93005	1.55334	1.49881	1.56916	1.60382	1.82376	AVRG		1.66769		9.45930
39 Benzene	0.90295 1.30653	0.90512	0.96885	0.98664	1.04197	1.20139	AVRG		1.04478		14.71502
40 Carbon tetrachloride	0.99800 1.44353	1.01018	1.01830	1.06856	1.09234	1.30065	AVRG		1.13308		15.15002

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
41 Cyclohexane	1.84791 ++++	1.90208	1.89425	1.99185	2.39771	2.95611	AVRG		2.16499		20.16504
42 Tert Amyl Methyl Ether	1.07866 ++++	0.60158	0.77689	0.87827	0.95216	1.04492	AVRG		0.88875		20.10045
44 2,2,4-Trimethylpentane	0.59958 0.91649	0.59595	0.59455	0.62302	0.69863	0.77964	AVRG		0.67258		13.92196
45 Heptane	1.99114 2.40954	2.02797	1.90049	2.00239	2.02013	2.26878	AVRG		2.08863		8.65676
46 1,2-Dichloropropane	2.42726 3.45854	2.45000	2.62988	2.79267	2.88795	3.23289	AVRG		2.83988		13.69908
47 Trichloroethene	2.29031 2.50313	2.21270	2.26938	2.31916	2.27705	2.45719	AVRG		2.33270		4.56482
48 1,4-Dioxane	3.74290 5.94928	4.26081	4.85849	4.68617	4.71161	5.49839	AVRG		4.81538		15.25880

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
49 Bromodichloromethane	1.05595 1.29442	1.08294	1.05443	1.06525	1.07864	1.21577	AVRG		1.12106		8.46644
50 Methylcyclohexane	3.95017 4.37133	4.31106	3.83767	3.90218	4.06432	4.28893	AVRG		4.10367		5.31511
51 Methyl Isobutyl Ketone	1.32695 1.56699	1.69501	1.80412	1.76113	1.37132	1.50294	AVRG		1.57549		11.86929
52 cis-1,3-Dichloropropene	2.12350 1.77241	2.34341	1.93713	1.83374	1.58892	1.71160	AVRG		1.90153		13.59314
53 trans-1,3-Dichloropropene	3437 1588396	6568	17790	39339	511296	1029022	LNLR	0.00414	1.52974		0.99971
55 1,1,2-Trichloroethane	1.73572 2.57315	2.11602	2.10729	2.20625	2.29048	2.50852	AVRG		2.21992		12.62258
56 Toluene	0.66842 0.96139	0.76617	0.75694	0.77657	0.83539	0.92909	AVRG		0.81342		12.65344

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
57 Methyl Butyl Ketone	0.798861	0.982841	1.108241	1.157391	0.906681	0.999291	AVRG		0.996971		12.045991
58 Dibromochloromethane	0.656311	0.728311	0.695721	0.714091	0.716351	0.800871	AVRG		0.733781		8.054731
59 1,2-Dibromoethane	0.840851	1.010941	0.904391	0.859251	0.846681	0.944291	AVRG		0.914591		7.727141
60 Tetrachloroethene	0.822121	0.809491	0.842451	0.898981	0.961961	1.059131	AVRG		0.930461		13.032711
62 Chlorobenzene	0.505231	0.606181	0.618211	0.646751	0.670141	0.739251	AVRG		0.648081		12.971371
63 Ethyl Benzene	0.293661	0.356811	0.360711	0.365631	0.384611	0.433791	AVRG		0.377971		13.849801<-
64 m&p-Xylene	0.397321	0.435841	0.417311	0.444741	0.461941	0.520791	AVRG		0.458931		11.188051

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			MSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000 Level 7										
65 Styrene	0.60663 0.86457	0.74216	0.76225	0.70395	0.73916	0.84214	AVRG		0.75155		11.47221
66 Bromoform	0.63168 0.83595	0.69876	0.69979	0.68427	0.70145	0.79391	AVRG		0.72083		9.67537
67 o-Xylene	0.34083 0.54104	0.39974	0.40399	0.43031	0.45641	0.51734	AVRG		0.44138		15.83025
68 1,1,2,2-Tetrachloroethane	0.56698 0.79820	0.61250	0.63138	0.66240	0.70997	0.78678	AVRG		0.68117		12.89120
69 Isopropylbenzene	0.33492 0.41559	0.30970	0.32453	0.33331	0.36077	0.40424	AVRG		0.35472		11.49865
70 N-Propylbenzene	0.29999 0.35223	0.29051	0.28952	0.29155	0.30373	0.34755	AVRG		0.31073		6.78360
71 4-Ethyltoluene	0.32813 0.42136	0.36293	0.35548	0.35663	0.37134	0.41615	AVRG		0.37743		11.11432

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
72 1,3,5-Trimethylbenzene	0.27501 0.44210	0.33511	0.35672	0.36172	0.39890	0.43013	AVRG		0.37310		15.86840
73 Tert-Butyl Benzene	0.32844 0.51809	0.39182	0.39978	0.39959	0.44048	0.49927	AVRG		0.42392		15.74325
74 1,2,4-Trimethylbenzene	0.37504 0.51036	0.36333	0.37042	0.38229	0.42509	0.48950	AVRG		0.41658		14.55330
75 Sec- Butylbenzene	0.32314 0.39709	0.34729	0.29641	0.29648	0.33004	0.37954	AVRG		0.33857		11.46401
76 1,3-Dichlorobenzene	0.54152 0.81678	0.62747	0.64023	0.65373	0.68639	0.76267	AVRG		0.67554		13.46626
78 Benzyl Chloride	0.53227 0.59121	0.66443	0.66856	0.60947	0.52596	0.59022	AVRG		0.59745		9.45326
79 1,4-Dichlorobenzene	0.47629 0.78511	0.54975	0.61391	0.65225	0.67487	0.75189	AVRG		0.64344		16.84464

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
80 p-isopropyltoluene	0.38780 0.46657	0.44928	0.47896	0.39454	0.40226	0.41225	AVRG		0.42738		8.63958
81 1,2,3-Trimethylbenzene	0.41106 0.52974	0.41514	0.39371	0.38720	0.44142	0.48597	AVRG		0.43775		11.98626
82 1,2-Dichlorobenzene	0.68073 0.79367	0.77384	0.71387	0.70008	0.71775	0.76858	AVRG		0.73550		5.81761
83 N-Butylbenzene	0.44393 0.49322	0.48763	0.52036	0.53521	0.43586	0.46186	AVRG		0.48401		7.83485
84 1,2,4-Trichlorobenzene	1.23173 ++++	1.40298	1.49432	1.48810	1.19544	1.21704	AVRG		1.33627		10.43116
85 Naphthalene	0.62669 ++++	0.78134	0.82725	0.82692	0.65341	0.66415	AVRG		0.72996		12.60993
86 Hexachlorobutadiene	0.62004 ++++	0.65446	0.77172	0.80364	1.06793	1.18243	AVRG		0.85004		26.69204

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
=====											
\$ 28 Hexane-d14 (S)	2.02664	2.15313	2.10830	2.16193	2.15686	2.12256					
	2.04058						AVRG		2.11000		2.64452
=====											
\$ 54 Toluene-d8 (S)	1.11151	1.09944	1.06990	1.06759	1.03022	0.99301					
	0.96396						AVRG		1.04795		5.21865
=====											
\$ 77 1,4-dichlorobenzene-d4 (S)	2.05679	2.09610	2.25577	2.05607	1.91045	2.23144					
	2.25415						AVRG		2.12325		6.11912
=====											

Data File: \\192.168.10.12\chem\10air0.i\031014.b\06911.D
 Report Date: 10-Mar-2014 15:10

Pace Analytical Services, Inc.

RECOVERY REPORT

Client Name: Client SDG: 031014.b
 Sample Matrix: GAS Fraction: VOA
 Lab Smp Id: ICV addl
 Level: LOW Operator: JAM
 Data Type: MS DATA SampleType: LCS
 SpikeList File: addn\lcmpds.spk Quant Type: ISTD
 Sublist File: addtn\ICV.sub
 Method File: \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Misc Info:

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
1 Chlorodifluorometh	10.0	10.4	104.24	60-140
12 Isopentane	10.0	10.2	101.56	60-140
30 Di-isopropyl Ether	10.0	10.9	108.90	60-140
34 Ethyl Tert-Butyl E	10.0	10.5	105.42	60-140
42 Tert Amyl Methyl E	10.0	9.65	96.49	60-140
50 Methylcyclohexane	10.0	11.0	109.89	60-140
73 Tert-Butyl Benzene	10.0	9.57	95.69	60-140
80 p-Isopropyltoluene	10.0	11.7	116.70	60-140
81 1,2,3-Trimethylben	10.0	11.0	109.75	60-140

SURROGATE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
\$ 28 Hexane-d14(S)	10.0	10.4	104.47	70-130
\$ 54 Toluene-d8 (S)	10.0	10.1	100.61	70-130
\$ 77 1,4-dichlorobenzen	10.0	8.92	89.21	70-130

Pace Analytical Services, Inc.

RECOVERY REPORT

Client Name: Client SDG: 031014.b
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV
Level: LOW Operator: JAM
Data Type: MS DATA SampleType: LCS
SpikeList File: SSV new.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
Misc Info:

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
2 Propylene	10.6	9.58	90.34	60-140
3 Dichlorodifluorome	9.60	8.61	89.67	60-140
4 Dichlorotetrafluor	11.0	8.76	79.65	60-140
5 Chloromethane	10.8	10.0	92.67	60-140
6 Vinyl chloride	9.60	9.29	96.81	60-140
7 1,3-Butadiene	9.90	9.34	94.40	60-140
8 Bromomethane	7.20	6.96	96.73	60-140
9 Chloroethane	7.60	7.42	97.61	60-140
10 Ethanol	7.90	10.7	135.01	60-140
11 Vinyl Bromide	9.70	9.51	98.01	60-140
14 Trichlorofluoromet	9.90	8.52	86.10	60-140
15 Acetone	9.40	7.97	84.77	60-140
16 Isopropyl Alcohol	10.2	10.3	100.86	60-140
18 1,1-Dichloroethene	11.5	11.4	99.37	60-140
20 Freon 113	9.30	9.28	99.77	60-140
21 Methylene chloride	9.90	9.61	97.03	60-140
23 Carbon Disulfide	10.0	6.46	64.61	60-140
24 trans-1,2-dichloro	10.2	10.8	105.53	60-140
25 Methyl Tert Butyl	9.60	8.59	89.53	60-140
27 1,1-Dichloroethane	10.2	9.74	95.52	60-140
26 Vinyl Acetate	10.3	11.3	109.98	60-140
29 Methyl Ethyl Keton	10.2	10.4	101.90	60-140
31 n-Hexane	10.1	9.64	95.41	60-140
33 cis-1,2-Dichloroet	10.1	10.3	102.01	60-140
32 Ethyl Acetate	10.7	10.4	97.73	60-140
35 Chloroform	10.9	9.77	89.62	60-140
36 Tetrahydrofuran	10.8	9.79	90.63	60-140
37 1,1,1-Trichloroeth	9.90	8.90	89.88	60-140
38 1,2-Dichloroethane	11.0	9.78	88.91	60-140
39 Benzene	10.6	9.76	92.05	60-140
40 Carbon tetrachlori	10.2	9.07	88.95	60-140
41 Cyclohexane	10.5	8.67	82.62	60-140
44 2,2,4-Trimethylpen	10.0	8.88	88.79	60-140
45 Heptane	11.3	10.4	92.29	60-140
46 1,2-Dichloropropan	10.1	9.11	90.20	60-140
47 Trichloroethene	9.50	9.77	102.84	60-140
49 Bromodichlorometha	9.80	9.48	96.69	60-140
48 1,4-Dioxane	9.70	8.59	88.58	60-140
51 Methyl Isobutyl Ke	9.80	10.6	108.26	60-140
52 cis-1,3-Dichloropr	11.6	12.0	103.88	60-140

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
53 trans-1,3-Dichloro	9.90	8.77	88.56	60-140
56 Toluene	10.4	8.96	86.20	60-140
55 1,1,2-Trichloroeth	9.60	8.26	86.01	60-140
57 Methyl Butyl Keton	9.70	10.4	107.03	60-140
58 Dibromochlorometha	9.30	9.21	99.07	60-140
59 1,2-Dibromoethane	9.60	9.91	103.19	60-140
60 Tetrachloroethene	9.60	9.16	95.38	60-140
62 Chlorobenzene	10.3	9.37	90.94	60-140
63 Ethyl Benzene	9.90	9.18	92.77	60-140
64 m&p-Xylene	20.2	17.5	86.63	60-140
66 Bromoform	9.80	9.70	98.95	60-140
65 Styrene	11.6	11.1	95.77	60-140
67 o-Xylene	9.30	7.89	84.82	60-140
68 1,1,2,2-Tetrachlor	9.30	9.25	99.48	60-140
69 Isopropylbenzene	9.30	9.35	100.51	60-140
70 N-Propylbenzene	8.90	9.17	103.07	60-140
71 4-Ethyltoluene	8.30	8.64	104.06	60-140
72 1,3,5-Trimethylben	9.60	8.35	87.01	60-140
74 1,2,4-Trimethylben	9.00	8.90	98.90	60-140
75 Sec- Butylbenzene	9.40	9.62	102.33	60-140
76 1,3-Dichlorobenzen	10.0	9.23	92.34	60-140
78 Benzyl Chloride	9.80	10.7	109.65	60-140
79 1,4-Dichlorobenzen	9.70	8.94	92.14	60-140
82 1,2-Dichlorobenzen	9.70	9.65	99.45	60-140
83 N-Butylbenzene	9.50	10.5	110.82	60-140
84 1,2,4-Trichloroben	9.10	11.2	122.76	60-140
85 Naphthalene	9.30	11.2	120.29	60-140
86 Hexachlorobutadien	9.10	7.29	80.11	60-140

SURROGATE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
\$ 28 Hexane-d14(S)	10.0	9.56	95.60	70-130
\$ 54 Toluene-d8 (S)	10.0	9.77	97.74	70-130
\$ 77 1,4-dichlorobenzen	10.0	10.5	104.84	70-130

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259328

Lab File ID: 07101BFB.D

BFB Injection Date: 03/12/2014

Instrument ID: 10AIR0

BFB Injection Time: 11:26

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.96
75	30.00 - 66.00% of mass 95	54.57
96	5.00 - 9.00% of mass 95	6.47
173	Less than 2.00% of mass 174	0.96 (1.18)
174	50.00 - 120.00% of mass 95	81.66
175	4.00 - 9.00% of mass 174	6.09 (7.46)
176	93.00 - 101.00% of mass 174	80.08 (98.07)
177	5.00 - 9.00% of mass 176	5.02 (6.27)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS for HBN 289158 [AIR/	1638294	07103_19645.D	03/12/2014	12:31
2	CCV	CCV	07103.D	03/12/2014	12:31
3	LCS (LCS)	LCS	07103_LCS.D	03/12/2014	12:31
4	BLANK for HBN 289158 [AI	1638293	07105_19645.D	03/12/2014	13:49
5	BLANK	BLANK	07105.D	03/12/2014	13:49
6	Ambient(1633318DUP)	1638565-DUP	07113.D	03/12/2014	17:40
7	IA-140-B-16	10259328010	07123.D	03/12/2014	22:32
8	IA-DUP1-ER-1	10259328007	07124.D	03/12/2014	23:01
9	IA-002-ER-1	10259328004	07125.D	03/12/2014	23:31
10	IA-001-ER-1	10259328003	07126.D	03/13/2014	00:00

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07103.D
Report Date: 12-Mar-2014 12:01

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MTN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.04583	1.71863	1.71863	0.010	-15.99313	30.00000	Averaged
2 Propylene	5.43647	4.74300	4.74300	0.010	-12.75579	30.00000	Averaged
3 Dichlorodifluoromethane	0.92694	0.79182	0.79182	0.010	-14.57651	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.14938	0.99641	0.99641	0.010	-13.30893	30.00000	Averaged
5 Chloromethane	3.25840	2.79458	2.79458	0.010	-14.23462	30.00000	Averaged
6 Vinyl chloride	3.25602	2.86612	2.86612	0.010	-11.97463	30.00000	Averaged
7 1,3-Butadiene	4.84187	4.18665	4.18665	0.010	-13.53241	30.00000	Averaged
8 Bromomethane	3.14144	2.75160	2.75160	0.010	-12.40978	30.00000	Averaged
9 Chloroethane	7.07477	6.16663	6.16663	0.010	-12.93632	30.00000	Averaged
10 Ethanol	9.17462	7.54701	7.54701	0.010	-17.74030	30.00000	Averaged
11 Vinyl Bromide	3.20252	2.74117	2.74117	0.010	-14.40570	30.00000	Averaged
12 Isopentane	3.22421	3.06799	3.06799	0.010	-4.84516	30.00000	Averaged
13 Acrolein	14.02424	10.20427	10.20427	0.010	-27.23836	30.00000	Averaged
14 Trichlorodifluoromethane	0.88952	0.76692	0.76692	0.010	-13.78203	30.00000	Averaged
15 Acetone	1.91867	1.68060	1.68060	0.010	-12.40801	30.00000	Averaged
16 Isopropyl Alcohol	2.26259	1.85825	1.85825	0.010	-17.87090	30.00000	Averaged
17 Acrylonitrile	6.49661	4.88065	4.88065	0.010	-24.87385	30.00000	Averaged
18 1,1-Dichloroethene	2.04749	1.73115	1.73115	0.010	-15.45018	30.00000	Averaged
19 Tert Butyl Alcohol (TBA)	1.39008	1.17746	1.17746	0.100	-15.29579	30.00000	Averaged
20 Freon 113	1.60200	1.41347	1.41347	0.010	-11.76874	30.00000	Averaged
21 Methylene chloride	3.10202	2.73071	2.73071	0.010	-11.97000	30.00000	Averaged
22 Allyl Chloride	8.17455	6.25124	6.25124	0.010	-23.52808	30.00000	Averaged
23 Carbon Disulfide	1.17065	1.02193	1.02193	0.010	-12.70390	30.00000	Averaged
24 trans-1,2-dichloroethene	3.54599	2.84456	2.84456	0.010	-19.78092	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.00829	0.87525	0.87525	0.300	-13.19444	30.00000	Averaged
26 Vinyl Acetate	1.64083	1.16082	1.16082	0.010	-29.25403	30.00000	Averaged
27 1,1-Dichloroethane	1.67162	1.45243	1.45243	0.010	-13.11230	30.00000	Averaged
28 Hexane-d14(S)	2.11000	2.12440	2.12440	0.200	0.68239	30.00000	Averaged
29 Methyl Ethyl Ketone	7.56219	5.90680	5.90680	0.010	-21.89045	30.00000	Averaged
30 Di-isopropyl Ether	1.10882	0.99174	0.99174	0.010	-10.55908	30.00000	Averaged
31 n-Hexane	2.21062	1.91924	1.91924	0.010	-13.18111	30.00000	Averaged
32 Ethyl Acetate	1.73354	1.32905	1.32905	0.010	-23.33300	30.00000	Averaged
33 cis-1,2-Dichloroethene	3.33210	2.72239	2.72239	0.010	-18.29799	30.00000	Averaged
34 Ethyl Tert-Butyl Ether	0.94808	0.81231	0.81231	0.010	-14.32106	30.00000	Averaged
35 Chloroform	1.25787	1.06731	1.06731	0.010	-15.14917	30.00000	Averaged
36 Tetrahydrofuran	3.19526	2.72344	2.72344	0.010	-14.76630	30.00000	Averaged
37 1,1,1-Trichloroethane	1.09721	0.94033	0.94033	0.010	-14.29764	30.00000	Averaged
38 1,2-Dichloroethane	1.66769	1.35984	1.35984	0.010	-18.45985	30.00000	Averaged
39 Benzene	1.04478	0.91289	0.91289	0.300	-12.62318	30.00000	Averaged
40 Carbon tetrachloride	1.13308	0.95237	0.95237	0.010	-15.94823	30.00000	Averaged
41 Cyclohexane	2.16499	2.10417	2.10417	0.010	-2.80907	30.00000	Averaged
42 Tert Amyl Methyl Ether	0.88875	0.83968	0.83968	0.010	-5.52145	30.00000	Averaged

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	0.67258	0.61497	0.61497	0.010	-8.56543	30.00000	Averaged
45 Heptane	2.08863	1.75894	1.75894	0.010	-15.78491	30.00000	Averaged
46 1,2-Dichloropropane	2.83988	2.49950	2.49950	0.010	-11.98595	30.00000	Averaged
47 Trichloroethene	2.33270	1.98344	1.98344	0.010	-14.97242	30.00000	Averaged
48 1,4-Dioxane	4.81538	4.41680	4.41680	0.010	-8.27729	30.00000	Averaged
49 Bromodichloromethane	1.12108	0.93049	0.93049	0.010	-17.00064	30.00000	Averaged
50 Methylcyclohexane	4.10367	3.59795	3.59795	0.010	-12.32339	30.00000	Averaged
51 Methyl Isobutyl Ketone	1.57549	1.19620	1.19620	0.010	-24.07451	30.00000	Averaged
52 cis-1,3-Dichloropropene	1.90153	1.41279	1.41279	0.010	-25.70256	30.00000	Averaged
53 trans-1,3-Dichloropropene	10.00000	11.83003	1.29764	0.010	18.30032	30.00000	Linear
54 Toluene-d8 (S)	1.04795	1.07305	1.07305	0.200	2.39544	30.00000	Averaged
55 1,1,2-Trichloroethane	2.21992	2.02772	2.02772	0.010	-8.65778	30.00000	Averaged
56 Toluene	0.81342	0.73695	0.73695	0.300	-9.40168	30.00000	Averaged
57 Methyl Butyl Ketone	0.99697	0.70902	0.70902	0.010	-28.88288	30.00000	Averaged
58 Dibromochloromethane	0.73378	0.56289	0.56289	0.010	-23.28953	30.00000	Averaged
59 1,2-Dibromoethane	0.91459	0.66738	0.66738	0.010	-27.02909	30.00000	Averaged
60 Tetrachloroethene	0.93046	0.76930	0.76930	0.010	-17.32003	30.00000	Averaged
62 Chlorobenzene	0.64808	0.54028	0.54028	0.010	-16.63394	30.00000	Averaged
63 Ethyl Benzene	0.37797	0.30075	0.30075	0.300	-20.43056	30.00000	Averaged
64 m,p-Xylene	0.45893	0.36348	0.36348	0.300	-20.79814	30.00000	Averaged
65 Styrene	0.75155	0.58777	0.58777	0.010	-21.79210	30.00000	Averaged
66 Bromoform	0.72083	0.55624	0.55624	0.010	-22.83282	30.00000	Averaged
67 o-Xylene	0.44138	0.36262	0.36262	0.300	-17.84393	30.00000	Averaged
68 1,1,2,2-Tetrachloroethane	0.68117	0.56436	0.56436	0.010	-17.14873	30.00000	Averaged
69 Isopropylbenzene	0.35472	0.28596	0.28596	0.010	-19.38580	30.00000	Averaged
70 N-Propylbenzene	0.31073	0.24608	0.24608	0.010	-20.80384	30.00000	Averaged
71 4-Ethyltoluene	0.37743	0.29947	0.29947	0.010	-20.65507	30.00000	Averaged
72 1,3,5-Trimethylbenzene	0.37310	0.32112	0.32112	0.010	-13.93209	30.00000	Averaged
73 Tert-Butyl Benzene	0.42392	0.35545	0.35545	0.010	-16.15188	30.00000	Averaged
74 1,2,4-Trimethylbenzene	0.41658	0.34132	0.34132	0.010	-18.06515	30.00000	Averaged
75 Sec- Butylbenzene	0.33857	0.26509	0.26509	0.010	-21.70411	30.00000	Averaged
76 1,3-Dichlorobenzene	0.67554	0.55119	0.55119	0.010	-18.40801	30.00000	Averaged
77 1,4-dichlorobenzene-d4 (S)	2.12325	2.33284	2.33284	0.200	9.87102	30.00000	Averaged
78 Benzyl Chloride	0.59745	0.41095	0.41095	0.010	-31.21545	30.00000	Averaged<-
79 1,4-Dichlorobenzene	0.64344	0.54903	0.54903	0.010	-14.67186	30.00000	Averaged
80 p-Isopropyltoluene	0.42738	0.31866	0.31866	0.010	-25.43747	30.00000	Averaged
81 1,2,3-Trimethylbenzene	0.43775	0.35225	0.35225	0.010	-19.53176	30.00000	Averaged
82 1,2-Dichlorobenzene	0.73550	0.56661	0.56661	0.010	-22.96269	30.00000	Averaged
83 N-Butylbenzene	0.48401	0.33283	0.33283	0.010	-31.23431	30.00000	Averaged<-
84 1,2,4-Trichlorobenzene	1.33827	0.88836	0.88836	0.010	-33.61893	30.00000	Averaged<-
85 Naphthalene	0.72996	0.49437	0.49437	0.010	-32.27456	30.00000	Averaged<-
86 Hexachlorobutadiene	0.85004	0.80766	0.80766	0.010	-4.98478	30.00000	Averaged

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259328

Lab File ID: 07108BFB.D

BFB Injection Date: 03/12/2014

Instrument ID: 10AIRD

BFB Injection Time: 14:08

GC Column: J&W DB-5

ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.00
75	30.00 - 66.00% of mass 95	57.87
96	5.00 - 9.00% of mass 95	6.44
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	94.75
175	4.00 - 9.00% of mass 174	7.31 (7.71)
176	93.00 - 101.00% of mass 174	92.10 (97.21)
177	5.00 - 9.00% of mass 176	5.49 (5.96)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	07109.D	03/12/2014	14:36
2	CAL2	CAL2	07110.D	03/12/2014	15:04
3	CAL3	CAL3	07111.D	03/12/2014	15:32
4	CAL4	CAL4	07112.D	03/12/2014	15:59
5	CAL5	CAL5	07113.D	03/12/2014	16:27
6	CAL6	CAL6	07114.D	03/12/2014	16:56
7	ICVADD (LCS)	ICVADD	07116.D	03/12/2014	17:51
8	ICV (LCS)	ICV	07117.D	03/12/2014	18:19
9	LCS for HBN 289212 [AIR/	1638489	07118L.D	03/12/2014	18:46
10	BLANK for HBN 289212 [AI	1638488	07121L.D	03/12/2014	20:09
11	IA-002-PB-1	10259328002	07122.D	03/12/2014	20:38
12	IA-093X-A-16	10259328008	07126.D	03/12/2014	22:31
13	IA-117X-A-16	10259328009	07127.D	03/12/2014	23:01
14	IA-003-ER-1	10259328005	07128.D	03/12/2014	23:31
15	IA-001-PB-1	10259328001	07131.D	03/13/2014	00:54
16	IA-DUP1-PB-1	10259328006	07132.D	03/13/2014	01:23

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\031214.b\07109.d
 Level 2: \\192.168.10.12\chem\10airD.i\031214.b\07110.d
 Level 3: \\192.168.10.12\chem\10airD.i\031214.b\07111.d
 Level 4: \\192.168.10.12\chem\10airD.i\031214.b\07112.d
 Level 5: \\192.168.10.12\chem\10airD.i\031214.b\07113.d
 Level 6: \\192.168.10.12\chem\10airD.i\031214.b\07114.d

Compound	0.100000	0.200000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			*RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	1.84707	2.20998	2.08707	2.38311	2.65662	2.59098	AVRG		2.29581		13.45696
2 Propylene	8.30420	10.33282	9.03493	7.10137	7.42845	6.97995	AVRG		8.19694		15.95078
3 Dichlorodifluoromethane	1.11783	1.07868	1.10555	0.92823	1.04706	1.16495	AVRG		1.07373		7.58585
4 Dichlorotetrafluoroethane	1.13666	1.26817	1.26495	1.09100	1.22570	1.20805	AVRG		1.19909		5.95336
5 Chloromethane	3.99438	4.61963	4.18383	2.64123	3.99128	3.89205	AVRG		4.05373		8.11362
6 Vinyl chloride	3.89964	4.88840	4.60996	3.92104	4.19250	4.07899	AVRG		4.06509		9.37421
7 1,3-Butadiene	5.84568	7.72397	7.53790	6.27815	6.73700	6.57185	AVRG		6.78243		10.70426
8 Bromomethane	3.85148	3.70757	3.80127	3.16512	3.37792	3.22720	AVRG		3.52176		8.57516
9 Chloroethane	9.58989	9.74752	9.51081	8.42077	8.98166	8.83494	AVRG		9.24750		6.36433
10 Ethanol	3.89796	5.82756	9.93536	7.64804	8.49662	8.16434	AVRG		7.32632		29.25557
11 Vinyl Bromide	3.81695	3.73543	3.90216	3.21578	3.35407	3.26417	AVRG		3.55175		8.46051
12 Isopentane	4.15019	5.61721	5.08509	4.26655	4.60957	4.50317	AVRG		4.70530		11.74291
13 Trichlorofluoromethane	0.97860	1.05490	1.05080	0.90657	1.02263	1.04827	AVRG		1.01030		5.76965
14 Acrolein	11.00155	19.36644	11.84109	12.78597	13.21486	12.77064	AVRG		13.49709		22.11707

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	12855	17620	59374	385066	821697	1299436	LINR	-0.03985	2.45705		0.99952
16 Isopropyl Alcohol	2522	6197	27370	348129	710045	1161465	LINR	0.00546	2.68998		0.99781
17 1,1-Dichloroethene	2.89663	2.83261	2.53167	2.12799	2.43318	2.38891	AVRG		2.53663		11.26954
18 Tert Butyl Alcohol	2.01544	2.01355	1.97750	1.60447	1.85244	1.69899	AVRG		1.86040		9.39724
19 Acrylonitrile	798	1962	11027	157583	326134	544552	LINR	0.01435	5.82725		0.99787
20 Freon 113	1.81592	1.81395	1.86800	1.62128	1.72976	1.65941	AVRG		1.75138		5.56711
21 Methylene chloride	++++	11007	37026	271086	601613	948282	LINR	-0.02453	3.35108		0.99976
22 Allyl Chloride	12.56010	9.99243	9.29961	8.09682	7.86363	7.60875	AVRG		9.23689		20.22778
23 Carbon Disulfide	1.21729	1.27786	1.37447	1.21500	1.17409	1.16213	AVRG		1.23681		6.36660
24 trans-1,2-dichloroethene	2193	4083	20952	267742	598892	914376	LINR	0.00097	3.40156		0.99980
25 Methyl Tert Butyl Ether	5391	11416	58411	735328	1636774	2492668	LINR	-0.00092	1.24721		0.99973
26 Vinyl Acetate	3994	8348	44040	559546	1246062	1921527	LINR	0.00314	1.62242		0.99988
27 1,1-Dichloroethane	2.43951	2.35852	2.23621	1.96824	2.06167	2.07531	AVRG		2.18991		8.45938
29 Methyl Ethyl Ketone	8.61264	10.67807	9.92530	8.86593	8.41578	8.57651	AVRG		9.17904		9.94729
30 n-Hexane	3.37310	3.48926	3.72236	3.14871	3.07110	3.21794	AVRG		3.33709		7.25803
31 Di-isopropyl Ether	1.64274	1.81782	1.69669	1.46101	1.42911	1.38956	AVRG		1.57282		10.90150
32 cis-1,2-Dichloroethene	2137	3858	19949	274310	578513	947258	LINR	0.01062	3.33737		0.99876
33 Ethyl Acetate	3824	7381	38612	495896	1038850	1706192	LINR	0.00822	1.85579		0.99861
34 Chloroform	1.37666	1.42703	1.45533	1.24153	1.35690	1.33504	AVRG		1.36541		5.51478
35 Ethyl Tert-Butyl Ether	5101	11163	56108	689344	1498577	2432017	LINR	0.01121	1.29833		0.99925
36 Tetrahydrofuran	5.26997	7.17005	6.09059	4.46509	4.75097	4.29754	AVRG		5.34070		20.70947
37 1,1,1-Trichloroethane	1.50495	1.40673	1.38469	1.11945	1.25944	1.25609	AVRG		1.32189		10.36522

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	C.1000000	C.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.96892	2.01016	1.97100	1.69113	1.87298	1.85399	AVRG		1.89970		6.07242
39 Benzene	1.43681	1.55608	1.46339	1.12407	1.19846	1.12510	AVRG		1.31732		14.44489
40 Carbon tetrachloride	1.31309	1.38980	1.37672	1.10581	1.28897	1.32943	AVRG		1.30064		7.90268
41 Cyclohexane	1838	3775	22962	303249	634718	1021012	LINR	0.00424	3.08391		0.99907
42 Tert Amyl Methyl Ether	17758	24679	68807	755422	1603988	2554497	LINR	-0.01200	1.23815		0.99944
44 2,2,4-Trimethylpentane	7224	14397	77193	963317	1984213	3297749	LINR	0.00753	0.96317		0.99800
45 Heptane	2778	4463	24577	341314	717642	1123468	LINR	-0.00219	2.78458		0.99927
46 1,2-Dichloropropane	1934	4268	20270	275121	582731	942091	LINR	0.00746	3.34645		0.99912
47 Trichloroethene	3.56455	3.49608	3.46217	2.62209	2.74872	2.67422	AVRG		3.09464		14.71455
48 Bromodichloromethane	1.35196	1.32439	1.34149	1.07629	1.16319	1.18352	AVRG		1.24014		9.25368
49 1,4-Dioxane	7.06505	8.16071	7.47531	5.51964	5.64036	5.41685	AVRG		6.54632		17.93051
50 Methylcyclohexane	1065	2517	13234	165262	372185	578677	LINR	0.00739	5.39751		0.99996
51 Methyl Isobutyl Ketone	2826	6431	36497	502300	1073067	1712543	LINR	0.00711	1.83404		0.99943
52 cis-1,3-Dichloropropene	3361	7460	35563	496474	1064359	1720174	LINR	0.01066	1.83165		0.99924
53 trans-1,3-Dichloropropene	3833	6222	38146	572995	1217189	1863188	LINR	-0.00355	1.66787		0.99912
55 Toluene	8089	15225	76878	1049359	2307764	3573128	LINR	0.00329	0.87292		0.99980
56 1,1,2-Trichloroethane	2.79977	3.26220	3.10938	2.34994	2.41284	2.35750	AVRG		2.71527		14.86457
57 Methyl Butyl Ketone	3115	5648	36044	510936	1076702	1686729	LINR	0.01333	0.99805		0.99982
58 Dibromochloromethane	5079	10721	52406	733694	1495682	2389620	LINR	0.01047	0.70854		0.99932
59 1,2-Dibromoethane	1.03870	0.98439	0.98233	0.81122	0.79994	0.76810	AVRG		0.89744		13.03189
60 Tetrachloroethene	1.09891	1.11322	1.08591	0.91076	0.86975	0.84570	AVRG		0.98738		12.63046
62 Chlorobenzene	0.79862	0.83831	0.81353	0.67409	0.64687	0.63561	AVRG		0.73451		12.51402

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	8798	16706	102814	1402365	3086160	4707342	LINE	0.01331	0.35534		0.99993
64 m,p-Xylene	6914	14151	81094	1120347	2355902	3705219	LINE	0.01289	0.45498		0.99976
65 Bromoform	5717	10782	56975	859792	1842792	2807865	LINE	0.00977	0.59533		0.99993
66 Styrene	3983	8138	51055	787872	1655243	2606991	LINE	0.01655	0.64594		0.99972
67 o-Xylene	7548	14271	85734	1186529	2456161	3904048	LINE	0.00540	0.44165		0.99982
68 1,1,2,2-Tetrachloroethane	0.81657	0.89467	0.81911	0.63587	0.64068	0.62524	AVRG		0.73873		16.00246
69 Isopropylbenzene	10320	19216	103260	1451853	3084217	4734953	LINE	0.00818	0.35399		0.99996
70 N-Propylbenzene	10447	20932	124461	1625752	3803407	5981173	LINE	0.01285	0.28167		0.99973
71 4-Ethyltoluene	++++	0.60445	0.48867	0.36975	0.37197	0.35774	AVRG		0.43852		24.38335
72 1,3,5-Trimethylbenzene	6564	14286	88734	1224789	2573268	4072084	LINE	0.01494	0.41449		0.99955
73 Tert-Butyl Benzene	5723	12925	79033	1120494	2356681	3694867	LINE	0.01334	0.45568		0.99980
74 1,2,4-Trimethylbenzene	6901	14815	84216	1117443	2540474	3980669	LINE	0.01167	0.42295		0.99978
75 1,3-Dichlorobenzene	++++	0.98955	0.86971	0.65511	0.65965	0.64347	AVRG		0.76350		20.63877
76 Sec-Butylbenzene	8233	18059	115499	1654994	3497609	5394553	LINE	0.00976	0.31127		0.99995
78 Benzyl Chloride	5460	10463	60380	1025289	2189893	3464827	QUAD	-0.02466	1.93992	0.04194	0.99985
79 1,4-Dichlorobenzene	++++	0.94318	0.89739	0.67009	0.67251	0.65124	AVRG		0.76688		18.41364
80 p-Isopropyltoluene	++++	0.69177	0.52105	0.41954	0.40475	0.40421	AVRG		0.48826		25.34366
81 1,2,3-Trimethylbenzene	6736	14861	80603	1109030	2388977	3649308	LINE	0.00934	0.45871		0.99997
82 1,2-Dichlorobenzene	4490	8618	46991	696705	1453901	2352537	LINE	0.02065	0.72091		0.99901
83 N-Butylbenzene	6331	15037	94132	1364510	2885118	4413147	LINE	0.00842	0.37915		0.99993
84 1,2,4-Trichlorobenzene	3603	7124	37327	615589	1357627	2122357	QUAD	-0.01725	1.19155	0.02576	0.99994
85 Naphthalene	4793	8364	57643	960782	2102178	3457455	QUAD	-0.01833	1.72712	0.11020	0.99980

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.3000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
86 Hexachlorobutadiene	4667	8662	46156	621041	1288178	2006115	LINR	0.00597	0.83912		0.99983
IS 28 Hexane-d14 (S)	2.48646	2.25498	2.26576	2.45626	2.27358	2.47599	AVRG		2.36864		4.83610
IS 54 Toluene-d8 (S)	1.18425	1.16663	1.19488	1.14030	1.14662	1.19130	AVRG		1.17066		1.98980
IS 77 1,4-dichlorobenzene-d4 (S)	1.99059	1.94186	1.85306	1.94464	1.81821	1.80511	AVRG		1.89225		4.05846

Data File: \\192.168.10.12\chem\10airD.i\031214.b\07116.d
 Report Date: 13-Mar-2014 11:20

Pace Analytical Services, Inc.

RECOVERY REPORT

Client Name: Client SDG: 031214.b
 Sample Matrix: GAS Fraction: VOA
 Lab Smp Id: ICVadd
 Level: LOW Operator: AH2
 Data Type: MS DATA SampleType: LCS
 SpikeList File: addcmpds.spk Quant Type: ISTD
 Sublist File: add.sub
 Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Misc Info:

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
1 Chlorodifluorometh	10.0	8.70	87.02	60-140
12 Isopentane	10.0	10.3	103.00	60-140
31 Di-isopropyl Ether	10.0	10.1	101.40	60-140
35 Ethyl Tert-Butyl E	10.0	10.0	100.60	60-140
42 Tert Amyl Methyl E	10.0	9.77	97.74	60-140
50 Methylcyclohexane	10.0	9.73	97.34	60-140
73 Tert-Butyl Benzene	10.0	8.22	82.18	60-140
80 p-Isopropyltoluene	10.0	11.2	112.55	60-140
81 1,2,3-Trimethylben	10.0	9.93	99.30	60-140

SURROGATE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
\$ 28 Hexane-d14(S)	10.0	9.68	96.80	70-130
\$ 54 Toluene-d8 (S)	10.0	10.0	100.38	70-130
\$ 77 1,4-dichlorobenzen	10.0	9.15	91.53	70-130

Pace Analytical Services, Inc.

RECOVERY REPORT

Client Name: Client SDG: 031214.b
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV
Level: LOW Operator: AH2
Data Type: MS DATA SampleType: LCS
SpikeList File: SSV new.spk Quant Type: ISTD
Sublist File: all.süb
Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
Misc Info:

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
2 Propylene	10.6	10.4	97.86	60-140
3 Dichlorodifluorome	9.60	9.94	103.50	60-140
4 Dichlorotetrafluor	11.0	9.06	82.41	60-140
5 Chloromethane	10.8	10.3	95.03	60-140
6 Vinyl chloride	9.60	9.74	101.52	60-140
7 1,3-Butadiene	9.90	9.87	99.69	60-140
8 Bromomethane	7.20	7.50	104.22	60-140
9 Chloroethane	7.60	7.68	101.03	60-140
10 Ethanol	7.90	8.66	109.58	60-140
11 Vinyl Bromide	9.70	9.86	101.62	60-140
13 Trichlorofluoromet	9.90	9.70	98.04	60-140
15 Acetone	9.40	9.42	100.28	60-140
16 Isopropyl Alcohol	10.2	9.78	95.87	60-140
17 1,1-Dichloroethene	11.5	13.7	118.88	60-140
20 Freon 113	9.30	10.5	112.61	60-140
21 Methylene chloride	9.90	8.92	90.14	60-140
23 Carbon Disulfide	10.0	6.36	63.66	60-140
24 trans-1,2-dichloro	10.2	9.24	90.59	60-140
25 Methyl Tert Butyl	9.60	8.44	87.96	60-140
27 1,1-Dichloroethane	10.2	10.7	105.25	60-140
26 Vinyl Acetate	10.3	9.13	88.64	60-140
29 Methyl Ethyl Keton	10.2	10.5	102.87	60-140
30 n-Hexane	10.1	9.63	95.33	60-140
32 cis-1,2-Dichloroet	10.1	9.38	92.89	60-140
33 Ethyl Acetate	10.7	9.31	87.04	60-140
34 Chloroform	10.9	10.4	95.30	60-140
36 Tetrahydrofuran	10.8	11.6	106.96	60-140
37 1,1,1-Trichloroeth	9.90	10.2	102.94	60-140
38 1,2-Dichloroethane	11.0	10.8	98.72	60-140
39 Benzene	10.6	10.9	103.15	60-140
40 Carbon tetrachlori	10.2	9.99	97.93	60-140
41 Cyclohexane	10.5	9.49	90.39	60-140
44 2,2,4-Trimethylpen	10.0	9.02	90.25	60-140
45 Heptane	11.3	10.3	91.23	60-140
46 1,2-Dichloropropan	10.1	8.91	88.18	60-140
47 Trichloroethene	9.50	10.8	113.17	60-140
48 Bromodichlorometha	9.80	10.7	109.49	60-140
49 1,4-Dioxane	9.70	10.2	105.60	60-140
51 Methyl Isobutyl Ke	9.80	9.63	98.32	60-140
52 cis-1,3-Dichloropr	11.6	10.3	88.58	60-140

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
53 trans-1,3-Dichloro	9.90	8.55	86.33	60-140
55 Toluene	10.4	8.97	86.21	60-140
56 1,1,2-Trichloroeth	9.60	9.45	98.41	60-140
57 Methyl Butyl Keton	9.70	8.61	88.77	60-140
58 Dibromochlorometha	9.30	8.53	91.70	60-140
59 1,2-Dibromoethane	9.60	9.57	99.72	60-140
60 Tetrachloroethene	9.60	9.69	100.92	60-140
62 Chlorobenzene	10.3	9.70	94.13	60-140
63 Ethyl Benzene	9.90	8.70	87.89	60-140
64 m&p-Xylene	20.2	17.8	88.21	60-140
65 Bromoform	9.80	8.89	90.74	60-140
66 Styrene	11.6	9.82	84.63	60-140
67 o-Xylene	9.30	7.72	82.96	60-140
68 1,1,2,2-Tetrachlor	9.30	9.91	106.57	60-140
69 Isopropylbenzene	9.30	8.81	94.76	60-140
70 N-Propylbenzene	8.90	8.26	92.81	60-140
71 4-Ethyltoluene	8.30	8.94	107.73	60-140
72 1,3,5-Trimethylben	9.60	8.22	85.58	60-140
74 1,2,4-Trimethylben	9.00	7.86	87.38	60-140
76 Sec- Butylbenzene	9.40	8.48	90.28	60-140
75 1,3-Dichlorobenzen	10.0	9.45	94.49	60-140
78 Benzyl Chloride	9.80	8.32	84.87	60-140
79 1,4-Dichlorobenzen	9.70	9.35	96.36	60-140
82 1,2-Dichlorobenzen	9.70	8.26	85.12	60-140
83 N-Butylbenzene	9.50	8.19	86.19	60-140
84 1,2,4-Trichloroben	9.10	7.54	82.85	60-140
85 Naphthalene	9.30	7.89	84.84	60-140
86 Hexachlorobutadien	9.10	7.04	77.38	60-140

SURROGATE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
\$ 28 Hexane-d14(S)	10.0	10.5	105.45	70-130
\$ 54 Toluene-d8 (S)	10.0	10.0	100.22	70-130
\$ 77 1,4-dichlorobenzen	10.0	10.1	101.49	70-130

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

QC Batch: AIR/19645 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259328003, 10259328004, 10259328007, 10259328010

METHOD BLANK: 1638293 Matrix: Air
Associated Lab Samples: 10259328003, 10259328004, 10259328007, 10259328010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/12/14 13:49	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/12/14 13:49	
1,1-Dichloroethane	ug/m3	ND	0.82	03/12/14 13:49	
1,1-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/12/14 13:49	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/12/14 13:49	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
1,2-Dichloroethane	ug/m3	ND	0.41	03/12/14 13:49	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
Benzene	ug/m3	ND	0.32	03/12/14 13:49	
Carbon tetrachloride	ug/m3	ND	0.64	03/12/14 13:49	
Chlorodifluoromethane	ug/m3	ND	0.20	03/12/14 13:49	
Chloroform	ug/m3	ND	0.99	03/12/14 13:49	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/12/14 13:49	
Ethylbenzene	ug/m3	ND	0.88	03/12/14 13:49	
m&p-Xylene	ug/m3	ND	1.8	03/12/14 13:49	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/12/14 13:49	
Methylene Chloride	ug/m3	ND	0.71	03/12/14 13:49	
Naphthalene	ug/m3	ND	1.1	03/12/14 13:49	
o-Xylene	ug/m3	ND	0.88	03/12/14 13:49	
Tetrachloroethene	ug/m3	ND	0.69	03/12/14 13:49	
Toluene	ug/m3	ND	0.77	03/12/14 13:49	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Trichloroethene	ug/m3	ND	0.55	03/12/14 13:49	
Vinyl chloride	ug/m3	ND	0.26	03/12/14 13:49	

LABORATORY CONTROL SAMPLE: 1638294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	64.7	117	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	60.7	109	72-130	
1,1-Dichloroethane	ug/m3	41.2	47.4	115	68-128	
1,1-Dichloroethene	ug/m3	40.3	47.7	118	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	62.1	124	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	114	151	30-150	CH,L3
1,2,4-Trimethylbenzene	ug/m3	50	61.0	122	71-140	
1,2-Dichloroethane	ug/m3	41.2	50.5	123	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	58.1	116	73-136	
Benzene	ug/m3	32.5	37.2	114	69-134	
Carbon tetrachloride	ug/m3	64	76.1	119	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

LABORATORY CONTROL SAMPLE: 1638294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	42.8	119	60-140	
Chloroform	ug/m3	49.7	58.5	118	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	49.3	122	71-135	
Dichlorodifluoromethane	ug/m3	50.3	58.8	117	69-125	
Ethylbenzene	ug/m3	44.2	55.5	126	73-139	
m&p-Xylene	ug/m3	44.2	55.7	126	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	42.2	115	72-132	
Methylene Chloride	ug/m3	35.3	40.1	114	64-134	
Naphthalene	ug/m3	53.3	78.7	148	61-150	CH
o-Xylene	ug/m3	44.2	53.7	122	71-138	
Tetrachloroethene	ug/m3	69	83.4	121	69-136	
Toluene	ug/m3	38.3	42.3	110	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	50.2	125	70-131	
Trichloroethene	ug/m3	54.6	64.2	118	70-135	
Vinyl chloride	ug/m3	26	29.5	114	69-132	

SAMPLE DUPLICATE: 1638565

Parameter	Units	10259301010 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	3.1	3.1	.7	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	9.6	10.1	5	25	
1,2-Dichloroethane	ug/m3	4.1	4.4	8	25	
1,3,5-Trimethylbenzene	ug/m3	ND	2.9		25	
Benzene	ug/m3	25.6	28.0	9	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	3.1	3.5	12	25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	2.8	2.6	7	25	
Ethylbenzene	ug/m3	2.9	3.0	4	25	
m&p-Xylene	ug/m3	11.2	11.5	2	25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	91.4	105	14	25	
Naphthalene	ug/m3	4.3	4.6	8	25	CH
o-Xylene	ug/m3	4.7	4.9	5	25	
Tetrachloroethene	ug/m3	8.3	8.8	5	25	
Toluene	ug/m3	175	183	5	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259328

QC Batch: AIR/19647 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259328001, 10259328002, 10259328005, 10259328006, 10259328008, 10259328009

METHOD BLANK: 1638488 Matrix: Air
Associated Lab Samples: 10259328001, 10259328002, 10259328005, 10259328006, 10259328008, 10259328009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/12/14 20:09	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/12/14 20:09	
1,1-Dichloroethane	ug/m3	ND	0.82	03/12/14 20:09	
1,1-Dichloroethene	ug/m3	ND	0.81	03/12/14 20:09	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/12/14 20:09	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/12/14 20:09	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 20:09	
1,2-Dichloroethane	ug/m3	ND	0.41	03/12/14 20:09	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 20:09	
Benzene	ug/m3	ND	0.32	03/12/14 20:09	
Carbon tetrachloride	ug/m3	ND	0.64	03/12/14 20:09	
Chlorodifluoromethane	ug/m3	ND	0.20	03/12/14 20:09	
Chloroform	ug/m3	ND	0.99	03/12/14 20:09	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 20:09	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/12/14 20:09	
Ethylbenzene	ug/m3	ND	0.88	03/12/14 20:09	
m&p-Xylene	ug/m3	ND	1.8	03/12/14 20:09	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/12/14 20:09	
Methylene Chloride	ug/m3	0.43J	0.71	03/12/14 20:09	
Naphthalene	ug/m3	ND	1.1	03/12/14 20:09	
o-Xylene	ug/m3	ND	0.88	03/12/14 20:09	
Tetrachloroethene	ug/m3	ND	0.69	03/12/14 20:09	
Toluene	ug/m3	ND	0.77	03/12/14 20:09	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 20:09	
Trichloroethene	ug/m3	ND	0.55	03/12/14 20:09	
Vinyl chloride	ug/m3	ND	0.26	03/12/14 20:09	

LABORATORY CONTROL SAMPLE: 1638489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	58.1	105	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	59.8	108	72-130	
1,1-Dichloroethane	ug/m3	41.2	44.1	107	68-128	
1,1-Dichloroethene	ug/m3	40.3	44.4	110	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	51.7	103	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	78.1	103	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	51.7	103	71-140	
1,2-Dichloroethane	ug/m3	41.2	42.1	102	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	50.6	101	73-136	
Benzene	ug/m3	32.5	36.7	113	69-134	
Carbon tetrachloride	ug/m3	64	67.3	105	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259328

LABORATORY CONTROL SAMPLE: 1638489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	31.7	88	60-140	
Chloroform	ug/m3	49.7	51.4	104	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	38.8	96	71-135	
Dichlorodifluoromethane	ug/m3	50.3	53.9	107	69-125	
Ethylbenzene	ug/m3	44.2	42.5	96	73-139	
m&p-Xylene	ug/m3	44.2	43.3	98	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	37.8	103	72-132	
Methylene Chloride	ug/m3	35.3	35.6	101	64-134	
Naphthalene	ug/m3	53.3	55.8	105	61-150	
o-Xylene	ug/m3	44.2	44.9	102	71-138	
Tetrachloroethene	ug/m3	69	74.3	108	69-136	
Toluene	ug/m3	38.3	36.4	95	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	41.7	103	70-131	
Trichloroethene	ug/m3	54.6	59.0	108	70-135	
Vinyl chloride	ug/m3	26	27.7	107	69-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10airD.i\031214.b\07131.d
Report Date: 13-Mar-2014 12:29

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 07131.d

Lab Smp Id: 10259328001

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m

Misc Info: 19647

Calibration Date: 12-MAR-2014

Calibration Time: 15:59

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	889865	533919	1245811	918951	3.27
61 Chlorobenzene - d	513489	308093	718885	527898	2.81

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031214.b\07122.d
Report Date: 13-Mar-2014 12:15

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 07122.d
Lab Smp Id: 10259328002 *IA-002-PB-1*
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
Misc Info: 19647

Calibration Date: 12-MAR-2014
Calibration Time: 15:59
Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	889865	533919	1245811	896615	0.76
61 Chlorobenzene - d	513489	308093	718885	526635	2.56

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07126.D
Report Date: 13-Mar-2014 12:03

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 07126.D

Lab Smp Id: 10259328003 *IA-001-ER-1*

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

Misc Info: 19645

Calibration Date: 12-MAR-2014

Calibration Time: 12:31

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	751790	451074	1052506	646217	-14.04
61 Chlorobenzene - d	483570	290142	676998	376925	-22.05

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.14

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07125.D
Report Date: 13-Mar-2014 12:01

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07125.D
Lab Smp Id: 10259328004 *IA-002-ER-1*
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m
Misc Info: 19645

Calibration Date: 12-MAR-2014
Calibration Time: 12:31
Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	751790	451074	1052506	653982	-13.01
61 Chlorobenzene - d	483570	290142	676998	376037	-22.24

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031214.b\07128.d
Report Date: 13-Mar-2014 12:27

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 07128.d

Lab Smp Id: 10259328005 *IA-003-ER-1*

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m

Misc Info: 19647

Calibration Date: 12-MAR-2014

Calibration Time: 15:59

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	889865	533919	1245811	989465	11.19
61 Chlorobenzene - d	513489	308093	718885	555743	8.23

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031214.b\07132.d
Report Date: 13-Mar-2014 12:31

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 07132.d

Lab Smp Id: 10259328006 *IA-DUP1-PB-1*

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m

Misc Info: 19647

Calibration Date: 12-MAR-2014

Calibration Time: 15:59

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	889865	533919	1245811	961144	8.01
61 Chlorobenzene - d	513489	308093	718885	509750	-0.73

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07124.D
 Report Date: 13-Mar-2014 11:59

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i Calibration Date: 12-MAR-2014
 Lab File ID: 07124.D Calibration Time: 12:31
 Lab Smp Id: 10259328007 *IA-DUP1-ER-1*
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: AIR
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m
 Misc Info: 19645

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	751790	451074	1052506	661453	-12.02
61 Chlorobenzene - d	483570	290142	676998	372280	-23.01

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.14

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031214.b\07126.d
 Report Date: 13-Mar-2014 12:24

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i Calibration Date: 12-MAR-2014
 Lab File ID: 07126.d Calibration Time: 15:59
 Lab Smp Id: 10259328008 *IA-093X-A-16*
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: AIR
 Operator: AH2
 Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Misc Info: 19647

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	889865	533919	1245811	982742	10.44
61 Chlorobenzene - d	513489	308093	718885	550103	7.13

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031214.b\07127.d
 Report Date: 13-Mar-2014 12:25

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i
 Lab File ID: 07127.d
 Lab Smp Id: 10259328009 *IA-117x-A-16*
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: AH2
 Method File: \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Misc Info: 19647

Calibration Date: 12-MAR-2014
 Calibration Time: 15:59

Level: LOW
 Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	889865	533919	1245811	995656	11.89
61 Chlorobenzene - d	513489	308093	718885	549578	7.03

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	-0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07123.D
Report Date: 13-Mar-2014 11:57

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Calibration Date: 12-MAR-2014

Lab File ID: 07123.D

Calibration Time: 12:31

Lab Smp Id: 10259328010 *IA-140-B-16*

Analysis Type: VOA

Level: LOW

Quant Type: ISTD

Sample Type: AIR

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

Misc Info: 19645

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	751790	451074	1052506	658269	-12.44
61 Chlorobenzene - d	483570	290142	676998	381599	-21.09

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.12	0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.



Instrument Run Log

1

Instrument: 10AIRO Method:
Column: J&W DB-5 0.32mm Helium Tune Standard: 10288-3-16

Misc. Prep. Info:
ISTD Lot: 10288-3-16

Surrogate Lot: 10288-3-16
Cal. Standard: 10288-8-3

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06901.D	BFB	L/	Tune	1		TUNE	3/10/14 09:43	JAM	
06902.D	CCV	G/	CCal	1		TO15_065-14	3/10/14 10:09	JAM	
06903BFB.D	BFB	L/	Tune	1		TUNE	3/10/14 10:47	JAM	
06904.D	CAL1	G/	Ical	1		TO15_069-14	3/10/14 11:12	JAM	
06905.D	CAL2	G/	Ical	1		TO15_069-14	3/10/14 11:36	JAM	
06906.D	CAL3	G/	Ical	1		TO15_069-14	3/10/14 12:01	JAM	
06907.D	CAL4	G/	Ical	1		TO15_069-14	3/10/14 12:28	JAM	
06908.D	CAL5	G/	Ical	1		TO15_069-14	3/10/14 12:54	JAM	
06909.D	CAL6	G/	Ical	1		TO15_069-14	3/10/14 13:23	JAM	
06910.D	CAL7	G/	Ical	1		TO15_069-14	3/10/14 13:55	JAM	
06911.D	ICV ADDL	G/	LCS	1		TO15_069-14	3/10/14 14:22	JAM	
06912.D	ICV	G/	LCS	1		TO15_069-14	3/10/14 14:48	JAM	
06913.D	LCS	G/	LCS	1		TO15_069-14	3/10/14 15:15	JAM	
06913_19627.D	1636339	G/19627	LCS	1		TO15_069-14	3/10/14 15:15	JAM	
06914.D	0	G/	Sample	1		TO15_069-14	3/10/14 15:46	JAM	
06915.D	BLANK	G/	Blank	1		TO15_069-14	3/10/14 16:16	JAM	
06915_19627.D	1636338	G/19627	Blank	1		TO15_069-14	3/10/14 16:16	JAM	
06916.D	BLANK	G/	Blank	1		TO15_069-14	3/10/14 16:46	JAM	
06917.D	10259517003	G/19627	Sample	1.39		TO15_069-14	3/10/14 18:14	JAM	
06918.D	-DUP	G/19627	Duplicate	1.39		TO15_069-14	3/10/14 18:44	JAM	
06919.D	10259517008	G/19627	Sample	1.55		TO15_069-14	3/10/14 19:13	JAM	
06920.D	10259517005	G/19627	Sample	1.34		TO15_069-14	3/10/14 19:42	JAM	
06921.D	10259517006	G/19627	Sample	1.75		TO15_069-14	3/10/14 20:11	JAM	
06922.D	10259517001	G/19627	Sample	1.49		TO15_069-14	3/10/14 20:41	JAM	
06923.D	10259517002	G/19627	Sample	1.34		TO15_069-14	3/10/14 21:10	JAM	
06924.D	10259517004	G/19627	Sample	1.55		TO15_069-14	3/10/14 21:39	JAM	
06925.D	10259517007	G/19627	Sample	1.34		TO15_069-14	3/10/14 22:09	JAM	
06926.D	10259658001	G/19627	Sample	1.44		TO15_069-14	3/10/14 22:38	JAM	
06927.D	10259658003	G/19627	Sample	1.44		TO15_069-14	3/10/14 23:07	JAM	
06928.D	10259658002	G/19627	Sample	1.55		TO15_069-14	3/10/14 23:36	JAM	
06929.D	10259658004	G/19627	Sample	1.55		TO15_069-14	3/11/14 00:06	JAM	
06930.D	10258929001	G/19627	Sample	1.39		TO15_069-14	3/11/14 00:35	JAM	
06931.D	10259815001	G/19627	Sample	1.39		TO15_069-14	3/11/14 01:04	JAM	
06932.D	10259815002	G/19627	Sample	1.55		TO15_069-14	3/11/14 01:33	JAM	
06933.D	10259815003	G/19627	Sample	1.61		TO15_069-14	3/11/14 02:03	JAM	
06934.D	10259815004	G/19627	Sample	1.61		TO15_069-14	3/11/14 02:32	JAM	
06935.D	10259253002	G/19627	Sample	31		TO15_069-14	3/11/14 02:57	JAM	
06936.D	10259253004	G/19627	Sample	26.8		TO15_069-14	3/11/14 03:21	JAM	
06937.D	1636865	G/19627	Duplicate	26.8		TO15_069-14	3/11/14 03:46	JAM	
06938.D	30114379001	G/19627	Sample	222.4		TO15_069-14	3/11/14 04:10	JAM	
06939.D	0	G/	Sample	1		TO15_069-14	3/11/14 04:35	JAM	
06940.D	IC	G/	Sample	1		TO15_069-14	3/11/14 05:04	JAM	
06941.D	0	G/	Sample	1		TO15_069-14	3/11/14 08:39	JAM	
06942.D	CERT	G/	Sample	1		TO15_069-14	3/11/14 09:08	JAM	
06943.D	CERT	G/	Sample	1		TO15_069-14	3/11/14 09:40	JAM	
06944.D	CERT	G/	Sample	1		TO15_069-14	3/11/14 10:09	JAM	



Instrument Run Log

2

Instrument: 10AIR0 Method: Misc. Prep. Info: Surrogate Lot: 10288-3-16
Column: J&W DB-5 0.32mm Helium Tune Standard: 10288-3-16 ISTD Lot: 10288-3-16 Cal. Standard: 10288-8-3

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
06945.D	CERT	G/	Sample	1		TO15_069-14	3/11/14 10:38	JAM	

Check Maintenance Items Performed:

Changed septum	Clipped column	Changed column - Lot #
Cleaned liner	Changed trap - Lot #	Other minor parts replaced
Replaced/Cleaned gold seal	Cleaned MS Source	No maintenance performed today

Additional Comments:

File Path 1: U:\10AIR0\1031014.B\
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 03/12/2014 12:53
Reviewed By/Date:



Instrument Run Log

1

Instrument: 10A1R0 Method:
Column: J&W DB-5 0.32mm Helium Tune Standard:

Misc. Prep. Info:
ISTD Lot: 8137-74-13

Surrogate Lot: 8137-74-13
Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
07101BFB.D	BFB	L/	Tune	1		TUNE	3/12/14 11:26	JAM	
07102.D	CCV	G/	CCal	1		TO15_069-14	3/12/14 11:53	JAM	
07103.D	CCV	G/	CCal	1		TO15_069-14	3/12/14 12:31	JAM	
07103_LCS.D	LCS	G/	LCS	1		TO15_069-14	3/12/14 12:31	JAM	
07104.D	0	G/	Sample	1		TO15_069-14	3/12/14 13:20	JAM	
07105.D	BLANK	G/	Blank	1		TO15_069-14	3/12/14 13:49	JAM	
07106.D	CERT	G/	Sample	1		TO15_069-14	3/12/14 14:27	JAM	
07107.D	10259301002	G/19638	Sample	1.8		TO15_069-14	3/12/14 14:56	JAM	
07108.D	10259301001	G/19638	Sample	33.6		TO15_069-14	3/12/14 15:20	JAM	
07109.D	10259289002	G/19645	Sample	73.28		TO15_069-14	3/12/14 15:49	JAM	
07110.D	10259077001	G/19630	Sample	19148.8		TO15_069-14	3/12/14 16:14	JAM	
07111.D	10259079002	G/19630	Sample	18483.2		TO15_069-14	3/12/14 16:39	JAM	
07112.D	10259301010	G/19645	Sample	1.74		TO15_069-14	3/12/14 17:08	JAM	
07113.D	-DUP	G/19645	Duplicate	1.74		TO15_069-14	3/12/14 17:40	JAM	
07114.D	10259301009	G/19645	Sample	1.8		TO15_069-14	3/12/14 18:09	JAM	
07115.D	10259301008	G/19645	Sample	1.68		TO15_069-14	3/12/14 18:38	JAM	
07116.D	10259301007	G/19645	Sample	1.74		TO15_069-14	3/12/14 19:07	JAM	
07117.D	10259301006	G/19645	Sample	1.74		TO15_069-14	3/12/14 19:37	JAM	
07118.D	10259301005	G/19645	Sample	1.8		TO15_069-14	3/12/14 20:06	JAM	
07119.D	10259301004	G/19645	Sample	1.74		TO15_069-14	3/12/14 20:35	JAM	
07120.D	10259332001	G/19645	Sample	1.87		TO15_069-14	3/12/14 21:04	JAM	
07121.D	10259332002	G/19645	Sample	1.68		TO15_069-14	3/12/14 21:34	JAM	
07122.D	10259332003	G/19645	Sample	1.74		TO15_069-14	3/12/14 22:03	JAM	
07123.D	10259328010	G/19645	Sample	1.8		TO15_069-14	3/12/14 22:32	JAM	
07124.D	10259328007	G/19645	Sample	1.68		TO15_069-14	3/12/14 23:01	JAM	
07125.D	10259328004	G/19645	Sample	1.8		TO15_069-14	3/12/14 23:31	JAM	
07126.D	10259328003	G/19645	Sample	2.29		TO15_069-14	3/13/14 00:00	JAM	
07127.D	10259329005	G/19645	Sample	1.68		TO15_069-14	3/13/14 00:29	JAM	
07128.D	10259329004	G/19645	Sample	1.8		TO15_069-14	3/13/14 00:58	JAM	
07129.D	10259329003	G/19645	Sample	1.8		TO15_069-14	3/13/14 01:27	JAM	
07130.D	-DUP	G/19645	Duplicate	1.8		TO15_069-14	3/13/14 01:58	JAM	
07131.D	10259329002	G/19645	Sample	1.68		TO15_069-14	3/13/14 02:28	JAM	
07132.D	10259329001	G/19645	Sample	1.68		TO15_069-14	3/13/14 03:00	JAM	
07133.D	0	G/	Sample	1		TO15_069-14	3/13/14 03:25	JAM	
07134.D	IC	G/	Sample	1		TO15_069-14	3/13/14 03:54	JAM	
07135.D	10259057001	G/19565	Sample	598.4		TO15_069-14	3/13/14 04:19	JAM	
07136.D	10259057005	G/19565	Sample	576		TO15_069-14	3/13/14 04:43	JAM	
07137.D	10259057007	G/19565	Sample	576		TO15_069-14	3/13/14 05:08	JAM	
07138.D	10259057009	G/19565	Sample	556.8		TO15_069-14	3/13/14 05:32	JAM	
07139.D	10259057011	G/19565	Sample	967.68		TO15_069-14	3/13/14 05:57	JAM	
07140.D	10259049007	G/19580	Sample	537.6		TO15_069-14	3/13/14 06:22	JAM	
07141.D	10259049009	G/19580	Sample	903.168		TO15_069-14	3/13/14 06:47	JAM	
07142.D	10259049015	G/19580	Sample	576		TO15_069-14	3/13/14 07:12	JAM	
07143.D	0	G/	Sample	1		TO15_069-14	3/13/14 07:36	JAM	
07144.D	IC	G/	Sample	1		TO15_069-14	3/13/14 08:10	JAM	
07145.D	10259057009	G/19565	Sample	556.8		TO15_069-14	3/13/14 09:04	JAM	



Instrument Run Log

2

Instrument: 10AIR0 Method: Misc. Prep. Info: Surrogate Lot: 8137-74-13
Column: J&W DB-5 0.32mm Helium Tune Standard: ISTD Lot: 8137-74-13 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
07146.D	10259057011	G/19565	Sample	967.68		TO15_069-14	3/13/14 09:29	JAM	
07147.D	10259049009	G/19580	Sample	903.168		TO15_069-14	3/13/14 09:55	JAM	

Check Maintenance Items Performed:

Changed septum	Clipped column	Changed column - Lot #
Cleaned liner	Changed trap - Lot #	Other minor parts replaced
Replaced/Cleaned gold seal	Cleaned MS Source	No maintenance performed today

Additional Comments:

File Path 1: U:\10AIR0\031214.B\l
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 03/13/2014 13:10
Reviewed By/Date:



Instrument Run Log

1

Instrument: 10AIRD
Column: J&W DB-5 0.32mm Helium

Method:
Tune Standard:

Misc. Prep. Info:
ISTD Lot: 10288-3-14

Surrogate Lot: 10288-3-14
Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
07101BFB.D	BFB	L/	Tune	1		50NG_BFB	3/12/14 10:04	AH2	
07102BFB.D	BFB	L/	Tune	1		50NG_BFB	3/12/14 10:31	AH2	
07103BFB.D	BFB	L/	Tune	1		50NG_BFB	3/12/14 10:59	AH2	
07104.D	CCV	G/	CCal	1		TO15_068-14	3/12/14 11:39	AH2	
07108BFB.D	BFB	L/	Tune	1		50NG_BFB	3/12/14 14:08	AH2	
07109.D	CAL1	G/	Ical	1		TO15_071-14	3/12/14 14:36	AH2	
07110.D	CAL2	G/	Ical	1		TO15_071-14	3/12/14 15:04	AH2	
07111.D	CAL3	G/	Ical	1		TO15_071-14	3/12/14 15:32	AH2	
07112.D	CAL4	G/	Ical	1		TO15_071-14	3/12/14 15:59	AH2	
07113.D	CAL5	G/	Ical	1		TO15_071-14	3/12/14 16:27	AH2	
07114.D	CAL6	G/	Ical	1		TO15_071-14	3/12/14 16:56	AH2	
07115.D	0	G/	Sample	1		TO15_071-14	3/12/14 17:23	AH2	
07116.D	ICVADD	G/	LCS	1		TO15_071-14	3/12/14 17:51	AH2	
07117.D	ICV	G/	LCS	1		TO15_071-14	3/12/14 18:19	AH2	
07118.D	LCS	G/	LCS	1		TO15_071-14	3/12/14 18:46	AH2	
07118L.D	1638489	G/19647	LCS	1		TO15_071-14	3/12/14 18:46	AH2	
07119.D	0	G/	Sample	1		TO15_071-14	3/12/14 19:14	AH2	
07120.D	BLANK	G/	Sample	1		TO15_071-14	3/12/14 19:41	AH2	
07121L.D	1638488	G/19647	Blank	1		TO15_071-14	3/12/14 20:09	AH2	
07121.D	BLANK	G/	Blank	1		TO15_071-14	3/12/14 20:09	AH2	
07122.D	10259328002	G/19647	Sample	1.8		TO15_071-14	3/12/14 20:38	AH2	
07123.D	10259329008	G/19647	Sample	1.87		TO15_071-14	3/12/14 21:06	AH2	
07124.D	10259329006	G/19647	Sample	1.8		TO15_071-14	3/12/14 21:34	AH2	
07125.D	10259329007	G/19647	Sample	1.8		TO15_071-14	3/12/14 22:03	AH2	
07126.D	10259328008	G/19647	Sample	1.74		TO15_071-14	3/12/14 22:31	AH2	
07127.D	10259328009	G/19647	Sample	1.8		TO15_071-14	3/12/14 23:01	AH2	
07128.D	10259328005	G/19647	Sample	1.68		TO15_071-14	3/12/14 23:31	AH2	
07129.D	0	G/	Sample	1		TO15_071-14	3/12/14 23:59	AH2	
07130.D	IC	G/	Sample	1		TO15_071-14	3/13/14 00:26	AH2	
07131.D	10259328001	G/19647	Sample	1.68		TO15_071-14	3/13/14 00:54	AH2	
07132.D	10259328006	G/19647	Sample	1.68		TO15_071-14	3/13/14 01:23	AH2	
07133.D	10259331001	G/19647	Sample	1.8		TO15_071-14	3/13/14 01:51	AH2	
07134.D	10259331009	G/19647	Sample	1.8		TO15_071-14	3/13/14 02:19	AH2	
07135.D	10259331015	G/19647	Sample	1.68		TO15_071-14	3/13/14 02:47	AH2	
07136.D	-DUP	G/19647	Sample	1.68		TO15_071-14	3/13/14 03:17	AH2	
07137.D	10259331013	G/19647	Sample	1.68		TO15_071-14	3/13/14 03:45	AH2	
07138.D	-DUP	G/19647	Sample	1.68		TO15_071-14	3/13/14 04:16	AH2	
07139.D	10259331011	G/19647	Sample	1.68		TO15_071-14	3/13/14 04:44	AH2	
07140.D	10259331019	G/19647	Sample	1.57		TO15_071-14	3/13/14 05:12	AH2	
07141.D	10259331023	G/19647	Sample	1.57		TO15_071-14	3/13/14 05:42	AH2	
07142.D	10259331018	G/19647	Sample	1.68		TO15_071-14	3/13/14 06:11	AH2	
07143.D	10259331016	G/19647	Sample	1.68		TO15_071-14	3/13/14 06:41	AH2	
07144.D	10259331014	G/19647	Sample	1.68		TO15_071-14	3/13/14 07:09	AH2	
07145.D	IC	G/	Sample	1		TO15_071-14	3/13/14 07:39	AH2	
07146.D	0	G/	Sample	1		TO15_071-14	3/13/14 09:13	AH2	
07147.D	CERT	G/	Sample	1		TO15_071-14	3/13/14 09:41	AH2	



Instrument Run Log

2

Instrument: 10AIRD Method: Misc. Prep. Info: Surrogate Lot: 10288-3-14
Cplumn: J&W DB-5 0.32mm Helium Tune Standard: ISTD Lot: 10288-3-14 Cal. Standard:

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
07148.D	CERT	G/	Sample	1		TO15_071-14	3/13/14 10:23	AH2	
07149.D	CERT	G/	Sample	1		TO15_071-14	3/13/14 10:51	AH2	
07150.D	CERT	G/	Sample	1		TO15_071-14	3/13/14 11:38	AH2	
07151.D	CERT	G/	Sample	1		TO15_071-14	3/13/14 12:06	AH2	
07202.D	CCV	G/	CCal	1		TO15_071-14	3/13/14 13:01	AH2	

Check Maintenance Items Performed:

Changed septum	Clipped column	Changed column - Lot #
Cleaned liner	Changed trap - Lot #	Other minor parts replaced
Replaced/Cleaned gold seal	Cleaned MS Source	No maintenance performed today

Additional Comments:

File Path 1: U:\10AIRD\1031214.B\
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 03/14/2014 18:26
Reviewed By/Date:



Tetra Tech

INTERNAL CORRESPONDENCE

TO: M. MARTIN **DATE: APRIL 25, 2014**

FROM: A. COGNETTI **COPIES: DV FILE**

**SUBJECT: ORGANIC DATA VALIDATION – VOC
MIDDLE RIVER CENTER
SAMPLE DELIVERY GROUP (SDG) – 10259329**

SAMPLES: 8/Air/VOC

IA-146-VLS-2	IA-147-VLS-2	IA-148-VLS-2	IA-149-VLS-2
IA-150-VLS-2	IA-151-VLS-2	IA-152-VLS-2	IA-DUP1-VLS-2

Overview

The sample set for Middle River Center, SDG 10259329 consisted of eight (8) air samples. All samples were analyzed for volatile organic compounds (VOC). There is one (1) field duplicate pair included in this SDG: IA-DUP1-VLS-2 and IA-147-VLS-2.

The samples were collected by Tetra Tech on February 26, 2014 and analyzed by PACE Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

- The continuing calibration percent differences (%Ds) for 1,2,4-trichlorobenzene and naphthalene were greater than the 30% quality control limit on March 12, 2014 @ 12:31 on instrument 10AIR0. The detected naphthalene result in sample IA-147-VLS-2 was qualified as estimated (J). The nondetected 1,2,4-trichlorobenzene and naphthalene results were qualified as estimated (UJ) in the affected samples.
- The concentration of methylene chloride in sample IA-147-VLS-s exceeded instrument calibration range. The detected methylene chloride results was qualified as estimated (J).
- Field duplicate imprecision was noted in the field duplicate pair IA-DUP1-VLS-2 and IA-147-VLS-2. The relative percent differences (RPDs) for benzene, methylene chloride and toluene exceeded the 50% quality control limit. The variance exceeded 2X the reporting limit for naphthalene. The detected and nondetected benzene, methylene chloride, naphthalene and toluene results were qualified as estimated (J) and (UJ), respectively in the field duplicate pair.

TO: M. Martin
FROM: A. Cognetti
SDG: 10259329
DATE: April 16, 2014

PAGE 2

Notes

The laboratory control sample (LCS) percent recovery (%R) of 1,2,4-trichlorobenzene was greater than the upper quality control limit in batch 1638294. No action was taken on the nondetected 1,2,4-trichlorobenzene results in the affected samples.

The laboratory did not report detections between the reporting limit and the method detection limit. The laboratory was required to revise and resubmit all sample results.

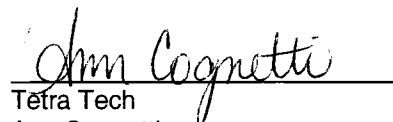
Nondetected results were reported to the method detection limit.

Executive Summary


Laboratory Performance: The laboratory did not initially report detections between the reporting limit and method detection limit. The continuing calibration %Ds for 1,2,4-trichlorobenzene and naphthalene were greater than the 30% quality control limit. The concentration of methylene chloride in sample IA-147-VLS-2 exceeded instrument calibration range.

Other Factors Affecting Data Quality: Field duplicate imprecision was noted in the field duplicate pair IA-DUP1-VLS-2 and IA-147-VLS-2.

The data for these analyses were reviewed with reference to USEPA National Functional Guidelines for Organic Data Validation (June 2008) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Ann Cognetti
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

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

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 04792 SDG: 10259329 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-146-VLS-2	IA-147-VLS-2	IA-148-VLS-2	IA-149-VLS-2	
	LAB_ID	10259329008	10259329001	10259329003	10259329006	
	SAMP_DATE	2/26/2014	2/26/2014	2/26/2014	2/26/2014	
	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
1,1,1-TRICHLOROETHANE	2.1 U			1.9 U	2 U	2 U
1,1,2-TRICHLOROETHANE	1 U			0.92 U	0.99 U	0.99 U
1,1-DICHLOROETHANE	1.5 U			1.4 U	1.5 U	1.5 U
1,1-DICHLOROETHENE	1.5 U			1.4 U	1.5 U	1.5 U
1,2,3-TRIMETHYLBENZENE	1.4			1.3 J	1.8 U	1.4
1,2,4-TRICHLOROBENZENE	2.8 U			2.5 UJ	2.7 UJ	2.7 U
1,2,4-TRIMETHYLBENZENE	2.6			4.1	2.9	2.5
1,2-DICHLOROETHANE	0.77 U			0.69 U	0.74 U	0.74 U
1,3,5-TRIMETHYLBENZENE	1.9 J	P		1.8	1.8 U	1.9
BENZENE	0.66			2.5 J	0.98	0.66
CARBON TETRACHLORIDE	1.2 U			1.1 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	2.3			5	3.2	2
CHLOROFORM	1.9 U			1.7 U	1.8 U	1.8 U
CIS-1,2-DICHLOROETHENE	1.5 U			1.4 U	1.5 U	1.5 U
DICHLORODIFLUOROMETHANE	1.9			1.7 U	2.7	1.8
ETHYLBENZENE	9.8			12.1	17.9	10.5
M+P-XYLENES	26.1			31.9	47.9	27.4
METHYL TERT-BUTYL ETHER	1.4 U			1.2 U	1.3 U	1.3 U
METHYLENE CHLORIDE	6.8			483 J	21.9	11.7
NAPHTHALENE	1.4 J	P		71 J	1.9 UJ	1.3 J
O-XYLENE	6.8			8.5	12	7.3
TETRACHLOROETHENE	1.3 U			1.2 U	1.2 U	1.2 U
TOLUENE	10			120 J	17.4	9.5
TRANS-1,2-DICHLOROETHENE	1.5 U			1.4 U	1.5 U	1.5 U
TRICHLOROETHENE	1 U			0.92 U	0.99 U	0.99 U
VINYL CHLORIDE	0.49 U			0.44 U	0.47 U	0.47 U

PROJ_NO: 04792 SDG: 10259329 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-150-VLS-2	IA-151-VLS-2	IA-152-VLS-2	IA-DUP1-VLS-2		
	LAB_ID	10259329007	10259329005	10259329004	10259329002		
	SAMP_DATE	2/26/2014	2/26/2014	2/26/2014	2/26/2014		
	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
1,1,1-TRICHLOROETHANE			2 U			2 U	
1,1,2-TRICHLOROETHANE			0.99 U			0.99 U	
1,1-DICHLOROETHANE			1.5 U			1.5 U	
1,1-DICHLOROETHENE			1.5 U			1.5 U	
1,2,3-TRIMETHYLBENZENE			1.4			1.8 U	
1,2,4-TRICHLOROBENZENE			2.7 U			2.7 UJ	
1,2,4-TRIMETHYLBENZENE			2.7			1.8 U	
1,2-DICHLOROETHANE			0.74 U			0.74 U	
1,3,5-TRIMETHYLBENZENE			1.9			1.8 U	
BENZENE			0.67			0.83	
CARBON TETRACHLORIDE			1.2 U			1.2 U	
CHLORODIFLUOROMETHANE			2.1			3.8	
CHLOROFORM			1.8 U			1.8 U	
CIS-1,2-DICHLOROETHENE			1.5 U			1.5 U	
DICHLORODIFLUOROMETHANE			1.9			2.6	
ETHYLBENZENE			12.8			1.6 U	
M+P-XYLENES			32.2			3.2 U	
METHYL TERT-BUTYL ETHER			1.3 U			1.3 U	
METHYLENE CHLORIDE			11.8			19.3	
NAPHTHALENE			1.3 J	P		1.9 UJ	C
O-XYLENE			8.8			1.6 U	
TETRACHLOROETHENE			1.2 U			1.2 U	
TOLUENE			11.2			4.4	
TRANS-1,2-DICHLOROETHENE			1.5 U			1.5 U	
TRICHLOROETHENE			0.99 U			0.99 U	
VINYL CHLORIDE			0.47 U			0.47 U	

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-146-VLS-2		Lab ID: 10259329008	Collected: 02/26/14 18:31	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.66	ug/m3	0.61	1.87		03/12/14 21:06	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/12/14 21:06	56-23-5	
Chlorodifluoromethane	2.3	ug/m3	0.37	1.87		03/12/14 21:06	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/12/14 21:06	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.9	1.87		03/12/14 21:06	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/12/14 21:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/12/14 21:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/12/14 21:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/12/14 21:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/12/14 21:06	156-60-5	
Ethylbenzene	9.8	ug/m3	1.6	1.87		03/12/14 21:06	100-41-4	
Methylene Chloride	6.8	ug/m3	1.3	1.87		03/12/14 21:06	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/12/14 21:06	1634-04-4	
Naphthalene	1.4J	ug/m3	2.0	1.87		03/12/14 21:06	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/12/14 21:06	127-18-4	
Toluene	10	ug/m3	1.4	1.87		03/12/14 21:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/12/14 21:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/12/14 21:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/12/14 21:06	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/12/14 21:06	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.37	1.87		03/12/14 21:06	526-73-8	
1,2,4-Trimethylbenzene	2.6	ug/m3	1.9	1.87		03/12/14 21:06	95-63-6	
1,3,5-Trimethylbenzene	1.9J	ug/m3	1.9	1.87		03/12/14 21:06	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/12/14 21:06	75-01-4	
m&p-Xylene	26.1	ug/m3	3.3	1.87		03/12/14 21:06	179601-23-1	
o-Xylene	6.8	ug/m3	1.6	1.87		03/12/14 21:06	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-147-VLS-2		Lab ID: 10259329001	Collected: 02/26/14 18:28		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.5	ug/m3	0.55	1.68		03/13/14 03:00	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 03:00	56-23-5	
Chlorodifluoromethane	5.0	ug/m3	1.2	1.68		03/13/14 03:00	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 03:00	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.7	1.68		03/13/14 03:00	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 03:00	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 03:00	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 03:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 03:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 03:00	156-60-5	
Ethylbenzene	12.1	ug/m3	1.5	1.68		03/13/14 03:00	100-41-4	
Methylene Chloride	483	ug/m3	1.2	1.68		03/13/14 03:00	75-09-2	E
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 03:00	1634-04-4	
Naphthalene	71.0	ug/m3	1.8	1.68		03/13/14 03:00	91-20-3	CH
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 03:00	127-18-4	
Toluene	120	ug/m3	1.3	1.68		03/13/14 03:00	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 03:00	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 03:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 03:00	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 03:00	79-01-6	
1,2,3-Trimethylbenzene	1.3J	ug/m3	1.7	1.68		03/13/14 03:00	526-73-8	
1,2,4-Trimethylbenzene	4.1	ug/m3	1.7	1.68		03/13/14 03:00	95-63-6	
1,3,5-Trimethylbenzene	1.8	ug/m3	1.7	1.68		03/13/14 03:00	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 03:00	75-01-4	
m&p-Xylene	31.9	ug/m3	3.0	1.68		03/13/14 03:00	179601-23-1	
o-Xylene	8.5	ug/m3	1.5	1.68		03/13/14 03:00	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259329

Sample: IA-148-VLS-2		Lab ID: 10259329003	Collected: 02/26/14 18:55	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.98	ug/m3	0.58	1.8		03/13/14 01:27	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/13/14 01:27	56-23-5	
Chlorodifluoromethane	3.2	ug/m3	1.3	1.8		03/13/14 01:27	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/13/14 01:27	67-66-3	
Dichlorodifluoromethane	2.7	ug/m3	1.8	1.8		03/13/14 01:27	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/13/14 01:27	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/13/14 01:27	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 01:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 01:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/13/14 01:27	156-60-5	
Ethylbenzene	17.9	ug/m3	1.6	1.8		03/13/14 01:27	100-41-4	
Methylene Chloride	21.9	ug/m3	1.3	1.8		03/13/14 01:27	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/13/14 01:27	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.8		03/13/14 01:27	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/13/14 01:27	127-18-4	
Toluene	17.4	ug/m3	1.4	1.8		03/13/14 01:27	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/13/14 01:27	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/13/14 01:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/13/14 01:27	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/13/14 01:27	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/13/14 01:27	526-73-8	
1,2,4-Trimethylbenzene	2.9	ug/m3	1.8	1.8		03/13/14 01:27	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/13/14 01:27	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/13/14 01:27	75-01-4	
m&p-Xylene	47.9	ug/m3	3.2	1.8		03/13/14 01:27	179601-23-1	
o-Xylene	12.0	ug/m3	1.6	1.8		03/13/14 01:27	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-149-VLS-2		Lab ID: 10259329006	Collected: 02/26/14 18:25	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.66 ug/m3		0.58	1.8		03/12/14 21:34	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.8		03/12/14 21:34	56-23-5	
Chlorodifluoromethane	2.0 ug/m3		0.36	1.8		03/12/14 21:34	75-45-6	
Chloroform	ND ug/m3		1.8	1.8		03/12/14 21:34	67-66-3	
Dichlorodifluoromethane	1.8 ug/m3		1.8	1.8		03/12/14 21:34	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.8		03/12/14 21:34	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.74	1.8		03/12/14 21:34	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.5	1.8		03/12/14 21:34	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/12/14 21:34	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/12/14 21:34	156-60-5	
Ethylbenzene	10.5 ug/m3		1.6	1.8		03/12/14 21:34	100-41-4	
Methylene Chloride	11.7 ug/m3		1.3	1.8		03/12/14 21:34	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.8		03/12/14 21:34	1634-04-4	
Naphthalene	1.3J ug/m3		1.9	1.8		03/12/14 21:34	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.8		03/12/14 21:34	127-18-4	
Toluene	9.5 ug/m3		1.4	1.8		03/12/14 21:34	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.7	1.8		03/12/14 21:34	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.0	1.8		03/12/14 21:34	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.99	1.8		03/12/14 21:34	79-00-5	
Trichloroethene	ND ug/m3		0.99	1.8		03/12/14 21:34	79-01-6	
1,2,3-Trimethylbenzene	1.4 ug/m3		0.36	1.8		03/12/14 21:34	526-73-8	
1,2,4-Trimethylbenzene	2.5 ug/m3		1.8	1.8		03/12/14 21:34	95-63-6	
1,3,5-Trimethylbenzene	1.9 ug/m3		1.8	1.8		03/12/14 21:34	108-67-8	
Vinyl chloride	ND ug/m3		0.47	1.8		03/12/14 21:34	75-01-4	
m&p-Xylene	27.4 ug/m3		3.2	1.8		03/12/14 21:34	179601-23-1	
o-Xylene	7.3 ug/m3		1.6	1.8		03/12/14 21:34	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-150-VLS-2		Lab ID: 10259329007	Collected: 02/26/14 18:34	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.67	ug/m3	0.58	1.8		03/12/14 22:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/12/14 22:03	56-23-5	
Chlorodifluoromethane	2.1	ug/m3	0.36	1.8		03/12/14 22:03	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/12/14 22:03	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.8		03/12/14 22:03	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/12/14 22:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/12/14 22:03	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/12/14 22:03	156-60-5	
Ethylbenzene	12.8	ug/m3	1.6	1.8		03/12/14 22:03	100-41-4	
Methylene Chloride	11.8	ug/m3	1.3	1.8		03/12/14 22:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/12/14 22:03	1634-04-4	
Naphthalene	1.3J	ug/m3	1.9	1.8		03/12/14 22:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/12/14 22:03	127-18-4	
Toluene	11.2	ug/m3	1.4	1.8		03/12/14 22:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/12/14 22:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/12/14 22:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/12/14 22:03	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/12/14 22:03	79-01-6	
1,2,3-Trimethylbenzene	1.4	ug/m3	0.36	1.8		03/12/14 22:03	526-73-8	
1,2,4-Trimethylbenzene	2.7	ug/m3	1.8	1.8		03/12/14 22:03	95-63-6	
1,3,5-Trimethylbenzene	1.9	ug/m3	1.8	1.8		03/12/14 22:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/12/14 22:03	75-01-4	
m&p-Xylene	32.2	ug/m3	3.2	1.8		03/12/14 22:03	179601-23-1	
o-Xylene	8.8	ug/m3	1.6	1.8		03/12/14 22:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259329

Sample: IA-151-VLS-2		Lab ID: 10259329005	Collected: 02/26/14 18:50	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.75 ug/m3		0.55	1.68		03/13/14 00:29	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/13/14 00:29	56-23-5	
Chlorodifluoromethane	2.7 ug/m3		1.2	1.68		03/13/14 00:29	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/13/14 00:29	67-66-3	
Dichlorodifluoromethane	2.4 ug/m3		1.7	1.68		03/13/14 00:29	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/13/14 00:29	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/13/14 00:29	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 00:29	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 00:29	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 00:29	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.68		03/13/14 00:29	100-41-4	
Methylene Chloride	7.3 ug/m3		1.2	1.68		03/13/14 00:29	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/13/14 00:29	1634-04-4	
Naphthalene	ND ug/m3		1.8	1.68		03/13/14 00:29	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/13/14 00:29	127-18-4	
Toluene	5.0 ug/m3		1.3	1.68		03/13/14 00:29	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/13/14 00:29	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/13/14 00:29	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/13/14 00:29	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/13/14 00:29	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.7	1.68		03/13/14 00:29	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.68		03/13/14 00:29	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/13/14 00:29	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/13/14 00:29	75-01-4	
m&p-Xylene	ND ug/m3		3.0	1.68		03/13/14 00:29	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.68		03/13/14 00:29	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259329

Sample: IA-152-VLS-2		Lab ID: 10259329004	Collected: 02/26/14 18:45	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.83 ug/m3		0.58	1.8		03/13/14 00:58	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.8		03/13/14 00:58	56-23-5	
Chlorodifluoromethane	3.8 ug/m3		1.3	1.8		03/13/14 00:58	75-45-6	
Chloroform	ND ug/m3		1.8	1.8		03/13/14 00:58	67-66-3	
Dichlorodifluoromethane	2.6 ug/m3		1.8	1.8		03/13/14 00:58	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.8		03/13/14 00:58	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.74	1.8		03/13/14 00:58	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.5	1.8		03/13/14 00:58	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/13/14 00:58	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/13/14 00:58	156-60-5	
Ethylbenzene	ND ug/m3		1.6	1.8		03/13/14 00:58	100-41-4	
Methylene Chloride	19.3 ug/m3		1.3	1.8		03/13/14 00:58	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.8		03/13/14 00:58	1634-04-4	
Naphthalene	ND ug/m3		1.9	1.8		03/13/14 00:58	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.8		03/13/14 00:58	127-18-4	
Toluene	4.4 ug/m3		1.4	1.8		03/13/14 00:58	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.7	1.8		03/13/14 00:58	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.0	1.8		03/13/14 00:58	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.99	1.8		03/13/14 00:58	79-00-5	
Trichloroethene	ND ug/m3		0.99	1.8		03/13/14 00:58	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.8	1.8		03/13/14 00:58	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.8	1.8		03/13/14 00:58	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.8	1.8		03/13/14 00:58	108-67-8	
Vinyl chloride	ND ug/m3		0.47	1.8		03/13/14 00:58	75-01-4	
m&p-Xylene	ND ug/m3		3.2	1.8		03/13/14 00:58	179601-23-1	
o-Xylene	ND ug/m3		1.6	1.8		03/13/14 00:58	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259329

Sample: IA-DUP1-VLS-2		Lab ID: 10259329002	Collected: 02/26/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.92	ug/m3	0.55	1.68		03/13/14 02:28	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/13/14 02:28	56-23-5	
Chlorodifluoromethane	4.6	ug/m3	1.2	1.68		03/13/14 02:28	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/13/14 02:28	67-66-3	
Dichlorodifluoromethane	2.6	ug/m3	1.7	1.68		03/13/14 02:28	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/13/14 02:28	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/13/14 02:28	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 02:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 02:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/13/14 02:28	156-60-5	
Ethylbenzene	14.7	ug/m3	1.5	1.68		03/13/14 02:28	100-41-4	
Methylene Chloride	11.7	ug/m3	1.2	1.68		03/13/14 02:28	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/13/14 02:28	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/13/14 02:28	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/13/14 02:28	127-18-4	
Toluene	18.9	ug/m3	1.3	1.68		03/13/14 02:28	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/13/14 02:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/13/14 02:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/13/14 02:28	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/13/14 02:28	79-01-6	
1,2,3-Trimethylbenzene	1.6J	ug/m3	1.7	1.68		03/13/14 02:28	526-73-8	
1,2,4-Trimethylbenzene	4.9	ug/m3	1.7	1.68		03/13/14 02:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/13/14 02:28	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/13/14 02:28	75-01-4	
m&p-Xylene	38.5	ug/m3	3.0	1.68		03/13/14 02:28	179601-23-1	
o-Xylene	10.3	ug/m3	1.5	1.68		03/13/14 02:28	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

PROJECT NARRATIVE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259329

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 17, 2014

General Information:

8 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/19645

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- DUP (Lab ID: 1638565)
 - Naphthalene
- IA-147-VLS-2 (Lab ID: 10259329001)
 - Naphthalene
- LCS (Lab ID: 1638294)
 - 1,2,4-Trichlorobenzene
 - Naphthalene

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/19645

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 1638294)
 - 1,2,4-Trichlorobenzene

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259329

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 17, 2014

Additional Comments:

Analyte Comments:

QC Batch: AIR/19645

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- IA-147-VLS-2 (Lab ID: 10259329001)
- Methylene Chloride

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

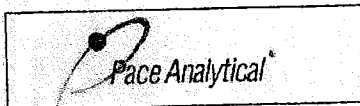
Project: MRC SV/IAQ Study Feb 2014

Pace Project No.: 10259329

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10259329001	IA-147-VLS-2	TO-15	AIR/19645		
10259329002	IA-DUP1-VLS-2	TO-15	AIR/19645		
10259329003	IA-148-VLS-2	TO-15	AIR/19645		
10259329004	IA-152-VLS-2	TO-15	AIR/19645		
10259329005	IA-151-VLS-2	TO-15	AIR/19645		
10259329006	IA-149-VLS-2	TO-15	AIR/19647		
10259329007	IA-150-VLS-2	TO-15	AIR/19647		
10259329008	IA-146-VLS-2	TO-15	AIR/19647		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Document Name: Air Sample Condition Upon Receipt	Document Revised: 26Dec2013 Page 1 of 1
Document No.: F-MN-A-106-rev.09	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition
Upon Receipt

Client Name:

fehru tech

Project #:

WO#: 10259329



Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: *on other sheet*

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other: _____ Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): _____ Corrected Temp (°C): _____

Thermom. Used: ☐ B88A912167504 ☐ 72337080
☐ B88A9132521491 ☐ 80512447

Date & Initials of Person Examining Contents: *02/3/14*

Temp should be above freezing to 6°C Correction Factor: _____

Type of Ice Received ☐ Blue ☐ Wet ☒ None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Media: <i>6°C</i>		
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <i>Sample 3 and 7 have the start time on the tag, not the end time</i>

Samples Received:

Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
147	0405		0258		
Dupl	2491				
148	2412		0446		
252	2435		0448		
151	2227		0415		
149	2397		0537		
150	2548		0518		
146	2570		0513		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review:

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

HOLDTIME

SDG 10259329

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/M3	IA-DUP1-VLS-2	10259329002	NM	02/26/2014	03/13/2014	03/13/2014	15	0	15
	UG/M3	IA-152-VLS-2	10259329004	NM	02/26/2014	03/13/2014	03/13/2014	15	0	15
	UG/M3	IA-151-VLS-2	10259329005	NM	02/26/2014	03/13/2014	03/13/2014	15	0	15
	UG/M3	IA-150-VLS-2	10259329007	NM	02/26/2014	03/12/2014	03/12/2014	14	0	14
	UG/M3	IA-149-VLS-2	10259329006	NM	02/26/2014	03/12/2014	03/12/2014	14	0	14
	UG/M3	IA-148-VLS-2	10259329003	NM	02/26/2014	03/13/2014	03/13/2014	15	0	15
	UG/M3	IA-147-VLS-2	10259329001	NM	02/26/2014	03/13/2014	03/13/2014	15	0	15
	UG/M3	IA-146-VLS-2	10259329008	NM	02/26/2014	03/12/2014	03/12/2014	14	0	14

Field Duplicate Precision

ANALYTE	IA-DUP1-VLS-2	IA-147-VLS-2	RPD	DIFFERENCE
1,2,3-TRIMETHYLBENZENE	1.6	1.3	20.69	0.3
1,2,4-TRIMETHYLBENZENE	4.9	4.1	17.78	0.8
1,3,5-TRIMETHYLBENZENE	ND	1.8	200.00	0.1
BENZENE	0.92	2.5	92.40	1.58 ✓
CHLORODIFLUOROMETHANE	4.6	5	8.33	0.4
DICHLORODIFLUOROMETHANE	2.6	ND	200.00	0.9
ETHYLBENZENE	14.7	12.1	19.40	2.6
M+P-XYLENES	38.5	31.9	18.75	6.6
METHYLENE CHLORIDE	11.7	483	190.54	471.3
NAPHTHALENE	ND	71	200.00	69.2 ✓
O-XYLENE	10.3	8.5	19.15	1.8
TOLUENE	18.9	120	145.57	101.1

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259329

Lab File ID: 06903BFB.D

BFB Injection Date: 03/10/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:47

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.00
75	30.00 - 66.00% of mass 95	50.47
96	5.00 - 9.00% of mass 95	6.68
173	Less than 2.00% of mass 174	0.65 (0.74)
174	50.00 - 120.00% of mass 95	86.78
175	4.00 - 9.00% of mass 174	6.55 (7.55)
176	93.00 - 101.00% of mass 174	84.03 (96.83)
177	5.00 - 9.00% of mass 176	5.81 (6.91)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	06904.D	03/10/2014	11:12
2	CAL2	CAL2	06905.D	03/10/2014	11:36
3	CAL3	CAL3	06906.D	03/10/2014	12:01
4	CAL4	CAL4	06907.D	03/10/2014	12:28
5	CAL5	CAL5	06908.D	03/10/2014	12:54
6	CAL6	CAL6	06909.D	03/10/2014	13:23
7	CAL7	CAL7	06910.D	03/10/2014	13:55
8	ICVADDL (LCS)	ICVADDL	06911.D	03/10/2014	14:22
9	ICV (LCS)	ICV	06912.D	03/10/2014	14:48

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air0.i\031014.b\06904.D
 Level 2: \\192.168.10.12\chem\10air0.i\031014.b\06905.D
 Level 3: \\192.168.10.12\chem\10air0.i\031014.b\06906.D
 Level 4: \\192.168.10.12\chem\10air0.i\031014.b\06907.D
 Level 5: \\192.168.10.12\chem\10air0.i\031014.b\06908.D
 Level 6: \\192.168.10.12\chem\10air0.i\031014.b\06909.D
 Level 7: \\192.168.10.12\chem\10air0.i\031014.b\06910.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
1 Chlorodifluoromethane	1.79334	1.96113	1.99290	2.02763	2.03916	2.21306					
	2.29356						AVRG		2.04583		8.06742
2 Propylene	4.42343	5.25024	5.12097	5.51810	5.55487	6.00090					
	6.18678						AVRG		5.43647		10.78516
3 Dichlorodifluoromethane	0.76495	0.83410	0.87557	0.92208	0.92385	1.03516					
	1.13286						AVRG		0.92694		13.33317
4 Dichlorotetrafluoroethane	0.88918	1.03163	1.09640	1.13448	1.17610	1.31356					
	1.40435						AVRG		1.14938		14.95494

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
5 Chloromethane	2.73337 4.00112	2.95282	3.02944	3.11024	3.29718	3.68461			3.25840	13.59974
							AVRG			
6 Vinyl chloride	2.80004 3.44528	3.26841	3.17952	3.36648	3.28817	3.44421			3.25602	6.84907
							AVRG			
7 1,3-Butadiene	4.03477 5.10050	5.07494	4.90816	4.88217	4.82254	5.07005			4.84187	7.68659
							AVRG			
8 Bromomethane	2.64768 3.35210	3.07464	3.10006	3.27756	3.19326	3.34481			3.14144	7.76394
							AVRG			
9 Chloroethane	5.93482 7.42973	7.37708	7.07120	7.21214	7.08487	7.41352			7.07477	7.41368
							AVRG			
10 Ethanol	7.86650 10.37597	9.60682	10.18409	8.95570	8.11859	9.11464			9.17462	10.46115
							AVRG			
11 Vinyl Bromide	2.86110 3.47223	3.08453	3.17242	3.26826	3.15421	3.40488			3.20252	6.39606
							AVRG			

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
12 Isopentane	2.35717 4.20716	2.79325	2.80360	2.92340	3.55224	3.93266	AVRG		3.22421		21.11392
13 Acrolein	15.21182 12.88044	16.17671	14.97296	15.01228	11.67974	12.23572	AVRG		14.02424		12.32414
14 Trichlorofluoromethane	0.71541 1.10566	0.83144	0.82954	0.84317	0.88790	1.01350	AVRG		0.88952		14.62331
15 Acetone	4.44444 2.30702	1.43823	1.61026	1.72216	2.20660	2.22776	AVRG		1.91867		19.41490
16 Isopropyl Alcohol	1.97508 2.47554	2.63503	2.16594	2.16518	2.03899	2.38240	AVRG		2.26259		10.67307
17 Acrylonitrile	6.94453 6.50762	7.44144	6.58736	6.45656	5.64662	5.89274	AVRG		6.49661		9.30261
18 1,1-Dichloroethene	1.76703 2.41291	1.88434	1.94283	2.00893	2.04456	2.27191	AVRG		2.04749		10.94912

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
19 Tert. Butyl Alcohol (TBA)	1.27469 1.72470	1.38692	1.14962	1.22188	1.33666	1.63613	AVRG		1.39008	15.39550
20 Freon 113	1.30782 1.94919	1.43945	1.48336	1.53997	1.63905	1.85518	AVRG		1.60200	14.34583
21 Methylene chloride	2.44829 3.81825	3.04900	2.83347	2.87484	3.18380	3.50654	AVRG		3.10202	14.63865
22 Allyl Chloride	8.99304 7.89769	9.06240	8.30561	8.01340	7.30581	7.64392	AVRG		8.17455	8.07486
23 Carbon Disulfide	1.08017 1.25785	1.11722	1.13167	1.21676	1.16239	1.22848	AVRG		1.17065	5.59102
24 trans-1,2-dichloroethene	3.61936 3.49520	3.52832	3.78773	3.72750	3.26238	3.40143	AVRG		3.54599	5.16148
25 Methyl Tert Butyl Ether	0.84133 1.17268	0.96801	0.96981	0.98238	1.01531	1.10853	AVRG		1.00829	10.61789

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
26 Vinyl Acetate	1.748531 1.514581	1.875591	1.780571	1.794361	1.332531	1.439621	AVRG		1.640831		12.717861
27 1,1-Dichloroethane	1.420591 1.917571	1.631251	1.591471	1.637351	1.666361	1.836761	AVRG		1.671621		9.769951
29 Methyl Ethyl Ketone	6.970881 7.648961	9.910721	7.270061	7.024211	6.782661	7.327871	AVRG		7.562191		14.191171
30 Di-isopropyl Ether	0.815191 1.405721	1.015791	1.011171	1.056991	1.147321	1.309581	AVRG		1.108821		17.925311
31 n-Hexane	1.937581 2.643971	1.939081	2.102981	2.159441	2.199191	2.492121	AVRG		2.210621		12.105141
32 Ethyl Acetate	1.464771 1.805541	1.715271	1.902441	1.922311	1.576611	1.747831	AVRG		1.733541		9.616561
33 cis-1,2-Dichloroethene	3.748631 3.334901	3.239441	3.313461	3.237211	3.131471	3.319681	AVRG		3.332101		5.899421

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
34 Ethyl Tert-Butyl Ether	0.75949 1.11688	0.90849	0.90735	0.92644	0.95192	1.06601	AVRG		0.94808	12.30615
35 Chloroform	1.14391 1.44071	1.20832	1.15602	1.22451	1.23897	1.39267	AVRG		1.25787	9.11573
36 Tetrahydrofuran	2.77362 3.40923	3.27398	3.03990	3.22107	3.23700	3.41204	AVRG		3.19526	7.03644
37 1,1,1-Trichloroethane	1.00703 1.31211	0.98490	0.99377	1.05122	1.09410	1.23734	AVRG		1.09721	11.73008
38 1,2-Dichloroethane	1.69488 1.93005	1.55334	1.49881	1.56916	1.60382	1.82376	AVRG		1.66769	9.45930
39 Benzene	0.90295 1.30653	0.90512	0.96885	0.98664	1.04197	1.20139	AVRG		1.04478	14.71502
40 Carbon tetrachloride	0.99800 1.44353	1.01018	1.01830	1.06856	1.09234	1.30065	AVRG		1.13308	15.15002

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
41 Cyclohexane	1.84791	1.90208	1.89425	1.99185	2.39771	2.95611					
	++++						AVRG		2.16499		20.16504
42 Tert Amyl Methyl Ether	++++	0.60158	0.77689	0.87827	0.95216	1.04492					
	1.07866						AVRG		0.88875		20.10045
44 2,2,4-Trimethylpentane	0.59958	0.59595	0.59455	0.62302	0.69883	0.77964					
	0.81649						AVRG		0.67258		13.92196
45 Heptane	1.99114	2.02797	1.90049	2.00239	2.02013	2.26878					
	2.40954						AVRG		2.08863		8.65676
46 1,2-Dichloropropane	2.42726	2.45000	2.62988	2.79267	2.86795	3.23289					
	3.45854						AVRG		2.83988		13.69908
47 Trichloroethene	2.29031	2.21270	2.26938	2.31916	2.27705	2.45719					
	2.50313						AVRG		2.33270		4.56482
48 1,4-Dioxane	3.74290	4.26081	4.85849	4.68617	4.71161	5.49839					
	5.94928						AVRG		4.81538		15.25880

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
49 Bromodichloromethane	1.05595	1.08294	1.05443	1.06525	1.07884	1.21577				
	1.29442						AVRG		1.12108	8.46644
50 Methylcyclohexane	3.95017	4.31106	3.83767	3.90218	4.06432	4.28893				
	4.37133						AVRG		4.10367	5.31511
51 Methyl Isobutyl Ketone	1.32695	1.69501	1.80412	1.76113	1.37132	1.50294				
	1.56699						AVRG		1.57549	11.86929
52 cis-1,3-Dichloropropene	2.12350	2.34341	1.93713	1.83374	1.58892	1.71160				
	1.77241						AVRG		1.90153	13.59314
53 trans-1,3-Dichloropropene	3437	6568	17790	39339	511296	1029022				
	1588396						LINR	0.00414	1.52974	0.99971
55 1,1,2-Trichloroethane	1.73572	2.11602	2.10729	2.20825	2.29048	2.50852				
	2.57315						AVRG		2.21992	12.62258
56 Toluene	0.66842	0.76617	0.75694	0.77657	0.83539	0.92909				
	0.96139						AVRG		0.81342	12.65344

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		*RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000									
	Level 7									
57 Methyl Butyl Ketone	0.798861	0.980841	1.10824	1.15739	0.906681	0.999291	AVRG		0.996971	12.045991
	1.025521									
58 Dibromochloromethane	0.656311	0.728311	0.695721	0.71409	0.716351	0.800871	AVRG		0.733781	8.054731
	0.824811									
59 1,2-Dibromoethane	0.840851	1.010941	0.904391	0.859251	0.846681	0.944291	AVRG		0.914591	7.727141
	0.995741									
60 Tetrachloroethene	0.822121	0.809491	0.842451	0.898981	0.961961	1.059131	AVRG		0.930461	13.032711
	1.119061									
62 Chlorobenzene	0.505231	0.606181	0.618211	0.646751	0.670141	0.739251	AVRG		0.648081	12.971371
	0.750781									
63 Ethyl Benzene	0.293661	0.356811	0.360711	0.365631	0.384611	0.433791	AVRG		0.377971	13.849801<
	0.450611									
64 m&p-Xylene	0.397321	0.435841	0.417311	0.444741	0.461941	0.520791	AVRG		0.458931	11.188051
	0.534561									

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
65 Styrene	0.60663 0.86457	0.74216	0.76225	0.70395	0.73916	0.84214					
							AVRG		0.75155		11.47221
66 Bromoform	0.63168 0.83595	0.69876	0.69979	0.68427	0.70145	0.79391					
							AVRG		0.72063		9.67537
67 o-Xylene	0.34083 0.54104	0.39974	0.40399	0.43031	0.45641	0.51734					
							AVRG		0.44138		15.83025
68 1,1,2,2-Tetrachloroethane	0.56698 0.79820	0.61250	0.63138	0.66240	0.70997	0.78678					
							AVRG		0.68117		12.89120
69 Isopropylbenzene	0.33492 0.41559	0.30970	0.32453	0.33331	0.36077	0.40424					
							AVRG		0.35472		11.49865
70 N-Propylbenzene	0.29999 0.35223	0.29051	0.28952	0.29155	0.30373	0.34755					
							AVRG		0.31073		8.78360
71 4-Ethyltoluene	0.32813 0.45136	0.36293	0.35548	0.35663	0.37134	0.41615					
							AVRG		0.37743		11.11432

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
72 1,3,5-Trimethylbenzene	0.27501	0.33611	0.35672	0.36172	0.39890	0.43913				
	0.44110						AVRG		0.37310	15.86840
73 Tert-Butyl Benzene	0.32844	0.39182	0.38978	0.39959	0.44048	0.49927				
	0.51809						AVRG		0.42392	15.74325
74 1,2,4-Trimethylbenzene	0.37504	0.36333	0.37042	0.38229	0.42509	0.48950				
	0.51036						AVRG		0.41658	14.55330
75 Sec- Butylbenzene	0.32314	0.34729	0.29641	0.29648	0.33004	0.37954				
	0.39709						AVRG		0.33857	11.46401
76 1,3-Dichlorobenzene	0.54152	0.62747	0.64023	0.65373	0.68639	0.76267				
	0.81678						AVRG		0.67554	13.46626
78 Benzyl Chloride	0.53227	0.66443	0.66856	0.60947	0.52596	0.59022				
	0.59121						AVRG		0.59745	9.45326
79 1,4-Dichlorobenzene	0.47629	0.54975	0.61391	0.65225	0.67487	0.75189				
	0.78511						AVRG		0.64344	16.84464

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
80 p-Isopropyltoluene	0.38780 0.46657	0.44928	0.47896	0.39454	0.40226	0.41225	AVRG		0.42738		8.63958
81 1,2,3-Trimethylbenzene	0.41106 0.52974	0.41514	0.39371	0.38720	0.44142	0.48597	AVRG		0.43775		11.98626
82 1,2-Dichlorobenzene	0.68073 0.79367	0.77384	0.71387	0.70008	0.71775	0.76858	AVRG		0.73550		5.81761
83 N-Butylbenzene	0.44393 0.49322	0.49763	0.52036	0.53521	0.43586	0.46186	AVRG		0.48401		7.83485
84 1,2,4-Trichlorobenzene	1.23173 ++++	1.40298	1.49432	1.48810	1.19544	1.21704	AVRG		1.33827		10.43116
85 Naphthalene	0.62669 ++++	0.78134	0.82725	0.82692	0.65341	0.66415	AVRG		0.72996		12.60993
86 Hexachlorobutadiene	0.62004 ++++	0.65446	0.77172	0.80364	1.06793	1.18243	AVRG		0.85004		26.69204

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									

\$ 28 Hexane-d14 (S)	2.02664	2.15313	2.10830	2.16193	2.15686	2.12256				
	2.04058						AVRG		2.11000	2.64452

\$ 54 Toluene-d8 (S)	1.11151	1.09944	1.06990	1.06759	1.03022	0.99301				
	0.96396						AVRG		1.04795	5.21865

\$ 77 1,4-dichlorobenzene-d4 (S)	2.05679	2.09810	2.25577	2.05607	1.91045	2.23144				
	2.25415						AVRG		2.12325	6.11812

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259329

Lab File ID: 07101BFB.D

BFB Injection Date: 03/12/2014

Instrument ID: 10AIR0

BFB Injection Time: 11:26

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.96
75	30.00 - 66.00% of mass 95	54.57
96	5.00 - 9.00% of mass 95	6.47
173	Less than 2.00% of mass 174	0.96 (1.18)
174	50.00 - 120.00% of mass 95	81.66
175	4.00 - 9.00% of mass 174	6.09 (7.46)
176	93.00 - 101.00% of mass 174	80.08 (98.07)
177	5.00 - 9.00% of mass 176	5.02 (6.27)

1 - Value is %mass 174

2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS for HBN 289158 [AIR/	1638294	07103_19645.D	03/12/2014	12:31
2	CCV	CCV	07103.D	03/12/2014	12:31
3	LCS (LCS)	LCS	07103_LCS.D	03/12/2014	12:31
4	BLANK for HBN 289158 [AI	1638293	07105_19645.D	03/12/2014	13:49
5	BLANK (BLK)	BLANK	07105.D	03/12/2014	13:49
6	Ambient(1633318DUP)	1638565-DUP	07113.D	03/12/2014	17:40
7	IA-151-VLS-2	10259329005	07127.D	03/13/2014	00:29
8	IA-152-VLS-2	10259329004	07128.D	03/13/2014	00:58
9	IA-148-VLS-2	10259329003	07129.D	03/13/2014	01:27
10	IA-DUP1-VLS-2	10259329002	07131.D	03/13/2014	02:28
11	IA-147-VLS-2	10259329001	07132.D	03/13/2014	03:00

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07103.D
Report Date: 12-Mar-2014 12:01

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.04583	1.71863	1.71863	0.010	-15.99313	30.00000	Averaged
2 Propylene	5.43647	4.74300	4.74300	0.010	-12.75579	30.00000	Averaged
3 Dichlorodifluoromethane	0.92694	0.79182	0.79182	0.010	-14.57651	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.14938	0.99641	0.99641	0.010	-13.30893	30.00000	Averaged
5 Chloromethane	3.25840	2.79458	2.79458	0.010	-14.23462	30.00000	Averaged
6 Vinyl chloride	3.25602	2.86612	2.86612	0.010	-11.97463	30.00000	Averaged
7 1,3-Butadiene	4.84187	4.18665	4.18665	0.010	-13.53241	30.00000	Averaged
8 Bromomethane	3.14144	2.75160	2.75160	0.010	-12.40978	30.00000	Averaged
9 Chloroethane	7.07477	6.16663	6.16663	0.010	-12.83632	30.00000	Averaged
10 Ethanol	9.17462	7.54701	7.54701	0.010	-17.74030	30.00000	Averaged
11 Vinyl Bromide	3.20252	2.74117	2.74117	0.010	-14.40570	30.00000	Averaged
12 Isopentane	3.22421	3.06799	3.06799	0.010	-4.84516	30.00000	Averaged
13 Acrolein	14.02424	10.20427	10.20427	0.010	-27.23836	30.00000	Averaged
14 Trichlorofluoromethane	0.88952	0.76692	0.76692	0.010	-13.78203	30.00000	Averaged
15 Acetone	1.91867	1.68060	1.68060	0.010	-12.40801	30.00000	Averaged
16 Isopropyl Alcohol	2.26259	1.85825	1.85825	0.010	-17.87090	30.00000	Averaged
17 Acrylonitrile	6.49661	4.88065	4.88065	0.010	-24.87385	30.00000	Averaged
18 1,1-Dichloroethene	2.04749	1.73115	1.73115	0.010	-15.45018	30.00000	Averaged
19 Tert Butyl Alcohol (TBA)	1.39008	1.17746	1.17746	0.100	-15.29579	30.00000	Averaged
20 Freon 113	1.60200	1.41347	1.41347	0.010	-11.76874	30.00000	Averaged
21 Methylene chloride	3.10202	2.73071	2.73071	0.010	-11.97000	30.00000	Averaged
22 Allyl Chloride	8.17455	6.25124	6.25124	0.010	-23.52808	30.00000	Averaged
23 Carbon Disulfide	1.17065	1.02193	1.02193	0.010	-12.70390	30.00000	Averaged
24 trans-1,2-dichloroethene	3.54599	2.84456	2.84456	0.010	-19.78092	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.00829	0.87525	0.87525	0.300	-13.19444	30.00000	Averaged
26 Vinyl Acetate	1.64083	1.16082	1.16082	0.010	-29.25403	30.00000	Averaged
27 1,1-Dichloroethane	1.67162	1.45243	1.45243	0.010	-13.11230	30.00000	Averaged
28 Hexane-d14(S)	2.11000	2.12440	2.12440	0.200	0.68239	30.00000	Averaged
29 Methyl Ethyl Ketone	7.56219	5.90680	5.90680	0.010	-21.89045	30.00000	Averaged
30 Di-isopropyl Ether	1.10882	0.99174	0.99174	0.010	-10.55908	30.00000	Averaged
31 n-Hexane	2.21062	1.91924	1.91924	0.010	-13.18111	30.00000	Averaged
32 Ethyl Acetate	1.73354	1.32905	1.32905	0.010	-23.33300	30.00000	Averaged
33 cis-1,2-Dichloroethene	3.33210	2.72239	2.72239	0.010	-18.29799	30.00000	Averaged
34 Ethyl Tert-Butyl Ether	0.94808	0.81231	0.81231	0.010	-14.32106	30.00000	Averaged
35 Chloroform	1.25787	1.06731	1.06731	0.010	-15.14917	30.00000	Averaged
36 Tetrahydrofuran	3.19526	2.72344	2.72344	0.010	-14.76630	30.00000	Averaged
37 1,1,1-Trichloroethane	1.09721	0.94033	0.94033	0.010	-14.29764	30.00000	Averaged
38 1,2-Dichloroethane	1.66769	1.35984	1.35984	0.010	-18.45985	30.00000	Averaged
39 Benzene	1.04478	0.91289	0.91289	0.300	-12.62318	30.00000	Averaged
40 Carbon tetrachloride	1.13308	0.95237	0.95237	0.010	-15.94823	30.00000	Averaged
41 Cyclohexane	2.16499	2.10417	2.10417	0.010	-2.80907	30.00000	Averaged
42 Tert Amyl Methyl Ether	0.88875	0.83968	0.83968	0.010	-5.52145	30.00000	Averaged

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
144 2,2,4-Trimethylpentane	0.67258	0.61497	0.61497	0.010	-8.56543	30.00000	Averaged
145 Heptane	2.08863	1.75894	1.75894	0.010	-15.78491	30.00000	Averaged
146 1,2-Dichloropropane	2.83988	2.49950	2.49950	0.010	-11.98595	30.00000	Averaged
147 Trichloroethene	2.33270	1.98344	1.98344	0.010	-14.97242	30.00000	Averaged
148 1,4-Dioxane	4.81538	4.41680	4.41680	0.010	-8.27729	30.00000	Averaged
149 Bromodichloromethane	1.12108	0.93049	0.93049	0.010	-17.00064	30.00000	Averaged
150 Methylcyclohexane	4.10367	3.59795	3.59795	0.010	-12.32339	30.00000	Averaged
151 Methyl Isobutyl Ketone	1.57549	1.19620	1.19620	0.010	-24.07451	30.00000	Averaged
152 cis-1,3-Dichloropropene	1.90153	1.41279	1.41279	0.010	-25.70256	30.00000	Averaged
153 trans-1,3-Dichloropropene	10.00000	11.83003	1.29764	0.010	18.30032	30.00000	Linear
154 Toluene-d8 (S)	1.04795	1.07305	1.07305	0.200	2.39544	30.00000	Averaged
155 1,1,2-Trichloroethane	2.21992	2.02772	2.02772	0.010	-8.65778	30.00000	Averaged
156 Toluene	0.81342	0.73695	0.73695	0.300	-9.40168	30.00000	Averaged
157 Methyl Butyl Ketone	0.99697	0.70902	0.70902	0.010	-28.88288	30.00000	Averaged
158 Dibromochloromethane	0.73378	0.56289	0.56289	0.010	-23.28953	30.00000	Averaged
159 1,2-Dibromoethane	0.91459	0.66738	0.66738	0.010	-27.02909	30.00000	Averaged
160 Tetrachloroethene	0.93046	0.76930	0.76930	0.010	-17.32003	30.00000	Averaged
162 Chlorobenzene	0.64808	0.54028	0.54028	0.010	-16.63394	30.00000	Averaged
163 Ethyl Benzene	0.37797	0.30075	0.30075	0.300	-20.43056	30.00000	Averaged
164 m&p-Xylene	0.45893	0.36348	0.36348	0.300	-20.79814	30.00000	Averaged
165 Styrene	0.75155	0.58777	0.58777	0.010	-21.79210	30.00000	Averaged
166 Bromoform	0.72083	0.55624	0.55624	0.010	-22.83282	30.00000	Averaged
167 o-Xylene	0.44138	0.36262	0.36262	0.300	-17.84393	30.00000	Averaged
168 1,1,2,2-Tetrachloroethane	0.68117	0.56436	0.56436	0.010	-17.14873	30.00000	Averaged
169 Isopropylbenzene	0.35472	0.28596	0.28596	0.010	-19.38580	30.00000	Averaged
170 N-Propylbenzene	0.31073	0.24608	0.24608	0.010	-20.80384	30.00000	Averaged
171 4-Ethyltoluene	0.37743	0.29947	0.29947	0.010	-20.65507	30.00000	Averaged
172 1,3,5-Trimethylbenzene	0.37310	0.32112	0.32112	0.010	-13.93209	30.00000	Averaged
173 Tert-Butyl Benzene	0.42392	0.35545	0.35545	0.010	-16.15188	30.00000	Averaged
174 1,2,4-Trimethylbenzene	0.41658	0.34132	0.34132	0.010	-18.06515	30.00000	Averaged
175 Sec- Butylbenzene	0.33857	0.26509	0.26509	0.010	-21.70411	30.00000	Averaged
176 1,3-Dichlorobenzene	0.67554	0.55119	0.55119	0.010	-18.40801	30.00000	Averaged
177 1,4-dichlorobenzene-d4 (S)	2.12325	2.33284	2.33284	0.200	9.87102	30.00000	Averaged
178 Benzyl Chloride	0.59745	0.41095	0.41095	0.010	-31.21545	30.00000	Averaged <-
179 1,4-Dichlorobenzene	0.64344	0.54903	0.54903	0.010	-14.67186	30.00000	Averaged
180 p-Isopropyltoluene	0.42738	0.31866	0.31866	0.010	-25.43747	30.00000	Averaged
181 1,2,3-Trimethylbenzene	0.43775	0.35225	0.35225	0.010	-19.53176	30.00000	Averaged
182 1,2-Dichlorobenzene	0.73550	0.56661	0.56661	0.010	-22.96269	30.00000	Averaged
183 N-Butylbenzene	0.48401	0.33283	0.33283	0.010	-31.23431	30.00000	Averaged <-
184 1,2,4-Trichlorobenzene	1.33827	0.88836	0.88836	0.010	-33.61893	30.00000	Averaged <-
185 Naphthalene	0.72996	0.49437	0.49437	0.010	-32.27456	30.00000	Averaged <-
186 Hexachlorobutadiene	0.85004	0.80766	0.80766	0.010	-4.98478	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07103.D
Report Date: 12-Mar-2014 12:01

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

Average %D / Drift Results.
=====
Calculated Average %D/Drift = 16.77426
Maximum Average %D/Drift = 30.00000
* Passed Average %D/Drift Test.

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259329

Lab File ID: 07108BFB.D

BFB Injection Date: 03/12/2014

Instrument ID: 10AIRD

BFB Injection Time: 14:08

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.00
75	30.00 - 66.00% of mass 95	57.87
96	5.00 - 9.00% of mass 95	6.44
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	94.75
175	4.00 - 9.00% of mass 174	7.31 (7.71)
176	93.00 - 101.00% of mass 174	92.10 (97.21)
177	5.00 - 9.00% of mass 176	5.49 (5.96)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	07109.D	03/12/2014	14:36
2	CAL2	CAL2	07110.D	03/12/2014	15:04
3	CAL3	CAL3	07111.D	03/12/2014	15:32
4	CAL4	CAL4	07112.D	03/12/2014	15:59
5	CAL5	CAL5	07113.D	03/12/2014	16:27
6	CAL6	CAL6	07114.D	03/12/2014	16:56
7	ICVADD (LCS)	ICVADD	07116.D	03/12/2014	17:51
8	ICV (LCS)	ICV	07117.D	03/12/2014	18:19
9	LCS for HBN 289212 [AIR/	1638489	07118L.D	03/12/2014	18:46
10	BLANK for HBN 289212 [AI	1638488	07121L.D	03/12/2014	20:09
11	IA-146-VLS-2	10259329008	07123.D	03/12/2014	21:06
12	IA-149-VLS-2	10259329006	07124.D	03/12/2014	21:34
13	IA-150-VLS-2	10259329007	07125.D	03/12/2014	22:03

Report Date : 13-Mar-2014 11:19

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\031214.b\07109.d
 Level 2: \\192.168.10.12\chem\10airD.i\031214.b\07110.d
 Level 3: \\192.168.10.12\chem\10airD.i\031214.b\07111.d
 Level 4: \\192.168.10.12\chem\10airD.i\031214.b\07112.d
 Level 5: \\192.168.10.12\chem\10airD.i\031214.b\07113.d
 Level 6: \\192.168.10.12\chem\10airD.i\031214.b\07114.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	1.84707	2.20998	2.08707	2.38311	2.65662	2.59098	AVRG		2.29581		13.45696
2 Propylene	8.30420	10.33282	9.03483	7.10137	7.42845	6.97995	AVRG		8.19694		15.95078
3 Dichlorodifluoromethane	1.11783	1.07668	1.10555	0.92829	1.04706	1.16498	AVRG		1.07373		7.58585
4 Dichlorotetrafluoroethane	1.13666	1.26817	1.26495	1.09100	1.22570	1.20808	AVRG		1.19909		5.95336
5 Chloromethane	3.99438	4.61963	4.18383	3.64123	3.99128	3.89205	AVRG		4.05373		8.11362
6 Vinyl chloride	3.89964	4.88640	4.60966	3.92104	4.19250	4.07899	AVRG		4.26509		9.37421
7 1,3-Butadiene	5.84568	7.72397	7.53790	6.27815	6.73700	6.57185	AVRG		6.78243		10.70426
8 Bromomethane	3.85148	3.70757	3.80127	3.16512	3.37792	3.22720	AVRG		3.52176		8.57516
9 Chloroethane	9.58989	9.74752	9.91081	8.42077	8.98106	8.83494	AVRG		9.24750		6.36433
10 Ethanol	3.89796	5.82756	9.93536	7.64804	8.49662	8.16434	AVRG		7.32832		29.25557
11 Vinyl Bromide	3.81895	3.73543	3.90116	3.21578	3.35402	3.28417	AVRG		3.55175		8.46051
12 Isopentane	4.15019	5.61721	5.08509	4.26655	4.60957	4.50317	AVRG		4.70530		11.74291
13 Trichlorofluoromethane	0.97860	1.05490	1.05080	0.90657	1.02263	1.04827	AVRG		1.01030		5.76965
14 Acrolein	11.00155	19.36844	11.84109	12.78597	13.21486	12.77064	AVRG		13.49709		22.11707

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	12855	17620	59374	385066	821697	1299436	LINR	-0.03985	2.45705		0.99952
16 Isopropyl Alcohol	2522	6197	27370	348129	710045	1181465	LINR	0.00546	2.68998		0.99781
17 1,1-Dichloroethene	2.89663	2.83261	2.53167	2.13799	2.43318	2.38891	AVRG		2.53683		11.26954
18 Tert Butyl Alcohol	2.01544	2.01355	1.97750	1.60447	1.85244	1.69899	AVRG		1.86040		9.39724
19 Acrylonitrile	798	1962	11027	157583	326134	544552	LINR	0.01425	5.82725		0.99787
20 Freon 113	1.81592	1.81395	1.86800	1.62128	1.72976	1.65941	AVRG		1.75138		5.56711
21 Methylene chloride	++++	11007	37026	271086	601613	948282	LINR	-0.02453	3.35108		0.99976
22 Allyl Chloride	12.56010	9.99243	9.29961	8.09682	7.86363	7.60875	AVRG		9.23689		20.22778
23 Carbon Disulfide	1.21729	1.27786	1.37447	1.21500	1.17409	1.16213	AVRG		1.23681		6.36660
24 trans-1,2-dichloroethene	2193	4083	20952	267742	598892	914376	LINR	0.00097	3.40156		0.99980
25 Methyl Tert Butyl Ether	5391	11416	58411	735328	1636774	2492669	LINR	-0.00092	1.24721		0.99973
26 Vinyl Acetate	3994	8348	44040	559546	1246062	1921527	LINR	0.00314	1.62242		0.99988
27 1,1-Dichloroethane	2.43951	2.35852	2.23621	1.96824	2.06167	2.07531	AVRG		2.18991		8.45938
29 Methyl Ethyl Ketone	8.61264	10.67807	9.92530	8.86593	8.41578	8.57651	AVRG		9.17904		9.94729
30 n-Hexane	3.37310	3.48926	3.72236	3.14871	3.07110	3.21794	AVRG		3.33708		7.25803
31 Di-isopropyl Ether	1.64274	1.81782	1.69669	1.46101	1.42911	1.38956	AVRG		1.57282		10.90150
32 cis-1,2-Dichloroethene	2137	3858	19949	274310	578513	947258	LINR	0.01062	3.33737		0.99876
33 Ethyl Acetate	3824	7381	38812	495896	1038850	1706192	LINR	0.00822	1.85579		0.99861
34 Chloroform	1.37666	1.42703	1.45533	1.24153	1.35690	1.33504	AVRG		1.36541		5.51478
35 Ethyl Tert-Butyl Ether	5101	11163	56108	689344	1496577	2432017	LINR	0.01121	1.29833		3.99925
36 Tetrahydrofuran	5.26997	7.17005	6.09059	4.46509	4.75097	4.29754	AVRG		5.34070		20.70947
37 1,1,1-Trichloroethane	1.50495	1.40673	1.38469	1.11945	1.25944	1.25609	AVRG		1.32189		10.36522

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.96892	2.01016	1.97100	1.69113	1.87298	1.88399	AVRG		1.89970		6.07242
39 Benzene	1.43681	1.55608	1.46339	1.12407	1.19846	1.12510	AVRG		1.31732		14.44489
40 Carbon tetrachloride	1.31309	1.38990	1.37672	1.10581	1.28897	1.32943	AVRG		1.30064		7.90208
41 Cyclohexane	1838	3775	22962	303249	634718	1021012	LINR	0.00424	3.08391		0.99907
42 Tert Amyl Methyl Ether	17758	24679	68807	755422	1603988	2554497	LINR	-0.01200	1.23815		0.99944
44 2,2,4-Trimethylpentane	7224	14397	77193	963317	1984213	3297749	LINR	0.00753	0.96317		0.99800
45 Heptane	2778	4463	24577	341314	717642	1123468	LINR	-0.00219	2.78458		0.99927
46 1,2-Dichloropropane	1934	4268	20270	275121	582731	942091	LINR	0.00746	3.34645		0.99912
47 Trichloroethene	3.56455	3.49608	3.46217	2.62209	2.74872	2.67422	AVRG		3.09464		14.71455
48 Bromodichloromethane	1.35196	1.32439	1.34149	1.07629	1.16319	1.18352	AVRG		1.24014		9.25368
49 1,4-Dioxane	7.06505	8.16071	7.47531	5.51964	5.64036	5.41685	AVRG		6.54632		17.93051
50 Methylcyclohexane	1065	2517	13234	165262	372185	578677	LINR	0.00739	5.39751		0.99996
51 Methyl Isobutyl Ketone	2926	6431	36497	502300	1073067	1712543	LINR	0.00711	1.83404		0.99943
52 cis-1,3-Dichloropropene	3361	7460	35563	496474	1064359	1720174	LINR	0.01066	1.83165		0.99924
53 trans-1,3-Dichloropropene	3833	6222	38146	572995	1217189	1863188	LINR	-0.00355	1.66767		0.99912
55 Toluene	8089	15225	76878	1049359	2307764	3573129	LINR	0.00329	0.87292		0.99980
56 1,1,2-Trichloroethane	2.79977	3.26220	3.10938	2.34994	2.41284	2.35750	AVRG		2.71527		14.86457
57 Methyl Butyl Ketone	3115	5648	36044	510936	1076702	1666729	LINR	0.01333	0.99805		0.99982
58 Dibromochloromethane	5079	10721	52406	733694	1495682	2389620	LINR	0.01047	0.70854		0.99932
59 1,2-Dibromoethane	1.03870	0.98439	0.98233	0.81122	0.79994	0.76810	AVRG		0.89744		13.03189
60 Tetrachloroethene	1.09891	1.11322	1.08591	0.91076	0.86975	0.84570	AVRG		0.98738		12.63046
62 Chlorobenzene	0.79863	0.83831	0.81353	0.67409	0.64687	0.63561	AVRG		0.73451		12.51402

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	8798	16706	102814	1402365	3086160	4707341	LINR	0.01331	0.35534		0.99993
64 m,p-Xylene	6914	14151	81094	1120347	2355902	3705219	LINR	0.01289	0.45498		0.99976
65 Bromoform	5717	10782	56975	859792	1842792	2807865	LINR	0.00977	0.59533		0.99993
66 Styrene	3983	8138	51055	787872	1655243	2606991	LINR	0.01655	0.64594		0.99972
67 o-Xylene	7548	14271	85734	1188529	2456161	3804048	LINR	0.00540	0.44165		0.99983
68 1,1,2,2-Tetrachloroethane	0.81657	0.89467	0.81911	0.63587	0.64088	0.62524	AVRG		0.73873		16.00246
69 Isopropylbenzene	10320	19216	103260	1451853	3084217	4734953	LINR	0.00818	0.35399		0.99996
70 N-Propylbenzene	10447	20932	124461	1825752	3803407	5981173	LINR	0.01285	0.28167		0.99973
71 4-Ethyltoluene	++++	0.60445	0.48867	0.36975	0.37197	0.35774	AVRG		0.43852		24.38335
72 1,3,5-Trimethylbenzene	6564	14286	88734	1224789	2573268	4072084	LINR	0.01494	0.41449		0.99965
73 Tert-Butyl Benzene	5720	12925	79033	1120494	2356681	3694867	LINR	0.01334	0.45568		0.99980
74 1,2,4-Trimethylbenzene	6901	14815	84216	1217443	2540474	3980669	LINR	0.01167	0.42295		0.99978
75 1,3-Dichlorobenzene	++++	0.98955	0.86971	0.65511	0.65965	0.64347	AVRG		0.76350		20.63877
76 Sec- Butylbenzene	8233	18059	115499	1654994	3497609	5384553	LINR	0.00976	0.31127		0.99995
78 Benzyl Chloride	5460	10465	60380	1025289	2189993	3464827	QUAD	-0.02466	1.93992	0.04194	0.99985
79 1,4-Dichlorobenzene	++++	0.94318	0.89739	0.67009	0.67251	0.65124	AVRG		0.76688		18.41364
80 p-Isopropyltoluene	++++	0.69177	0.52105	0.41954	0.40475	0.40421	AVRG		0.48826		25.34366
81 1,2,3-Trimethylbenzene	6736	14861	80603	1109030	2388977	3649308	LINR	0.00934	0.45871		0.99997
82 1,2-Dichlorobenzene	4490	8618	46991	696705	1453901	2352537	LINR	0.02065	0.72091		0.99901
83 N-Butylbenzene	6331	15037	94132	1364510	2885118	4413147	LINR	0.00842	0.37915		0.99993
84 1,2,4-Trichlorobenzene	3603	7124	37327	615589	1357627	2122357	QUAD	-0.01725	1.19155	0.02576	0.99994
85 Naphthalene	4793	8564	57643	960782	2102178	3457455	QUAD	-0.01833	1.72712	0.11020	0.99980

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	or R^2
86 Hexachlorocyclopentadiene	4667	8662	46356	621041	1288178	2006115	LTNR	0.00597	0.83912		0.99983
\$ 28 Hexane-d14 (S)	2.48646	2.25498	2.26576	2.45626	2.27358	2.47599	AVRG		2.36884		4.83610
\$ 54 Toluene-d8 (S)	1.18425	1.16663	1.19488	1.14030	1.14662	1.19130	AVRG		1.17066		1.98980
\$ 77 1,4-dichlorobenzene-d4 (S)	1.99059	1.94186	1.85306	1.94464	1.81821	1.80511	AVRG		1.89225		4.05846

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Average %RSD Results.	
Calculated Average %RSD =	10.56159
Maximum Average %RSD =	30.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
Averaged	$\text{Amt} = m1 * \text{Rsp}$	Amount
Linear	$\text{Amt} = b + m1 * \text{Rsp}$	Amount
Quad	$\text{Rsp} = b + m1 * \text{Amt} + m2 * \text{Amt}^2$	Amount

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259329

QC Batch: AIR/19645 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259329001, 10259329002, 10259329003, 10259329004, 10259329005

METHOD BLANK: 1638293 Matrix: Air
Associated Lab Samples: 10259329001, 10259329002, 10259329003, 10259329004, 10259329005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/12/14 13:49	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/12/14 13:49	
1,1-Dichloroethane	ug/m3	ND	0.82	03/12/14 13:49	
1,1-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/12/14 13:49	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/12/14 13:49	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
1,2-Dichloroethane	ug/m3	ND	0.41	03/12/14 13:49	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
Benzene	ug/m3	ND	0.32	03/12/14 13:49	
Carbon tetrachloride	ug/m3	ND	0.64	03/12/14 13:49	
Chlorodifluoromethane	ug/m3	ND	0.20	03/12/14 13:49	
Chloroform	ug/m3	ND	0.99	03/12/14 13:49	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/12/14 13:49	
Ethylbenzene	ug/m3	ND	0.88	03/12/14 13:49	
m&p-Xylene	ug/m3	ND	1.8	03/12/14 13:49	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/12/14 13:49	
Methylene Chloride	ug/m3	ND	0.71	03/12/14 13:49	
Naphthalene	ug/m3	ND	1.1	03/12/14 13:49	
o-Xylene	ug/m3	ND	0.88	03/12/14 13:49	
Tetrachloroethene	ug/m3	ND	0.69	03/12/14 13:49	
Toluene	ug/m3	ND	0.77	03/12/14 13:49	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Trichloroethene	ug/m3	ND	0.55	03/12/14 13:49	
Vinyl chloride	ug/m3	ND	0.26	03/12/14 13:49	

LABORATORY CONTROL SAMPLE: 1638294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	64.7	117	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	60.7	109	72-130	
1,1-Dichloroethane	ug/m3	41.2	47.4	115	68-128	
1,1-Dichloroethene	ug/m3	40.3	47.7	118	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	62.1	124	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	114	151	30-150	CH,L3
1,2,4-Trimethylbenzene	ug/m3	50	61.0	122	71-140	
1,2-Dichloroethane	ug/m3	41.2	50.5	123	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	58.1	116	73-136	
Benzene	ug/m3	32.5	37.2	114	69-134	
Carbon tetrachloride	ug/m3	64	76.1	119	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014

Pace Project No.: 10259329

LABORATORY CONTROL SAMPLE: 1638294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	42.8	119	60-140	
Chloroform	ug/m3	49.7	58.5	118	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	49.3	122	71-135	
Dichlorodifluoromethane	ug/m3	50.3	58.8	117	69-125	
Ethylbenzene	ug/m3	44.2	55.5	126	73-139	
m&p-Xylene	ug/m3	44.2	55.7	126	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	42.2	115	72-132	
Methylene Chloride	ug/m3	35.3	40.1	114	64-134	
Naphthalene	ug/m3	53.3	78.7	148	61-150	CH
o-Xylene	ug/m3	44.2	53.7	122	71-138	
Tetrachloroethene	ug/m3	69	83.4	121	69-136	
Toluene	ug/m3	38.3	42.3	110	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	50.2	125	70-131	
Trichloroethene	ug/m3	54.6	64.2	118	70-135	
Vinyl chloride	ug/m3	26	29.5	114	69-132	

SAMPLE DUPLICATE: 1638565

Parameter	Units	10259301010 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND			25
1,1,2-Trichloroethane	ug/m3	ND	ND			25
1,1-Dichloroethane	ug/m3	ND	ND			25
1,1-Dichloroethene	ug/m3	ND	ND			25
1,2,3-Trimethylbenzene	ug/m3	3.1	3.1	7		25
1,2,4-Trichlorobenzene	ug/m3	ND	ND			25
1,2,4-Trimethylbenzene	ug/m3	9.6	10.1	5		25
1,2-Dichloroethane	ug/m3	4.1	4.4	8		25
1,3,5-Trimethylbenzene	ug/m3	ND	2.9			25
Benzene	ug/m3	25.6	28.0	9		25
Carbon tetrachloride	ug/m3	ND	ND			25
Chlorodifluoromethane	ug/m3	3.1	3.5	12		25
Chloroform	ug/m3	ND	ND			25
cis-1,2-Dichloroethene	ug/m3	ND	ND			25
Dichlorodifluoromethane	ug/m3	2.8	2.6	7		25
Ethylbenzene	ug/m3	2.9	3.0	4		25
m&p-Xylene	ug/m3	11.2	11.5	2		25
Methyl-tert-butyl ether	ug/m3	ND	ND			25
Methylene Chloride	ug/m3	91.4	105	14		25
Naphthalene	ug/m3	4.3	4.6	8		25 CH
o-Xylene	ug/m3	4.7	4.9	5		25
Tetrachloroethene	ug/m3	8.3	8.8	5		25
Toluene	ug/m3	175	183	5		25
trans-1,2-Dichloroethene	ug/m3	ND	ND			25
Trichloroethene	ug/m3	ND	ND			25
Vinyl chloride	ug/m3	ND	ND			25

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259329

QC Batch: AIR/19647 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259329006, 10259329007, 10259329008

METHOD BLANK: 1638488 Matrix: Air
Associated Lab Samples: 10259329006, 10259329007, 10259329008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/12/14 20:09	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/12/14 20:09	
1,1-Dichloroethane	ug/m3	ND	0.82	03/12/14 20:09	
1,1-Dichloroethene	ug/m3	ND	0.81	03/12/14 20:09	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/12/14 20:09	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/12/14 20:09	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 20:09	
1,2-Dichloroethane	ug/m3	ND	0.41	03/12/14 20:09	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 20:09	
Benzene	ug/m3	ND	0.32	03/12/14 20:09	
Carbon tetrachloride	ug/m3	ND	0.64	03/12/14 20:09	
Chlorodifluoromethane	ug/m3	ND	0.20	03/12/14 20:09	
Chloroform	ug/m3	ND	0.99	03/12/14 20:09	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 20:09	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/12/14 20:09	
Ethylbenzene	ug/m3	ND	0.88	03/12/14 20:09	
m&p-Xylene	ug/m3	ND	1.8	03/12/14 20:09	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/12/14 20:09	
Methylene Chloride	ug/m3	ND	0.71	03/12/14 20:09	
Naphthalene	ug/m3	ND	1.1	03/12/14 20:09	
o-Xylene	ug/m3	ND	0.88	03/12/14 20:09	
Tetrachloroethene	ug/m3	ND	0.69	03/12/14 20:09	
Toluene	ug/m3	ND	0.77	03/12/14 20:09	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 20:09	
Trichloroethene	ug/m3	ND	0.55	03/12/14 20:09	
Vinyl chloride	ug/m3	ND	0.26	03/12/14 20:09	

LABORATORY CONTROL SAMPLE: 1638489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	58.1	105	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	59.8	108	72-130	
1,1-Dichloroethane	ug/m3	41.2	44.1	107	68-128	
1,1-Dichloroethene	ug/m3	40.3	44.4	110	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	51.7	103	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	78.1	103	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	51.7	103	71-140	
1,2-Dichloroethane	ug/m3	41.2	42.1	102	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	50.6	101	73-136	
Benzene	ug/m3	32.5	36.7	113	69-134	
Carbon tetrachloride	ug/m3	64	67.3	105	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014

Pace Project No.: 10259329

LABORATORY CONTROL SAMPLE: 1638489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	31.7	88	60-140	
Chloroform	ug/m3	49.7	51.4	104	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	38.8	96	71-135	
Dichlorodifluoromethane	ug/m3	50.3	53.9	107	69-125	
Ethylbenzene	ug/m3	44.2	42.5	96	73-139	
m&p-Xylene	ug/m3	44.2	43.3	98	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	37.8	103	72-132	
Methylene Chloride	ug/m3	35.3	35.6	101	64-134	
Naphthalene	ug/m3	53.3	55.8	105	61-150	
o-Xylene	ug/m3	44.2	44.9	102	71-138	
Tetrachloroethene	ug/m3	69	74.3	108	69-136	
Toluene	ug/m3	38.3	36.4	95	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	41.7	103	70-131	
Trichloroethene	ug/m3	54.6	59.0	108	70-135	
Vinyl chloride	ug/m3	26	27.7	107	69-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259329

Sample: IA-147-VLS-2		Lab ID: 10259329001	Collected: 02/26/14 18:28	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.5 ug/m3		0.55	1.68		03/13/14 03:00	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/13/14 03:00	56-23-5	
Chlorodifluoromethane	5.0 ug/m3		1.2	1.68		03/13/14 03:00	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/13/14 03:00	67-66-3	
Dichlorodifluoromethane	ND ug/m3		1.7	1.68		03/13/14 03:00	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/13/14 03:00	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/13/14 03:00	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 03:00	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 03:00	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/13/14 03:00	156-60-5	
Ethylbenzene	12.1 ug/m3		1.5	1.68		03/13/14 03:00	100-41-4	
Methylene Chloride	483 ug/m3		1.2	1.68		03/13/14 03:00	75-09-2	E
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/13/14 03:00	1634-04-4	
Naphthalene	71.0 ug/m3		1.8	1.68		03/13/14 03:00	91-20-3	CH
Tetrachloroethene	ND ug/m3		1.2	1.68		03/13/14 03:00	127-18-4	
Toluene	120 ug/m3		1.3	1.68		03/13/14 03:00	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/13/14 03:00	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/13/14 03:00	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/13/14 03:00	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/13/14 03:00	79-01-6	
1,2,3-Trimethylbenzene	1.3J ug/m3		1.7	1.68		03/13/14 03:00	526-73-8	
1,2,4-Trimethylbenzene	4.1 ug/m3		1.7	1.68		03/13/14 03:00	95-63-6	
1,3,5-Trimethylbenzene	1.8 ug/m3		1.7	1.68		03/13/14 03:00	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/13/14 03:00	75-01-4	
m&p-Xylene	31.9 ug/m3		3.0	1.68		03/13/14 03:00	179601-23-1	
o-Xylene	8.5 ug/m3		1.5	1.68		03/13/14 03:00	95-47-6	

$$\frac{1374003}{601477} \times 10 \text{ ppbv} \times 1.68 \times 0.81342 = 31.22 \text{ ppbv}$$

$$31.22 \text{ ppbv} \times \frac{92.14 \text{ g/mole}}{24.45 \text{ L/mole}} = 117.6 \text{ ug/m}^3$$

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07132.D
Report Date: 13-Mar-2014 12:16

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\031214.b\07132.D
Lab Smp Id: 10259329001 **IA-147-VLS-2**
Inj Date : 13-MAR-2014 03:00
Operator : JAM Inst ID: 10air0.i
Smp Info :
Misc Info : 19645
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\031214.b\TO15 069-14.m
Meth Date : 13-Mar-2014 08:24 jmasterman Quant Type: ISTD
Cal Date : 10-MAR-2014 13:55 Cal File: 06910.D
Als bottle: 32
Dil Factor: 1.68000
Integrator: HP RTE Compound Sublist: 10258805.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	1.680	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv)	FINAL (ppbv)
1 Chlorodifluoromethane	51			3.479	3.479 (0.570)		24541	0.83472	1.40
3 Dichlorodifluoromethane	85			Compound Not Detected.					
6 Vinyl chloride	62			Compound Not Detected.					
18 1,1-Dichloroethene	61			Compound Not Detected.					
21 Methylene chloride	49			4.459	4.465 (0.731)		1577223	81.3428	137 (AM)
24 trans-1,2-dichloroethene	96			Compound Not Detected.					
25 Methyl Tert Butyl Ether	73			Compound Not Detected.					
27 1,1-Dichloroethane	63			Compound Not Detected.					
\$ 28 Hexane-d14(S)	66			4.949	4.955 (0.811)		281565	9.87739	9.88
33 cis-1,2-Dichloroethene	96			Compound Not Detected.					
35 Chloroform	83			Compound Not Detected.					
37 1,1,1-Trichloroethane	97			Compound Not Detected.					
38 1,2-Dichloroethane	62			Compound Not Detected.					
39 Benzene	78			5.954	5.972 (0.976)		26051	0.45251	0.760 (M)
40 Carbon tetrachloride	117			Compound Not Detected.					
* 43 1,4-Difluorobenzene	114			6.103	6.127 (1.000)		601477	10.0000	
47 Trichloroethene	130			Compound Not Detected.					
\$ 54 Toluene-d8 (S)	98			7.592	7.616 (1.244)		568683	9.90810	9.91
56 Toluene	91			7.672	7.697 (1.257)		1374003	18.5817	31.2 (M)
55 1,1,2-Trichloroethane	97			Compound Not Detected.					
60 Tetrachloroethene	166			Compound Not Detected.					
* 61 Chlorobenzene - d5	117			9.186	9.217 (1.000)		359198	10.0000	
63 Ethyl Benzene	91			9.471	9.508 (1.031)		154578	1.62658	2.73
64 m&p-Xylene	91			9.614	9.651 (1.047)		336827	4.30346	7.23

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
49 Bromodichloromethane	1.05595	1.08294	1.05443	1.06525	1.07884	1.21577				
	1.29442						AVRG		1.12108	8.46644
50 Methylcyclohexane	3.95017	4.31106	3.83767	3.90218	4.06432	4.28893				
	4.37133						AVRG		4.10367	5.31511
51 Methyl Isobutyl Ketone	1.32695	1.69501	1.80412	1.76113	1.37132	1.50294				
	1.56699						AVRG		1.57549	11.86929
52 cis-1,3-Dichloropropene	2.12350	2.34341	1.93713	1.83374	1.58892	1.71160				
	1.77241						AVRG		1.90153	13.59314
53 trans-1,3-Dichloropropene	3437	6568	17790	39339	511296	1029022				
	1588396						LTNR	0.00414	1.52974	0.99971
55 1,1,2-Trichloroethane	1.73572	2.11602	2.10729	2.20825	2.29048	2.50852				
	2.57315						AVRG		2.21992	12.62258
56 Toluene	0.66842	0.76617	0.75694	0.77657	0.83539	0.92909				
	0.96139						AVRG		0.81342	12.65344

**Tetra Tech INC****INTERNAL CORRESPONDENCE**

TO: M. MARTIN **DATE:** APRIL 29, 2014
FROM: JOSEPH KALINYAK **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
LOCKHEED MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 10259332

SAMPLES: 33 / Air / VOC

BCK-1-16	BCK-2-16	BCK-3-16	BCK-4-16
IA-015-A-16	IA-018-A-16	IA-075-A-16	IA-076-A-16
IA-079-A-16	IA-081-A-16	IA-093-A-16	IA-094-A-16
IA-108-A-16	IA-117-A-16	IA-118-A-16	IA-136-A-16
IA-138-A-16	IA-DUP3-A-16	SV-015-A-16	SV-018-A-16
SV-075-A-16	SV-076-A-16	SV-079-A-16	SV-081-A-16
SV-093-A-16	SV-094-A-16	SV-108-A-16	SV-117-A-16
SV-118-A-16	SV-136-A-16	SV-138-A-16	SV-DUP3-A-16
SV-DUP4-A-16			

Overview

The sample set for Lockheed Middle River SDG 10259332 consisted of thirty-three (33) soil vapor and indoor air samples, including four (4) blank air samples. The samples were analyzed for a select list of volatile organic compounds (VOC). Three (3) field duplicate sample pairs were associated with this sample delivery group (SDG); IA-DUP3-A-16 / IA-015-A-16, SV-DUP3-A-16 / SV-015-A-16, and SV-DUP4-A-16 / SV-018-A-16.

The sample was collected by Tetra Tech on February 25, 2014 and analyzed by Pace Analytical Services, Inc. The laboratory analyzed the samples in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank/canister blank results, blank spike/blank spike duplicate results, surrogate spike recoveries, internal standard recoveries, field duplicate precision, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major Issues

No major issues were identified.

Minor Issues

- The continuing calibration verification (CCV) percent difference (%D) was greater than the 30% quality control limit for 1,2,4-trichlorobenzene and naphthalene on 03/12/14 @ 12:31.

Affected Samples:

IA-015-A-16 SV-015-A-16 SV-108-A-16

Action: The sample non-detected 1,2,4-trichlorobenzene and naphthalene results were qualified estimated, (UJ).

TO: M. MARTIN
SDG: 10259332

PAGE: 2

- The analyte relative percent differences (RPDs) were greater than the 50% quality control limit for chlorodifluoromethane, methylene chloride, and vinyl chloride for field duplicate sample pair samples SV-DUP3-A-16 / SV-015-A-16.

Affected Samples: SV-DUP3-A-16 / SV-015-A-16

Action: The sample detected and non-detected chlorodifluoromethane, methylene chloride, and vinyl chloride results were qualified estimated, (J) and (UJ), respectively.

- The analyte RPD was greater than the 50% quality control limit for methylene chloride for field duplicate sample pair samples IA-DUP3-A-16 / IA-015-A-16.

Affected Samples: IA-DUP3-A-16 / IA-015-A-16

Action: The sample detected methylene chloride results were qualified estimated, (J).

Additional Comments

Samples were analyzed at various dilutions (multiple dilutions in some cases).

The laboratory control sample (LCS) percent recovery (%R) was greater than the quality control limit for 1,2,4-trichlorobenzene and naphthalene for batch Air/19645.

Affected Samples:

IA-015-A-16 SV-015-A-16 SV-108-A-16

Action: No action was taken as the samples had non-detected 1,2,4-trichlorobenzene and naphthalene results.

The following VOC contaminants were detected in the method blank at the following maximum concentrations as listed below:

<u>Analyte</u>	<u>Maximum Conc. $\mu\text{g}/\text{m}^3$</u>	<u>Action Level $\mu\text{g}/\text{m}^3$</u>
Methylene chloride ⁽¹⁾	0.96	4.80

- ⁽¹⁾ Method blank for batch Air/1640107 affecting samples SV-018-A-16 (dilution 2.02), BCK-2-16 (dilution 1.68), and SV-DUP4-A-16 (dilution 1.74).

An action level of ten times for the common laboratory contaminant methylene chloride has been used to evaluate sample data for blank contamination. Dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. The affected samples were not qualified for methylene chloride method blank contamination.

Background samples BCK-1-16, BCK-2-16, BCK-3-16, and BCK-4-16 had positive VOC detections.

The laboratory package received from the laboratory initially was missing calibration data for an instrument. The laboratory was contacted and the missing information was provided.

The laboratory reported the VOC air result concentrations in units of $\mu\text{g}/\text{m}^3$ and non-detected VOC analyte results to the Reporting Limit (RL).

The laboratory did not initially report detected results less than the reporting limit (RL) and greater than the method detection limit (MDL). All sample result forms were revised to include the detections greater than MDL but less than the RL.

TO: M. MARTIN
SDG: 10259332

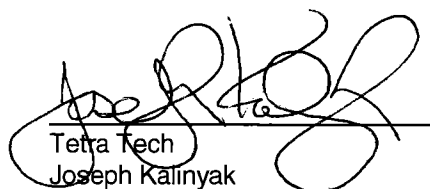
PAGE: 3

EXECUTIVE SUMMARY

Laboratory Performance Issues: Sample analyte results were qualified for CCV %D non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the USEPA Method TO-15 and the USEPA National Functional Guidelines for Organic Data Validation (June 2008).


Tetra Tech
Joseph Kalinyak
Chemist/Data Validator
Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A - Qualified Analytical Results
- Appendix B - Results as Reported by the Laboratory
- Appendix C - 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)

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (i.e., % 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	=	ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
P	=	Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
Q	=	Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	RPD between columns/detectors $> 40\%$ 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 less than sample activity
Z1	=	Tentatively Identified Compound considered presumptively present
Z2	=	Tentatively Identified Compound column bleed

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	BCK-1-16				BCK-2-16	BCK-3-16	BCK-4-16
	LAB_ID	10259332027				10259332028	10259332029	10259332030
	SAMP_DATE	2/25/2014				2/25/2014	2/25/2014	2/25/2014
	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
1,1,1-TRICHLOROETHANE		1.9 U	1.9 U			1.9 U	2.8 U	
1,1,2-TRICHLOROETHANE		0.92 U	0.92 U			0.92 U	1.4 U	
1,1-DICHLOROETHANE		1.4 U	1.4 U			1.4 U	2 U	
1,1-DICHLOROETHENE		1.4 U	1.4 U			1.4 U	2 U	
1,2,3-TRIMETHYLBENZENE		0.34 U	1.4			1.3	0.5 U	
1,2,4-TRICHLOROBENZENE		2.5 U	2.5 U			2.5 U	3.8 U	
1,2,4-TRIMETHYLBENZENE		1.3 J	2.8	P		2.2	2.5 U	
1,2-DICHLOROETHANE		0.69 U	0.69 U			0.69 U	1 U	
1,3,5-TRIMETHYLBENZENE		1.7 U	1.7 U			1.7	2.5 U	
BENZENE		0.93	2.7			0.78	1.1	
CARBON TETRACHLORIDE		1.1 U	1.1 U			1.1 U	1.6 U	
CHLORODIFLUOROMETHANE		10.8	2.7			1.2	1.8	
CHLOROFORM		1.7 U	1.7 U			1.7 U	2.5 U	
CIS-1,2-DICHLOROETHENE		1.4 U	1.4 U			1.4 U	2 U	
DICHLORODIFLUOROMETHANE		2.1	3.4			2.1	2.9	
ETHYLBENZENE		1.2 J	2.6	P		1.5 U	2.2 U	
M+P-XYLENES		1.7 J	5.8	P		1.5 J	4.4 U	
METHYL TERT-BUTYL ETHER		1.2 U	1.2 U			1.2 U	1.8 U	
METHYLENE CHLORIDE		580	23.4			21.2	10	
NAPHTHALENE		1.3 J	3.5	P		1.4 J	2.7 U	
O-XYLENE		1.5 U	2.3			1.5 U	2.2 U	
TETRACHLOROETHENE		1.2 U	1.9			1.2 U	1.7 U	
TOLUENE		8.3	24			1.3 J	1.6 J	P
TRANS-1,2-DICHLOROETHENE		1.4 U	1.4 U			1.4 U	2 U	
TRICHLOROETHENE		0.92 U	4.2			0.92 U	1.4 U	
VINYL CHLORIDE		0.44 U	0.44 U			0.44 U	0.65 U	

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-015-A-16	IA-018-A-16	IA-075-A-16	IA-076-A-16
	LAB_ID	10259332002	10259332022	10259332018	10259332016
	SAMP_DATE	2/25/2014	2/25/2014	2/25/2014	2/25/2014
	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/M3	UG/M3	UG/M3	UG/M3
	PCT_SOLIDS				
	DUP_OF				
PARAMETER					
1,1,1-TRICHLOROETHANE	RESULT	VQL	QLCD	RESULT	VQL
	1.9 U			2.1 U	2.1 U
1,1,2-TRICHLOROETHANE	0.92 U			1 U	1 U
1,1-DICHLOROETHANE	1.4 U			1.5 U	1.5 U
1,1-DICHLOROETHENE	1.4 U			1.5 U	1.5 U
1,2,3-TRIMETHYLBENZENE	1.7 U			0.37 U	0.37 U
1,2,4-TRICHLOROBENZENE	2.5 UJ		C	2.6 U	2.8 U
1,2,4-TRIMETHYLBENZENE	1.7 U			1.9 U	1.9 U
1,2-DICHLOROETHANE	0.69 U			0.77 U	0.77 U
1,3,5-TRIMETHYLBENZENE	1.7 U			1.9 U	1.9 U
BENZENE	1.2			15.9	0.96
CARBON TETRACHLORIDE	1.1 U			1.2 U	1.2 U
CHLORODIFLUOROMETHANE	7.5			3.9	2.9
CHLOROFORM	1.7 U		P	1.9 U	1.9 U
CIS-1,2-DICHLOROETHENE	1.4 U			1.5 U	1.5 U
DICHLORODIFLUOROMETHANE	2.9			2.2	2.1
ETHYLBENZENE	0.77 J		P	0.87 J	0.83 J
M+P-XYLENES	3.3			3 J	2.9 J
METHYL TERT-BUTYL ETHER	1.2 U			1.4 U	1.4 U
METHYLENE CHLORIDE	13.7 J		G	14.7	9.8
NAPHTHALENE	1.8 UJ		C	3.6	3.6
O-XYLENE	1.3 J		P	1.1 J	1.2 J
TETRACHLOROETHENE	1.2 U			1.3 U	1.3 U
TOLUENE	15.6			49.3	54.5
TRANS-1,2-DICHLOROETHENE	1.4 U			1.5 U	1.5 U
TRICHLOROETHENE	0.92 U			1.6	1.9
VINYL CHLORIDE	0.44 U			0.49 U	0.49 U

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-079-A-16	IA-081-A-16	IA-093-A-16	IA-094-A-16	
	LAB_ID	10259332010	10259332012	10259332026	10259332020	
	SAMP_DATE	2/25/2014	2/25/2014	2/25/2014	2/25/2014	
	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
1,1,1-TRICHLOROETHANE		2.1 U			2.9 U	1.9 U
1,1,2-TRICHLOROETHANE		1 U			1.4 U	0.96 U
1,1-DICHLOROETHANE		1.5 U			2.1 U	1.4 U
1,1-DICHLOROETHENE		1.5 U			2.1 U	1.4 U
1,2,3-TRIMETHYLBENZENE		0.37 U			0.52 U	0.35 U
1,2,4-TRICHLOROBENZENE		2.8 U			3.9 U	2.6 U
1,2,4-TRIMETHYLBENZENE		1.9 U			2.6 U	1.7 U
1,2-DICHLOROETHANE		0.77 U			1.1 U	0.71 U
1,3,5-TRIMETHYLBENZENE		1.9 U			2.6 U	1.7 U
BENZENE		0.88			0.98	0.93
CARBON TETRACHLORIDE		1.2 U			1.7 U	1.1 U
CHLORODIFLUOROMETHANE		4.8			4.4	1.7
CHLOROFORM		1.9 U			2.6 U	1.7 U
CIS-1,2-DICHLOROETHENE		1.5 U			2.1 U	1.4 U
DICHLORODIFLUOROMETHANE		2.4			3.1	2.2
ETHYLBENZENE		1.6 U			2.3 U	1.5 U
M+P-XYLENES		2.6 J	P		4.5 U	3.1 U
METHYL TERT-BUTYL ETHER		1.4 U			1.9 U	1.3 U
METHYLENE CHLORIDE		12.7			14	5
NAPHTHALENE		2.1			2.8	2.2
O-XYLENE		0.9 J	P		2.3 U	1.5 U
TETRACHLOROETHENE		1.3 U			1.8 U	1.2 U
TOLUENE		41.8			3	1.6
TRANS-1,2-DICHLOROETHENE		1.5 U			2.1 U	1.4 U
TRICHLOROETHENE		1 U			5.9	0.96 U
VINYL CHLORIDE		0.49 U			0.67 U	0.45 U

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-108-A-16	IA-117-A-16	IA-118-A-16	IA-136-A-16				
	LAB_ID	10259332004	10259332008	10259332006	10259332014				
	SAMP_DATE	2/25/2014	2/25/2014	2/25/2014	2/25/2014				
	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
1,1,1-TRICHLOROETHANE		2 U			2.1 U			1.2 J	P
1,1,2-TRICHLOROETHANE		0.99 U			1 U			0.99 U	
1,1-DICHLOROETHANE		1.5 U			1.5 U			1.5 U	
1,1-DICHLOROETHENE		1.5 U			1.5 U			1.5 U	
1,2,3-TRIMETHYLBENZENE		0.36 U			0.37 U			0.36 U	
1,2,4-TRICHLOROBENZENE		2.7 U			2.8 U			2.7 U	
1,2,4-TRIMETHYLBENZENE		1.8 U			1.9 U			1.8 U	
1,2-DICHLOROETHANE		0.74 U			0.77 U			0.74 U	
1,3,5-TRIMETHYLBENZENE		1.8 U			1.9 U			1.8 U	
BENZENE		0.9			0.89			1	
CARBON TETRACHLORIDE		1.2 U			1.2 U			1.2 U	
CHLORODIFLUOROMETHANE		4			3.5			12.4	
CHLOROFORM		1.8 U			1.9 U			1.8 U	
CIS-1,2-DICHLOROETHENE		1.5 U			1.5 U			1.5 U	
DICHLORODIFLUOROMETHANE		2.2			2			1.9	
ETHYLBENZENE		0.94 J	P		0.84 J	P		1.4 J	P
M+P-XYLENES		3.4			2.7 J	P		5.6	
METHYL TERT-BUTYL ETHER		1.3 U			1.4 U			1.3 U	
METHYLENE CHLORIDE		8.8			8.9			8.8	
NAPHTHALENE		2.2			2.2			2.2	
O-XYLENE		1.3 J	P		0.92 J	P		2	
TETRACHLOROETHENE		1.2 U			1.3 U			1.2 U	
TOLUENE		43.8			67.5			16.5	
TRANS-1,2-DICHLOROETHENE		1.5 U			1.5 U			1.5 U	
TRICHLOROETHENE		0.99 U			1 U			5.6	
VINYL CHLORIDE		0.47 U			0.49 U			0.47 U	

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-138-A-16	IA-DUP3-A-16	SV-015-A-16	SV-018-A-16	
	LAB_ID	10259332024	10259332033	10259332001	10259332021	
	SAMP_DATE	2/25/2014	2/25/2014	2/25/2014	2/25/2014	
	QC_TYPE	NM	NM	NM	NM	
	UNITS	UG/M3	UG/M3	UG/M3	UG/M3	
	PCT_SOLIDS					
DUP_OF	IA-015-A-16					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.9 U	2.8 U		76.3	2.2 U	
1,1,2-TRICHLOROETHANE	1.4 U	1.4 U		1 U	1.1 U	
1,1-DICHLOROETHANE	2.1 U	2 U		14.6	3.1	
1,1-DICHLOROETHENE	2.1 U	2 U		369	230	
1,2,3-TRIMETHYLBENZENE	0.52 U	0.5 U		1.9 U	0.4 U	
1,2,4-TRICHLOROBENZENE	3.9 U	3.8 U		2.8 UJ	3.1 U	
1,2,4-TRIMETHYLBENZENE	2.6 U	2.5 U		1.9 U	1.7 J	P
1,2-DICHLOROETHANE	1.1 U	1 U		0.77 U	0.83 U	
1,3,5-TRIMETHYLBENZENE	2.6 U	2.5 U		1.9 U	2 U	
BENZENE	1.1	1.2		0.64	0.96	
CARBON TETRACHLORIDE	1.7 U	1.6 U		1.2 U	1.3 U	
CHLORODIFLUOROMETHANE	4.8	8.2		5.8 J	8.9	
CHLOROFORM	2.6 U	2.5 U		64.7	1.7 J	P
CIS-1,2-DICHLOROETHENE	2.1 U	2 U		1110	16.3	
DICHLORODIFLUOROMETHANE	3	3.2		2.1	2.2	
ETHYLBENZENE	2.3 U	2.2 U		1.6 U	1.8 U	
M+P-XYLENES	4.5 U	3.4 J	P	3.1 J	2 J	P
METHYL TERT-BUTYL ETHER	1.9 U	1.8 U		1.4 U	1.5 U	
METHYLENE CHLORIDE	17.2	7.4 J	G	31.6 J	19.8	
NAPHTHALENE	3	2.1 J	P	2 UJ	2.8	
O-XYLENE	2.3 U	1.4 J	P	1.6 J	1.8 U	
TETRACHLOROETHENE	1.8 U	1.7 U		1.3 U	1.4 U	
TOLUENE	2.5	16.9		7.1	2.6	
TRANS-1,2-DICHLOROETHENE	2.1 U	2 U		25	1.6 U	
TRICHLOROETHENE	1.6	1.4 U		564	174	
VINYL CHLORIDE	0.67 U	0.65 U		0.49 UJ	G	0.57

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-075-A-16	SV-076-A-16	SV-079-A-16	SV-081-A-16		
	LAB_ID	10259332017	10259332015	10259332009	10259332011		
	SAMP_DATE	2/25/2014	2/25/2014	2/25/2014	2/25/2014		
	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	
1,1,1-TRICHLOROETHANE		1.9 U			2.1		6.4
1,1,2-TRICHLOROETHANE		0.92 U			0.99 U		0.99 U
1,1-DICHLOROETHANE		1.4 U			1.6		1.5 U
1,1-DICHLOROETHENE		1.4 U			2.7		1.5 U
1,2,3-TRIMETHYLBENZENE		59.2			23.1		4140
1,2,4-TRICHLOROBENZENE		2.5 U			2.7 U		2.7 U
1,2,4-TRIMETHYLBENZENE		205			12.3		6780
1,2-DICHLOROETHANE		0.69 U			0.74 U		0.74 U
1,3,5-TRIMETHYLBENZENE		107			1.8 U		3500
BENZENE		0.79			1.1		0.58 U
CARBON TETRACHLORIDE		1.1 U			1.2 U		1.2 U
CHLORODIFLUOROMETHANE		4.1			2.7		25.4
CHLOROFORM		1.7 U		P	9		2.8
CIS-1,2-DICHLOROETHENE		1.4 U			2620		6.1
DICHLORODIFLUOROMETHANE		2.1			1.7 J	P	1.8
ETHYLBENZENE		1.6			2.1		57.9
M+P-XYLENES		9			5.2		480
METHYL TERT-BUTYL ETHER		1.2 U			1.3 U		1.3 U
METHYLENE CHLORIDE		3.1			18.7		15.4
NAPHTHALENE		259			27.9		1.9 U
O-XYLENE		19.7			5.3		228
TETRACHLOROETHENE		1.2 U			14.1		73.8
TOLUENE		7.8			5.9		13.9
TRANS-1,2-DICHLOROETHENE		1.4 U			517		1.5 U
TRICHLOROETHENE		3.1			6090		7.9
VINYL CHLORIDE		0.44 U			0.49 U		0.47 U

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-093-A-16	SV-094-A-16	SV-108-A-16	SV-117-A-16					
	LAB_ID	10259332025	10259332019	10259332003	10259332007					
	SAMP_DATE	2/25/2014	2/25/2014	2/25/2014	2/25/2014					
	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
	1,1,1-TRICHLOROETHANE		3.1 U		2 U		1.9 U		5.1	
	1,1,2-TRICHLOROETHANE		1.6 U		0.99 U		0.96 U		0.99 U	
1,1-DICHLOROETHANE		2.3 U		1.5 U		2.1		1.5 U		
1,1-DICHLOROETHENE		2.3 U		1.5 U		7.7		1.5 U		
1,2,3-TRIMETHYLBENZENE		0.56 U		0.36 U		1.7 U		4.5		
1,2,4-TRICHLOROBENZENE		4.3 U		2.7 U		2.6 UJ	C	2.7 U		
1,2,4-TRIMETHYLBENZENE		2.8 U		1.8 U		1.7 U		5.8		
1,2-DICHLOROETHANE		1.2 U		0.74 U		0.71 U		0.74 U		
1,3,5-TRIMETHYLBENZENE		2.8 U		1.8 U		1.7 U		1.8 U		
BENZENE		1.2		1.1		0.88		0.58 U		
CARBON TETRACHLORIDE		1.8 U		1.2 U		1.1 U		1.2 U		
CHLORODIFLUOROMETHANE		14.6		3.6		12.3		0.8		
CHLOROFORM		2.8 U		1.8 U		1.7 U		1.8 U		
CIS-1,2-DICHLOROETHENE		2.3 U		1.5 U		1.4 U		1.5 U		
DICHLORODIFLUOROMETHANE		3.9		2.3		2.5		1.5 J	P	
ETHYLBENZENE		2.5 U		1.6 U		1.5 U		2.1		
M+P-XYLENES		5 U		3.2 U		2.9 J	P	9.7		
METHYL TERT-BUTYL ETHER		2.1 U		1.3 U		1.3 U		1.3 U		
METHYLENE CHLORIDE		415		59.8		12.4		40.4		
NAPHTHALENE		3.5		2.5		1.9 UJ	C	95.1		
O-XYLENE		2.5 U		1.6 U		1.2 J	P	8.3		
TETRACHLOROETHENE		1.9 U		1.2 U		1.2 U		10.3		
TOLUENE		6.8		2.3		17.3		9.9		
TRANS-1,2-DICHLOROETHENE		2.3 U		1.5 U		1.4 U		1.5 U		
TRICHLOROETHENE		7		0.99 U		0.94 J	P	109		
VINYL CHLORIDE		0.73 U		0.47 U		0.45 U		0.47 U		

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-118-A-16	SV-136-A-16	SV-138-A-16	SV-DUP3-A-16	
	LAB_ID	10259332005	10259332013	10259332023	10259332032	
	SAMP_DATE	2/25/2014	2/25/2014	2/25/2014	2/25/2014	
	QC_TYPE	NM	NM	NM	NM	
	UNITS	UG/M3	UG/M3	UG/M3	UG/M3	
	PCT_SOLIDS					
	DUP_OF				SV-015-A-16	
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	26.2			3.4	3.2 U	112
1,1,2-TRICHLOROETHANE	1 U			1 U	1.6 U	1.5 U
1,1-DICHLOROETHANE	90.3			1.7	2.6	21.6
1,1-DICHLOROETHENE	1670			1.5 U	6.4	473
1,2,3-TRIMETHYLBENZENE	18.1			6.1	0.57 U	0.55 U
1,2,4-TRICHLOROBENZENE	2.8 U			2.8 U	4.3 U	4.2 U
1,2,4-TRIMETHYLBENZENE	34.1			6.8	2.9 U	2.8 U
1,2-DICHLOROETHANE	0.77 U			0.77 U	1.2 U	1.1 U
1,3,5-TRIMETHYLBENZENE	23.2			5.4	2.9 U	2.8 U
BENZENE	1.8			6.7	1.6	0.9 U
CARBON TETRACHLORIDE	1.2 U			1.2 U	1.8 U	1.8 U
CHLORODIFLUOROMETHANE	5.2			0.37 U	9.6	2.6 J G
CHLOROFORM	106			217	2.8 U	93.6
CIS-1,2-DICHLOROETHENE	477			55.2	5.6	1260
DICHLORODIFLUOROMETHANE	2			1.9 U	3.3	2.3 J P
ETHYLBENZENE	27.2			1.7	1.9 J	2.4 U
M+P-XYLENES	156			4.2	6.1	4.9 U
METHYL TERT-BUTYL ETHER	1.4 U			1.4 U	2.1 U	2 U
METHYLENE CHLORIDE	15			13.5	17.5	18.6 J G
NAPHTHALENE	20.7			9.3	23.1	3 U
O-XYLENE	65.2			3.4	1.6 J	1.4 J P
TETRACHLOROETHENE	1.6			15.1	2.7	1.9 U
TOLUENE	3.8			11.7	10.3	4.6
TRANS-1,2-DICHLOROETHENE	18.1			25.3	2.3 U	37.7
TRICHLOROETHENE	5860			91000	80.3	619
VINYL CHLORIDE	0.49 U			0.49 U	0.75 U	1.5 J G

PROJ_NO: 04792 SDG: 10259332 FRACTION: OV MEDIA: AIR	NSAMPLE	SV-DUP4-A-16	
	LAB_ID	10259332034	
	SAMP_DATE	2/25/2014	
	QC_TYPE	NM	
	UNITS	UG/M3	
	PCT_SOLIDS		
	DUP_OF	SV-018-A-16	
PARAMETER			
1,1,1-TRICHLOROETHANE	RESULT	VQL	QLCD
1,1,2-TRICHLOROETHANE		1.9 U	
1,1-DICHLOROETHANE		0.96 U	
1,1-DICHLOROETHENE		3.2	
1,2,3-TRIMETHYLBENZENE		192	
1,2,4-TRICHLOROBENZENE		0.35 U	
1,2,4-TRIMETHYLBENZENE		2.6 U	
1,2,4-TRIMETHYLBENZENE		1.5 J	P
1,2-DICHLOROETHANE		0.71 U	
1,3,5-TRIMETHYLBENZENE		1.4 J	P
BENZENE		0.77	
CARBON TETRACHLORIDE		1.1 U	
CHLORODIFLUOROMETHANE		7.1	
CHLOROFORM		1.4 J	P
CIS-1,2-DICHLOROETHENE		13.7	
DICHLORODIFLUOROMETHANE		1.9	
ETHYLBENZENE		1.5 U	
M+P-XYLENES		1.7 J	P
METHYL TERT-BUTYL ETHER		1.3 U	
METHYLENE CHLORIDE		17.8	
NAPHTHALENE		3.1	
O-XYLENE		1.5 U	
TETRACHLOROETHENE		1.2 U	
TOLUENE		2	
TRANS-1,2-DICHLOROETHENE		1.4 U	
TRICHLOROETHENE		150	
VINYL CHLORIDE		0.59	

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: BCK-1-16		Lab ID: 10259332027	Collected: 02/25/14 15:37	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.93	ug/m3	0.55	1.68		03/15/14 06:14	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/15/14 06:14	56-23-5	
Chlorodifluoromethane	10.8	ug/m3	0.34	1.68		03/15/14 06:14	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/15/14 06:14	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/15/14 06:14	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/15/14 06:14	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/15/14 06:14	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 06:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 06:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 06:14	156-60-5	
Ethylbenzene	1.2J	ug/m3	1.5	1.68		03/15/14 06:14	100-41-4	
Methylene Chloride	580	ug/m3	16.8	23.71		03/18/14 14:34	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/15/14 06:14	1634-04-4	
Naphthalene	1.3J	ug/m3	1.8	1.68		03/15/14 06:14	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/15/14 06:14	127-18-4	
Toluene	8.3	ug/m3	1.3	1.68		03/15/14 06:14	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/15/14 06:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/15/14 06:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/15/14 06:14	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/15/14 06:14	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/15/14 06:14	526-73-8	
1,2,4-Trimethylbenzene	1.3J	ug/m3	1.7	1.68		03/15/14 06:14	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/15/14 06:14	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/15/14 06:14	75-01-4	
m&p-Xylene	1.7J	ug/m3	3.0	1.68		03/15/14 06:14	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/15/14 06:14	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: BCK-2-16		Lab ID: 10259332028	Collected: 02/25/14 15:33	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.7 ug/m3		0.55	1.68		03/15/14 01:54	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/15/14 01:54	56-23-5	
Chlorodifluoromethane	2.7 ug/m3		0.34	1.68		03/15/14 01:54	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/15/14 01:54	67-66-3	
Dichlorodifluoromethane	3.4 ug/m3		1.7	1.68		03/15/14 01:54	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/15/14 01:54	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/15/14 01:54	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/15/14 01:54	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/15/14 01:54	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/15/14 01:54	156-60-5	
Ethylbenzene	2.6 ug/m3		1.5	1.68		03/15/14 01:54	100-41-4	
Methylene Chloride	23.4 ug/m3		1.2	1.68		03/15/14 01:54	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/15/14 01:54	1634-04-4	
Naphthalene	3.5 ug/m3		1.8	1.68		03/15/14 01:54	91-20-3	
Tetrachloroethene	1.9 ug/m3		1.2	1.68		03/15/14 01:54	127-18-4	
Toluene	24.0 ug/m3		1.3	1.68		03/15/14 01:54	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/15/14 01:54	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/15/14 01:54	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/15/14 01:54	79-00-5	
Trichloroethene	4.2 ug/m3		0.92	1.68		03/15/14 01:54	79-01-6	
1,2,3-Trimethylbenzene	1.4 ug/m3		0.34	1.68		03/15/14 01:54	526-73-8	
1,2,4-Trimethylbenzene	2.8 ug/m3		1.7	1.68		03/15/14 01:54	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/15/14 01:54	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/15/14 01:54	75-01-4	
m&p-Xylene	5.8 ug/m3		3.0	1.68		03/15/14 01:54	179601-23-1	
o-Xylene	2.3 ug/m3		1.5	1.68		03/15/14 01:54	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: BCK-3-16		Lab ID: 10259332029	Collected: 02/25/14 15:32	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.78	ug/m3	0.55	1.68		03/15/14 00:56	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/15/14 00:56	56-23-5	
Chlorodifluoromethane	1.2	ug/m3	0.34	1.68		03/15/14 00:56	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/15/14 00:56	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.7	1.68		03/15/14 00:56	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/15/14 00:56	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/15/14 00:56	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 00:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 00:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/15/14 00:56	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/15/14 00:56	100-41-4	
Methylene Chloride	21.2	ug/m3	1.2	1.68		03/18/14 02:28	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/15/14 00:56	1634-04-4	
Naphthalene	1.4J	ug/m3	1.8	1.68		03/15/14 00:56	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/15/14 00:56	127-18-4	
Toluene	1.3J	ug/m3	1.3	1.68		03/15/14 00:56	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/15/14 00:56	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/15/14 00:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/15/14 00:56	79-00-5	
Trichloroethene	ND	ug/m3	0.92	1.68		03/15/14 00:56	79-01-6	
1,2,3-Trimethylbenzene	1.3	ug/m3	0.34	1.68		03/15/14 00:56	526-73-8	
1,2,4-Trimethylbenzene	2.2	ug/m3	1.7	1.68		03/15/14 00:56	95-63-6	
1,3,5-Trimethylbenzene	1.7	ug/m3	1.7	1.68		03/15/14 00:56	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/15/14 00:56	75-01-4	
m&p-Xylene	1.5J	ug/m3	3.0	1.68		03/15/14 00:56	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/15/14 00:56	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: BCK-4-16		Lab ID: 10259332030	Collected: 02/25/14 15:29		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1 ug/m3		0.81	2.49		03/18/14 02:58	71-43-2	
Carbon tetrachloride	ND ug/m3		1.6	2.49		03/18/14 02:58	56-23-5	
Chlorodifluoromethane	1.8 ug/m3		0.50	2.49		03/18/14 02:58	75-45-6	
Chloroform	ND ug/m3		2.5	2.49		03/18/14 02:58	67-66-3	
Dichlorodifluoromethane	2.9 ug/m3		2.5	2.49		03/18/14 02:58	75-71-8	
1,1-Dichloroethane	ND ug/m3		2.0	2.49		03/18/14 02:58	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.0	2.49		03/18/14 02:58	107-06-2	
1,1-Dichloroethene	ND ug/m3		2.0	2.49		03/18/14 02:58	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		2.0	2.49		03/18/14 02:58	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.0	2.49		03/18/14 02:58	156-60-5	
Ethylbenzene	ND ug/m3		2.2	2.49		03/18/14 02:58	100-41-4	
Methylene Chloride	10 ug/m3		1.8	2.49		03/18/14 02:58	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.8	2.49		03/18/14 02:58	1634-04-4	
Naphthalene	ND ug/m3		2.7	2.49		03/18/14 02:58	91-20-3	
Tetrachloroethene	ND ug/m3		1.7	2.49		03/18/14 02:58	127-18-4	
Toluene	1.6J ug/m3		1.9	2.49		03/18/14 02:58	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		3.8	2.49		03/18/14 02:58	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.8	2.49		03/18/14 02:58	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.4	2.49		03/18/14 02:58	79-00-5	
Trichloroethene	ND ug/m3		1.4	2.49		03/18/14 02:58	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.50	2.49		03/18/14 02:58	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.5	2.49		03/18/14 02:58	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.5	2.49		03/18/14 02:58	108-67-8	
Vinyl chloride	ND ug/m3		0.65	2.49		03/18/14 02:58	75-01-4	
m&p-Xylene	ND ug/m3		4.4	2.49		03/18/14 02:58	179601-23-1	
o-Xylene	ND ug/m3		2.2	2.49		03/18/14 02:58	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-015-A-16		Lab ID: 10259332002	Collected: 02/25/14 15:49	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2 ug/m3		0.55	1.68		03/12/14 21:34	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/12/14 21:34	56-23-5	
Chlorodifluoromethane	7.5 ug/m3		1.2	1.68		03/12/14 21:34	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/12/14 21:34	67-66-3	
Dichlorodifluoromethane	2.9 ug/m3		1.7	1.68		03/12/14 21:34	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/12/14 21:34	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/12/14 21:34	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 21:34	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 21:34	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/12/14 21:34	156-60-5	
Ethylbenzene	0.77J ug/m3		1.5	1.68		03/12/14 21:34	100-41-4	
Methylene Chloride	13.7 ug/m3		1.2	1.68		03/12/14 21:34	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/12/14 21:34	1634-04-4	
Naphthalene	ND ug/m3		1.8	1.68		03/12/14 21:34	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/12/14 21:34	127-18-4	
Toluene	15.6 ug/m3		1.3	1.68		03/12/14 21:34	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/12/14 21:34	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/12/14 21:34	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/12/14 21:34	79-00-5	
Trichloroethene	ND ug/m3		0.92	1.68		03/12/14 21:34	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.7	1.68		03/12/14 21:34	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.68		03/12/14 21:34	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/12/14 21:34	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/12/14 21:34	75-01-4	
m&p-Xylene	3.3 ug/m3		3.0	1.68		03/12/14 21:34	179601-23-1	
o-Xylene	1.3J ug/m3		1.5	1.68		03/12/14 21:34	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-018-A-16		Lab ID: 10259332022	Collected: 02/25/14 16:23	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.75	ug/m3	0.57	1.74		03/17/14 23:18	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/17/14 23:18	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.35	1.74		03/17/14 23:18	75-45-6	
Chloroform	1.4J	ug/m3	1.7	1.74		03/17/14 23:18	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.8	1.74		03/17/14 23:18	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.74		03/17/14 23:18	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/17/14 23:18	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.74		03/17/14 23:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/17/14 23:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/17/14 23:18	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/17/14 23:18	100-41-4	
Methylene Chloride	14.4	ug/m3	1.2	1.74		03/17/14 23:18	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/17/14 23:18	1634-04-4	
Naphthalene	2.8	ug/m3	1.9	1.74		03/17/14 23:18	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/17/14 23:18	127-18-4	
Toluene	1.7	ug/m3	1.3	1.74		03/17/14 23:18	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/17/14 23:18	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/17/14 23:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/17/14 23:18	79-00-5	
Trichloroethene	1.0	ug/m3	0.96	1.74		03/17/14 23:18	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/17/14 23:18	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/17/14 23:18	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/17/14 23:18	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/17/14 23:18	75-01-4	
m&p-Xylene	ND	ug/m3	3.1	1.74		03/17/14 23:18	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/17/14 23:18	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-075-A-16		Lab ID: 10259332018	Collected: 02/25/14 16:17	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	15.9	ug/m3	0.61	1.87		03/15/14 00:04	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/15/14 00:04	56-23-5	
Chlorodifluoromethane	3.9	ug/m3	0.37	1.87		03/15/14 00:04	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/15/14 00:04	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.9	1.87		03/15/14 00:04	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/15/14 00:04	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/15/14 00:04	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/15/14 00:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/15/14 00:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/15/14 00:04	156-60-5	
Ethylbenzene	0.87J	ug/m3	1.6	1.87		03/15/14 00:04	100-41-4	
Methylene Chloride	14.7	ug/m3	1.3	1.87		03/15/14 00:04	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/15/14 00:04	1634-04-4	
Naphthalene	3.6	ug/m3	2.0	1.87		03/15/14 00:04	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/15/14 00:04	127-18-4	
Toluene	49.3	ug/m3	1.4	1.87		03/15/14 00:04	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/15/14 00:04	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/15/14 00:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/15/14 00:04	79-00-5	
Trichloroethene	1.6	ug/m3	1.0	1.87		03/15/14 00:04	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/15/14 00:04	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/15/14 00:04	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/15/14 00:04	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/15/14 00:04	75-01-4	
m&p-Xylene	3.0J	ug/m3	3.3	1.87		03/15/14 00:04	179601-23-1	
o-Xylene	1.1J	ug/m3	1.6	1.87		03/15/14 00:04	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-076-A-16		Lab ID: 10259332016	Collected: 02/25/14 16:12	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.96	ug/m3	0.61	1.87		03/14/14 23:05	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 23:05	56-23-5	
Chlorodifluoromethane	2.9	ug/m3	0.37	1.87		03/14/14 23:05	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/14/14 23:05	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.9	1.87		03/14/14 23:05	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 23:05	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 23:05	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 23:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 23:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 23:05	156-60-5	
Ethylbenzene	0.83J	ug/m3	1.6	1.87		03/14/14 23:05	100-41-4	
Methylene Chloride	9.8	ug/m3	1.3	1.87		03/14/14 23:05	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 23:05	1634-04-4	
Naphthalene	3.6	ug/m3	2.0	1.87		03/14/14 23:05	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 23:05	127-18-4	
Toluene	54.5	ug/m3	1.4	1.87		03/14/14 23:05	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 23:05	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 23:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 23:05	79-00-5	
Trichloroethene	1.9	ug/m3	1.0	1.87		03/14/14 23:05	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/14/14 23:05	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 23:05	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 23:05	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 23:05	75-01-4	
m&p-Xylene	2.9J	ug/m3	3.3	1.87		03/14/14 23:05	179601-23-1	
o-Xylene	1.2J	ug/m3	1.6	1.87		03/14/14 23:05	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-079-A-16		Lab ID: 10259332010	Collected: 02/25/14 15:55	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.88	ug/m3	0.61	1.87		03/14/14 20:10	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 20:10	56-23-5	
Chlorodifluoromethane	4.8	ug/m3	0.37	1.87		03/14/14 20:10	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/14/14 20:10	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.9	1.87		03/14/14 20:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 20:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 20:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 20:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 20:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 20:10	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/14/14 20:10	100-41-4	
Methylene Chloride	12.7	ug/m3	1.3	1.87		03/14/14 20:10	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 20:10	1634-04-4	
Naphthalene	2.1	ug/m3	2.0	1.87		03/14/14 20:10	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 20:10	127-18-4	
Toluene	41.8	ug/m3	1.4	1.87		03/14/14 20:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 20:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 20:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 20:10	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/14/14 20:10	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/14/14 20:10	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 20:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 20:10	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 20:10	75-01-4	
m&p-Xylene	2.6J	ug/m3	3.3	1.87		03/14/14 20:10	179601-23-1	
o-Xylene	0.90J	ug/m3	1.6	1.87		03/14/14 20:10	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-081-A-16		Lab ID: 10259332012	Collected: 02/25/14 16:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.4 ug/m3		0.86	2.66		03/17/14 22:44	71-43-2	
Carbon tetrachloride	ND ug/m3		1.7	2.66		03/17/14 22:44	56-23-5	
Chlorodifluoromethane	36.6 ug/m3		0.53	2.66		03/17/14 22:44	75-45-6	
Chloroform	ND ug/m3		2.6	2.66		03/17/14 22:44	67-66-3	
Dichlorodifluoromethane	2.9 ug/m3		2.7	2.66		03/17/14 22:44	75-71-8	
1,1-Dichloroethane	ND ug/m3		2.2	2.66		03/17/14 22:44	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.1	2.66		03/17/14 22:44	107-06-2	
1,1-Dichloroethene	ND ug/m3		2.2	2.66		03/17/14 22:44	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		2.2	2.66		03/17/14 22:44	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.2	2.66		03/17/14 22:44	156-60-5	
Ethylbenzene	36.6 ug/m3		2.3	2.66		03/17/14 22:44	100-41-4	
Methylene Chloride	37.0 ug/m3		1.9	2.66		03/17/14 22:44	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.9	2.66		03/17/14 22:44	1634-04-4	
Naphthalene	3.7 ug/m3		2.8	2.66		03/17/14 22:44	91-20-3	
Tetrachloroethene	ND ug/m3		1.8	2.66		03/17/14 22:44	127-18-4	
Toluene	163 ug/m3		2.0	2.66		03/17/14 22:44	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		4.0	2.66		03/17/14 22:44	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		3.0	2.66		03/17/14 22:44	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.5	2.66		03/17/14 22:44	79-00-5	
Trichloroethene	19.2 ug/m3		1.5	2.66		03/17/14 22:44	79-01-6	
1,2,3-Trimethylbenzene	3.6 ug/m3		0.53	2.66		03/17/14 22:44	526-73-8	
1,2,4-Trimethylbenzene	11.7 ug/m3		2.7	2.66		03/17/14 22:44	95-63-6	
1,3,5-Trimethylbenzene	4.9 ug/m3		2.7	2.66		03/17/14 22:44	108-67-8	
Vinyl chloride	ND ug/m3		0.69	2.66		03/17/14 22:44	75-01-4	
m&p-Xylene	161 ug/m3		4.7	2.66		03/17/14 22:44	179601-23-1	
o-Xylene	48.5 ug/m3		2.3	2.66		03/17/14 22:44	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-093-A-16		Lab ID: 10259332026	Collected: 02/25/14 16:27	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.98 ug/m3		0.84	2.58		03/18/14 01:23	71-43-2	
Carbon tetrachloride	ND ug/m3		1.7	2.58		03/18/14 01:23	56-23-5	
Chlorodifluoromethane	4.4 ug/m3		0.52	2.58		03/18/14 01:23	75-45-6	
Chloroform	ND ug/m3		2.6	2.58		03/18/14 01:23	67-66-3	
Dichlorodifluoromethane	3.1 ug/m3		2.6	2.58		03/18/14 01:23	75-71-8	
1,1-Dichloroethane	ND ug/m3		2.1	2.58		03/18/14 01:23	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.1	2.58		03/18/14 01:23	107-06-2	
1,1-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 01:23	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 01:23	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 01:23	156-60-5	
Ethylbenzene	ND ug/m3		2.3	2.58		03/18/14 01:23	100-41-4	
Methylene Chloride	14.0 ug/m3		1.8	2.58		03/18/14 01:23	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.9	2.58		03/18/14 01:23	1634-04-4	
Naphthalene	2.8 ug/m3		2.8	2.58		03/18/14 01:23	91-20-3	
Tetrachloroethene	ND ug/m3		1.8	2.58		03/18/14 01:23	127-18-4	
Toluene	3.0 ug/m3		2.0	2.58		03/18/14 01:23	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		3.9	2.58		03/18/14 01:23	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.9	2.58		03/18/14 01:23	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.4	2.58		03/18/14 01:23	79-00-5	
Trichloroethene	5.9 ug/m3		1.4	2.58		03/18/14 01:23	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.52	2.58		03/18/14 01:23	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.6	2.58		03/18/14 01:23	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.6	2.58		03/18/14 01:23	108-67-8	
Vinyl chloride	ND ug/m3		0.67	2.58		03/18/14 01:23	75-01-4	
m&p-Xylene	ND ug/m3		4.5	2.58		03/18/14 01:23	179601-23-1	
o-Xylene	ND ug/m3		2.3	2.58		03/18/14 01:23	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-094-A-16		Lab ID: 10259332020	Collected: 02/25/14 16:19	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.93 ug/m3		0.57	1.74		03/15/14 01:37	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.74		03/15/14 01:37	56-23-5	
Chlorodifluoromethane	1.7 ug/m3		0.35	1.74		03/15/14 01:37	75-45-6	
Chloroform	ND ug/m3		1.7	1.74		03/15/14 01:37	67-66-3	
Dichlorodifluoromethane	2.2 ug/m3		1.8	1.74		03/15/14 01:37	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.74		03/15/14 01:37	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.71	1.74		03/15/14 01:37	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.74		03/15/14 01:37	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.74		03/15/14 01:37	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.74		03/15/14 01:37	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.74		03/15/14 01:37	100-41-4	
Methylene Chloride	5.0 ug/m3		1.2	1.74		03/15/14 01:37	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.74		03/15/14 01:37	1634-04-4	
Naphthalene	2.2 ug/m3		1.9	1.74		03/15/14 01:37	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.74		03/15/14 01:37	127-18-4	
Toluene	1.6 ug/m3		1.3	1.74		03/15/14 01:37	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.6	1.74		03/15/14 01:37	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.74		03/15/14 01:37	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.96	1.74		03/15/14 01:37	79-00-5	
Trichloroethene	ND ug/m3		0.96	1.74		03/15/14 01:37	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.35	1.74		03/15/14 01:37	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.74		03/15/14 01:37	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.74		03/15/14 01:37	108-67-8	
Vinyl chloride	ND ug/m3		0.45	1.74		03/15/14 01:37	75-01-4	
m&p-Xylene	ND ug/m3		3.1	1.74		03/15/14 01:37	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.74		03/15/14 01:37	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: IA-108-A-16		Lab ID: 10259332004	Collected: 02/25/14 15:49	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.90	ug/m3	0.58	1.8		03/14/14 17:14	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 17:14	56-23-5	
Chlorodifluoromethane	4.0	ug/m3	0.36	1.8		03/14/14 17:14	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 17:14	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.8	1.8		03/14/14 17:14	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 17:14	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 17:14	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 17:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 17:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 17:14	156-60-5	
Ethylbenzene	0.94J	ug/m3	1.6	1.8		03/14/14 17:14	100-41-4	
Methylene Chloride	8.8	ug/m3	1.3	1.8		03/14/14 17:14	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 17:14	1634-04-4	
Naphthalene	2.2	ug/m3	1.9	1.8		03/14/14 17:14	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/14/14 17:14	127-18-4	
Toluene	43.8	ug/m3	1.4	1.8		03/14/14 17:14	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 17:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/14/14 17:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 17:14	79-00-5	
Trichloroethene	ND	ug/m3	0.99	1.8		03/14/14 17:14	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/14/14 17:14	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 17:14	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 17:14	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 17:14	75-01-4	
m&p-Xylene	3.4	ug/m3	3.2	1.8		03/14/14 17:14	179601-23-1	
o-Xylene	1.3J	ug/m3	1.6	1.8		03/14/14 17:14	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-117-A-16		Lab ID: 10259332008	Collected: 02/25/14 15:53	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.89	ug/m3	0.61	1.87		03/14/14 19:11	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 19:11	56-23-5	
Chlorodifluoromethane	3.5	ug/m3	0.37	1.87		03/14/14 19:11	75-45-6	
Chloroform	ND	ug/m3	1.9	1.87		03/14/14 19:11	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.9	1.87		03/14/14 19:11	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 19:11	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 19:11	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 19:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 19:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 19:11	156-60-5	
Ethylbenzene	0.84J	ug/m3	1.6	1.87		03/14/14 19:11	100-41-4	
Methylene Chloride	8.9	ug/m3	1.3	1.87		03/14/14 19:11	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 19:11	1634-04-4	
Naphthalene	2.2	ug/m3	2.0	1.87		03/14/14 19:11	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 19:11	127-18-4	
Toluene	67.5	ug/m3	1.4	1.87		03/14/14 19:11	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 19:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 19:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 19:11	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.87		03/14/14 19:11	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.37	1.87		03/14/14 19:11	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 19:11	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.9	1.87		03/14/14 19:11	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 19:11	75-01-4	
m&p-Xylene	2.7J	ug/m3	3.3	1.87		03/14/14 19:11	179601-23-1	
o-Xylene	0.92J	ug/m3	1.6	1.87		03/14/14 19:11	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-118-A-16		Lab ID: 10259332006	Collected: 02/25/14 15:53	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.0	ug/m3	0.58	1.8		03/14/14 18:13	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 18:13	56-23-5	
Chlorodifluoromethane	12.4	ug/m3	0.36	1.8		03/14/14 18:13	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 18:13	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.8		03/14/14 18:13	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 18:13	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 18:13	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:13	156-60-5	
Ethylbenzene	1.4J	ug/m3	1.6	1.8		03/14/14 18:13	100-41-4	
Methylene Chloride	8.8	ug/m3	1.3	1.8		03/14/14 18:13	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 18:13	1634-04-4	
Naphthalene	2.2	ug/m3	1.9	1.8		03/14/14 18:13	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/14/14 18:13	127-18-4	
Toluene	16.5	ug/m3	1.4	1.8		03/14/14 18:13	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 18:13	120-82-1	
1,1,1-Trichloroethane	1.2J	ug/m3	2.0	1.8		03/14/14 18:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 18:13	79-00-5	
Trichloroethene	5.6	ug/m3	0.99	1.8		03/14/14 18:13	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/14/14 18:13	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 18:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 18:13	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 18:13	75-01-4	
m&p-Xylene	5.6	ug/m3	3.2	1.8		03/14/14 18:13	179601-23-1	
o-Xylene	2.0	ug/m3	1.6	1.8		03/14/14 18:13	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-136-A-16		Lab ID: 10259332014	Collected: 02/25/14 16:08	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.94	ug/m3	0.58	1.8		03/14/14 22:07	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 22:07	56-23-5	
Chlorodifluoromethane	3.3	ug/m3	0.36	1.8		03/14/14 22:07	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 22:07	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.8	1.8		03/14/14 22:07	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 22:07	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 22:07	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 22:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 22:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 22:07	156-60-5	
Ethylbenzene	0.75J	ug/m3	1.6	1.8		03/14/14 22:07	100-41-4	
Methylene Chloride	7.3	ug/m3	1.3	1.8		03/14/14 22:07	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 22:07	1634-04-4	
Naphthalene	2.9	ug/m3	1.9	1.8		03/14/14 22:07	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.8		03/14/14 22:07	127-18-4	
Toluene	53.6	ug/m3	1.4	1.8		03/14/14 22:07	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 22:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/14/14 22:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 22:07	79-00-5	
Trichloroethene	4.2	ug/m3	0.99	1.8		03/14/14 22:07	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.36	1.8		03/14/14 22:07	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 22:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 22:07	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 22:07	75-01-4	
m&p-Xylene	2.6J	ug/m3	3.2	1.8		03/14/14 22:07	179601-23-1	
o-Xylene	0.99J	ug/m3	1.6	1.8		03/14/14 22:07	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-138-A-16		Lab ID: 10259332024	Collected: 02/25/14 16:24	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1 ug/m3		0.84	2.58		03/18/14 00:19	71-43-2	
Carbon tetrachloride	ND ug/m3		1.7	2.58		03/18/14 00:19	56-23-5	
Chlorodifluoromethane	4.8 ug/m3		0.52	2.58		03/18/14 00:19	75-45-6	
Chloroform	ND ug/m3		2.6	2.58		03/18/14 00:19	67-66-3	
Dichlorodifluoromethane	3.0 ug/m3		2.6	2.58		03/18/14 00:19	75-71-8	
1,1-Dichloroethane	ND ug/m3		2.1	2.58		03/18/14 00:19	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.1	2.58		03/18/14 00:19	107-06-2	
1,1-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 00:19	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 00:19	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.1	2.58		03/18/14 00:19	156-60-5	
Ethylbenzene	ND ug/m3		2.3	2.58		03/18/14 00:19	100-41-4	
Methylene Chloride	17.2 ug/m3		1.8	2.58		03/18/14 00:19	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.9	2.58		03/18/14 00:19	1634-04-4	
Naphthalene	3.0 ug/m3		2.8	2.58		03/18/14 00:19	91-20-3	
Tetrachloroethene	ND ug/m3		1.8	2.58		03/18/14 00:19	127-18-4	
Toluene	2.5 ug/m3		2.0	2.58		03/18/14 00:19	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		3.9	2.58		03/18/14 00:19	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.9	2.58		03/18/14 00:19	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.4	2.58		03/18/14 00:19	79-00-5	
Trichloroethene	1.6 ug/m3		1.4	2.58		03/18/14 00:19	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.52	2.58		03/18/14 00:19	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.6	2.58		03/18/14 00:19	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.6	2.58		03/18/14 00:19	108-67-8	
Vinyl chloride	ND ug/m3		0.67	2.58		03/18/14 00:19	75-01-4	
m&p-Xylene	ND ug/m3		4.5	2.58		03/18/14 00:19	179601-23-1	
o-Xylene	ND ug/m3		2.3	2.58		03/18/14 00:19	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: IA-DUP3-A-16		Lab ID: 10259332033	Collected: 02/25/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2 ug/m3		0.81	2.49		03/18/14 04:37	71-43-2	
Carbon tetrachloride	ND ug/m3		1.6	2.49		03/18/14 04:37	56-23-5	
Chlorodifluoromethane	8.2 ug/m3		0.50	2.49		03/18/14 04:37	75-45-6	
Chloroform	ND ug/m3		2.5	2.49		03/18/14 04:37	67-66-3	
Dichlorodifluoromethane	3.2 ug/m3		2.5	2.49		03/18/14 04:37	75-71-8	
1,1-Dichloroethane	ND ug/m3		2.0	2.49		03/18/14 04:37	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.0	2.49		03/18/14 04:37	107-06-2	
1,1-Dichloroethene	ND ug/m3		2.0	2.49		03/18/14 04:37	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		2.0	2.49		03/18/14 04:37	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.0	2.49		03/18/14 04:37	156-60-5	
Ethylbenzene	ND ug/m3		2.2	2.49		03/18/14 04:37	100-41-4	
Methylene Chloride	7.4 ug/m3		1.8	2.49		03/18/14 04:37	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.8	2.49		03/18/14 04:37	1634-04-4	
Naphthalene	2.1J ug/m3		2.7	2.49		03/18/14 04:37	91-20-3	
Tetrachloroethene	ND ug/m3		1.7	2.49		03/18/14 04:37	127-18-4	
Toluene	16.9 ug/m3		1.9	2.49		03/18/14 04:37	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		3.8	2.49		03/18/14 04:37	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.8	2.49		03/18/14 04:37	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.4	2.49		03/18/14 04:37	79-00-5	
Trichloroethene	ND ug/m3		1.4	2.49		03/18/14 04:37	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.50	2.49		03/18/14 04:37	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.5	2.49		03/18/14 04:37	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.5	2.49		03/18/14 04:37	108-67-8	
Vinyl chloride	ND ug/m3		0.65	2.49		03/18/14 04:37	75-01-4	
m&p-Xylene	3.4J ug/m3		4.4	2.49		03/18/14 04:37	179601-23-1	
o-Xylene	1.4J ug/m3		2.2	2.49		03/18/14 04:37	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-015-A-16		Lab ID: 10259332001	Collected: 02/25/14 09:48	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.64 ug/m3		0.61	1.87		03/12/14 21:04	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.87		03/12/14 21:04	56-23-5	
Chlorodifluoromethane	5.8 ug/m3		1.3	1.87		03/12/14 21:04	75-45-6	
Chloroform	64.7 ug/m3		1.9	1.87		03/12/14 21:04	67-66-3	
Dichlorodifluoromethane	2.1 ug/m3		1.9	1.87		03/12/14 21:04	75-71-8	
1,1-Dichloroethane	14.6 ug/m3		1.5	1.87		03/12/14 21:04	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.77	1.87		03/12/14 21:04	107-06-2	
1,1-Dichloroethene	369 ug/m3		60.6	74.8		03/14/14 01:00	75-35-4	A3
cis-1,2-Dichloroethene	1110 ug/m3		60.6	74.8		03/14/14 01:00	156-59-2	A3
trans-1,2-Dichloroethene	25.0 ug/m3		1.5	1.87		03/12/14 21:04	156-60-5	
Ethylbenzene	ND ug/m3		1.6	1.87		03/12/14 21:04	100-41-4	
Methylene Chloride	31.6 ug/m3		1.3	1.87		03/12/14 21:04	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.4	1.87		03/12/14 21:04	1634-04-4	
Naphthalene	ND ug/m3		2.0	1.87		03/12/14 21:04	91-20-3	
Tetrachloroethene	ND ug/m3		1.3	1.87		03/12/14 21:04	127-18-4	
Toluene	7.1 ug/m3		1.4	1.87		03/12/14 21:04	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.8	1.87		03/12/14 21:04	120-82-1	
1,1,1-Trichloroethane	76.3 ug/m3		2.1	1.87		03/12/14 21:04	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.0	1.87		03/12/14 21:04	79-00-5	
Trichloroethene	564 ug/m3		41.1	74.8		03/14/14 01:00	79-01-6	A3
1,2,3-Trimethylbenzene	ND ug/m3		1.9	1.87		03/12/14 21:04	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.9	1.87		03/12/14 21:04	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.9	1.87		03/12/14 21:04	108-67-8	
Vinyl chloride	ND ug/m3		0.49	1.87		03/12/14 21:04	75-01-4	
m&p-Xylene	3.1J ug/m3		3.3	1.87		03/12/14 21:04	179601-23-1	
o-Xylene	1.6J ug/m3		1.6	1.87		03/12/14 21:04	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-018-A-16		Lab ID: 10259332021	Collected: 02/25/14 10:30	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.96 ug/m3		0.66	2.02		03/15/14 07:38	71-43-2	
Carbon tetrachloride	ND ug/m3		1.3	2.02		03/15/14 07:38	56-23-5	
Chlorodifluoromethane	8.9 ug/m3		0.40	2.02		03/15/14 07:38	75-45-6	
Chloroform	1.7J ug/m3		2.0	2.02		03/15/14 07:38	67-66-3	
Dichlorodifluoromethane	2.2 ug/m3		2.0	2.02		03/15/14 07:38	75-71-8	
1,1-Dichloroethane	3.1 ug/m3		1.7	2.02		03/15/14 07:38	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.83	2.02		03/15/14 07:38	107-06-2	
1,1-Dichloroethene	230 ug/m3		1.6	2.02		03/15/14 07:38	75-35-4	
cis-1,2-Dichloroethene	16.3 ug/m3		1.6	2.02		03/15/14 07:38	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.6	2.02		03/15/14 07:38	156-60-5	
Ethylbenzene	ND ug/m3		1.8	2.02		03/15/14 07:38	100-41-4	
Methylene Chloride	19.8 ug/m3		1.4	2.02		03/15/14 07:38	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.5	2.02		03/15/14 07:38	1634-04-4	
Naphthalene	2.8 ug/m3		2.2	2.02		03/15/14 07:38	91-20-3	
Tetrachloroethene	ND ug/m3		1.4	2.02		03/15/14 07:38	127-18-4	
Toluene	2.6 ug/m3		1.6	2.02		03/15/14 07:38	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		3.1	2.02		03/15/14 07:38	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.2	2.02		03/15/14 07:38	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.1	2.02		03/15/14 07:38	79-00-5	
Trichloroethene	174 ug/m3		1.1	2.02		03/15/14 07:38	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.40	2.02		03/15/14 07:38	526-73-8	
1,2,4-Trimethylbenzene	1.7J ug/m3		2.0	2.02		03/15/14 07:38	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.0	2.02		03/15/14 07:38	108-67-8	
Vinyl chloride	0.57 ug/m3		0.53	2.02		03/15/14 07:38	75-01-4	
m&p-Xylene	2.0J ug/m3		3.6	2.02		03/15/14 07:38	179601-23-1	
o-Xylene	ND ug/m3		1.8	2.02		03/15/14 07:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-075-A-16		Lab ID: 10259332017	Collected: 02/25/14 10:20	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.79 ug/m3		0.55	1.68		03/14/14 23:34	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/14/14 23:34	56-23-5	
Chlorodifluoromethane	4.1 ug/m3		0.34	1.68		03/14/14 23:34	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/14/14 23:34	67-66-3	
Dichlorodifluoromethane	2.1 ug/m3		1.7	1.68		03/14/14 23:34	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/14/14 23:34	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/14/14 23:34	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/14/14 23:34	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/14/14 23:34	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/14/14 23:34	156-60-5	
Ethylbenzene	1.6 ug/m3		1.5	1.68		03/14/14 23:34	100-41-4	
Methylene Chloride	3.1 ug/m3		1.2	1.68		03/14/14 23:34	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/14/14 23:34	1634-04-4	
Naphthalene	259 ug/m3		1.8	1.68		03/14/14 23:34	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/14/14 23:34	127-18-4	
Toluene	7.8 ug/m3		1.3	1.68		03/14/14 23:34	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		03/14/14 23:34	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/14/14 23:34	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/14/14 23:34	79-00-5	
Trichloroethene	3.1 ug/m3		0.92	1.68		03/14/14 23:34	79-01-6	
1,2,3-Trimethylbenzene	59.2 ug/m3		0.34	1.68		03/14/14 23:34	526-73-8	
1,2,4-Trimethylbenzene	205 ug/m3		1.7	1.68		03/14/14 23:34	95-63-6	
1,3,5-Trimethylbenzene	107 ug/m3		1.7	1.68		03/14/14 23:34	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/14/14 23:34	75-01-4	
m&p-Xylene	9.0 ug/m3		3.0	1.68		03/14/14 23:34	179601-23-1	
o-Xylene	19.7 ug/m3		1.5	1.68		03/14/14 23:34	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV
Pace Project No.: 10259332

Sample: SV-076-A-16		Lab ID: 10259332015	Collected: 02/25/14 10:08	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.61	1.87		03/14/14 22:36	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 22:36	56-23-5	
Chlorodifluoromethane	1.6	ug/m3	0.37	1.87		03/14/14 22:36	75-45-6	
Chloroform	1.7J	ug/m3	1.9	1.87		03/14/14 22:36	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.9	1.87		03/14/14 22:36	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.87		03/14/14 22:36	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 22:36	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 22:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 22:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 22:36	156-60-5	
Ethylbenzene	ND	ug/m3	1.6	1.87		03/14/14 22:36	100-41-4	
Methylene Chloride	12.6	ug/m3	1.3	1.87		03/14/14 22:36	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 22:36	1634-04-4	
Naphthalene	94.9	ug/m3	2.0	1.87		03/14/14 22:36	91-20-3	
Tetrachloroethene	ND	ug/m3	1.3	1.87		03/14/14 22:36	127-18-4	
Toluene	3.8	ug/m3	1.4	1.87		03/14/14 22:36	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 22:36	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.87		03/14/14 22:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 22:36	79-00-5	
Trichloroethene	14.0	ug/m3	1.0	1.87		03/14/14 22:36	79-01-6	
1,2,3-Trimethylbenzene	20.8	ug/m3	0.37	1.87		03/14/14 22:36	526-73-8	
1,2,4-Trimethylbenzene	40.2	ug/m3	1.9	1.87		03/14/14 22:36	95-63-6	
1,3,5-Trimethylbenzene	14.0	ug/m3	1.9	1.87		03/14/14 22:36	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 22:36	75-01-4	
m&p-Xylene	4.4	ug/m3	3.3	1.87		03/14/14 22:36	179601-23-1	
o-Xylene	2.9	ug/m3	1.6	1.87		03/14/14 22:36	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-079-A-16		Lab ID: 10259332009	Collected: 02/25/14 10:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1 ug/m3		0.58	1.8		03/14/14 19:40	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.8		03/14/14 19:40	56-23-5	
Chlorodifluoromethane	2.7 ug/m3		0.36	1.8		03/14/14 19:40	75-45-6	
Chloroform	9.0 ug/m3		1.8	1.8		03/14/14 19:40	67-66-3	
Dichlorodifluoromethane	1.7J ug/m3		1.8	1.8		03/14/14 19:40	75-71-8	
1,1-Dichloroethane	1.6 ug/m3		1.5	1.8		03/14/14 19:40	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.74	1.8		03/14/14 19:40	107-06-2	
1,1-Dichloroethene	2.7 ug/m3		1.5	1.8		03/14/14 19:40	75-35-4	
cis-1,2-Dichloroethene	2620 ug/m3		58.3	72		03/17/14 21:50	156-59-2	A3
trans-1,2-Dichloroethene	517 ug/m3		58.3	72		03/17/14 21:50	156-60-5	A3
Ethylbenzene	2.1 ug/m3		1.6	1.8		03/14/14 19:40	100-41-4	
Methylene Chloride	18.7 ug/m3		1.3	1.8		03/14/14 19:40	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.8		03/14/14 19:40	1634-04-4	
Naphthalene	27.9 ug/m3		1.9	1.8		03/14/14 19:40	91-20-3	
Tetrachloroethene	14.1 ug/m3		1.2	1.8		03/14/14 19:40	127-18-4	
Toluene	5.9 ug/m3		1.4	1.8		03/14/14 19:40	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.7	1.8		03/14/14 19:40	120-82-1	
1,1,1-Trichloroethane	2.1 ug/m3		2.0	1.8		03/14/14 19:40	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.99	1.8		03/14/14 19:40	79-00-5	
Trichloroethene	6090 ug/m3		39.6	72		03/17/14 21:50	79-01-6	A3
1,2,3-Trimethylbenzene	23.1 ug/m3		0.36	1.8		03/14/14 19:40	526-73-8	
1,2,4-Trimethylbenzene	12.3 ug/m3		1.8	1.8		03/14/14 19:40	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.8	1.8		03/14/14 19:40	108-67-8	
Vinyl chloride	ND ug/m3		0.47	1.8		03/14/14 19:40	75-01-4	
m&p-Xylene	5.2 ug/m3		3.2	1.8		03/14/14 19:40	179601-23-1	
o-Xylene	5.3 ug/m3		1.6	1.8		03/14/14 19:40	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-081-A-16		Lab ID: 10259332011	Collected: 02/25/14 10:04	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/14/14 20:39	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 20:39	56-23-5	
Chlorodifluoromethane	25.4	ug/m3	0.36	1.8		03/14/14 20:39	75-45-6	
Chloroform	2.8	ug/m3	1.8	1.8		03/14/14 20:39	67-66-3	
Dichlorodifluoromethane	1.8	ug/m3	1.8	1.8		03/14/14 20:39	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 20:39	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 20:39	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 20:39	75-35-4	
cis-1,2-Dichloroethene	6.1	ug/m3	1.5	1.8		03/14/14 20:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 20:39	156-60-5	
Ethylbenzene	57.9	ug/m3	1.6	1.8		03/14/14 20:39	100-41-4	
Methylene Chloride	15.4	ug/m3	1.3	1.8		03/14/14 20:39	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 20:39	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.8		03/14/14 20:39	91-20-3	
Tetrachloroethene	73.8	ug/m3	1.2	1.8		03/14/14 20:39	127-18-4	
Toluene	13.9	ug/m3	1.4	1.8		03/14/14 20:39	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 20:39	120-82-1	
1,1,1-Trichloroethane	6.4	ug/m3	2.0	1.8		03/14/14 20:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 20:39	79-00-5	
Trichloroethene	7.9	ug/m3	0.99	1.8		03/14/14 20:39	79-01-6	
1,2,3-Trimethylbenzene	4140	ug/m3	14.4	72		03/17/14 22:14	526-73-8	A3
1,2,4-Trimethylbenzene	6780	ug/m3	71.9	72		03/17/14 22:14	95-63-6	A3
1,3,5-Trimethylbenzene	3500	ug/m3	71.9	72		03/17/14 22:14	108-67-8	A3
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 20:39	75-01-4	
m&p-Xylene	480	ug/m3	127	72		03/17/14 22:14	179601-23-1	A3
o-Xylene	228	ug/m3	1.6	1.8		03/14/14 20:39	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-093-A-16		Lab ID: 10259332025	Collected: 02/25/14 16:27		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.2 ug/m3		0.92	2.82		03/18/14 00:49	71-43-2	
Carbon tetrachloride	ND ug/m3		1.8	2.82		03/18/14 00:49	56-23-5	
Chlorodifluoromethane	14.6 ug/m3		0.56	2.82		03/18/14 00:49	75-45-6	
Chloroform	ND ug/m3		2.8	2.82		03/18/14 00:49	67-66-3	
Dichlorodifluoromethane	3.9 ug/m3		2.8	2.82		03/18/14 00:49	75-71-8	
1,1-Dichloroethane	ND ug/m3		2.3	2.82		03/18/14 00:49	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.2	2.82		03/18/14 00:49	107-06-2	
1,1-Dichloroethene	ND ug/m3		2.3	2.82		03/18/14 00:49	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		2.3	2.82		03/18/14 00:49	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.3	2.82		03/18/14 00:49	156-60-5	
Ethylbenzene	ND ug/m3		2.5	2.82		03/18/14 00:49	100-41-4	
Methylene Chloride	415 ug/m3		2.0	2.82		03/18/14 00:49	75-09-2	E
Methyl-tert-butyl ether	ND ug/m3		2.1	2.82		03/18/14 00:49	1634-04-4	
Naphthalene	3.5 ug/m3		3.0	2.82		03/18/14 00:49	91-20-3	
Tetrachloroethene	ND ug/m3		1.9	2.82		03/18/14 00:49	127-18-4	
Toluene	6.8 ug/m3		2.2	2.82		03/18/14 00:49	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		4.3	2.82		03/18/14 00:49	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		3.1	2.82		03/18/14 00:49	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.6	2.82		03/18/14 00:49	79-00-5	
Trichloroethene	7.0 ug/m3		1.6	2.82		03/18/14 00:49	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.56	2.82		03/18/14 00:49	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.8	2.82		03/18/14 00:49	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.8	2.82		03/18/14 00:49	108-67-8	
Vinyl chloride	ND ug/m3		0.73	2.82		03/18/14 00:49	75-01-4	
m&p-Xylene	ND ug/m3		5.0	2.82		03/18/14 00:49	179601-23-1	
o-Xylene	ND ug/m3		2.5	2.82		03/18/14 00:49	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-094-A-16		Lab ID: 10259332019	Collected: 02/25/14 10:26	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.1 ug/m3		0.58	1.8		03/15/14 00:33	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.8		03/15/14 00:33	56-23-5	
Chlorodifluoromethane	3.6 ug/m3		0.36	1.8		03/15/14 00:33	75-45-6	
Chloroform	ND ug/m3		1.8	1.8		03/15/14 00:33	67-66-3	
Dichlorodifluoromethane	2.3 ug/m3		1.8	1.8		03/15/14 00:33	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.5	1.8		03/15/14 00:33	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.74	1.8		03/15/14 00:33	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.5	1.8		03/15/14 00:33	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/15/14 00:33	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.5	1.8		03/15/14 00:33	156-60-5	
Ethylbenzene	ND ug/m3		1.6	1.8		03/15/14 00:33	100-41-4	
Methylene Chloride	59.8 ug/m3		1.3	1.8		03/15/14 00:33	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.3	1.8		03/15/14 00:33	1634-04-4	
Naphthalene	2.5 ug/m3		1.9	1.8		03/15/14 00:33	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.8		03/15/14 00:33	127-18-4	
Toluene	2.3 ug/m3		1.4	1.8		03/15/14 00:33	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.7	1.8		03/15/14 00:33	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		2.0	1.8		03/15/14 00:33	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.99	1.8		03/15/14 00:33	79-00-5	
Trichloroethene	ND ug/m3		0.99	1.8		03/15/14 00:33	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.36	1.8		03/15/14 00:33	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.8	1.8		03/15/14 00:33	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.8	1.8		03/15/14 00:33	108-67-8	
Vinyl chloride	ND ug/m3		0.47	1.8		03/15/14 00:33	75-01-4	
m&p-Xylene	ND ug/m3		3.2	1.8		03/15/14 00:33	179601-23-1	
o-Xylene	ND ug/m3		1.6	1.8		03/15/14 00:33	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-108-A-16		Lab ID: 10259332003	Collected: 02/25/14 09:51	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.88	ug/m3	0.57	1.74		03/12/14 22:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/12/14 22:03	56-23-5	
Chlorodifluoromethane	12.3	ug/m3	1.3	1.74		03/12/14 22:03	75-45-6	
Chloroform	ND	ug/m3	1.7	1.74		03/12/14 22:03	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	1.8	1.74		03/12/14 22:03	75-71-8	
1,1-Dichloroethane	2.1	ug/m3	1.4	1.74		03/12/14 22:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/12/14 22:03	107-06-2	
1,1-Dichloroethene	7.7	ug/m3	1.4	1.74		03/12/14 22:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/12/14 22:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/12/14 22:03	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/12/14 22:03	100-41-4	
Methylene Chloride	12.4	ug/m3	1.2	1.74		03/12/14 22:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/12/14 22:03	1634-04-4	
Naphthalene	ND	ug/m3	1.9	1.74		03/12/14 22:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/12/14 22:03	127-18-4	
Toluene	17.3	ug/m3	1.3	1.74		03/12/14 22:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/12/14 22:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/12/14 22:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/12/14 22:03	79-00-5	
Trichloroethene	0.94J	ug/m3	0.96	1.74		03/12/14 22:03	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.74		03/12/14 22:03	108-67-8	
Vinyl chloride	ND	ug/m3	0.45	1.74		03/12/14 22:03	75-01-4	
m&p-Xylene	2.9J	ug/m3	3.1	1.74		03/12/14 22:03	179601-23-1	
o-Xylene	1.2J	ug/m3	1.5	1.74		03/12/14 22:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-117-A-16		Lab ID: 10259332007	Collected: 02/25/14 09:59	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.58	1.8		03/14/14 18:42	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		03/14/14 18:42	56-23-5	
Chlorodifluoromethane	0.80	ug/m3	0.36	1.8		03/14/14 18:42	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		03/14/14 18:42	67-66-3	
Dichlorodifluoromethane	1.5J	ug/m3	1.8	1.8		03/14/14 18:42	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/14/14 18:42	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		03/14/14 18:42	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/14/14 18:42	156-60-5	
Ethylbenzene	2.1	ug/m3	1.6	1.8		03/14/14 18:42	100-41-4	
Methylene Chloride	40.4	ug/m3	1.3	1.8		03/14/14 18:42	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/14/14 18:42	1634-04-4	
Naphthalene	95.1	ug/m3	1.9	1.8		03/14/14 18:42	91-20-3	
Tetrachloroethene	10.3	ug/m3	1.2	1.8		03/14/14 18:42	127-18-4	
Toluene	9.9	ug/m3	1.4	1.8		03/14/14 18:42	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		03/14/14 18:42	120-82-1	
1,1,1-Trichloroethane	5.1	ug/m3	2.0	1.8		03/14/14 18:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		03/14/14 18:42	79-00-5	
Trichloroethene	109	ug/m3	0.99	1.8		03/14/14 18:42	79-01-6	
1,2,3-Trimethylbenzene	4.5	ug/m3	0.36	1.8		03/14/14 18:42	526-73-8	
1,2,4-Trimethylbenzene	5.8	ug/m3	1.8	1.8		03/14/14 18:42	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/14/14 18:42	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		03/14/14 18:42	75-01-4	
m&p-Xylene	9.7	ug/m3	3.2	1.8		03/14/14 18:42	179601-23-1	
o-Xylene	8.3	ug/m3	1.6	1.8		03/14/14 18:42	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-118-A-16		Lab ID: 10259332005	Collected: 02/25/14 09:55	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.8 ug/m3		0.61	1.87		03/14/14 17:43	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.87		03/14/14 17:43	56-23-5	
Chlorodifluoromethane	5.2 ug/m3		0.37	1.87		03/14/14 17:43	75-45-6	
Chloroform	106 ug/m3		1.9	1.87		03/14/14 17:43	67-66-3	
Dichlorodifluoromethane	2.0 ug/m3		1.9	1.87		03/14/14 17:43	75-71-8	
1,1-Dichloroethane	90.3 ug/m3		1.5	1.87		03/14/14 17:43	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.77	1.87		03/14/14 17:43	107-06-2	
1,1-Dichloroethene	1670 ug/m3		60.6	74.8		03/17/14 21:25	75-35-4	A3
cis-1,2-Dichloroethene	477 ug/m3		60.6	74.8		03/17/14 21:25	156-59-2	A3
trans-1,2-Dichloroethene	18.1 ug/m3		1.5	1.87		03/14/14 17:43	156-60-5	
Ethylbenzene	27.2 ug/m3		1.6	1.87		03/14/14 17:43	100-41-4	
Methylene Chloride	15.0 ug/m3		1.3	1.87		03/14/14 17:43	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.4	1.87		03/14/14 17:43	1634-04-4	
Naphthalene	20.7 ug/m3		2.0	1.87		03/14/14 17:43	91-20-3	
Tetrachloroethene	1.6 ug/m3		1.3	1.87		03/14/14 17:43	127-18-4	
Toluene	3.8 ug/m3		1.4	1.87		03/14/14 17:43	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.8	1.87		03/14/14 17:43	120-82-1	
1,1,1-Trichloroethane	26.2 ug/m3		2.1	1.87		03/14/14 17:43	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.0	1.87		03/14/14 17:43	79-00-5	
Trichloroethene	5860 ug/m3		41.1	74.8		03/17/14 21:25	79-01-6	A3
1,2,3-Trimethylbenzene	18.1 ug/m3		0.37	1.87		03/14/14 17:43	526-73-8	
1,2,4-Trimethylbenzene	34.1 ug/m3		1.9	1.87		03/14/14 17:43	95-63-6	
1,3,5-Trimethylbenzene	23.2 ug/m3		1.9	1.87		03/14/14 17:43	108-67-8	
Vinyl chloride	ND ug/m3		0.49	1.87		03/14/14 17:43	75-01-4	
m&p-Xylene	156 ug/m3		3.3	1.87		03/14/14 17:43	179601-23-1	
o-Xylene	65.2 ug/m3		1.6	1.87		03/14/14 17:43	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-136-A-16		Lab ID: 10259332013	Collected: 02/25/14 09:10	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	6.7	ug/m3	0.61	1.87		03/14/14 21:37	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 21:37	56-23-5	
Chlorodifluoromethane	ND	ug/m3	0.37	1.87		03/14/14 21:37	75-45-6	
Chloroform	217	ug/m3	1.9	1.87		03/14/14 21:37	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.9	1.87		03/14/14 21:37	75-71-8	
1,1-Dichloroethane	1.7	ug/m3	1.5	1.87		03/14/14 21:37	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 21:37	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 21:37	75-35-4	
cis-1,2-Dichloroethene	55.2	ug/m3	1.5	1.87		03/14/14 21:37	156-59-2	
trans-1,2-Dichloroethene	25.3	ug/m3	1.5	1.87		03/14/14 21:37	156-60-5	
Ethylbenzene	1.7	ug/m3	1.6	1.87		03/14/14 21:37	100-41-4	
Methylene Chloride	13.5	ug/m3	1.3	1.87		03/14/14 21:37	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 21:37	1634-04-4	
Naphthalene	9.3	ug/m3	2.0	1.87		03/14/14 21:37	91-20-3	
Tetrachloroethene	15.1	ug/m3	1.3	1.87		03/14/14 21:37	127-18-4	
Toluene	11.7	ug/m3	1.4	1.87		03/14/14 21:37	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 21:37	120-82-1	
1,1,1-Trichloroethane	3.4	ug/m3	2.1	1.87		03/14/14 21:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 21:37	79-00-5	
Trichloroethene	91000	ug/m3	658	1196.8		03/17/14 16:34	79-01-6	A3
1,2,3-Trimethylbenzene	6.1	ug/m3	0.37	1.87		03/14/14 21:37	526-73-8	
1,2,4-Trimethylbenzene	6.8	ug/m3	1.9	1.87		03/14/14 21:37	95-63-6	
1,3,5-Trimethylbenzene	5.4	ug/m3	1.9	1.87		03/14/14 21:37	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 21:37	75-01-4	
m&p-Xylene	4.2	ug/m3	3.3	1.87		03/14/14 21:37	179601-23-1	
o-Xylene	3.4	ug/m3	1.6	1.87		03/14/14 21:37	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-138-A-16		Lab ID: 10259332023	Collected: 02/25/14 10:35	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.6 ug/m3		0.93	2.87		03/17/14 23:50	71-43-2	
Carbon tetrachloride	ND ug/m3		1.8	2.87		03/17/14 23:50	56-23-5	
Chlorodifluoromethane	9.6 ug/m3		0.57	2.87		03/17/14 23:50	75-45-6	
Chloroform	ND ug/m3		2.8	2.87		03/17/14 23:50	67-66-3	
Dichlorodifluoromethane	3.3 ug/m3		2.9	2.87		03/17/14 23:50	75-71-8	
1,1-Dichloroethane	2.6 ug/m3		2.4	2.87		03/17/14 23:50	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.2	2.87		03/17/14 23:50	107-06-2	
1,1-Dichloroethene	6.4 ug/m3		2.3	2.87		03/17/14 23:50	75-35-4	
cis-1,2-Dichloroethene	5.6 ug/m3		2.3	2.87		03/17/14 23:50	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.3	2.87		03/17/14 23:50	156-60-5	
Ethylbenzene	1.9J ug/m3		2.5	2.87		03/17/14 23:50	100-41-4	
Methylene Chloride	17.5 ug/m3		2.0	2.87		03/17/14 23:50	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		2.1	2.87		03/17/14 23:50	1634-04-4	
Naphthalene	23.1 ug/m3		3.1	2.87		03/17/14 23:50	91-20-3	
Tetrachloroethene	2.7 ug/m3		2.0	2.87		03/17/14 23:50	127-18-4	
Toluene	10.3 ug/m3		2.2	2.87		03/17/14 23:50	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		4.3	2.87		03/17/14 23:50	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		3.2	2.87		03/17/14 23:50	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.6	2.87		03/17/14 23:50	79-00-5	
Trichloroethene	80.3 ug/m3		1.6	2.87		03/17/14 23:50	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.57	2.87		03/17/14 23:50	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		2.9	2.87		03/17/14 23:50	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.9	2.87		03/17/14 23:50	108-67-8	
Vinyl chloride	ND ug/m3		0.75	2.87		03/17/14 23:50	75-01-4	
m&p-Xylene	6.1 ug/m3		5.1	2.87		03/17/14 23:50	179601-23-1	
o-Xylene	1.6J ug/m3		2.5	2.87		03/17/14 23:50	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-DUP3-A-16		Lab ID: 10259332032	Collected: 02/25/14 00:00		Received: 03/04/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.90	2.77		03/18/14 04:03	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.8	2.77		03/18/14 04:03	56-23-5	
Chlorodifluoromethane	2.6	ug/m3	0.55	2.77		03/18/14 04:03	75-45-6	
Chloroform	93.6	ug/m3	2.7	2.77		03/18/14 04:03	67-66-3	
Dichlorodifluoromethane	2.3J	ug/m3	2.8	2.77		03/18/14 04:03	75-71-8	
1,1-Dichloroethane	21.6	ug/m3	2.3	2.77		03/18/14 04:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.1	2.77		03/18/14 04:03	107-06-2	
1,1-Dichloroethene	473	ug/m3	89.7	110.7		03/18/14 17:31	75-35-4	A3
cis-1,2-Dichloroethene	1260	ug/m3	89.7	110.7		03/18/14 17:31	156-59-2	A3
trans-1,2-Dichloroethene	37.7	ug/m3	2.2	2.77		03/18/14 04:03	156-60-5	
Ethylbenzene	ND	ug/m3	2.4	2.77		03/18/14 04:03	100-41-4	
Methylene Chloride	18.6	ug/m3	2.0	2.77		03/18/14 04:03	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	2.0	2.77		03/18/14 04:03	1634-04-4	
Naphthalene	ND	ug/m3	3.0	2.77		03/18/14 04:03	91-20-3	
Tetrachloroethene	ND	ug/m3	1.9	2.77		03/18/14 04:03	127-18-4	
Toluene	4.6	ug/m3	2.1	2.77		03/18/14 04:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	4.2	2.77		03/18/14 04:03	120-82-1	
1,1,1-Trichloroethane	112	ug/m3	3.1	2.77		03/18/14 04:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.5	2.77		03/18/14 04:03	79-00-5	
Trichloroethene	619	ug/m3	60.9	110.7		03/18/14 17:31	79-01-6	A3
1,2,3-Trimethylbenzene	ND	ug/m3	0.55	2.77		03/18/14 04:03	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.8	2.77		03/18/14 04:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.8	2.77		03/18/14 04:03	108-67-8	
Vinyl chloride	1.5	ug/m3	0.72	2.77		03/18/14 04:03	75-01-4	
m&p-Xylene	ND	ug/m3	4.9	2.77		03/18/14 04:03	179601-23-1	
o-Xylene	1.4J	ug/m3	2.4	2.77		03/18/14 04:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

Sample: SV-DUP4-A-16		Lab ID: 10259332034	Collected: 02/25/14 00:00	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.77	ug/m3	0.57	1.74		03/15/14 05:15	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.74		03/15/14 05:15	56-23-5	
Chlorodifluoromethane	7.1	ug/m3	0.35	1.74		03/15/14 05:15	75-45-6	
Chloroform	1.4J	ug/m3	1.7	1.74		03/15/14 05:15	67-66-3	
Dichlorodifluoromethane	1.9	ug/m3	1.8	1.74		03/15/14 05:15	75-71-8	
1,1-Dichloroethane	3.2	ug/m3	1.4	1.74		03/15/14 05:15	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.71	1.74		03/15/14 05:15	107-06-2	
1,1-Dichloroethene	192	ug/m3	1.4	1.74		03/15/14 05:15	75-35-4	
cis-1,2-Dichloroethene	13.7	ug/m3	1.4	1.74		03/15/14 05:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.74		03/15/14 05:15	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.74		03/15/14 05:15	100-41-4	
Methylene Chloride	17.8	ug/m3	1.2	1.74		03/15/14 05:15	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.74		03/15/14 05:15	1634-04-4	
Naphthalene	3.1	ug/m3	1.9	1.74		03/15/14 05:15	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.74		03/15/14 05:15	127-18-4	
Toluene	2.0	ug/m3	1.3	1.74		03/15/14 05:15	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.6	1.74		03/15/14 05:15	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.74		03/15/14 05:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.96	1.74		03/15/14 05:15	79-00-5	
Trichloroethene	150	ug/m3	0.96	1.74		03/15/14 05:15	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.35	1.74		03/15/14 05:15	526-73-8	
1,2,4-Trimethylbenzene	1.5J	ug/m3	1.7	1.74		03/15/14 05:15	95-63-6	
1,3,5-Trimethylbenzene	1.4J	ug/m3	1.7	1.74		03/15/14 05:15	108-67-8	
Vinyl chloride	0.59	ug/m3	0.45	1.74		03/15/14 05:15	75-01-4	
m&p-Xylene	1.7J	ug/m3	3.1	1.74		03/15/14 05:15	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.74		03/15/14 05:15	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

HOLDTIME

SDG 10259332

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/M3	IA-076-A-16	10259332016	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	BCK-1-16	10259332027	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	IA-136-A-16	10259332014	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	IA-118-A-16	10259332006	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	IA-117-A-16	10259332008	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	IA-108-A-16	10259332004	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	IA-094-A-16	10259332020	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	IA-093-A-16	10259332026	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21
	UG/M3	IA-DUP3-A-16	10259332033	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21
	UG/M3	IA-079-A-16	10259332010	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	SV-015-A-16	10259332001	NM	02/25/2014	03/12/2014	03/12/2014	15	0	15
	UG/M3	IA-075-A-16	10259332018	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	IA-018-A-16	10259332022	NM	02/25/2014	03/17/2014	03/17/2014	20	0	20
	UG/M3	IA-015-A-16	10259332002	NM	02/25/2014	03/12/2014	03/12/2014	15	0	15
	UG/M3	BCK-4-16	10259332030	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/M3	BCK-3-16	10259332029	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21
	UG/M3	BCK-3-16	10259332029	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	BCK-2-16	10259332028	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	BCK-1-16	10259332027	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21
	UG/M3	IA-081-A-16	10259332012	NM	02/25/2014	03/17/2014	03/17/2014	20	0	20
	UG/M3	SV-093-A-16	10259332025	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21
	UG/M3	SV-DUP3-A-16	10259332032	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21
	UG/M3	SV-138-A-16	10259332023	NM	02/25/2014	03/17/2014	03/17/2014	20	0	20
	UG/M3	SV-136-A-16	10259332013	NM	02/25/2014	03/17/2014	03/17/2014	20	0	20
	UG/M3	SV-136-A-16	10259332013	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	SV-118-A-16	10259332005	NM	02/25/2014	03/17/2014	03/17/2014	20	0	20
	UG/M3	SV-118-A-16	10259332005	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	SV-117-A-16	10259332007	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	IA-138-A-16	10259332024	NM	02/25/2014	03/18/2014	03/18/2014	21	0	21
	UG/M3	SV-094-A-16	10259332019	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	SV-DUP4-A-16	10259332034	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	SV-081-A-16	10259332011	NM	02/25/2014	03/17/2014	03/17/2014	20	0	20
	UG/M3	SV-081-A-16	10259332011	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/M3	SV-079-A-16	10259332009	NM	02/25/2014	03/17/2014	03/17/2014	20	0	20
	UG/M3	SV-079-A-16	10259332009	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	SV-076-A-16	10259332015	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	SV-075-A-16	10259332017	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	SV-018-A-16	10259332021	NM	02/25/2014	03/15/2014	03/15/2014	18	0	18
	UG/M3	SV-015-A-16	10259332001	NM	02/25/2014	03/14/2014	03/14/2014	17	0	17
	UG/M3	SV-108-A-16	10259332003	NM	02/25/2014	03/12/2014	03/12/2014	15	0	15



AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: Tetra Tech

Address: 20051 Century Blvd, Suite 200

City: Germantown, MD 20874

Email To: Tony.Aponavage@tetratech.com

Phone: _____

Fax: _____

Requested Due Date/TAT: _____

Section B

Required Project Information:

Report To: same

Copy To: _____

Purchase Order No.: _____

Project Name: _____

Project Number: _____

Section C

Invoice Information:

Attention: _____

Company Name: _____

Address: _____

Pace Quote Reference: _____

Pace Project Manager/Sales Rep: _____

Pace Profile #: _____

Section D Required Client Information

AIR SAMPLE ID

Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA

CODE

TB

1 Liter Summa Can

6 Liter Summa Can

Low Volume Puff

High Volume Puff

Other

PM10

14861

Page: 1 of 3

Program

UST

Superfund

Emissions

Clean Air Act

X

Voluntary Clean Up

Dry Clean

RCRA

Other

Location of Sampling by State

MD

Reporting Units

ug/m³

ppbV

ppmV

Other

Report Level

II

III

IV

Other

Method:

PM10

3C: Fixed Gas (%)

TO-3M (Methane)

TO-4 (PCBs)

TO-13 (PAH)

TO-14

TO-15 Short List*

Temp in °C

Received on

Ice

Custody

Sealed Cooler

Samples Intact

RELINQUISHED BY / AFFILIATION

DATE

TIME

ACCEPTED BY / AFFILIATION

DATE

TIME

SV-015-A-16

IA-015-A-16

SV-108-A-16

IA-108-A-16

SV-118-A-16

IA-118-A-16

SV-117-A-16

IA-117-A-16

SV-079-A-16

IA-079A-16

SV-081-A-16

IA-081-A-16

11C-NIA-025-14

0730

0848

0737

0855

0747

0859

0753

0900

0757

0900

0800

0845

0851

0951

1549

0955

1553

0959

1553

1000

1555

1004

1600

0948

1549

0948

1549

0948

1553

0959

1553

1000

1555

1004

1600

0948

1549

0948

1549

0948

1553

0959

1553

1000

1555

1004

1600

Flow Control Number

Summa Can Number

Canister Pressure (Initial Field - psig)

Canister Pressure (Final Field - psig)

0075

0078

0033

0033

0034

0054

0013

0019

0152

0606

0144

0053

0009

2268

1156

2242

2492

2277

2265

2501

2530

2507

2436

2827

1106

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

30

COLLECTED

DATE

TIME

DATE

TIME

COMPOSITE START

COMPOSITE END

SV-015-A-16

IA-015-A-16

SV-108-A-16

IA-108-A-16

SV-118-A-16

IA-118-A-16

SV-117-A-16

IA-117-A-16

SV-079-A-16

IA-079A-16

SV-081-A-16

IA-081-A-16

11C-NIA-025-14

0730

0848

0737

0855

0747

0859

0753

0900

0757

0900

0800

0845

0851

0951

1549

0955

1553

0959

1553

1000

1555

1004

1600

0948

1549

0948

1549

0948

1553

0959

1553

1000

1555

1004

1600

0948

1549

0948

1549

0948

1553

0959

1553

1000

1555

1004

1600

RELINQUISHED BY / AFFILIATION

DATE

TIME

ACCEPTED BY / AFFILIATION

DATE

TIME

SV-015-A-16

IA-015-A-16

SV-108-A-16

IA-108-A-16

SV-118-A-16

IA-118-A-16

SV-117-A-16

IA-117-A-16

SV-079-A-16

IA-079A-16

SV-081-A-16

IA-081-A-16

11C-NIA-025-14

0730

0848

0737

0855

0747

0859

0753

0900

0757

0900

0800

0845

0851

0951

1549

0955

1553

0959

1553

1000

1555

1004

1600

0948

1549

0948

1549

0948

1553

0959

1553

1000

1555

1004

1600

0948

1549

0948

1549

0948

1553

0959

1553

1000

1555

1004

1600

RELINQUISHED BY / AFFILIATION

DATE

TIME

ACCEPTED BY / AFFILIATION

DATE

TIME

SV-015-A-16

IA-015-A-16

SV-108-A-16

IA-108-A-16

SV-118-A-16

IA-118-A-16

SV-117-A-16

IA-117-A-16

SV-079-A-16

IA-079A-16

SV-081-A-16

IA-081-A-16

11C-NIA-025-14

0730


0848

0737

08

ORIGINAL

ORIGINAL

	Document Name: Air Sample Condition Upon Receipt	Document Revised: 26Dec2013 Page 1 of 1
	Document No.: F-MN-A-106-rev.09	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name:

tetra tech

Project #:

WO#: 10259332



Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: *on other sheet*

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other: _____

Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): _____

Corrected Temp (°C): _____

Thermom. Used: ☐ B88A912167504
☐ B88A9132521491

☐ 72337080
☐ 80512447

Temp should be above freezing to 6°C Correction Factor: _____

Date & Initials of Person Examining Contents: *3/4/14*

Type of ice Received ☐ Blue ☐ Wet ☒ None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Media: <i>6°C</i>	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<i>#003, #008 sample fines on the bag or the start times not end times</i>

Samples Received:

Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
SV-015	2268 / 0075	SV-081	0827 / 0053	SV-018	2568 / 0247
IA-015	1156 / 0233	IA-081	1106 / 0009	IA-018	2287 / 0295
SV-108	2242 / 0133	SV-136	2555 / 0041	SV-138	1321 / 0035
IA-108	2492 / 0534	IA-136	2458 / 0527	IA-138	0941 / 0520
SV-118	2277 / 0054	SV-076	2223 / 0407	SV-043	1785 / 0056
IA-118	2265 / 0113	IA-076	1105 / 0412	IA-043	1108 / 0364
SV-117	2501 / 0119	SV-075	2263 / 0041	BCK-1	1170 / 0441
IA-117	2530 / 0157	IA-075	1458 / 0455	BCK-2	0880 / 0305
SV-079	2507 / 0600	SV-094	2230 / 0253	BCK-3	2250 / 0296
FA-079	2436 / 0144	IA-094	2145 / 0053	BCK-4	2208 / 0523

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____

Date: *3/8/14*

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

PROJECT NARRATIVE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 19, 2014

General Information:

33 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/19645

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- DUP (Lab ID: 1638565)
 - Naphthalene
- LCS (Lab ID: 1638294)
 - 1,2,4-Trichlorobenzene
 - Naphthalene

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: AIR/19668

P8: Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

- BLANK (Lab ID: 1640107)
 - Methylene Chloride

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/19645

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 1638294)
 - 1,2,4-Trichlorobenzene

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 19, 2014

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: AIR/19645

A3: The sample was analyzed by serial dilution.

- SV-015-A-16 (Lab ID: 10259332001)
 - 1,1-Dichloroethene
 - cis-1,2-Dichloroethene
 - Trichloroethene

QC Batch: AIR/19661

A3: The sample was analyzed by serial dilution.

- SV-079-A-16 (Lab ID: 10259332009)
 - cis-1,2-Dichloroethene
 - trans-1,2-Dichloroethene
 - Trichloroethene
- SV-081-A-16 (Lab ID: 10259332011)
 - 1,2,3-Trimethylbenzene
 - 1,2,4-Trimethylbenzene
 - 1,3,5-Trimethylbenzene
 - m&p-Xylene
- SV-118-A-16 (Lab ID: 10259332005)
 - 1,1-Dichloroethene
 - cis-1,2-Dichloroethene
 - Trichloroethene
- SV-136-A-16 (Lab ID: 10259332013)
 - Trichloroethene

QC Batch: AIR/19668

P8: Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

- BLANK (Lab ID: 1640107)
 - Methylene Chloride

QC Batch: AIR/19678

A3: The sample was analyzed by serial dilution.

- SV-DUP3-A-16 (Lab ID: 10259332032)
 - 1,1-Dichloroethene
 - cis-1,2-Dichloroethene
 - Trichloroethene

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 19, 2014

Analyte Comments:

QC Batch: AIR/19678

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- SV-093-A-16 (Lab ID: 10259332025)
- Methylene Chloride

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10259332001	SV-015-A-16	Air	02/25/14 09:48	03/04/14 10:00
10259332002	IA-015-A-16	Air	02/25/14 15:49	03/04/14 10:00
10259332003	SV-108-A-16	Air	02/25/14 09:51	03/04/14 10:00
10259332004	IA-108-A-16	Air	02/25/14 15:49	03/04/14 10:00
10259332005	SV-118-A-16	Air	02/25/14 09:55	03/04/14 10:00
10259332006	IA-118-A-16	Air	02/25/14 15:53	03/04/14 10:00
10259332007	SV-117-A-16	Air	02/25/14 09:59	03/04/14 10:00
10259332008	IA-117-A-16	Air	02/25/14 15:53	03/04/14 10:00
10259332009	SV-079-A-16	Air	02/25/14 10:00	03/04/14 10:00
10259332010	IA-079-A-16	Air	02/25/14 15:55	03/04/14 10:00
10259332011	SV-081-A-16	Air	02/25/14 10:04	03/04/14 10:00
10259332012	IA-081-A-16	Air	02/25/14 16:00	03/04/14 10:00
10259332013	SV-136-A-16	Air	02/25/14 09:10	03/04/14 10:00
10259332014	IA-136-A-16	Air	02/25/14 16:08	03/04/14 10:00
10259332015	SV-076-A-16	Air	02/25/14 10:08	03/04/14 10:00
10259332016	IA-076-A-16	Air	02/25/14 16:12	03/04/14 10:00
10259332017	SV-075-A-16	Air	02/25/14 10:20	03/04/14 10:00
10259332018	IA-075-A-16	Air	02/25/14 16:17	03/04/14 10:00
10259332019	SV-094-A-16	Air	02/25/14 10:26	03/04/14 10:00
10259332020	IA-094-A-16	Air	02/25/14 16:19	03/04/14 10:00
10259332021	SV-018-A-16	Air	02/25/14 10:30	03/04/14 10:00
10259332022	IA-018-A-16	Air	02/25/14 16:23	03/04/14 10:00
10259332023	SV-138-A-16	Air	02/25/14 10:35	03/04/14 10:00
10259332024	IA-138-A-16	Air	02/25/14 16:24	03/04/14 10:00
10259332025	SV-093-A-16	Air	02/25/14 16:27	03/04/14 10:00
10259332026	IA-093-A-16	Air	02/25/14 16:27	03/04/14 10:00
10259332027	BCK-1-16	Air	02/25/14 15:37	03/04/14 10:00
10259332028	BCK-2-16	Air	02/25/14 15:33	03/04/14 10:00
10259332029	BCK-3-16	Air	02/25/14 15:32	03/04/14 10:00
10259332030	BCK-4-16	Air	02/25/14 15:29	03/04/14 10:00
10259332032	SV-DUP3-A-16	Air	02/25/14 00:00	03/04/14 10:00
10259332033	IA-DUP3-A-16	Air	02/25/14 00:00	03/04/14 10:00
10259332034	SV-DUP4-A-16	Air	02/25/14 00:00	03/04/14 10:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: MRC SV/IAQ Study Feb 2014

Pace Project No.: 10259332

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10259332001	SV-015-A-16	TO-15	JAM	26
10259332002	IA-015-A-16	TO-15	JAM	26
10259332003	SV-108-A-16	TO-15	JAM	26
10259332004	IA-108-A-16	TO-15	JAM	26
10259332005	SV-118-A-16	TO-15	JAM	26
10259332006	IA-118-A-16	TO-15	JAM	26
10259332007	SV-117-A-16	TO-15	JAM	26
10259332008	IA-117-A-16	TO-15	JAM	26
10259332009	SV-079-A-16	TO-15	JAM	26
10259332010	IA-079-A-16	TO-15	JAM	26
10259332011	SV-081-A-16	TO-15	JAM	26
10259332012	IA-081-A-16	TO-15	JAM	26
10259332013	SV-136-A-16	TO-15	JAM	26
10259332014	IA-136-A-16	TO-15	JAM	26
10259332015	SV-076-A-16	TO-15	JAM	26
10259332016	IA-076-A-16	TO-15	JAM	26
10259332017	SV-075-A-16	TO-15	JAM	26
10259332018	IA-075-A-16	TO-15	JAM	26
10259332019	SV-094-A-16	TO-15	JAM	26
10259332020	IA-094-A-16	TO-15	JAM	26
10259332021	SV-018-A-16	TO-15	DR1	26
10259332022	IA-018-A-16	TO-15	JAM	26
10259332023	SV-138-A-16	TO-15	JAM	26
10259332024	IA-138-A-16	TO-15	JAM	26
10259332025	SV-093-A-16	TO-15	JAM	26
10259332026	IA-093-A-16	TO-15	JAM	26
10259332027	BCK-1-16	TO-15	DR1	26
10259332028	BCK-2-16	TO-15	DR1	26
10259332029	BCK-3-16	TO-15	DR1, JAM	26
10259332030	BCK-4-16	TO-15	JAM	26
10259332032	SV-DUP3-A-16	TO-15	JAM	26
10259332033	IA-DUP3-A-16	TO-15	JAM	26
10259332034	SV-DUP4-A-16	TO-15	DR1	26

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

A3 The sample was analyzed by serial dilution.

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

P8 Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10259332001	SV-015-A-16	TO-15	AIR/19645		
10259332002	IA-015-A-16	TO-15	AIR/19645		
10259332003	SV-108-A-16	TO-15	AIR/19645		
10259332004	IA-108-A-16	TO-15	AIR/19661		
10259332005	SV-118-A-16	TO-15	AIR/19661		
10259332006	IA-118-A-16	TO-15	AIR/19661		
10259332007	SV-117-A-16	TO-15	AIR/19661		
10259332008	IA-117-A-16	TO-15	AIR/19661		
10259332009	SV-079-A-16	TO-15	AIR/19661		
10259332010	IA-079-A-16	TO-15	AIR/19661		
10259332011	SV-081-A-16	TO-15	AIR/19661		
10259332012	IA-081-A-16	TO-15	AIR/19678		
10259332013	SV-136-A-16	TO-15	AIR/19661		
10259332014	IA-136-A-16	TO-15	AIR/19661		
10259332015	SV-076-A-16	TO-15	AIR/19661		
10259332016	IA-076-A-16	TO-15	AIR/19661		
10259332017	SV-075-A-16	TO-15	AIR/19661		
10259332018	IA-075-A-16	TO-15	AIR/19661		
10259332019	SV-094-A-16	TO-15	AIR/19661		
10259332020	IA-094-A-16	TO-15	AIR/19661		
10259332021	SV-018-A-16	TO-15	AIR/19668		
10259332022	IA-018-A-16	TO-15	AIR/19678		
10259332023	SV-138-A-16	TO-15	AIR/19678		
10259332024	IA-138-A-16	TO-15	AIR/19678		
10259332025	SV-093-A-16	TO-15	AIR/19678		
10259332026	IA-093-A-16	TO-15	AIR/19678		
10259332027	BCK-1-16	TO-15	AIR/19693		
10259332028	BCK-2-16	TO-15	AIR/19668		
10259332029	BCK-3-16	TO-15	AIR/19693		
10259332030	BCK-4-16	TO-15	AIR/19678		
10259332032	SV-DUP3-A-16	TO-15	AIR/19678		
10259332033	IA-DUP3-A-16	TO-15	AIR/19678		
10259332034	SV-DUP4-A-16	TO-15	AIR/19668		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07704BFB.D

BFB Injection Date: 03/18/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:18

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.42
75	30.00 - 66.00% of mass 95	50.84
96	5.00 - 9.00% of mass 95	6.97
173	Less than 2.00% of mass 174	0.58 (0.67)
174	50.00 - 120.00% of mass 95	86.39
175	4.00 - 9.00% of mass 174	6.90 (7.98)
176	93.00 - 101.00% of mass 174	82.62 (95.64)
177	5.00 - 9.00% of mass 176	5.47 (6.62)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	07705.D	03/18/2014	10:43
2	CAL2	CAL2	07706.D	03/18/2014	11:07
3	CAL3	CAL3	07707.D	03/18/2014	11:33
4	CAL4	CAL4	07708.D	03/18/2014	11:59
5	CAL5	CAL5	07709.D	03/18/2014	12:26
6	CAL6	CAL6	07710.D	03/18/2014	12:52
7	CAL7	CAL7	07711.D	03/18/2014	13:21
8	ICVADDL (LCS)	ICVADDL	07712.D	03/18/2014	13:46
9	ICV (LCS)	ICV	07713.D	03/18/2014	14:10
10	LCS (LCS)	LCS	07714.D	03/18/2014	14:35
11	BLANK (BLK)	BLANK	07718_BLANK.	03/18/2014	16:18
12	SV-DUP3-A-16	10259332032	07720.D	03/18/2014	17:31

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07108BFB.D

BFB Injection Date: 03/12/2014

Instrument ID: 10AIRD

BFB Injection Time: 14:08

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.00
75	30.00 - 66.00% of mass 95	57.87
96	5.00 - 9.00% of mass 95	6.44
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	94.75
175	4.00 - 9.00% of mass 174	7.31 (7.71)
176	93.00 - 101.00% of mass 174	92.10 (97.21)
177	5.00 - 9.00% of mass 176	5.49 (5.96)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	07109.D	03/12/2014	14:36
2	CAL2	CAL2	07110.D	03/12/2014	15:04
3	CAL3	CAL3	07111.D	03/12/2014	15:32
4	CAL4	CAL4	07112.D	03/12/2014	15:59
5	CAL5	CAL5	07113.D	03/12/2014	16:27
6	CAL6	CAL6	07114.D	03/12/2014	16:56
7	ICVADD (LCS)	ICVADD	07116.D	03/12/2014	17:51
8	ICV (LCS)	ICV	07117.D	03/12/2014	18:19

Report Date : 13-Mar-2014 11:19

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\031214.b\07109.d
 Level 2: \\192.168.10.12\chem\10airD.i\031214.b\07110.d
 Level 3: \\192.168.10.12\chem\10airD.i\031214.b\07111.d
 Level 4: \\192.168.10.12\chem\10airD.i\031214.b\07112.d
 Level 5: \\192.168.10.12\chem\10airD.i\031214.b\07113.d
 Level 6: \\192.168.10.12\chem\10airD.i\031214.b\07114.d

Compound	0.100000	0.200000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	1.84707	2.20998	2.08707	2.38311	2.63662	2.59098	AVRG		2.29531		13.45696
2 Propylene	8.30420	10.33282	9.03483	7.10137	7.42845	6.97995	AVRG		8.19694		15.93078
3 Dichlorodifluoromethane	1.11783	1.07868	1.10555	0.92829	1.04706	1.16499	AVRG		1.07373		7.58585
4 Dichlorotetrafluoroethane	1.13666	1.26817	1.26495	1.09100	1.22570	1.20808	AVRG		1.19909		5.95336
5 Chloromethane	3.99438	4.61963	4.18383	3.64123	3.99128	3.89205	AVRG		4.05373		8.11362
6 Vinyl chloride	3.89964	4.88840	4.60996	3.92104	4.19250	4.07899	AVRG		4.26509		9.37421
7 1,3-Butadiene	5.84568	7.72397	7.53790	6.27815	6.73700	6.57185	AVRG		6.78243		10.70426
8 Bromomethane	3.85148	3.70757	3.90127	3.16512	3.37792	3.22720	AVRG		3.52176		8.57516
9 Chloroethane	9.58989	9.74752	9.91081	8.42077	8.98106	8.83494	AVRG		9.24750		6.36433
10 Ethanol	3.89796	5.82756	9.93536	7.64804	8.49662	8.16434	AVRG		7.32832		29.25557
11 Vinyl Bromide	3.81395	3.73543	3.90216	3.21578	3.35402	3.28417	AVRG		3.55175		8.46051
12 Isopentane	4.15019	5.61721	5.08509	4.26655	4.60957	4.50317	AVRG		4.70530		11.74291
13 Trichlorofluoromethane	0.97860	1.05430	1.05383	0.90657	1.02263	1.04827	AVRG		1.01030		5.76969
14 Acrolein	11.00155	19.36844	11.84109	12.78597	13.21486	12.77064	AVRG		13.49709		22.11707

Report Date : 13-Mar-2014 11:19

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\T015_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.100000C	0.200000C	1.0000	10.0000	20.0000	30.0000	Coefficients	b	m1	m2	RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6 (Curve)					
15 Acetone	12855	17620	59374	385066	821697	1299436 LINR	-0.03985	2.45735			0.99952
16 Isopropyl Alcohol	2522	6197	27370	348129	710045	1181465 LINR	0.00546	2.69998			0.99791
17 1,1-Dichloroethene	2.69663	2.83261	2.53167	2.13799	2.43318	2.38891 AVRG		2.53663			11.26954
18 Tert Butyl Alcohol	2.01544	2.01355	1.97750	1.60447	1.85244	1.69899 AVRG		1.86040			9.39724
19 Acrylonitrile	798	1962	11027	157583	326134	544552 LINR	0.01435	5.82723			0.99787
20 Freon 113	1.81592	1.81395	1.86800	1.62128	1.72976	1.65941 AVRG		1.75138			5.56711
21 Methylene chloride	++++	11007	37026	271086	601613	948282 LINR	-0.02453	3.35108			0.99976
22 Allyl Chloride	12.56010	9.99243	9.29961	6.09682	7.86363	7.60875 AVRG		9.23689			20.22778
23 Carbon Disulfide	1.21729	1.27786	1.37447	1.21500	1.17409	1.16213 AVRG		1.23681			6.36660
24 trans-1,2-dichloroethene	2193	4083	20952	267742	598892	914376 LINR	0.00097	3.40156			0.99980
25 Methyl Tert Butyl Ether	5391	11416	58411	735328	1636774	2492668 LINR	-0.00092	1.24731			0.99973
26 Vinyl Acetate	3994	8348	44040	559546	1246062	1921527 LINR	0.00314	1.62242			0.99968
27 1,1-Dichloroethane	2.43951	2.35852	2.23621	1.96824	2.06167	2.07531 AVRG		2.18991			3.45938
29 Methyl Ethyl Ketone	8.61264	10.67807	9.92530	8.86593	8.41578	8.57651 AVRG		9.17904			9.94729
30 n-Hexane	3.37310	3.48926	3.72236	3.14871	3.07110	3.21794 AVRG		3.33728			7.25803
31 Di-Isopropyl Ether	1.64274	1.81782	1.69669	1.46101	1.42911	1.38956 AVRG		1.57282			10.90150
32 cis-1,2-Dichloroethene	2137	3859	19949	274210	578513	947258 LINR	0.01062	3.33737			0.99876
33 Ethyl Acetate	3824	7381	38812	495996	1038950	1706192 LINR	0.00822	1.85579			0.99661
34 Chloroform	1.37666	1.42703	1.45533	1.24153	1.35690	1.33504 AVRG		1.36541			5.51478
35 Ethyl Tert-Butyl Ether	5101	11163	56108	689344	1498577	2432017 LINR	0.01121	1.29833			0.99925
36 Tetrahydrofuran	5.26997	7.17005	6.09059	4.46509	4.75097	4.29754 AVRG		5.34070			20.70947
37 1,1,1-Trichloroethane	1.50495	1.40673	1.38469	1.11945	1.25944	1.25609 AVRG		1.32189			10.36522

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\T015_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.000000	0.200000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.96692	2.01016	1.97100	1.69113	1.87298	1.90399	AVRG		1.89970		6.07242
39 Benzene	1.43681	1.55603	1.46339	1.12407	1.19546	1.12510	AVRG		1.32732		14.44489
40 Carbon tetrachloride	1.31309	1.38980	1.37672	1.10581	1.28897	1.32943	AVRG		1.30064		7.90208
41 Cyclohexane	1838	3775	22962	303249	634718	1021012	LINR	0.00424	3.08391		0.99907
42 Tert Amyl Methyl Ether	17758	24679	68807	755422	1603988	2554497	LINR	-0.01200	1.23815		0.99944
44 2,2,4-Trimethylpentane	7224	14397	77193	963317	1984213	3297749	LINR	0.00753	0.96317		0.99800
45 Heptane	2778	4463	24577	341314	717642	1123468	LINR	-0.00219	2.78458		0.99927
46 1,2-Dichloropropane	1934	4268	20270	275121	582731	942091	LINR	0.00746	3.34645		0.99912
47 Trichloroethene	3.56455	3.49608	3.46217	2.62209	2.74872	2.67422	AVRG		3.09464		14.71455
48 Bromodichloromethane	1.35196	1.32439	1.34149	1.07629	1.16319	1.18352	AVRG		1.24014		9.25368
49 1,4-Dioxane	7.06505	8.16071	7.47531	5.51964	5.64036	5.41685	AVRG		6.54632		17.82051
50 Methylcyclohexane	1065	2517	13234	165262	372185	578677	LINR	0.00739	5.39751		0.99996
51 Methyl Isobutyl Ketone	2926	6431	36497	502300	1073067	1712543	LINR	0.00711	1.83404		0.99943
52 cis-1,3-Dichloropropene	3361	7460	35563	496474	1064359	1720174	LINR	0.01066	1.83165		0.99924
53 trans-1,3-Dichloropropene	3833	6223	38146	572995	1217189	1863188	LINR	-0.00355	1.66787		0.99912
55 Toluene	8085	15225	76878	1049359	2307764	3573128	LINR	0.00329	0.87292		0.99980
56 1,1,2-Trichloroethane	2.79977	3.26220	3.10938	2.34994	2.41284	2.35750	AVRG		2.71527		14.86457
57 Methyl Butyl Ketone	3125	5648	36044	510936	1076702	1686729	LINR	0.01333	0.99851		0.99982
58 Dibromochloromethane	5079	10721	52406	733694	1495682	2389620	LINR	0.01047	0.70854		0.99932
59 1,2-Dibromoethane	1.03870	0.98439	0.98233	0.81122	0.79994	0.76810	AVRG		0.89744		13.03189
60 Tetrachloroethene	1.09691	1.11322	1.08591	0.91076	0.86975	0.94570	AVRG		0.99739		12.63046
62 Chlorobenzene	0.79863	0.83831	0.81353	0.67409	0.64687	0.63561	AVRG		0.72451		12.51402

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Level 6 (Curve)	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	9798	16706	102914	1402365	3086160	4707341	LINR	0.01331	0.35534		0.99993
64 m,p-Xylene	6914	14151	81094	1120347	2355902	3705219	LINR	0.01289	0.43499		0.99976
65 Bromoform	5717	10782	56975	859792	1842792	2807865	LINR	0.00977	0.59533		0.99993
66 Styrene	3983	8138	51055	787972	1655243	2606992	LINR	0.01655	0.64594		0.99972
67 o-Xylene	7548	14271	85734	1188529	2436161	3804048	LINR	0.00540	0.44165		0.99983
68 1,1,2,2-Tetrachloroethane	0.81657	0.89467	0.81911	0.63587	0.64088	0.62524	AVRG		0.73873		16.00246
69 Isopropylbenzene	10320	19216	103260	1451853	3084217	4734953	LINR	0.00818	0.35399		0.99996
70 N-Propylbenzene	10447	20932	124461	1825752	3803407	5961173	LINR	0.01285	0.28167		0.99973
71 4-Ethyltoluene	++++	0.60445	0.48567	0.36975	0.37197	0.35774	AVRG		0.42852		24.38335
72 1,3,5-Trimethylbenzene	6564	14286	88734	1224789	2573268	4072084	LINR	0.01494	0.41449		0.99965
73 Tert-Butyl Benzene	5720	12925	79033	1120494	2356681	3694867	LINR	0.01334	0.45566		0.99980
74 1,2,4-Trimethylbenzene	6901	14615	84216	1217443	2540474	3960669	LINR	0.01167	0.42295		0.99978
75 1,3-Dichlorobenzene	++++	0.98955	0.86971	0.65511	0.65965	0.64347	AVRG		0.76350		20.63877
76 Sec-Butylbenzene	8233	18059	115499	1654994	3497609	5384553	LINR	0.00976	0.31127		0.99995
78 Benzyl Chloride	5460	10465	60380	1025269	2189803	3464827	QUAD	-0.02466	1.93992	0.04194	0.99985
79 1,4-Dichlorobenzene	++++	0.94318	0.89739	0.67009	0.67251	0.65124	AVRG		0.76688		18.41364
80 p-Isopropyltoluene	++++	0.69177	0.52105	0.41954	0.40475	0.40421	AVRG		0.46826		25.24366
81 1,2,3-Trimethylbenzene	6736	14861	90603	1109030	2388977	3649308	LINR	0.00934	0.45871		0.99997
82 1,2-Dichlorobenzene	4490	8618	46991	696705	1453901	2352537	LINR	0.02065	0.72091		0.99901
83 N-Ethylbenzene	6331	15037	94132	1364510	2885118	4413147	LINR	0.00842	0.37915		0.99993
84 1,2,4-Trichlorobenzene	3603	7124	37327	615589	1357627	2122357	QUAD	-0.01725	1.19155	0.02976	0.99994
85 Naphthalene	4793	8364	57643	960782	2102178	3457455	QUAD	-0.01833	1.72712	0.11020	0.99980

Report Date : 13-Mar-2014 11:19

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
 End Cal Date : 12-MAR-2014 16:56
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031214.b\TO15_071-14.m
 Last Edit : 13-Mar-2014 11:19 ahamilton

Compound	0.100000	0.200000	1.0000	10.0000	20.0000	30.0000	Coefficient	b	m1	m2	RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6 (Curve)					
86 Hexachlorobutadiene	4667	8662	46156	621041	1288173	2006115	LINR	0.00597	0.83910		0.99963
\$ 28 Hexane-d14 (S)	2.48646	2.25498	2.26576	2.45626	2.27358	2.47599	AVRG		2.36884		4.83610
\$ 54 Toluene-d8 (S)	1.18425	1.16663	1.19488	1.14030	1.14662	1.19130	AVRG		1.17066		1.98980
\$ 77 1,4-dichlorobenzene-d4 (S)	1.99059	1.94186	1.85306	1.94464	1.81821	1.80511	AVRG		1.89225		4.05846

Report Date : 13-Mar-2014 11:19

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-MAR-2014 14:36
End Cal Date : 12-MAR-2014 16:56
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\031214.b\T015_071-14.m
Last Edit : 13-Mar-2014 11:19 ahamilton

Average %RSD Results.
Calculated Average %RSD = 10.56159
Maximum Average %RSD = 30.00000
Passed Average %RSD Test.

Curve	Formula	Units
Averaged	$Amt = m1 \cdot Rsp$	Amount
Linear	$Amt = b + m1 \cdot Rsp$	Amount
Quad	$Rsp = b + m1 \cdot Amt + m2 \cdot Amt^2$	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07301BFB.D

BFB Injection Date: 03/14/2014

Instrument ID: 10AIRD

BFB Injection Time: 12:07

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	21.37
75	30.00 - 66.00% of mass 95	56.05
96	5.00 - 9.00% of mass 95	6.88
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	91.10
175	4.00 - 9.00% of mass 174	7.23 (7.94)
176	93.00 - 101.00% of mass 174	89.93 (98.72)
177	5.00 - 9.00% of mass 176	6.64 (7.38)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV	CCV	07302.D	03/14/2014	12:36
2	LCS for HBN 289655 [AIR/	1640973	07321_19693.D	03/14/2014	22:33
3	LCS for HBN 289483 [AIR/	1640108	07321.D	03/14/2014	22:33
4	BLANK for HBN 289483 [AI	1640107	07323.D	03/14/2014	23:29
5	BLANK for HBN 289655 [AI	1640972	07323_19693.D	03/14/2014	23:29
6	BCK-3-16	10259332029	07326.D	03/15/2014	00:56
7	BCK-2-16	10259332028	07328.D	03/15/2014	01:54
8	SV-DUP4-A-16	10259332034	07335.D	03/15/2014	05:15
9	BCK-1-16	10259332027	07337.D	03/15/2014	06:14
10	SV-018-A-16	10259332021	07340.D	03/15/2014	07:38

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 14-MAR-2014 12:36
Lab File ID: 07302.d Init. Cal. Date(s): 12-MAR-2014 12-MAR-2014
Analysis Type: AIR Init. Cal. Times: 14:36 16:56
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.29581	2.39762	2.39762	0.010	4.43499	30.00000	Averaged
2 Propylene	8.19694	7.01976	7.01976	0.010	-14.36120	30.00000	Averaged
3 Dichlorodifluoromethane	1.07373	0.91849	0.91849	0.010	-14.45798	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.19909	1.11146	1.11146	0.010	-7.30818	30.00000	Averaged
5 Chloromethane	4.05373	3.70784	3.70784	0.010	-8.53271	30.00000	Averaged
6 Vinyl chloride	4.26509	3.82837	3.82837	0.010	-10.23947	30.00000	Averaged
7 1,3-Butadiene	6.78243	6.31938	6.31938	0.010	-6.82718	30.00000	Averaged
8 Bromomethane	3.52176	3.08815	3.08815	0.010	-12.31241	30.00000	Averaged
9 Chloroethane	9.24750	8.68366	8.68366	0.010	-6.09724	30.00000	Averaged
10 Ethanol	7.32832	7.46866	7.46866	0.100	1.91505	30.00000	Averaged
11 Vinyl Bromide	3.55175	3.15473	3.15473	0.010	-11.17827	30.00000	Averaged
12 Isopentane	4.70530	4.29731	4.29731	0.010	-8.67068	30.00000	Averaged
13 Trichlorofluoromethane	1.01030	0.94450	0.94450	0.010	-6.51304	30.00000	Averaged
14 Acrolein	13.49709	13.26250	13.26250	0.010	-1.73806	30.00000	Averaged
15 Acetone	10.00000	10.96112	2.16298	0.010	9.61116	30.00000	Linear
16 Isopropyl Alcohol	10.00000	10.30119	2.62523	0.010	3.01194	30.00000	Linear
17 1,1-Dichloroethene	2.53683	2.28818	2.28818	0.010	-9.80146	30.00000	Averaged
18 Tert Butyl Alcohol	1.86040	1.64116	1.64116	0.100	-11.78420	30.00000	Averaged
19 Acrylonitrile	10.00000	10.05324	5.88034	0.010	0.53244	30.00000	Linear
20 Freon 113	1.75138	1.73242	1.73242	0.010	-1.08260	30.00000	Averaged
21 Methylene chloride	10.00000	9.19091	3.55130	0.010	-8.09087	30.00000	Linear
22 Allyl Chloride	9.23689	8.94377	8.94377	0.010	-3.17334	30.00000	Averaged
23 Carbon Disulfide	1.23681	1.22877	1.22877	0.010	-0.64978	30.00000	Averaged
24 trans-1,2-dichloroethene	10.00000	9.85537	3.45488	0.010	-1.44633	30.00000	Linear
25 Methyl Tert Butyl Ether	10.00000	9.56019	1.30333	0.010	-4.39811	30.00000	Linear
26 Vinyl Acetate	10.00000	9.62750	1.69070	0.010	-3.72499	30.00000	Linear
27 1,1-Dichloroethane	2.18991	2.11311	2.11311	0.010	-3.50701	30.00000	Averaged
28 Hexane-d14(S)	2.36884	2.50703	2.50703	0.200	5.83361	30.00000	Averaged
29 Methyl Ethyl Ketone	9.17904	8.31752	8.31752	0.010	-9.38569	30.00000	Averaged
30 n-Hexane	3.33708	3.10555	3.10555	0.010	-6.93811	30.00000	Averaged
31 Di-isopropyl Ether	1.57282	1.40098	1.40098	0.010	-10.92571	30.00000	Averaged
32 cis-1,2-Dichloroethene	10.00000	10.31003	3.27071	0.010	3.10026	30.00000	Linear
33 Ethyl Acetate	10.00000	10.42823	1.79372	0.010	4.28232	30.00000	Linear
34 Chloroform	1.36541	1.19953	1.19953	0.010	-12.14890	30.00000	Averaged
35 Ethyl Tert-Butyl Ether	10.00000	11.03719	1.18839	0.010	10.37194	30.00000	Linear
36 Tetrahydrofuran	5.34070	4.35104	4.35104	0.010	-18.53058	30.00000	Averaged
37 1,1,1-Trichloroethane	1.32189	1.13750	1.13750	0.010	-13.94916	30.00000	Averaged
38 1,2-Dichloroethane	1.89970	1.72133	1.72133	0.010	-9.38919	30.00000	Averaged
39 Benzene	1.31732	1.12463	1.12463	0.300	-14.62756	30.00000	Averaged
40 Carbon tetrachloride	1.30064	1.17898	1.17898	0.010	-9.35382	30.00000	Averaged
41 Cyclohexane	10.00000	9.58303	3.23241	0.010	-4.16973	30.00000	Linear
42 Tert Amyl Methyl Ether	10.00000	10.65215	1.14940	0.010	6.52148	30.00000	Linear

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 14-MAR-2014 12:36
Lab File ID: 07302.d Init. Cal. Date(s): 12-MAR-2014 12-MAR-2014
Analysis Type: AIR Init. Cal. Times: 14:36 16:56
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	10.00000	10.32763	0.93946	0.010	3.27633	30.00000	Linear
45 Heptane	10.00000	10.47497	2.65278	0.010	4.74972	30.00000	Linear
46 1,2-Dichloropropane	10.00000	10.28142	3.27865	0.010	2.81420	30.00000	Linear
47 Trichloroethene	3.09464	2.58329	2.58329	0.010	-16.52368	30.00000	Averaged
48 Bromodichloromethane	1.24014	1.05222	1.05222	0.010	-15.15340	30.00000	Averaged
49 1,4-Dioxane	6.54632	4.86862	4.86862	0.010	-25.62811	30.00000	Averaged
50 Methylcyclohexane	10.00000	10.50510	5.17440	0.010	5.05102	30.00000	Linear
51 Methyl Isobutyl Ketone	10.00000	10.33663	1.78661	0.010	3.36634	30.00000	Linear
52 cis-1,3-Dichloropropene	10.00000	10.43746	1.77299	0.010	4.37463	30.00000	Linear
53 trans-1,3-Dichloropropene	10.00000	10.54302	1.57666	0.010	5.43019	30.00000	Linear
54 Toluene-d8 (S)	1.17066	1.13392	1.13392	0.200	-3.13859	30.00000	Averaged
55 Toluene	10.00000	10.20878	0.95784	0.300	2.08785	30.00000	Linear
56 1,1,2-Trichloroethane	2.71527	2.34380	2.34380	0.010	-13.68097	30.00000	Averaged
57 Methyl Butyl Ketone	10.00000	10.60478	0.95311	0.010	6.04779	30.00000	Linear
58 Dibromochloromethane	10.00000	11.33782	0.63076	0.010	13.37815	30.00000	Linear
59 1,2-Dibromoethane	0.89744	0.74375	0.74375	0.010	-17.12631	30.00000	Averaged
60 Tetrachloroethene	0.98738	0.79430	0.79430	0.010	-19.55396	30.00000	Averaged
62 Chlorobenzene	0.73451	0.59341	0.59341	0.010	-19.21006	30.00000	Averaged
63 Ethyl Benzene	10.00000	10.71910	0.33567	0.300	7.19104	30.00000	Linear
64 m&p-Xylene	10.00000	10.85847	0.42405	0.300	8.58473	30.00000	Linear
65 Bromoform	10.00000	11.01610	0.54525	0.010	10.16097	30.00000	Linear
66 Styrene	10.00000	11.09042	0.59125	0.010	10.90423	30.00000	Linear
67 o-Xylene	10.00000	11.07387	0.40078	0.300	10.73866	30.00000	Linear
68 1,1,2,2-Tetrachloroethane	0.73873	0.59306	0.59306	0.010	-19.71818	30.00000	Averaged
69 Isopropylbenzene	10.00000	11.25345	0.31687	0.010	12.53450	30.00000	Linear
70 N-Propylbenzene	10.00000	11.00830	0.25889	0.010	10.08296	30.00000	Linear
71 4-Ethyltoluene	0.43852	0.34430	0.34430	0.010	-21.48443	30.00000	Averaged
72 1,3,5-Trimethylbenzene	10.00000	10.92897	0.38452	0.010	9.28967	30.00000	Linear
73 Tert-Butyl Benzene	10.00000	11.13060	0.41436	0.010	11.30602	30.00000	Linear
74 1,2,4-Trimethylbenzene	10.00000	11.32973	0.37719	0.010	13.29732	30.00000	Linear
75 1,3-Dichlorobenzene	0.76350	0.59217	0.59217	0.010	-22.44027	30.00000	Averaged
76 Sec- Butylbenzene	10.00000	11.17166	0.28108	0.010	11.71660	30.00000	Linear
77 1,4-dichlorobenzene-d4 (S)	1.89225	1.95037	1.95037	0.200	3.07156	30.00000	Averaged
78 Benzyl Chloride	10.00000	11.07194	0.45985	0.010	10.71944	30.00000	Quadratic
79 1,4-Dichlorobenzene	0.76688	0.60760	0.60760	0.010	-20.77032	30.00000	Averaged
80 p-Isopropyltoluene	0.48826	0.37251	0.37251	0.010	-23.70793	30.00000	Averaged
81 1,2,3-Trimethylbenzene	10.00000	10.40171	0.44499	0.010	4.01709	30.00000	Linear
82 1,2-Dichlorobenzene	10.00000	10.71392	0.68609	0.010	7.13917	30.00000	Linear
83 N-Butylbenzene	10.00000	11.28526	0.33850	0.010	12.85260	30.00000	Linear
84 1,2,4-Trichlorobenzene	10.00000	11.17506	0.74268	0.010	11.75059	30.00000	Quadratic
85 Naphthalene	10.00000	11.45900	0.47495	0.010	14.59001	30.00000	Quadratic
86 Hexachlorobutadiene	10.00000	11.69282	0.72132	0.010	16.92815	30.00000	Linear

Data File: \\192.168.10.12\chem\10airD.i\031414.b\07302.d
Report Date: 14-Mar-2014 13:02

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 14-MAR-2014 12:36
Lab File ID: 07302.d Init. Cal. Date(s): 12-MAR-2014 12-MAR-2014
Analysis Type: AIR Init. Cal. Times: 14:36 16:56
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m

Average %D / Drift Results.	
=====	
Calculated Average %D/Drift =	9.52996
Maximum Average %D/Drift =	30.00000
* Passed Average %D/Drift Test.	

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07603BFB.D

BFB Injection Date: 03/17/2014

Instrument ID: 10AIRD

BFB Injection Time: 09:34

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	17.83
75	30.00 - 66.00% of mass 95	54.54
96	5.00 - 9.00% of mass 95	6.52
173	Less than 2.00% of mass 174	0.81 (0.84)
174	50.00 - 120.00% of mass 95	96.19
175	4.00 - 9.00% of mass 174	7.69 (8.00)
176	93.00 - 101.00% of mass 174	93.60 (97.31)
177	5.00 - 9.00% of mass 176	6.13 (6.55)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL4	CAL4	07605.D	03/17/2014	10:49
2	CAL5	CAL5	07606.D	03/17/2014	11:30
3	CAL6	CAL6	07607.D	03/17/2014	11:59
4	CAL1	CAL1	07609.D	03/17/2014	13:04
5	CAL2	CAL2	07610.D	03/17/2014	13:32
6	CAL3	CAL3	07611.D	03/17/2014	13:59
7	ICVADD (LCS)	ICVADD	07612.D	03/17/2014	14:27
8	ICV (LCS)	ICV	07613.D	03/17/2014	14:55

Report Date : 18-Mar-2014 08:18

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-MAR-2014 10:49
 End Cal Date : 17-MAR-2014 13:59
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031714.b\TO15_076-14.m
 Last Edit : 17-Mar-2014 16:11 drandall

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\031714.b\07609.d
 Level 2: \\192.168.10.12\chem\10airD.i\031714.b\07610.d
 Level 3: \\192.168.10.12\chem\10airD.i\031714.b\07611.d
 Level 4: \\192.168.10.12\chem\10airD.i\031714.b\07605.d
 Level 5: \\192.168.10.12\chem\10airD.i\031714.b\07606.d
 Level 6: \\192.168.10.12\chem\10airD.i\031714.b\07607.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	1.61500	1.82582	1.88353	2.10432	2.08369	2.51803	AVRG	2.00507			15.42405
2 Propylene	4.78595	6.68429	7.26616	5.32946	5.13691	6.44177	AVRG	5.94076			16.66744
3 Dichlorodifluoromethane	0.92781	1.02132	0.98587	0.90741	1.02080	1.13330	AVRG	0.99942			8.06402
4 Dichlorotetrafluoroethane	1.10628	1.17604	1.20156	0.96778	0.96892	1.23301	AVRG	1.10893			10.51708
5 Chloromethane	3.57915	3.80838	3.91634	2.97298	2.91406	3.96074	AVRG	3.52528			13.33070
6 Vinyl chloride	3.64470	3.98003	4.10736	3.07911	2.96596	3.96791	AVRG	3.62418			13.56813
7 1,3-Butadiene	6.23955	7.68052	6.32717	4.77807	4.92131	6.16422	AVRG	6.01847			17.69404
8 Bromomethane	3.08054	3.39034	3.54267	2.98423	2.90846	3.58121	AVRG	3.24791			9.03988
9 Chloroethane	10.60239	7.13295	8.91213	7.48696	7.38851	9.87957	AVRG	8.56708			16.99278
10 Ethanol	7.52185	8.40089	10.89101	6.51687	6.91990	8.56907	AVRG	8.13493			19.25714
11 Vinyl Bromide	2.85668	3.61515	3.74138	3.44008	2.82235	3.34786	AVRG	3.30392			11.64895
12 Isopentane	4.28182	4.43623	4.91863	4.23630	3.43107	4.27593	AVRG	4.26333			11.26470
13 Trichlorofluoromethane	1.01495	1.12937	1.06865	1.12626	0.97716	1.07089	AVRG	1.06455			5.66154
14 Acrolein	8.87802	8.92720	9.59840	13.94694	11.61387	14.28018	AVRG	11.20743			21.97456

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-MAR-2014 10:49
 End Cal Date : 17-MAR-2014 13:59
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031714.b\TO15_076-14.m
 Last Edit : 17-Mar-2014 16:11 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	++++	18708	63044	501033	1040073	1355449	LINR	-0.03660	2.27183		0.99877
16 Isopropyl Alcohol	2.44629	3.16660	3.09776	2.54246	2.42982	2.65357	AVRG		2.72275		12.03819
17 1,1-Dichloroethene	2.37867	3.19782	2.79819	2.37189	1.98146	2.26008	AVRG		2.49802		17.29658
18 Tert Butyl Alcohol	1.80173	2.31446	1.93189	1.62506	1.42654	1.57435	AVRG		1.77901		17.76282
19 Acrylonitrile	7.35393	9.09555	8.52044	5.55188	4.46034	5.40087	AVRG		6.73050		27.79363
20 Freon 113	1.90522	2.14672	1.95952	1.76796	1.51312	1.59804	AVRG		1.81510		13.02551
21 Methylene chloride	2.05568	2.50494	3.04996	3.15005	2.68996	3.17803	AVRG		2.77144		15.94342
22 Allyl Chloride	10.67346	9.25669	10.90706	7.88609	6.73295	7.32551	AVRG		8.79696		19.97598
23 Carbon Disulfide	1.06974	1.36986	1.32706	0.99112	0.96946	1.16329	AVRG		1.14842		14.78406
24 trans-1,2-dichloroethene	3.44989	4.70829	3.86239	2.83593	2.77841	3.31851	AVRG		3.49224		20.60141
25 Methyl Tert Butyl Ether	1.22770	1.65957	1.35792	1.11770	1.02864	1.15095	AVRG		1.25708		17.99665
26 Vinyl Acetate	1.57923	2.38761	2.18743	1.28415	1.26549	1.59201	AVRG		1.70099		27.89766
27 1,1-Dichloroethane	1.82061	2.62447	2.58438	1.73248	1.67144	1.89812	AVRG		2.05525		21.04316
29 Methyl Ethyl Ketone	6.53403	9.42365	9.97456	6.45370	6.98089	7.76007	AVRG		7.85448		19.25364
30 n-Hexane	2.27392	3.35407	3.90945	2.30792	2.59677	2.71650	AVRG		2.85977		22.57312
31 Di-isopropyl Ether	1.57610	1.74034	1.84396	1.04158	1.08669	1.18675	AVRG		1.41290		24.79798
32 cis-1,2-Dichloroethene	3.21750	3.51384	4.65289	2.64727	2.52591	2.85560	AVRG		3.23550		24.26023
33 Ethyl Acetate	1.73686	2.01820	2.53619	1.40328	1.33585	1.61544	AVRG		1.77430		25.16083
34 Chloroform	1.21136	1.31766	1.51268	1.08567	1.10954	1.19258	AVRG		1.23825		12.73186
35 Ethyl Tert-Butyl Ether	1.10436	1.33914	1.47769	0.97138	0.99136	1.09590	AVRG		1.16331		17.37113
36 Tetrahydrofuran	4.12468	5.18599	4.89248	3.28739	3.08490	3.87119	AVRG		4.07444		20.67241
37 1,1,1-Trichloroethane	1.21815	1.28939	1.24800	1.05885	1.07125	1.14442	AVRG		1.17168		8.13258

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-MAR-2014 10:49
 End Cal Date : 17-MAR-2014 13:59
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031714.b\TO15_076-14.m
 Last Edit : 17-Mar-2014 16:11 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.64504	1.96959	1.88610	1.56181	1.59655	1.71150	AVRG	1.72843			9.52124
39 Benzene	1.05965	1.19222	1.18715	0.88095	0.86298	0.98177	AVRG	1.02745			14.05627
40 Carbon Tetrachloride	1.31400	1.34393	1.37118	1.08093	1.11045	1.24681	AVRG	1.24455			9.87322
41 Cyclohexane	3.08951	3.03283	3.20848	2.26276	2.21076	2.67943	AVRG	2.74729			15.77048
42 Tert Amyl Methyl Ether	0.47289	0.68133	1.09068	0.93724	0.91467	1.03004	AVRG	0.85447			27.33003
44 2,2,4-Trimethylpentane	0.89521	1.00152	0.95267	0.71349	0.69420	0.81751	AVRG	0.84577			14.89977
45 Heptane	2.42026	3.09013	2.82860	2.04018	1.98992	2.37009	AVRG	2.45653			17.64802
46 1,2-Dichloropropane	2.94202	3.20709	3.42883	2.63312	2.58660	2.96057	AVRG	2.95970			10.97383
47 Trichloroethene	2.76011	2.93533	2.85251	2.18644	2.12132	2.33487	AVRG	2.53176			14.17943
48 Bromodichloromethane	1.24596	1.25080	1.24590	0.97172	0.97276	1.07230	AVRG	1.12657			12.20361
49 1,4-Dioxane	5.49009	5.89089	6.18333	4.08373	4.22611	4.57804	AVRG	5.07536			17.65937
50 Methylcyclohexane	5.65586	5.75393	5.76037	4.23082	4.33091	4.50231	AVRG	5.03904			14.99479
51 Methyl Isobutyl Ketone	1.78623	2.12971	2.05335	1.44486	1.37195	1.62194	AVRG	1.73467			18.01969
52 cis-1,3-Dichloropropene	1.86468	2.12418	2.06447	1.50223	1.46042	1.64372	AVRG	1.77662			16.00648
53 trans-1,3-Dichloropropene	1.81198	2.18513	2.06461	1.42775	1.34098	1.54781	AVRG	1.72971			20.05557
55 Toluene	0.84433	0.98125	0.96693	0.71126	0.70441	0.80137	AVRG	0.83492			14.41018
56 1,1,2-Trichloroethane	2.33964	2.73515	2.66792	1.95050	1.89597	2.13485	AVRG	2.28734			15.61676
57 Methyl Butyl Ketone	4137	7518	42291	771556	1618056	++++	LINR	0.61310			0.99967
58 Dibromochloromethane	0.70053	0.76895	0.80043	0.47050	0.58422	0.63696	AVRG	0.66027			18.60099
59 1,2-Dibromoethane	0.80901	0.89691	0.86765	0.50423	0.66022	0.66479	AVRG	0.73380			20.49220
60 Tetrachloroethene	0.86990	0.93602	0.91854	0.56778	0.68935	0.72908	AVRG	0.78511			18.65964
62 Chlorobenzene	0.59885	0.66783	0.67441	0.50665	0.51467	0.54148	AVRG	0.58398			12.81843

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-MAR-2014 10:49
 End Cal Date : 17-MAR-2014 13:59
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031714.b\TO15_076-14.m
 Last Edit : 17-Mar-2014 16:11 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	0.35875	0.42695	0.38847	0.27726	0.28913	0.31538	AVRG		0.34266		17.19093 <-
64 m,p-Xylene	0.44078	0.49907	0.49962	0.36034	0.36227	0.39662	AVRG		0.42645		14.90946
65 Bromoform	0.69373	0.72510	0.73391	0.47642	0.49038	0.52803	AVRG		0.60793		20.07320
66 Styrene	0.74417	0.74963	0.74459	0.51057	0.51180	0.53877	AVRG		0.63325		19.59322
67 o-Xylene	0.43128	0.48104	0.47850	0.34203	0.36398	0.38474	AVRG		0.41360		14.30003
68 1,1,2,2-Tetrachloroethane	0.59387	0.71992	0.70888	0.49521	0.52371	0.53856	AVRG		0.59669		16.21082
69 Isopropylbenzene	0.35767	0.39034	0.37186	0.28434	0.28592	0.31178	AVRG		0.33365		13.69474
70 N-Propylbenzene	0.32819	0.34194	0.30725	0.22366	0.23805	0.25002	AVRG		0.28152		17.91641
71 4-Ethyltoluene	0.40827	0.43596	0.40140	0.28660	0.30398	0.32717	AVRG		0.36056		17.28167
72 1,3,5-Trimethylbenzene	0.47950	0.48816	0.46407	0.32786	0.34138	0.36655	AVRG		0.41125		17.93323
73 Tert-Butyl Benzene	0.49575	0.55000	0.51079	0.36860	0.37445	0.40544	AVRG		0.45084		17.21073
74 1,2,4-Trimethylbenzene	0.44564	0.47697	0.45754	0.34134	0.34484	0.37440	AVRG		0.40679		14.82346
75 1,3-Dichlorobenzene	0.67103	0.73354	0.74940	0.52705	0.53385	0.56891	AVRG		0.63063		15.89405
76 Sec- Butylbenzene	0.37555	0.38709	0.34679	0.24799	0.25810	0.27822	AVRG		0.31562		19.50607
78 Benzyl Chloride	7366	13505	69418	1177736	2416016	3537721	LTNR	-0.01024	0.43968		0.99649
79 1,4-Dichlorobenzene	0.65087	0.75518	0.76979	0.53547	0.54266	0.58464	AVRG		0.63977		16.19806
80 p-Isopropyltoluene	0.46053	0.51933	0.47518	0.31832	0.33665	0.35181	AVRG		0.41030		20.65893
81 1,2,3-Trimethylbenzene	0.50322	0.55133	0.52642	0.37052	0.38068	0.43256	AVRG		0.46079		16.71725
82 1,2-Dichlorobenzene	0.79024	0.89440	0.85518	0.57861	0.61693	0.72372	AVRG		0.74318		17.12910
83 N-Butylbenzene	0.45356	0.50521	0.44683	0.20480	0.33405	0.36921	AVRG		0.40227		19.40307
84 1,2,4-Trichlorobenzene	0.76347	1.12740	1.33199	0.63683	0.89316	0.69760	AVRG		0.90841		29.81645
85 Naphthalene	0.40291	0.75752	0.65403	0.40129	0.56204	0.44956	AVRG		0.53789		27.19491

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-MAR-2014 10:49
End Cal Date : 17-MAR-2014 13:59
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\031714.b\TO15_076-14.m
Last Edit : 17-Mar-2014 16:11 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
86 Hexachlorobutadiene	0.60383	0.81332	0.85288	0.63886	0.91940	0.74809	AVRG		0.76273		16.16809
\$ 28 Hexane-d14 (S)	2.31099	2.92764	2.96074	2.30415	2.24697	2.63481	AVRG		2.56421		12.65727
\$ 54 Toluene-d8 (S)	1.16263	1.18930	1.19269	1.16674	1.11191	1.18521	AVRG		1.16808		2.57853
\$ 77 1,4-dichlorobenzene-d4 (S)	2.15116	2.10107	2.10267	2.12797	2.13113	2.01875	AVRG		2.10546		2.20732

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-MAR-2014 10:49
 End Cal Date : 17-MAR-2014 13:59
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\031714.b\TO15_076-14.m
 Last Edit : 17-Mar-2014 16:11 drandall

Average %RSD Results.	
Calculated Average %RSD =	17.18861
Maximum Average %RSD =	30.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
Averaged	$\text{Amt} = \text{ml} \cdot \text{Rsp}$	Amount
Linear	$\text{Amt} = b + \text{ml} \cdot \text{Rsp}$	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07701BFB.D

BFB Injection Date: 03/18/2014

Instrument ID: 10AIRD

BFB Injection Time: 08:15

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.78
75	30.00 - 66.00% of mass 95	53.22
96	5.00 - 9.00% of mass 95	7.05
173	Less than 2.00% of mass 174	0.58 (0.60)
174	50.00 - 120.00% of mass 95	97.86
175	4.00 - 9.00% of mass 174	7.60 (7.76)
176	93.00 - 101.00% of mass 174	93.01 (95.04)
177	5.00 - 9.00% of mass 176	5.90 (6.34)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV	CCV	07702.D	03/18/2014	08:42
2	LCS (LCS)	LCS	07702LCS.D	03/18/2014	08:42
3	CERT	CERT	07704.D	03/18/2014	09:50
4	BLANK (BLK)	BLANK	07704_BLANK.	03/18/2014	09:50
5	BCK-1-16	10259332027	07714.D	03/18/2014	14:34

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 18-MAR-2014 08:42
Lab File ID: 07702.d Init. Cal. Date(s): 17-MAR-2014 17-MAR-2014
Analysis Type: AIR Init. Cal. Times: 10:49 13:59
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\031814.b\TO15_076-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MTN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.00507	2.15118	2.15118	0.010	7.28705	30.00000	Averaged
2 Propylene	5.94076	5.74072	5.74072	0.010	-3.36728	30.00000	Averaged
3 Dichlorodifluoromethane	0.99942	0.85885	0.85885	0.010	-14.06506	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.10893	1.00608	1.00608	0.010	-9.27461	30.00000	Averaged
5 Chloromethane	3.52528	3.23300	3.23300	0.010	-8.29082	30.00000	Averaged
6 Vinyl chloride	3.62418	3.33381	3.33381	0.010	-8.01202	30.00000	Averaged
7 1,3-Butadiene	6.01847	5.46794	5.46794	0.010	-9.14743	30.00000	Averaged
8 Bromomethane	3.24791	2.66227	2.66227	0.010	-18.03124	30.00000	Averaged
9 Chloroethane	8.56708	7.73520	7.73520	0.010	-9.71029	30.00000	Averaged
10 Ethanol	8.13493	6.76371	6.76371	0.100	-16.85603	30.00000	Averaged
11 Vinyl Bromide	3.30392	2.77754	2.77754	0.010	-15.93184	30.00000	Averaged
12 Isopentane	4.26333	2.95825	2.95825	0.010	-20.61168	30.00000	Averaged
13 Trichlorofluoromethane	1.06455	0.85313	0.85313	0.010	-19.85977	30.00000	Averaged
14 Acrolein	11.20743	11.86314	11.86314	0.010	5.85062	30.00000	Averaged
15 Acetone	10.00000	12.17671	1.81128	0.010	21.76713	30.00000	Linear
16 Isopropyl Alcohol	2.72275	2.11525	2.11525	0.010	-22.31196	30.00000	Averaged
17 1,1-Dichloroethene	2.49802	1.93247	1.93247	0.010	-22.63985	30.00000	Averaged
18 Tert Butyl Alcohol	1.77901	1.31882	1.31882	0.100	-25.86749	30.00000	Averaged
19 Acrylonitrile	6.73050	4.62331	4.62331	0.010	-31.30809	30.00000	Averaged
20 Freon 113	1.81510	1.40359	1.40359	0.010	-22.67143	30.00000	Averaged
21 Methylene chloride	2.77144	2.76281	2.76281	0.010	-0.31125	30.00000	Averaged
22 Allyl Chloride	8.79696	6.75195	6.75195	0.010	-23.24682	30.00000	Averaged
23 Carbon Disulfide	1.14842	0.95157	0.95157	0.010	-17.14149	30.00000	Averaged
24 trans-1,2-dichloroethene	3.49224	2.61011	2.61011	0.010	-25.25952	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.25708	0.93212	0.93212	0.010	-25.85049	30.00000	Averaged
26 Vinyl Acetate	1.70099	1.24961	1.24961	0.010	-26.53604	30.00000	Averaged
27 1,1-Dichloroethane	2.05525	1.59757	1.59757	0.010	-22.26904	30.00000	Averaged
28 Hexane-d14(S)	2.56421	2.24103	2.24103	0.200	-12.60346	30.00000	Averaged
29 Methyl Ethyl Ketone	7.85448	6.53545	6.53545	0.010	-16.79344	30.00000	Averaged
30 n-Hexane	2.85977	2.30720	2.30720	0.010	-19.32239	30.00000	Averaged
31 Di-isopropyl Ether	1.41290	1.05047	1.05047	0.010	-25.65147	30.00000	Averaged
32 cis-1,2-Dichloroethene	3.23550	2.59223	2.59223	0.010	-19.88184	30.00000	Averaged
33 Ethyl Acetate	1.77430	1.43241	1.43241	0.010	-19.26896	30.00000	Averaged
34 Chloroform	1.23825	1.05686	1.05686	0.010	-14.64902	30.00000	Averaged
35 Ethyl Tert-Butyl Ether	1.16331	0.95596	0.95596	0.010	-17.82367	30.00000	Averaged
36 Tetrahydrofuran	4.07444	3.39899	3.39899	0.010	-16.57766	30.00000	Averaged
37 1,1,1-Trichloroethane	1.17168	1.01790	1.01790	0.010	-13.12428	30.00000	Averaged
38 1,2-Dichloroethane	1.72843	1.50278	1.50278	0.010	-13.05509	30.00000	Averaged
39 Benzene	1.02745	0.97109	0.97109	0.300	-5.48571	30.00000	Averaged
40 Carbon Tetrachloride	1.24455	1.11207	1.11207	0.010	-10.64470	30.00000	Averaged
41 Cyclohexane	2.74729	2.44408	2.44408	0.010	-11.03666	30.00000	Averaged
42 Tert Amyl Methyl Ether	0.85447	0.91709	0.91709	0.010	7.32860	30.00000	Averaged

Data File: \\192.168.10.12\chem\10airD.i\031814.b\07702.d
Report Date: 18-Mar-2014 09:05

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 18-MAR-2014 08:42
Lab File ID: 07702.d Init. Cal. Date(s): 17-MAR-2014 17-MAR-2014
Analysis Type: AIR Init. Cal. Times: 10:49 13:59
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\031814.b\TO15_076-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	0.84577	0.72954	0.72954	0.010	-13.74242	30.00000	Averaged
45 Heptane	2.45653	2.15526	2.15526	0.010	-12.26394	30.00000	Averaged
46 1,2-Dichloropropane	2.95970	2.66265	2.66265	0.010	-10.03661	30.00000	Averaged
47 Trichloroethene	2.53176	2.16392	2.16392	0.010	-14.52900	30.00000	Averaged
48 Bromodichloromethane	1.12657	0.94656	0.94656	0.010	-15.97842	30.00000	Averaged
49 1,4-Dioxane	5.07536	4.43245	4.43245	0.010	-12.66729	30.00000	Averaged
50 Methylcyclohexane	5.03904	4.25726	4.25726	0.010	-15.51444	30.00000	Averaged
51 Methyl Isobutyl Ketone	1.73467	1.49852	1.49852	0.010	-13.61391	30.00000	Averaged
52 cis-1,3-Dichloropropene	1.77662	1.48840	1.48840	0.010	-16.22273	30.00000	Averaged
53 trans-1,3-Dichloropropene	1.72971	1.35770	1.35770	0.010	-21.50737	30.00000	Averaged
54 Toluene-d8 (S)	1.16808	1.12232	1.12232	0.200	-3.91773	30.00000	Averaged
55 Toluene	0.83492	0.71580	0.71580	0.300	-14.26813	30.00000	Averaged
56 1,1,2-Trichloroethane	2.28734	1.99547	1.99547	0.010	-12.76003	30.00000	Averaged
57 Methyl Butyl Ketone	10.00000	7.99915	0.78666	0.010	-20.00845	30.00000	Linear
58 Dibromochloromethane	0.66027	0.58380	0.58380	0.010	-11.58164	30.00000	Averaged
59 1,2-Dibromoethane	0.73380	0.63920	0.63920	0.010	-12.89230	30.00000	Averaged
60 Tetrachloroethene	0.78511	0.70979	0.70979	0.010	-9.59426	30.00000	Averaged
62 Chlorobenzene	0.58398	0.52612	0.52612	0.010	-9.90765	30.00000	Averaged
63 Ethyl Benzene	0.34266	0.28273	0.28273	0.300	-17.49050	30.00000	Averaged
64 m&p-Xylene	0.42645	0.35992	0.35992	0.300	-15.60114	30.00000	Averaged
65 Bromoform	0.60793	0.50157	0.50157	0.010	-17.49466	30.00000	Averaged
66 Styrene	0.63325	0.52601	0.52601	0.010	-16.93567	30.00000	Averaged
67 o-Xylene	0.41360	0.35864	0.35864	0.300	-13.28829	30.00000	Averaged
68 1,1,2,2-Tetrachloroethane	0.59669	0.52278	0.52278	0.010	-12.38710	30.00000	Averaged
69 Isopropylbenzene	0.33365	0.29110	0.29110	0.010	-12.75360	30.00000	Averaged
70 N-Propylbenzene	0.28152	0.23179	0.23179	0.010	-17.66573	30.00000	Averaged
71 4-Ethyltoluene	0.36056	0.30629	0.30629	0.010	-15.05173	30.00000	Averaged
72 1,3,5-Trimethylbenzene	0.41125	0.34123	0.34123	0.010	-17.02666	30.00000	Averaged
73 Tert-Butyl Benzene	0.45084	0.36639	0.36639	0.010	-18.73075	30.00000	Averaged
74 1,2,4-Trimethylbenzene	0.40679	0.34128	0.34128	0.010	-16.10402	30.00000	Averaged
75 1,3-Dichlorobenzene	0.63063	0.53353	0.53353	0.010	-15.39762	30.00000	Averaged
76 Sec- Butylbenzene	0.31562	0.25334	0.25334	0.010	-19.73489	30.00000	Averaged
77 1,4-dichlorobenzene-d4 (S)	2.10546	2.05615	2.05615	0.200	-2.34177	30.00000	Averaged
78 Benzyl Chloride	10.00000	10.51317	0.41419	0.010	5.13167	30.00000	Linear
79 1,4-Dichlorobenzene	0.63977	0.53395	0.53395	0.010	-16.54007	30.00000	Averaged
80 p-Isopropyltoluene	0.41030	0.33337	0.33337	0.010	-18.75049	30.00000	Averaged
81 1,2,3-Trimethylbenzene	0.46079	0.37158	0.37158	0.010	-19.36025	30.00000	Averaged
82 1,2-Dichlorobenzene	0.74318	0.57320	0.57320	0.010	-22.87145	30.00000	Averaged
83 N-Butylbenzene	0.40227	0.30764	0.30764	0.010	-23.52558	30.00000	Averaged
84 1,2,4-Trichlorobenzene	0.90841	0.67817	0.67817	0.010	-25.34582	30.00000	Averaged
85 Naphthalene	0.53789	0.42420	0.42420	0.010	-21.13587	30.00000	Averaged
86 Hexachlorobutadiene	0.76273	0.69727	0.69727	0.010	-8.58235	30.00000	Averaged

Data File: \\192.168.10.12\chem\10airD.i\031814.b\07702.d
Report Date: 18-Mar-2014 09:05

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 18-MAR-2014 08:42
Lab File ID: 07702.d Init. Cal. Date(s): 17-MAR-2014 17-MAR-2014
Analysis Type: AIR Init. Cal. Times: 10:49 13:59
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\031814.b\TO15_076-14.m

|Average %D / Drift Results. |

|=====|
|Calculated Average %D/Drift = 15.67830 |

|Maximum Average %D/Drift = 30.00000 |

|* Passed Average %D/Drift Test. |

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 06903BFB.D

BFB Injection Date: 03/10/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:47

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.00
75	30.00 - 66.00% of mass 95	50.47
96	5.00 - 9.00% of mass 95	6.68
173	Less than 2.00% of mass 174	0.65 (0.74)
174	50.00 - 120.00% of mass 95	86.78
175	4.00 - 9.00% of mass 174	6.55 (7.55)
176	93.00 - 101.00% of mass 174	84.03 (96.83)
177	5.00 - 9.00% of mass 176	5.81 (6.91)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	06904.D	03/10/2014	11:12
2	CAL2	CAL2	06905.D	03/10/2014	11:36
3	CAL3	CAL3	06906.D	03/10/2014	12:01
4	CAL4	CAL4	06907.D	03/10/2014	12:28
5	CAL5	CAL5	06908.D	03/10/2014	12:54
6	CAL6	CAL6	06909.D	03/10/2014	13:23
7	CAL7	CAL7	06910.D	03/10/2014	13:55
8	ICVADDL (LCS)	ICVADDL	06911.D	03/10/2014	14:22
9	ICV (LCS)	ICV	06912.D	03/10/2014	14:48

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air0.i\031014.b\06904.D
 Level 2: \\192.168.10.12\chem\10air0.i\031014.b\06905.D
 Level 3: \\192.168.10.12\chem\10air0.i\031014.b\06906.D
 Level 4: \\192.168.10.12\chem\10air0.i\031014.b\06907.D
 Level 5: \\192.168.10.12\chem\10air0.i\031014.b\06908.D
 Level 6: \\192.168.10.12\chem\10air0.i\031014.b\06909.D
 Level 7: \\192.168.10.12\chem\10air0.i\031014.b\06910.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
1 Chlorodifluoromethane	1.79334	1.96113	1.99290	2.02763	2.03916	2.21306					
	2.29356						(AVRG)		2.04583		8.36742
2 Propylene	4.42343	5.25024	5.12097	5.51810	5.55487	6.00090					
	6.18678						(AVRG)		5.43647		10.78516
3 Dichlorodifluoromethane	0.76495	0.83410	0.87557	0.92208	0.92385	1.03516					
	1.13286						(AVRG)		0.92694		13.33317
4 Dichlorotetrafluoroethane	0.88918	1.03163	1.09640	1.13448	1.17610	1.31356					
	1.40435						(AVRG)		1.14938		14.95494

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		m1	m2	
	30.0000									
	Level 7									
5 Chloromethane	2.73337	2.95282	3.02944	3.11024	3.29718	3.68461				
	4.00112						AVRG	3.25840		13.59974
6 Vinyl chloride	2.80004	3.26941	3.17952	3.36648	3.28917	3.44421				
	3.44528						AVRG	3.25652		6.94907
7 1,3-Butadiene	4.03477	5.07494	4.90816	4.88217	4.82254	5.07005				
	5.10050						AVRG	4.84137		7.68659
8 Bromomethane	2.64768	3.07464	3.10006	3.27756	3.19326	3.34481				
	3.35210						AVRG	3.24144		7.76394
9 Chloroethane	5.93482	7.37708	7.07120	7.21214	7.08487	7.41352				
	7.42973						AVRG	7.07477		7.41368
10 Ethanol	7.86650	9.60682	10.18409	8.95570	8.11859	9.11464				
	10.37597						AVRG	9.17462		10.46115
11 Vinyl Bromide	2.86110	3.08453	3.17242	3.26826	3.15421	3.40488				
	3.47223						AVRG	3.20252		6.39606

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
12 Isopentane	2.35717	2.79325	2.90360	2.92340	3.55224	3.93266					
	4.20716						AVRG		3.22421		21.11392
13 Acrolein	15.21182	16.17671	14.97296	15.01228	11.67974	12.23572					
	12.88044						AVRG		14.02434		12.32414
14 Trichlorofluoromethane	0.71541	0.83144	0.82954	0.84317	0.88790	1.01350					
	1.10566						AVRG		0.88952		14.6233
15 Acetone	++++	1.43823	1.61026	1.72216	2.20660	2.22776					
	2.30702						AVRG		1.91867		19.41490
16 Isopropyl Alcohol	1.97568	2.63503	2.16594	2.16518	2.03899	2.38240					
	2.47554						AVRG		2.26259		10.67307
17 Acrylonitrile	6.94453	7.44144	6.58736	6.45656	5.64602	5.89274					
	6.50762						AVRG		6.49661		9.30261
18 1,1-Dichloroethene	1.76703	1.88434	1.94283	2.00893	2.04456	2.27191					
	2.41281						AVRG		2.04749		10.94912

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2600000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
19 Tert Butyl Alcohol (TBA)	1.27469	1.38691	1.14962	1.22183	1.33666	1.63613				
	1.72470					AVRG		1.39063		15.39530
20 Freon 113	1.30782	1.43943	1.48336	1.53997	1.63905	1.85518				
	1.94919					AVRG		1.60200		14.34583
21 Methylene chloride	2.44829	3.04900	2.83347	2.87484	3.18380	3.50654				
	3.81825					AVRG		3.10292		14.63865
22 Allyl Chloride	8.99304	9.06249	8.30561	8.01340	7.30581	7.64392				
	7.89769					AVRG		8.17455		8.07486
23 Carbon Disulfide	1.08017	1.11722	1.13167	1.21676	1.16239	1.22948				
	1.25785					AVRG		1.17065		5.59102
24 trans-1,2-dichloroethene	3.61936	3.52833	3.78773	3.72750	3.26238	3.40143				
	3.49520					AVRG		3.54599		5.16148
25 Methyl Tert Butyl Ether	0.84133	0.96801	0.96980	0.98239	1.01531	1.10853				
	1.17268					AVRG		1.00829		10.61789

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
26 Vinyl Acetate	1.74853	1.87559	1.78057	1.79436	1.33253	1.43962					
	1.51458						AVRG		1.64083		12.71786
27 1,1-Dichloroethane	1.42059	1.63125	1.59147	1.63735	1.66636	1.83676					
	1.91757						AVRG		1.67162		9.76995
29 Methyl Ethyl Ketone	6.97088	9.91072	7.27006	7.02422	6.78266	7.32787					
	7.64896						AVRG		7.56219		14.19117
30 Di-isopropyl Ether	0.81519	1.01579	1.01117	1.05699	1.14732	1.30958					
	1.40572						AVRG		1.10882		17.92531
31 n-Hexane	1.93758	1.93908	2.10298	2.15944	2.19919	2.49212					
	2.64397						AVRG		2.21062		12.10514
32 Ethyl Acetate	1.46477	1.71527	1.90244	1.92231	1.57661	1.74783					
	1.80564						AVRG		1.73354		9.61656
33 cis-1,2-Dichloroethene	3.74662	3.23944	3.31346	3.23721	3.13147	3.31968					
	3.33480						AVRG		3.33210		5.89942

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
34 Ethyl Tert-Butyl Ether	0.75949	0.90849	0.90735	0.92644	0.95192	1.06601				
	1.11688						AVRG		0.94808	12.30615
35 Chloroform	1.14391	1.20832	1.15602	1.22451	1.23897	1.39267				
	1.44071						AVRG		1.25797	9.11573
36 Tetrahydrofuran	2.77362	3.27398	3.03990	3.22107	3.23700	3.41204				
	3.40923						AVRG		3.19526	7.03644
37 1,1,1-Trichloroethane	1.00763	0.98490	0.99377	1.05122	1.09410	1.23734				
	1.31211						AVRG		1.09721	11.73008
38 1,2-Dichloroethane	1.69488	1.55334	1.49881	1.56916	1.60382	1.82376				
	1.93005						AVRG		1.66769	9.45930
39 Benzene	0.90295	0.90512	0.96885	0.98664	1.04197	1.20139				
	1.30653						AVRG		1.04478	14.71502
40 Carbon tetrachloride	0.99800	1.01018	1.01830	1.06656	1.09234	1.30065				
	1.44353						AVRG		1.13308	15.15002

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000 Level 1	0.2000000 Level 2	0.5000000 Level 3	1.0000 Level 4	10.0000 Level 5	20.0000 Level 6	Curve	b	Coefficients		%RSD or R ²
	30.0000 Level 7								m1	m2	
41 Cyclohexane	1.84791 ++++	1.90208	1.89425	1.99185	2.39771	2.95611			2.16499		20.16504
							AVRG				
42 Tert Amyl Methyl Ether	++++ 1.07866	0.60158	0.77689	0.87327	0.95216	1.04492			0.88875		20.10045
							AVRG				
44 2,2,4-Trimethylpentane	0.59958 0.81649	0.59595	0.59455	0.62302	0.69883	0.77964			0.67258		13.92196
							AVRG				
45 Heptane	1.99114 2.40954	2.02797	1.90049	2.00239	2.02013	2.26579			2.08863		3.65676
							AVRG				
46 1,2-Dichloropropane	2.42726 3.45854	2.45000	2.62989	2.79267	2.88795	3.23289			2.83998		13.69908
							AVRG				
47 Trichloroethene	2.29031 2.50313	2.31270	2.26939	2.31916	2.27705	2.45719			2.33270		4.56482
							AVRG				
48 1,4-Dioxane	3.74290 5.94928	4.26081	4.85849	4.68617	4.71161	5.49839			4.81538		15.25880
							AVRG				

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
49 Bromdichloromethane	1.05535	1.08294	1.05443	1.06525	1.07884	1.21577					
	1.29442						AVRG		1.12108		8.46644
50 Methylcyclohexane	3.95017	4.31106	3.83767	3.90218	4.06432	4.28893					
	4.37133						AVRG		4.10367		5.31511
51 Methyl Isobutyl Ketone	1.32695	1.69501	1.80412	1.76113	1.37132	1.50294					
	1.56699						AVRG		1.57549		11.86929
52 cis-1,3-Dichloropropene	2.12350	2.34341	1.93713	1.83374	1.58892	1.71160					
	1.77241						AVRG		1.90153		13.59314
53 trans-1,3-Dichloropropene	3437	6568	17790	39339	511296	1029022					
	1588396						LINE	0.00414	1.52974		0.99871
55 1,1,2-Trichloroethane	1.73572	2.11602	2.10729	2.20825	2.29048	2.50852					
	2.57315						AVRG		2.21992		12.62258
56 Toluene	0.68842	0.76617	0.75694	0.77637	0.83539	0.92909					
	0.96139						AVRG		0.81342		12.65344

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
57 Methyl Butyl Ketone	0.79886	0.98284	1.10824	1.15739	0.90668	0.99929				
	1.02552						AVRG		0.99697	12.04599
58 Dibromochloromethane	0.65631	0.72831	0.63572	0.71409	0.71635	0.60087				
	0.82481						AVRG		0.73378	8.05473
59 1,2-Dibromoethane	0.84085	1.01094	0.90439	0.85925	0.84668	0.94429				
	0.99574						AVRG		0.91459	7.72714
60 Tetrachloroethene	0.82212	0.80949	0.84245	0.89698	0.96196	1.05913				
	1.11906						AVRG		0.93046	13.03271
62 Chlorobenzene	0.50523	0.60618	0.61821	0.64675	0.67014	0.73925				
	0.75078						AVRG		0.64808	12.97137
63 Ethyl Benzene	0.29366	0.35681	0.36071	0.36563	0.39461	0.43379				
	0.45061						AVRG		0.37797	13.84980 <-
64 m,p-Xylene	0.39732	0.43584	0.41731	0.44474	0.46194	0.52079				
	0.53456						AVRG		0.45893	11.18805

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
65 Styrene	0.60663	0.74216	0.76225	0.70395	0.73916	0.84214					
	0.86457						AVRG		0.75153		11.47221
66 Bromoform	0.63168	0.69976	0.69979	0.68427	0.70145	0.79391					
	0.83595						AVRG		0.72083		9.67537
67 o-Xylene	0.34083	0.39974	0.40399	0.43031	0.45641	0.51734					
	0.54104						AVRG		0.44128		15.83025
68 1,1,2,2-Tetrachloroethane	0.56698	0.61250	0.63138	0.66240	0.70997	0.78678					
	0.79820						AVRG		0.68117		12.89120
69 Isopropylbenzene	0.33492	0.30970	0.32453	0.33331	0.36077	0.40424					
	0.41559						AVRG		0.35472		11.49865
70 N-Propylbenzene	0.29999	0.29051	0.28952	0.29155	0.30373	0.34755					
	0.35223						AVRG		0.31073		8.78360
71 4-Ethyltoluene	0.32813	0.36293	0.35543	0.35662	0.37134	0.41615					
	0.45136						AVRG		0.37743		11.11432

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\TO15_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		m1	m2	
	30.0000									
	Level 7									
72 1,3,5-Trimethylbenzene	0.27501	0.33911	0.35672	0.36172	0.39890	0.43913				
	0.44210						AVRG	0.37310		15.96840
73 Tert-Butyl Benzene	0.32944	0.39182	0.38978	0.39959	0.44048	0.49927				
	0.51909						AVRG	0.42392		15.74325
74 1,2,4-Trimethylbenzene	0.37504	0.36333	0.37042	0.38229	0.42509	0.48950				
	0.51036						AVRG	0.41658		14.55330
75 Sec- Butylbenzene	0.32314	0.34729	0.29641	0.29648	0.33004	0.37954				
	0.39709						AVRG	0.33857		11.46401
76 1,3-Dichlorobenzene	0.54152	0.62747	0.64023	0.63373	0.68639	0.76267				
	0.81678						AVRG	0.67554		13.46626
78 Benzyl Chloride	0.53227	0.66443	0.66956	0.60947	0.52596	0.59022				
	0.59121						AVRG	0.59745		9.45326
79 1,4-Dichlorobenzene	0.47629	0.54975	0.61391	0.65225	0.67487	0.75189				
	0.78511						AVRG	0.64344		16.84464

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m	
	30.0000									
	Level 7									
80 p-Isopropyltoluene	0.38780	0.44938	0.47596	0.39454	0.40226	0.41225				
	0.46657						AVRG	0.42739		8.63958
81 1,2,3-Trimethylbenzene	0.41106	0.41514	0.39371	0.38720	0.44142	0.48597				
	0.52974						AVRG	0.43775		11.98626
82 1,2-Dichlorobenzene	0.68073	0.77384	0.71387	0.76009	0.71775	0.76858				
	0.79367						AVRG	0.73550		5.81761
83 N-Butylbenzene	0.44393	0.49763	0.52036	0.53521	0.43586	0.46186				
	0.49322						AVRG	0.48401		7.83485
84 1,2,4-Trichlorobenzene	1.23173	1.40299	1.49432	1.48810	1.19544	1.21704				
	++++						AVRG	1.33927		10.43116
85 Naphthalene	0.82669	0.78134	0.82725	0.82692	0.65341	0.66415				
	++++						AVRG	0.72996		12.60993
86 Hexachlorobutadiene	0.62004	0.65446	0.77172	0.80364	1.06793	1.18243				
	++++						AVRG	0.85004		26.69204

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
 End Cal Date : 10-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
 Last Edit : 10-Mar-2014 15:12 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		m1	m2	or RSD
	33.0000									
	Level 7									
=====										
\$ 29 Hexane-d14 (S)	2.02664	2.15313	2.10830	2.16192	2.15686	2.12256				
	2.04058					IAVRG		2.11000		2.64452

\$ 54 Toluene-d8 (S)	1.11151	1.09944	1.06990	1.06759	1.03022	0.99301				
	0.96396					IAVRG		1.04795		5.21865

\$ 77 1,4-dichlorobenzene-d4 (S)	2.05679	2.09810	2.25577	2.05607	1.91045	2.23144				
	2.25415					IAVRG		2.12325		6.11812

Report Date : 11-Mar-2014 14:01

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-MAR-2014 11:12
End Cal Date : 10-MAR-2014 13:55
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10air0.i\031014.b\T015_069-14.m
Last Edit : 10-Mar-2014 15:12 10air0.i

Average %RSD Results.	
=====	
Calculated Average %RSD =	11.53846
Maximum Average %RSD =	40.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
Averaged	Ant = ml*Rsp	Amount
Linear	Ant = b + ml*Rsp	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07101BFB.D

BFB Injection Date: 03/12/2014

Instrument ID: 10AIR0

BFB Injection Time: 11:26

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.96
75	30.00 - 66.00% of mass 95	54.57
96	5.00 - 9.00% of mass 95	6.47
173	Less than 2.00% of mass 174	0.96 (1.18)
174	50.00 - 120.00% of mass 95	81.66
175	4.00 - 9.00% of mass 174	6.09 (7.46)
176	93.00 - 101.00% of mass 174	80.08 (98.07)
177	5.00 - 9.00% of mass 176	5.02 (6.27)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS for HBN 289158 [AIR/	1638294	07103_19645.D	03/12/2014	12:31
2	CCV	CCV	07103.D	03/12/2014	12:31
3	LCS (LCS)	LCS	07103_LCS.D	03/12/2014	12:31
4	BLANK for HBN 289158 [AI	1638293	07105_19645.D	03/12/2014	13:49
5	BLANK (BLK)	BLANK	07105.D	03/12/2014	13:49
6	Ambient(1633318DUP)	1638565-DUP	07113.D	03/12/2014	17:40
7	SV-015-A-16	10259332001	07120.D	03/12/2014	21:04
8	IA-015-A-16	10259332002	07121.D	03/12/2014	21:34
9	SV-108-A-16	10259332003	07122.D	03/12/2014	22:03

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.04583	1.71863	1.71863	0.010	-15.99313	30.00000	Averaged
2 Propylene	5.43647	4.74300	4.74300	0.010	-12.75579	30.00000	Averaged
3 Dichlorodifluoromethane	0.92694	0.79182	0.79182	0.010	-14.57651	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.14938	0.99641	0.99641	0.010	-13.30893	30.00000	Averaged
5 Chloromethane	3.25840	2.79458	2.79458	0.010	-14.23462	30.00000	Averaged
6 Vinyl chloride	3.25602	2.86612	2.86612	0.010	-11.97463	30.00000	Averaged
7 1,3-Butadiene	4.84187	4.18665	4.18665	0.010	-13.53241	30.00000	Averaged
8 Bromomethane	3.14144	2.75160	2.75160	0.010	-12.40978	30.00000	Averaged
9 Chloroethane	7.07477	6.16663	6.16663	0.010	-12.83632	30.00000	Averaged
10 Ethanol	9.17462	7.54701	7.54701	0.010	-17.74030	30.00000	Averaged
11 Vinyl Bromide	3.20252	2.74117	2.74117	0.010	-14.40570	30.00000	Averaged
12 Isopentane	3.22421	3.06799	3.06799	0.010	-4.84516	30.00000	Averaged
13 Acrolein	14.02424	10.20427	10.20427	0.010	-27.23836	30.00000	Averaged
14 Trichlorofluoromethane	0.88952	0.76692	0.76692	0.010	-13.78203	30.00000	Averaged
15 Acetone	1.91867	1.68060	1.68060	0.010	-12.40801	30.00000	Averaged
16 Isopropyl Alcohol	2.26259	1.85825	1.85825	0.010	-17.87090	30.00000	Averaged
17 Acrylonitrile	6.49661	4.88065	4.88065	0.010	-24.87385	30.00000	Averaged
18 1,1-Dichloroethene	2.04749	1.73115	1.73115	0.010	-15.45018	30.00000	Averaged
19 Tert Butyl Alcohol (TBA)	1.39008	1.17746	1.17746	0.100	-15.29579	30.00000	Averaged
20 Freon 113	1.60200	1.41347	1.41347	0.010	-11.76874	30.00000	Averaged
21 Methylene chloride	3.10202	2.73071	2.73071	0.010	-11.97000	30.00000	Averaged
22 Allyl Chloride	8.17455	6.25124	6.25124	0.010	-23.52808	30.00000	Averaged
23 Carbon Disulfide	1.17065	1.02193	1.02193	0.010	-12.70390	30.00000	Averaged
24 trans-1,2-dichloroethene	3.54599	2.84456	2.84456	0.010	-19.78092	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.00829	0.87525	0.87525	0.300	-13.19444	30.00000	Averaged
26 Vinyl Acetate	1.64083	1.16082	1.16082	0.010	-29.25403	30.00000	Averaged
27 1,1-Dichloroethane	1.67162	1.45243	1.45243	0.010	-13.11230	30.00000	Averaged
28 Hexane-d14(S)	2.11000	2.12440	2.12440	0.200	0.68239	30.00000	Averaged
29 Methyl Ethyl Ketone	7.56219	5.90680	5.90680	0.010	-21.89045	30.00000	Averaged
30 Di-isopropyl Ether	1.10882	0.99174	0.99174	0.010	-10.55908	30.00000	Averaged
31 n-Hexane	2.21062	1.91924	1.91924	0.010	-13.18111	30.00000	Averaged
32 Ethyl Acetate	1.73354	1.32905	1.32905	0.010	-23.33300	30.00000	Averaged
33 cis-1,2-Dichloroethene	3.33210	2.72239	2.72239	0.010	-18.29799	30.00000	Averaged
34 Ethyl Tert-Butyl Ether	0.94808	0.81231	0.81231	0.010	-14.32106	30.00000	Averaged
35 Chloroform	1.25787	1.06731	1.06731	0.010	-15.14917	30.00000	Averaged
36 Tetrahydrofuran	3.19526	2.72344	2.72344	0.010	-14.76630	30.00000	Averaged
37 1,1,1-Trichloroethane	1.09721	0.94033	0.94033	0.010	-14.29764	30.00000	Averaged
38 1,2-Dichloroethane	1.66769	1.35984	1.35984	0.010	-18.45985	30.00000	Averaged
39 Benzene	1.04478	0.91289	0.91289	0.300	-12.62318	30.00000	Averaged
40 Carbon tetrachloride	1.13308	0.95237	0.95237	0.010	-15.94823	30.00000	Averaged
41 Cyclohexane	2.16499	2.10417	2.10417	0.010	-2.80907	30.00000	Averaged
42 Tert Amyl Methyl Ether	0.88875	0.83968	0.83968	0.010	-5.52145	30.00000	Averaged

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	0.67258	0.61497	0.61497	0.010	-8.56543	30.00000	Averaged
45 Heptane	2.08863	1.75894	1.75894	0.010	-15.78491	30.00000	Averaged
46 1,2-Dichloropropane	2.83988	2.49950	2.49950	0.010	-11.98595	30.00000	Averaged
47 Trichloroethene	2.33270	1.98344	1.98344	0.010	-14.97242	30.00000	Averaged
48 1,4-Dioxane	4.81538	4.41680	4.41680	0.010	-8.27729	30.00000	Averaged
49 Bromodichloromethane	1.12108	0.93049	0.93049	0.010	-17.00064	30.00000	Averaged
50 Methylcyclohexane	4.10367	3.59795	3.59795	0.010	-12.32339	30.00000	Averaged
51 Methyl Isobutyl Ketone	1.57549	1.19620	1.19620	0.010	-24.07451	30.00000	Averaged
52 cis-1,3-Dichloropropene	1.90153	1.41279	1.41279	0.010	-25.70256	30.00000	Averaged
53 trans-1,3-Dichloropropene	10.00000	11.83003	1.29764	0.010	18.30032	30.00000	Linear
54 Toluene-d8 (S)	1.04795	1.07305	1.07305	0.200	2.39544	30.00000	Averaged
55 1,1,2-Trichloroethane	2.21992	2.02772	2.02772	0.010	-8.65778	30.00000	Averaged
56 Toluene	0.81342	0.73695	0.73695	0.300	-9.40168	30.00000	Averaged
57 Methyl Butyl Ketone	0.99697	0.70902	0.70902	0.010	-28.88288	30.00000	Averaged
58 Dibromochloromethane	0.73378	0.56289	0.56289	0.010	-23.28953	30.00000	Averaged
59 1,2-Dibromoethane	0.91459	0.66738	0.66738	0.010	-27.02909	30.00000	Averaged
60 Tetrachloroethene	0.93046	0.76930	0.76930	0.010	-17.32003	30.00000	Averaged
62 Chlorobenzene	0.64808	0.54028	0.54028	0.010	-16.63394	30.00000	Averaged
63 Ethyl Benzene	0.37797	0.30075	0.30075	0.300	-20.43056	30.00000	Averaged
64 m&p-Xylene	0.45893	0.36348	0.36348	0.300	-20.79814	30.00000	Averaged
65 Styrene	0.75155	0.58777	0.58777	0.010	-21.79210	30.00000	Averaged
66 Bromoform	0.72083	0.55624	0.55624	0.010	-22.83282	30.00000	Averaged
67 o-Xylene	0.44138	0.36262	0.36262	0.300	-17.84393	30.00000	Averaged
68 1,1,2,2-Tetrachloroethane	0.68117	0.56436	0.56436	0.010	-17.14873	30.00000	Averaged
69 Isopropylbenzene	0.35472	0.28596	0.28596	0.010	-19.38580	30.00000	Averaged
70 N-Propylbenzene	0.31073	0.24608	0.24608	0.010	-20.80384	30.00000	Averaged
71 4-Ethyltoluene	0.37743	0.29947	0.29947	0.010	-20.65507	30.00000	Averaged
72 1,3,5-Trimethylbenzene	0.37310	0.32112	0.32112	0.010	-13.93209	30.00000	Averaged
73 Tert-Butyl Benzene	0.42392	0.35545	0.35545	0.010	-16.15188	30.00000	Averaged
74 1,2,4-Trimethylbenzene	0.41658	0.34132	0.34132	0.010	-18.06515	30.00000	Averaged
75 Sec- Butylbenzene	0.33857	0.26509	0.26509	0.010	-21.70411	30.00000	Averaged
76 1,3-Dichlorobenzene	0.67554	0.55119	0.55119	0.010	-18.40801	30.00000	Averaged
77 1,4-dichlorobenzene-d4 (S)	2.12325	2.33284	2.33284	0.200	9.87102	30.00000	Averaged
78 Benzyl Chloride	0.59745	0.41095	0.41095	0.010	-31.21545	30.00000	Averaged<-
79 1,4-Dichlorobenzene	0.64344	0.54903	0.54903	0.010	-14.67186	30.00000	Averaged
80 p-Isopropyltoluene	0.42738	0.31866	0.31866	0.010	-25.43747	30.00000	Averaged
81 1,2,3-Trimethylbenzene	0.43775	0.35225	0.35225	0.010	-19.53176	30.00000	Averaged
82 1,2-Dichlorobenzene	0.73550	0.56661	0.56661	0.010	-22.96269	30.00000	Averaged
83 n-Butylbenzene	0.48401	0.33283	0.33283	0.010	-31.83431	30.00000	Averaged<-
84 1,2,4-Trichlorobenzene	1.33827	0.88836	0.88836	0.010	-33.61893	30.00000	Averaged<-
85 Naphthalene	0.72996	0.49437	0.49437	0.010	-32.27456	30.00000	Averaged<-
86 Hexachlorobutadiene	0.85004	0.80766	0.80766	0.010	-4.98478	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07103.D
Report Date: 12-Mar-2014 12:01

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 12-MAR-2014 12:31
Lab File ID: 07103.D Init. Cal. Date(s): 10-MAR-2014 10-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:12 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 16.77426

Maximum Average %D/Drift = 30.00000

* Passed Average %D/Drift Test.

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07203BFB.D

BFB Injection Date: 03/13/2014

Instrument ID: 10AIR0

BFB Injection Time: 11:44

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.23
75	30.00 - 66.00% of mass 95	53.82
96	5.00 - 9.00% of mass 95	6.33
173	Less than 2.00% of mass 174	0.93 (1.11)
174	50.00 - 120.00% of mass 95	83.38
175	4.00 - 9.00% of mass 174	6.31 (7.57)
176	93.00 - 101.00% of mass 174	80.61 (96.67)
177	5.00 - 9.00% of mass 176	5.19 (6.44)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	07204.D	03/13/2014	12:08
2	CAL2	CAL2	07205.D	03/13/2014	12:33
3	CAL3	CAL3	07206.D	03/13/2014	12:58
4	CAL4	CAL4	07207.D	03/13/2014	13:24
5	CAL5	CAL5	07208.D	03/13/2014	13:51
6	CAL6	CAL6	07209.D	03/13/2014	14:20
7	CAL7	CAL7	07210.D	03/13/2014	14:52
8	ICVADDL (LCS)	ICVADDL	07211.D	03/13/2014	15:18
9	ICV (LCS)	ICV	07212.D	03/13/2014	15:45
10	LCS (LCS)	LCS	07213.D	03/13/2014	16:12
11	BLANK (BLK)	BLANK	07215.D	03/13/2014	17:05
12	SV-015-A-16	10259332001	07231.D	03/14/2014	01:00

Report Date : 14-Mar-2014 07:05

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air0.i\031314.b\07204.D
 Level 2: \\192.168.10.12\chem\10air0.i\031314.b\07205.D
 Level 3: \\192.168.10.12\chem\10air0.i\031314.b\07206.D
 Level 4: \\192.168.10.12\chem\10air0.i\031314.b\07207.D
 Level 5: \\192.168.10.12\chem\10air0.i\031314.b\07208.D
 Level 6: \\192.168.10.12\chem\10air0.i\031314.b\07209.D
 Level 7: \\192.168.10.12\chem\10air0.i\031314.b\07210.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
1 Chlorodifluoromethane	1.09024	1.29800	1.40165	1.49995	1.54016	1.62148					
	1.68526						AVRG		1.44810		14.10214
2 Propylene	3.42657	3.91860	4.21482	4.22761	4.37136	4.50263					
	4.61025						AVRG		4.18172		9.59235
3 Dichlorodifluoromethane	0.49437	0.57016	0.62269	0.65616	0.68822	0.76585					
	0.85673						AVRG		0.66488		18.15761
4 Dichlorotetrafluoroethane	0.62713	0.71177	0.78656	0.84342	0.89375	0.97714					
	1.04585						AVRG		0.84080		17.41828

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
5 Chloromethane	1.82398	2.20198	2.20677	2.41326	2.48360	2.73376					
	2.92168						AVRG		2.39786		15.21884
6 Vinyl chloride	2.23269	2.18441	2.55286	2.66577	2.59664	2.64252					
	2.63557						AVRG		2.50150		8.14928
7 1,3-Butadiene	3.43584	3.67156	3.77145	3.95042	3.77485	3.86527					
	3.92821						AVRG		3.77109		4.69435
8 Bromomethane	2.00142	2.19530	2.34624	2.55570	2.53729	2.54564					
	2.53313						AVRG		2.38782		9.12173
9 Chloroethane	4.41878	4.73086	5.05795	6.00359	5.62731	5.66497					
	5.66349						AVRG		5.30956		10.94399
10 Ethanol	++++	1486	3527	7121	89575	179285					
	265692						LLNR	-0.01726	6.53491		0.99835
11 Vinyl Bromide	2.07921	2.28541	2.32068	2.57271	2.47425	2.59380					
	2.61766						AVRG		2.42053		8.25670

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
12 Isopentane	++++	1.78250	2.10318	2.23581	2.73806	2.90838					
	3.09288						AVRG		2.47680		20.69609
13 Acrolein	491	820	2262	3979	58533	117834					
	179782						LINR	-0.00172	9.70042		0.99940
14 Trichlorofluoromethane	0.45946	0.54323	0.56714	0.61090	0.66070	0.74515					
	0.81802						AVRG		0.62923		19.51599
15 Acetone	7392	12898	26138	52974	355175	708920					
	1068299						LINR	-0.04522	1.65379		0.99928
16 Isopropyl Alcohol	1.40960	1.73578	1.52173	1.65034	1.55576	1.66751					
	1.75724						AVRG		1.61399		7.72270
17 Acrylonitrile	4.64073	5.12052	4.92127	4.86138	4.32186	4.49616					
	4.72558						AVRG		4.72679		5.69985
18 1,1-Dichloroethene	1.20990	1.40198	1.39496	1.49022	1.50982	1.66484					
	1.76147						AVRG		1.49046		12.24615

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
19 Tert Butyl Alcohol (TBA)	0.96042 1.28953	1.14425	0.87681	0.91832	1.00129	1.14058	AVRG		1.04732	14.17002
20 Freon 113	0.85679 1.45848	0.96869	1.07585	1.15870	1.25181	1.37106	AVRG		1.16305	18.49480
21 Methylene chloride	++++ 2.77025	1.74445	1.97090	2.22703	2.38635	2.57599	AVRG		2.27916	16.70071
22 Allyl Chloride	6.32827 5.97759	6.63187	6.29583	6.71954	5.73432	5.79499	AVRG		6.21177	6.27446
23 Carbon Disulfide	0.70072 0.94152	0.77568	0.85863	0.92518	0.90451	0.92475	AVRG		0.86157	10.54578
24 trans-1,2-dichloroethene	2.54080 2.66560	2.82349	2.91464	2.80191	2.56984	2.64500	AVRG		2.70875	5.16984
25 Methyl Tert Butyl Ether	0.59875 0.88556	0.71187	0.79635	0.77775	0.77822	0.83585	AVRG		0.76062	12.12595

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
26 Vinyl Acetate	4188	7635	18668	36570	523640	1050231					
	1560895						LINR	-0.00805	1.10936		0.99857
27 1,1-Dichloroethane	0.97761	1.08148	1.15046	1.24261	1.28175	1.37386					
	1.43581						AVRG		1.22051		13.26809
29 Methyl Ethyl Ketone	5.46409	5.76094	5.17352	5.03447	5.30423	5.56212					
	5.66597						AVRG		5.42362		4.86740
30 Di-isopropyl Ether	0.61350	0.67946	0.75788	0.80110	0.86204	0.96616					
	1.05783						AVRG		0.81971		19.04973
31 n-Hexane	1.22714	1.42967	1.59049	1.66360	1.69796	1.84793					
	1.98614						AVRG		1.63470		15.47388
32 Ethyl Acetate	0.99757	1.31484	1.49485	1.35024	1.17908	1.29838					
	1.37924						AVRG		1.26774		12.36113
33 cis-1,2-Dichloroethene	2.29833	2.31623	2.56747	2.61317	2.45677	2.54926					
	2.58417						AVRG		2.48363		5.23188

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\T015_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000									
	Level 7									
34 Ethyl Tert-Butyl Ether	0.60430	0.63090	0.67281	0.73024	0.73299	0.80393				
	0.84804						AVRG		0.71760	12.36289
35 Chloroform	0.72949	0.76920	0.82631	0.90040	0.92367	1.02921				
	1.08614						AVRG		0.89492	14.66456
36 Tetrahydrofuran	1.91903	2.25741	2.49285	2.47426	2.43880	2.56205				
	2.54745						AVRG		2.38455	9.58802
37 1,1,1-Trichloroethane	0.60166	0.63629	0.72240	0.77095	0.80015	0.90683				
	0.97728						AVRG		0.77365	17.57993
38 1,2-Dichloroethane	0.94735	1.03551	1.07305	1.13119	1.16283	1.31669				
	1.44054						AVRG		1.15817	14.63365
39 Benzene	0.61498	0.66072	0.74818	0.77902	0.81864	0.89811				
	0.97310						AVRG		0.78468	16.03987
40 Carbon tetrachloride	0.63078	0.66720	0.74887	0.76874	0.81771	0.95558				
	1.08117						AVRG		0.81001	19.69713

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\T015_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			#RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
41 Cyclohexane	1.42581 2.48399	1.44106	1.49922	1.52391	1.87210	2.18587	AVRG		1.77600		23.59344
42 Tert Amyl Methyl Ether	++++ 0.82775	0.45655	0.60073	0.68612	0.75012	0.78990	AVRG		0.68519		20.10801
44 2,2,4-Trimethylpentane	0.39092 0.62142	0.43125	0.48147	0.49631	0.55098	0.58739	AVRG		0.50854		16.34433
45 Heptane	1.28779 1.82215	1.40353	1.41339	1.54243	1.58298	1.70345	AVRG		1.53653		12.06971
46 1,2-Dichloropropane	1.63448 2.60688	1.77345	1.99484	2.23056	2.20911	2.45897	AVRG		2.12976		16.52235
47 Trichloroethene	1.71098 1.92079	1.62892	1.71521	1.86534	1.80880	1.88779	AVRG		1.79112		6.05086
48 1,4-Dioxane	2.91543 4.18751	3.72967	3.76580	4.18422	3.50961	3.98015	AVRG		3.75320		11.85484

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
49 Bromodichloromethane	0.63623 0.98067	0.71991	0.76248	0.79966	0.80281	0.91051	AVRG		0.80176	14.35549
50 Methylcyclohexane	3.01400 3.34515	3.27098	3.28578	3.33529	3.24656	3.29375	AVRG		3.25593	3.44355
51 Methyl Isobutyl Ketone	1.14554 1.17170	1.26970	1.33750	1.37874	1.04187	1.11414	AVRG		1.20846	10.21087
52 cis-1,3-Dichloropropene	1.49108 1.33189	1.58683	1.47459	1.43253	1.24180	1.29707	AVRG		1.40797	8.68121
53 trans-1,3-Dichloropropene	3259 1494014	6258	15972	33726	467522	976354	LINR	0.00574	1.16789	0.99981
55 1,1,2-Trichloroethane	1.31443 1.99510	1.35838	1.63222	1.66117	1.79194	1.92260	AVRG		1.66798	15.66015
56 Toluene	0.48721 0.74349	0.57459	0.59212	0.61931	0.65428	0.70565	AVRG		0.62524	13.70296

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
57 Methyl Butyl Ketone	3979	7101	16452	36048	496681	986580					
	1509303						LINR	-0.01915	0.73920		0.99732
58 Dibromochloromethane	0.44568	0.45624	0.47749	0.49639	0.51717	0.56454					
	0.61181						AVRG		0.50990		11.78356
59 1,2-Dibromoethane	0.65349	0.64024	0.61880	0.66715	0.63087	0.67375					
	0.72258						AVRG		0.65813		5.23086
60 Tetrachloroethene	0.53968	0.58800	0.65552	0.67462	0.72269	0.76526					
	0.81996						AVRG		0.68082		14.37364
62 Chlorobenzene	0.37931	0.42751	0.45841	0.48766	0.51286	0.53546					
	0.55949						AVRG		0.48010		13.14359
63 Ethyl Benzene	0.26383	0.28588	0.28402	0.27378	0.27798	0.31005					
	0.33187						AVRG		0.28963		8.09638 <-
64 m,p-Xylene	0.32663	0.34697	0.32960	0.33541	0.32599	0.37120					
	0.39535						AVRG		0.34731		7.63238

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000									
	Level 7									
65 Styrene	0.62999 0.65495	0.71719	0.61777	0.56752	0.54202	0.59412	AVRG		0.61765	9.40286
66 Bromoform	0.43759 0.61862	0.47182	0.48397	0.48642	0.51094	0.55992	AVRG		0.50990	11.93645
67 o-Xylene	0.32286 0.40168	0.29700	0.29916	0.31331	0.32346	0.36443	AVRG		0.33170	11.49023 <-
68 1,1,2,2-Tetrachloroethane	0.38798 0.59043	0.43526	0.44220	0.47512	0.51492	0.56452	AVRG		0.48720	15.01726
69 Isopropylbenzene	0.23508 0.31165	0.24374	0.24955	0.24684	0.26535	0.28922	AVRG		0.26306	10.58544
70 N-Propylbenzene	0.29260 0.26498	0.24100	0.22746	0.21871	0.22397	0.24531	AVRG		0.24486	10.70477
71 4-Ethyltoluene	0.33929 0.32518	0.30178	0.28085	0.26936	0.27379	0.29746	AVRG		0.29824	8.82669

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
72 1,3,5-Trimethylbenzene	0.25509	0.25284	0.26639	0.26499	0.28736	0.31596				
	0.32061						AVRG		0.28046	10.04690
73 Tert-Butyl Benzene	0.32789	0.32034	0.31575	0.30022	0.32266	0.35928				
	0.38157						AVRG		0.33253	8.42844
74 1,2,4-Trimethylbenzene	0.34039	0.30135	0.27619	0.27596	0.30148	0.35069				
	0.37463						AVRG		0.31724	12.09848
75 Sec- Butylbenzene	0.31573	0.27400	0.22070	0.21616	0.23634	0.27200				
	0.29245						AVRG		0.26106	14.43245
76 1,3-Dichlorobenzene	0.45672	0.48169	0.47555	0.48451	0.49567	0.55152				
	0.58204						AVRG		0.50396	8.99864
78 Benzyl Chloride	0.41603	0.47321	0.48336	0.41825	0.36574	0.41918				
	0.45509						AVRG		0.43298	9.36368
79 1,4-Dichlorobenzene	0.38969	0.42000	0.45055	0.46705	0.49338	0.55315				
	0.57376						AVRG		0.47823	14.05054

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
80 p-Isopropyltoluene	0.37886 0.33988	0.39989	0.35966	0.28516	0.28817	0.31636	AVRG		0.33628		13.06243
81 1,2,3-Trimethylbenzene	0.33490 0.37830	0.31872	0.28827	0.28476	0.31640	0.35405	AVRG		0.32506		10.40562
82 1,2-Dichlorobenzene	0.55927 0.59954	0.60412	0.50136	0.50570	0.52429	0.56512	AVRG		0.55134		7.65020
83 N-Butylbenzene	6543 ++++	12561	35138	76279	1066198	2116696	LINR	-0.00070	0.32631		0.99814
84 1,2,4-Trichlorobenzene	2182 ++++	4353	11140	24779	382745	812484	LINR	0.01111	0.85585		0.99977
85 Naphthalene	3849 ++++	7350	20161	43933	706535	1497021	LINR	0.01205	0.46407		0.99972
86 Hexachlorobutadiene	5665 ++++	10436	25040	50440	427808	862170	LINR	-0.02535	0.81506		0.99894

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
=====											
\$ 28 Hexane-d14 (S)	2.09326	2.10687	2.08921	2.13759	2.13272	2.08766					
	2.02100						AVRG		2.09547		1.84233
=====											
\$ 54 Toluene-d8 (S)	1.09826	1.10133	1.08225	1.10749	1.04077	1.03365					
	0.98556						AVRG		1.06419		4.27274
=====											
\$ 77 1,4-dichlorobenzene-d4 (S)	2.83795	2.77462	2.57081	2.58597	1.93294	2.46533					
	1.49710						AVRG		2.38067		20.51327
=====											

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-MAR-2014 12:08
 End Cal Date : 13-MAR-2014 14:52
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Last Edit : 13-Mar-2014 15:58 10air0.i

Average %RSD Results.
=====
Calculated Average %RSD = 11.97086
Maximum Average %RSD = 40.00000
* Passed Average %RSD Test.

Curve	Formula	Units
Averaged	Amt = m1*Rsp	Amount
Linear	Amt = b + m1*Rsp	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07301BFB.D

BFB Injection Date: 03/14/2014

Instrument ID: 10AIR0

BFB Injection Time: 10:37

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	17.71
75	30.00 - 66.00% of mass 95	50.24
96	5.00 - 9.00% of mass 95	6.64
173	Less than 2.00% of mass 174	0.58 (0.65)
174	50.00 - 120.00% of mass 95	88.88
175	4.00 - 9.00% of mass 174	6.52 (7.34)
176	93.00 - 101.00% of mass 174	85.10 (95.74)
177	5.00 - 9.00% of mass 176	5.50 (6.47)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV	CCV	07302.D	03/14/2014	11:04
2	LCS (LCS)	LCS	07302_LCS.D	03/14/2014	11:04
3	BLANK (BLK)	BLANK	07305.D	03/14/2014	12:50

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 14-MAR-2014 11:04
Lab File ID: 07302.D Init. Cal. Date(s): 13-MAR-2014 13-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:08 14:52
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL	MIN	%D / %DRIFT	MAX	CURVE TYPE
1 Chlorodifluoromethane	1.44810	1.52812	1.52812 0.010	5.52551	30.00000	Averaged	
2 Propylene	4.18172	3.90176	3.90176 0.010	-6.69497	30.00000	Averaged	
3 Dichlorodifluoromethane	0.66488	0.72609	0.72609 0.010	9.20522	30.00000	Averaged	
4 Dichlorotetrafluoroethane	0.84080	0.87876	0.87876 0.010	4.51509	30.00000	Averaged	
5 Chloromethane	2.39786	2.40336	2.40336 0.010	0.22910	30.00000	Averaged	
6 Vinyl chloride	2.50150	2.29947	2.29947 0.010	-8.07626	30.00000	Averaged	
7 1,3-Butadiene	3.77109	3.39364	3.39364 0.010	-10.00881	30.00000	Averaged	
8 Bromomethane	2.38782	2.29443	2.29443 0.010	-3.91089	30.00000	Averaged	
9 Chloroethane	5.30956	5.01540	5.01540 0.010	-5.54021	30.00000	Averaged	
10 Ethanol	10.00000	10.85361	5.92669 0.010	8.53614	30.00000	Linear	
11 Vinyl Bromide	2.42053	2.30171	2.30171 0.010	-4.90885	30.00000	Averaged	
12 Isopentane	2.47680	2.52067	2.52067 0.010	1.77135	30.00000	Averaged	
13 Acrolein	10.00000	11.54821	8.38747 0.010	15.48208	30.00000	Linear	
14 Trichlorofluoromethane	0.62923	0.70742	0.70742 0.010	12.42572	30.00000	Averaged	
15 Acetone	10.00000	10.47028	1.51411 0.010	4.70276	30.00000	Linear	
16 Isopropyl Alcohol	1.61399	1.48668	1.48668 0.010	-7.88787	30.00000	Averaged	
17 Acrylonitrile	4.72679	4.06905	4.06905 0.010	-13.91506	30.00000	Averaged	
18 1,1-Dichloroethene	1.49046	1.53605	1.53605 0.010	3.05894	30.00000	Averaged	
19 Tert Butyl Alcohol (TBA)	1.04732	1.00741	1.00741 0.100	-3.80986	30.00000	Averaged	
20 Freon 113	1.16305	1.23922	1.23922 0.010	6.54897	30.00000	Averaged	
21 Methylene chloride	2.27916	2.34299	2.34299 0.010	2.80066	30.00000	Averaged	
22 Allyl Chloride	6.21177	5.19280	5.19280 0.010	-16.40383	30.00000	Averaged	
23 Carbon Disulfide	0.86157	0.84014	0.84014 0.010	-2.48747	30.00000	Averaged	
24 trans-1,2-dichloroethene	2.70875	2.39483	2.39483 0.010	-11.58934	30.00000	Averaged	
25 Methyl Tert Butyl Ether	0.76062	0.75914	0.75914 0.300	-0.19483	30.00000	Averaged	
26 Vinyl Acetate	10.00000	11.13830	0.98884 0.010	11.38297	30.00000	Linear	
27 1,1-Dichloroethane	1.22051	1.26234	1.26234 0.010	3.42748	30.00000	Averaged	
28 Hexane-d14(S)	2.09547	2.10873	2.10873 0.200	0.63260	30.00000	Averaged	
29 Methyl Ethyl Ketone	5.42362	4.84582	4.84582 0.010	-10.65337	30.00000	Averaged	
30 Di-isopropyl Ether	0.81971	0.84215	0.84215 0.010	2.73711	30.00000	Averaged	
31 n-Hexane	1.63470	1.61357	1.61357 0.010	-1.29302	30.00000	Averaged	
32 Ethyl Acetate	1.28774	1.14765	1.14765 0.010	-10.87887	30.00000	Averaged	
33 cis-1,2-Dichloroethene	2.48363	2.26152	2.26152 0.010	-8.94274	30.00000	Averaged	
34 Ethyl Tert-Butyl Ether	0.71760	0.70210	0.70210 0.010	-2.16005	30.00000	Averaged	
35 Chloroform	0.89492	0.94686	0.94686 0.010	5.80372	30.00000	Averaged	
36 Tetrahydrofuran	2.38455	2.28726	2.28726 0.010	-4.08010	30.00000	Averaged	
37 1,1,1-Trichloroethane	0.77365	0.85474	0.85474 0.010	10.48154	30.00000	Averaged	
38 1,2-Dichloroethane	1.15817	1.26829	1.26829 0.010	9.50873	30.00000	Averaged	
39 Benzene	0.78468	0.76476	0.76476 0.300	-2.53902	30.00000	Averaged	
40 Carbon tetrachloride	0.81001	0.88913	0.88913 0.010	9.76798	30.00000	Averaged	
41 Cyclohexane	1.77600	1.78092	1.78092 0.010	0.27736	30.00000	Averaged	
42 Tert Amyl Methyl Ether	0.68519	0.71070	0.71070 0.010	3.72239	30.00000	Averaged	

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07302.D
Report Date: 14-Mar-2014 10:34

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 14-MAR-2014 11:04
Lab File ID: 07302.D Init. Cal. Date(s): 13-MAR-2014 13-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:08 14:52
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF %D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
144 2,2,4-Trimethylpentane	0.50854	0.51627	0.51627	0.010	1.52065	30.00000 Averaged
145 Heptane	1.53653	1.47146	1.47146	0.010	-4.23477	30.00000 Averaged
146 1,2-Dichloropropane	2.12976	2.05422	2.05422	0.010	-3.54662	30.00000 Averaged
147 Trichloroethene	1.79112	1.65666	1.65666	0.010	-7.50713	30.00000 Averaged
148 1,4-Dioxane	3.75320	3.39742	3.39742	0.010	-9.47939	30.00000 Averaged
149 Bromodichloromethane	0.80176	0.83673	0.83673	0.010	4.36221	30.00000 Averaged
150 Methylcyclohexane	3.25593	2.91937	2.91937	0.010	-10.33680	30.00000 Averaged
151 Methyl isobutyl Ketone	1.20846	1.01736	1.01736	0.010	-15.81357	30.00000 Averaged
152 cis-1,3-Dichloropropene	1.40797	1.19323	1.19323	0.010	-15.25190	30.00000 Averaged
153 trans-1,3-Dichloropropene	10.00000	10.50384	1.11798	0.010	5.03835	30.00000 Linear
154 Toluene-d8 (S)	1.06419	1.04319	1.04319	0.200	-1.97319	30.00000 Averaged
155 1,1,2-Trichloroethane	1.66798	1.71946	1.71946	0.010	3.08672	30.00000 Averaged
156 Toluene	0.62524	0.62018	0.62018	0.300	-0.80853	30.00000 Averaged
157 Methyl Butyl Ketone	10.00000	11.21484	0.64806	0.010	12.14838	30.00000 Linear
158 Dibromochloromethane	0.50990	0.52878	0.52878	0.010	3.70117	30.00000 Averaged
159 1,2-Dibromoethane	0.65813	0.62113	0.62113	0.010	-5.62166	30.00000 Averaged
160 Tetrachloroethene	0.68082	0.69132	0.69132	0.010	1.54171	30.00000 Averaged
162 Chlorobenzene	0.48010	0.47633	0.47633	0.010	-0.78414	30.00000 Averaged
163 Ethyl Benzene	0.28963	0.27546	0.27546	0.300	-4.89067	30.00000 Averaged
164 m&p-Xylene	0.34731	0.33374	0.33374	0.300	-3.90678	30.00000 Averaged
165 Styrene	0.61765	0.53845	0.53845	0.010	-12.82328	30.00000 Averaged
166 Bromoform	0.50990	0.52777	0.52777	0.010	3.50568	30.00000 Averaged
167 o-Xylene	0.33170	0.33541	0.33541	0.300	1.12042	30.00000 Averaged
168 1,1,2,2-Tetrachloroethane	0.48720	0.50627	0.50627	0.010	3.91474	30.00000 Averaged
169 Isopropylbenzene	0.26306	0.25908	0.25908	0.010	-1.51297	30.00000 Averaged
170 N-Propylbenzene	0.24486	0.22380	0.22380	0.010	-8.60036	30.00000 Averaged
171 4-Ethyltoluene	0.29824	0.27318	0.27318	0.010	-8.40352	30.00000 Averaged
172 1,3,5-Trimethylbenzene	0.28046	0.29302	0.29302	0.010	4.47885	30.00000 Averaged
173 Tert-Butyl Benzene	0.33253	0.32345	0.32345	0.010	-2.73030	30.00000 Averaged
174 1,2,4-Trimethylbenzene	0.31724	0.31347	0.31347	0.010	-1.18929	30.00000 Averaged
175 Sec- Butylbenzene	0.26106	0.24483	0.24483	0.010	-6.21563	30.00000 Averaged
176 1,3-Dichlorobenzene	0.50396	0.50383	0.50383	0.010	-0.02469	30.00000 Averaged
177 1,4-dichlorobenzene-d4 (S)	2.38067	2.07958	2.07958	0.200	-12.64744	30.00000 Averaged
178 Benzyl Chloride	0.43298	0.37740	0.37740	0.010	-12.83724	30.00000 Averaged
179 1,4-Dichlorobenzene	0.47823	0.49460	0.49460	0.010	3.42457	30.00000 Averaged
180 p-Isopropyltoluene	0.33828	0.28876	0.28876	0.010	-14.63957	30.00000 Averaged
181 1,2,3-Trimethylbenzene	0.32506	0.32536	0.32536	0.010	0.09317	30.00000 Averaged
182 1,2-Dichlorobenzene	0.55134	0.50748	0.50748	0.010	-7.95495	30.00000 Averaged
183 N-Butylbenzene	10.00000	10.56287	0.30872	0.010	5.62874	30.00000 Linear
184 1,2,4-Trichlorobenzene	10.00000	10.63314	0.81339	0.010	6.33135	30.00000 Linear
185 Naphthalene	10.00000	10.61707	0.44212	0.010	6.17074	30.00000 Linear
186 Hexachlorobutadiene	10.00000	10.40873	0.76444	0.010	4.08732	30.00000 Linear

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07302.D
Report Date: 14-Mar-2014 10:34

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 14-MAR-2014 11:04
Lab File ID: 07302.D Init. Cal. Date(s): 13-MAR-2014 13-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:08 14:52
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 6.10010

Maximun Average %D/Drift = 30.00000

* Passed Average %D/Drift Test.

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10259332

Lab File ID: 07601BFB.D

BFB Injection Date: 03/17/2014

Instrument ID: 10AIR0

BFB Injection Time: 08:23

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.16
75	30.00 - 66.00% of mass 95	50.86
96	5.00 - 9.00% of mass 95	6.92
173	Less than 2.00% of mass 174	0.76 (0.89)
174	50.00 - 120.00% of mass 95	86.26
175	4.00 - 9.00% of mass 174	6.10 (7.07)
176	93.00 - 101.00% of mass 174	84.57 (98.04)
177	5.00 - 9.00% of mass 176	5.46 (6.46)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS for HBN 289541 [AIR/	1640446	07602_19678.D	03/17/2014	08:50
2	CCV	CCV	07602.D	03/17/2014	08:50
3	LCS for HBN 289655 [AIR/	1640973	07602_19693.D	03/17/2014	08:50
4	LCS (LCS)	LCS	07602_LCS.D	03/17/2014	08:50
5	BLANK (BLK)	BLANK	07611_BLANK.	03/17/2014	13:52
6	BLANK for HBN 289541 [AI	1640445	07611_19678.D	03/17/2014	13:52
7	BLANK for HBN 289655 [AI	1640972	07611_19693.D	03/17/2014	13:52
8	SV-136-A-16	10259332013	07617.D	03/17/2014	16:34
9	SV-118-A-16	10259332005	07628.D	03/17/2014	21:25
10	SV-079-A-16	10259332009	07629.D	03/17/2014	21:50
11	SV-081-A-16	10259332011	07630.D	03/17/2014	22:14
12	IA-081-A-16	10259332012	07631.D	03/17/2014	22:44
13	IA-018-A-16	10259332022	07632.D	03/17/2014	23:18
14	SV-138-A-16	10259332023	07633.D	03/17/2014	23:50
15	IA-138-A-16	10259332024	07634.D	03/18/2014	00:19
16	SV-093-A-16	10259332025	07635.D	03/18/2014	00:49
17	IA-093-A-16	10259332026	07636.D	03/18/2014	01:23
18	BCK-1-16	10259332027	07637.D	03/18/2014	01:54
19	BCK-3-16	10259332029	07638.D	03/18/2014	02:28
20	BCK-4-16	10259332030	07639.D	03/18/2014	02:58
21	SV-DUP3-A-16	10259332032	07641.D	03/18/2014	04:03
22	IA-DUP3-A-16	10259332033	07642.D	03/18/2014	04:37

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 17-MAR-2014 08:50
Lab File ID: 07602.D Init. Cal. Date(s): 13-MAR-2014 13-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:08 14:52
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	1.44810	1.31360	1.31360	0.010	-9.28809	30.00000	Averaged
2 Propylene	4.18172	3.47671	3.47671	0.010	-16.85937	30.00000	Averaged
3 Dichlorodifluoromethane	0.66488	0.61067	0.61067	0.010	-8.15432	30.00000	Averaged
4 Dichlorotetrafluoroethane	0.84080	0.75349	0.75349	0.010	-10.38432	30.00000	Averaged
5 Chloromethane	2.39786	2.09447	2.09447	0.010	-12.65259	30.00000	Averaged
6 Vinyl chloride	2.50150	2.08525	2.08525	0.010	-16.63998	30.00000	Averaged
7 1,3-Butadiene	3.77109	3.03717	3.03717	0.010	-19.46155	30.00000	Averaged
8 Bromomethane	2.38782	2.04290	2.04290	0.010	-14.44505	30.00000	Averaged
9 Chloroethane	5.30956	4.51055	4.51055	0.010	-15.04857	30.00000	Averaged
10 Ethanol	10.00000	11.57621	5.56218	0.010	15.76214	30.00000	Linear
11 Vinyl Bromide	2.42053	2.06752	2.06752	0.010	-14.58421	30.00000	Averaged
12 Isopentane	2.47680	2.27062	2.27062	0.010	-8.32460	30.00000	Averaged
13 Acrolein	10.00000	12.58248	7.69896	0.010	25.82478	30.00000	Linear
14 Trichlorofluoromethane	0.62923	0.59710	0.59710	0.010	-5.10681	30.00000	Averaged
15 Acetone	10.00000	12.44212	1.28257	0.010	24.42121	30.00000	Linear
16 Isopropyl Alcohol	1.61399	1.37128	1.37128	0.010	-15.03830	30.00000	Averaged
17 Acrylonitrile	4.72679	3.63663	3.63663	0.010	-23.06348	30.00000	Averaged
18 1,1-Dichloroethene	1.49046	1.34294	1.34294	0.010	-9.89732	30.00000	Averaged
19 Tert Butyl Alcohol (TBA)	1.04732	0.89809	0.89809	0.100	-14.24853	30.00000	Averaged
20 Freon 113	1.16305	1.08694	1.08694	0.010	-6.54431	30.00000	Averaged
21 Methylene chloride	2.27916	2.04617	2.04617	0.010	-10.22281	30.00000	Averaged
22 Allyl Chloride	6.21177	4.69780	4.69780	0.010	-24.37264	30.00000	Averaged
23 Carbon Disulfide	0.86157	0.76106	0.76106	0.010	-11.66522	30.00000	Averaged
24 trans-1,2-dichloroethene	2.70875	2.15236	2.15236	0.010	-20.54053	30.00000	Averaged
25 Methyl Tert Butyl Ether	0.76062	0.67487	0.67487	0.300	-11.27467	30.00000	Averaged
26 Vinyl Acetate	10.00000	12.75440	0.86433	0.010	27.54396	30.00000	Linear
27 1,1-Dichloroethane	1.22051	1.10494	1.10494	0.010	-9.46936	30.00000	Averaged
28 Hexane-d14(S)	2.09547	2.10622	2.10622	0.200	0.51304	30.00000	Averaged
29 Methyl Ethyl Ketone	5.42362	4.36416	4.36416	0.010	-19.53412	30.00000	Averaged
30 Di-isopropyl Ether	0.81971	0.73202	0.73202	0.010	-10.69742	30.00000	Averaged
31 n-Hexane	1.63470	1.43140	1.43140	0.010	-12.43681	30.00000	Averaged
32 Ethyl Acetate	1.28774	1.00739	1.00739	0.010	-21.77128	30.00000	Averaged
33 cis-1,2-Dichloroethene	2.48363	2.04948	2.04948	0.010	-17.48029	30.00000	Averaged
34 Ethyl Tert-Butyl Ether	0.71760	0.62614	0.62614	0.010	-12.74547	30.00000	Averaged
35 Chloroform	0.89492	0.81964	0.81964	0.010	-8.41201	30.00000	Averaged
36 Tetrahydrofuran	2.38455	2.04254	2.04254	0.010	-14.34291	30.00000	Averaged
37 1,1,1-Trichloroethane	0.77365	0.72287	0.72287	0.010	-6.56390	30.00000	Averaged
38 1,2-Dichloroethane	1.15817	1.06768	1.06768	0.010	-7.81321	30.00000	Averaged
39 Benzene	0.78468	0.68469	0.68469	0.300	-12.74278	30.00000	Averaged
40 Carbon tetrachloride	0.81001	0.74828	0.74828	0.010	-7.62042	30.00000	Averaged
41 Cyclohexane	1.77600	1.55888	1.55888	0.010	-12.22491	30.00000	Averaged
42 Tert Amyl Methyl Ether	0.68519	0.62299	0.62299	0.010	-9.07848	30.00000	Averaged

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 17-MAR-2014 08:50
Lab File ID: 07602.D Init. Cal. Date(s): 13-MAR-2014 13-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:08 14:52
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	0.50854	0.45666	0.45666	0.010	-10.20071	30.00000	Averaged
45 Heptane	1.53653	1.29016	1.29016	0.010	-16.03408	30.00000	Averaged
46 1,2-Dichloropropane	2.12976	1.85274	1.85274	0.010	-13.00683	30.00000	Averaged
47 Trichloroethene	1.79112	1.51868	1.51868	0.010	-15.21021	30.00000	Averaged
48 1,4-Dioxane	3.75320	3.14447	3.14447	0.010	-16.21903	30.00000	Averaged
49 Bromodichloromethane	0.80176	0.71482	0.71482	0.010	-10.84278	30.00000	Averaged
50 Methylcyclohexane	3.25593	2.65694	2.65694	0.010	-18.39675	30.00000	Averaged
51 Methyl Isobutyl Ketone	1.20846	0.88871	0.88871	0.010	-26.45909	30.00000	Averaged
52 cis-1,3-Dichloropropene	1.40797	1.05893	1.05893	0.010	-24.79034	30.00000	Averaged
53 trans-1,3-Dichloropropene	10.00000	12.08889	0.97070	0.010	20.88888	30.00000	Linear
54 Toluene-d8 (S)	1.06419	1.02135	1.02135	0.200	-4.02562	30.00000	Averaged
55 1,1,2-Trichloroethane	1.66798	1.52231	1.52231	0.010	-8.73300	30.00000	Averaged
56 Toluene	0.62524	0.55422	0.55422	0.300	-11.35847	30.00000	Averaged
57 Methyl Butyl Ketone	10.00000	12.22065	0.59554	0.010	22.20648	30.00000	Linear
58 Dibromochloromethane	0.50990	0.48878	0.48878	0.010	-4.14343	30.00000	Averaged
59 1,2-Dibromoethane	0.65813	0.57124	0.57124	0.010	-13.20202	30.00000	Averaged
60 Tetrachloroethene	0.68082	0.65895	0.65895	0.010	-3.21269	30.00000	Averaged
62 Chlorobenzene	0.48010	0.45954	0.45954	0.010	-4.28280	30.00000	Averaged
63 Ethyl Benzene	0.28963	0.25803	0.25803	0.300	-10.90990	30.00000	Averaged <-
64 m&p-Xylene	0.34731	0.30942	0.30942	0.300	-10.90927	30.00000	Averaged
65 Styrene	0.61765	0.50295	0.50295	0.010	-18.57010	30.00000	Averaged
66 Bromoform	0.50990	0.48404	0.48404	0.010	-5.07132	30.00000	Averaged
67 o-Xylene	0.33170	0.30990	0.30990	0.300	-6.57269	30.00000	Averaged
68 1,1,2,2-Tetrachloroethane	0.48720	0.47647	0.47647	0.010	-2.20182	30.00000	Averaged
69 Isopropylbenzene	0.26306	0.24782	0.24782	0.010	-5.79539	30.00000	Averaged
70 N-Propylbenzene	0.24486	0.20698	0.20698	0.010	-15.47017	30.00000	Averaged
71 4-Ethyltoluene	0.29824	0.26046	0.26046	0.010	-12.66917	30.00000	Averaged
72 1,3,5-Trimethylbenzene	0.28046	0.27984	0.27984	0.010	-0.22077	30.00000	Averaged
73 Tert-Butyl Benzene	0.33253	0.31109	0.31109	0.010	-6.44641	30.00000	Averaged
74 1,2,4-Trimethylbenzene	0.31724	0.29752	0.29752	0.010	-6.21566	30.00000	Averaged
75 Sec- Butylbenzene	0.26106	0.23016	0.23016	0.010	-11.83447	30.00000	Averaged
76 1,3-Dichlorobenzene	0.50396	0.48045	0.48045	0.010	-4.66424	30.00000	Averaged
77 1,4-dichlorobenzene-d4 (S)	2.38067	1.49798	1.49798	0.200	-37.67740	30.00000	Averaged <-
78 Benzyl Chloride	0.43298	0.34967	0.34967	0.010	-19.24035	30.00000	Averaged
79 1,4-Dichlorobenzene	0.47823	0.47582	0.47582	0.010	-0.50369	30.00000	Averaged
80 p-Isopropyltoluene	0.33828	0.27654	0.27654	0.010	-18.25285	30.00000	Averaged
81 1,2,3-Trimethylbenzene	0.32506	0.30748	0.30748	0.010	-5.40622	30.00000	Averaged
82 1,2-Dichlorobenzene	0.55134	0.48930	0.48930	0.010	-11.25284	30.00000	Averaged
83 N-Butylbenzene	10.00000	11.44223	0.28501	0.010	14.42234	30.00000	Linear
84 1,2,4-Trichlorobenzene	10.00000	11.32155	0.76344	0.010	13.21552	30.00000	Linear
85 Naphthalene	10.00000	11.27618	0.41600	0.010	12.76180	30.00000	Linear
86 Hexachlorobutadiene	10.00000	11.12658	0.71622	0.010	11.26576	30.00000	Linear

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07602.D
Report Date: 17-Mar-2014 08:23

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 17-MAR-2014 08:50
Lab File ID: 07602.D Init. Cal. Date(s): 13-MAR-2014 13-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:08 14:52
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 12.84499

Maximum Average %D/Drift = 30.00000

* Passed Average %D/Drift Test.

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014 REV

Pace Project No.: 10259332

QC Batch: AIR/19645 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259332001, 10259332002, 10259332003

METHOD BLANK: 1638293 Matrix: Air

Associated Lab Samples: 10259332001, 10259332002, 10259332003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/12/14 13:49	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/12/14 13:49	
1,1-Dichloroethane	ug/m3	ND	0.82	03/12/14 13:49	
1,1-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
1,2,3-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/12/14 13:49	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
1,2-Dichloroethane	ug/m3	ND	0.41	03/12/14 13:49	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
Benzene	ug/m3	ND	0.32	03/12/14 13:49	
Carbon tetrachloride	ug/m3	ND	0.64	03/12/14 13:49	
Chlorodifluoromethane	ug/m3	ND	0.72	03/12/14 13:49	
Chloroform	ug/m3	ND	0.99	03/12/14 13:49	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/12/14 13:49	
Ethylbenzene	ug/m3	ND	0.88	03/12/14 13:49	
m&p-Xylene	ug/m3	ND	1.8	03/12/14 13:49	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/12/14 13:49	
Methylene Chloride	ug/m3	ND	0.71	03/12/14 13:49	
Naphthalene	ug/m3	ND	1.1	03/12/14 13:49	
o-Xylene	ug/m3	ND	0.88	03/12/14 13:49	
Tetrachloroethene	ug/m3	ND	0.69	03/12/14 13:49	
Toluene	ug/m3	ND	0.77	03/12/14 13:49	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Trichloroethene	ug/m3	ND	0.55	03/12/14 13:49	
Vinyl chloride	ug/m3	ND	0.26	03/12/14 13:49	

LABORATORY CONTROL SAMPLE: 1638294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	64.7	117	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	60.7	109	72-130	
1,1-Dichloroethane	ug/m3	41.2	47.4	115	68-128	
1,1-Dichloroethene	ug/m3	40.3	47.7	118	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	62.1	124	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	114	151	30-150	CH,L3
1,2,4-Trimethylbenzene	ug/m3	50	61.0	122	71-140	
1,2-Dichloroethane	ug/m3	41.2	50.5	123	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	58.1	116	73-136	
Benzene	ug/m3	32.5	37.2	114	69-134	
Carbon tetrachloride	ug/m3	64	76.1	119	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

QC Batch: AIR/19668 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259332021, 10259332028, 10259332034

METHOD BLANK: 1640107 Matrix: Air

Associated Lab Samples: 10259332021, 10259332028, 10259332034

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/14/14 23:29	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/14/14 23:29	
1,1-Dichloroethane	ug/m3	ND	0.82	03/14/14 23:29	
1,1-Dichloroethene	ug/m3	ND	0.81	03/14/14 23:29	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/14/14 23:29	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/14/14 23:29	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/14/14 23:29	
1,2-Dichloroethane	ug/m3	ND	0.41	03/14/14 23:29	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/14/14 23:29	
Benzene	ug/m3	ND	0.32	03/14/14 23:29	
Carbon tetrachloride	ug/m3	ND	0.64	03/14/14 23:29	
Chlorodifluoromethane	ug/m3	ND	0.20	03/14/14 23:29	
Chloroform	ug/m3	ND	0.99	03/14/14 23:29	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/14/14 23:29	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/14/14 23:29	
Ethylbenzene	ug/m3	ND	0.88	03/14/14 23:29	
m&p-Xylene	ug/m3	ND	1.8	03/14/14 23:29	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/14/14 23:29	
Methylene Chloride	ug/m3	0.96	0.71	03/14/14 23:29	P8
Naphthalene	ug/m3	ND	1.1	03/14/14 23:29	
o-Xylene	ug/m3	ND	0.88	03/14/14 23:29	
Tetrachloroethene	ug/m3	ND	0.69	03/14/14 23:29	
Toluene	ug/m3	ND	0.77	03/14/14 23:29	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/14/14 23:29	
Trichloroethene	ug/m3	ND	0.55	03/14/14 23:29	
Vinyl chloride	ug/m3	ND	0.26	03/14/14 23:29	

LABORATORY CONTROL SAMPLE: 1640108

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	60.1	108	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	66.7	120	72-130	
1,1-Dichloroethane	ug/m3	41.2	41.5	101	68-128	
1,1-Dichloroethene	ug/m3	40.3	44.0	109	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	57.4	115	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	89.5	119	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	57.1	114	71-140	
1,2-Dichloroethane	ug/m3	41.2	42.7	104	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	57.8	116	73-136	
Benzene	ug/m3	32.5	40.0	123	69-134	
Carbon tetrachloride	ug/m3	64	67.6	106	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014

Pace Project No.: 10259332

LABORATORY CONTROL SAMPLE: 1640108

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	32.9	91	60-140	
Chloroform	ug/m3	49.7	53.4	108	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	43.7	108	71-135	
Dichlorodifluoromethane	ug/m3	50.3	54.6	109	69-125	
Ethylbenzene	ug/m3	44.2	51.0	116	73-139	
m&p-Xylene	ug/m3	44.2	52.2	118	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	36.7	100	72-132	
Methylene Chloride	ug/m3	35.3	34.2	97	64-134	
Naphthalene	ug/m3	53.3	64.8	122	61-150	
o-Xylene	ug/m3	44.2	51.0	116	71-138	
Tetrachloroethene	ug/m3	69	91.8	133	69-136	
Toluene	ug/m3	38.3	40.3	105	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	39.9	99	70-131	
Trichloroethene	ug/m3	54.6	64.3	118	70-135	
Vinyl chloride	ug/m3	26	29.1	112	69-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

QC Batch: AIR/19645 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259332001, 10259332002, 10259332003

METHOD BLANK: 1638293 Matrix: Air

Associated Lab Samples: 10259332001, 10259332002, 10259332003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/12/14 13:49	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/12/14 13:49	
1,1-Dichloroethane	ug/m3	ND	0.82	03/12/14 13:49	
1,1-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/12/14 13:49	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/12/14 13:49	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
1,2-Dichloroethane	ug/m3	ND	0.41	03/12/14 13:49	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/12/14 13:49	
Benzene	ug/m3	ND	0.32	03/12/14 13:49	
Carbon tetrachloride	ug/m3	ND	0.64	03/12/14 13:49	
Chlorodifluoromethane	ug/m3	ND	0.20	03/12/14 13:49	
Chloroform	ug/m3	ND	0.99	03/12/14 13:49	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/12/14 13:49	
Ethylbenzene	ug/m3	ND	0.88	03/12/14 13:49	
m&p-Xylene	ug/m3	ND	1.8	03/12/14 13:49	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/12/14 13:49	
Methylene Chloride	ug/m3	ND	0.71	03/12/14 13:49	
Naphthalene	ug/m3	ND	1.1	03/12/14 13:49	
o-Xylene	ug/m3	ND	0.88	03/12/14 13:49	
Tetrachloroethene	ug/m3	ND	0.69	03/12/14 13:49	
Toluene	ug/m3	ND	0.77	03/12/14 13:49	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/12/14 13:49	
Trichloroethene	ug/m3	ND	0.55	03/12/14 13:49	
Vinyl chloride	ug/m3	ND	0.26	03/12/14 13:49	

LABORATORY CONTROL SAMPLE: 1638294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	64.7	117	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	60.7	109	72-130	
1,1-Dichloroethane	ug/m3	41.2	47.4	115	68-128	
1,1-Dichloroethene	ug/m3	40.3	47.7	118	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	62.1	124	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	114	151	30-150 CH,L3	
1,2,4-Trimethylbenzene	ug/m3	50	61.0	122	71-140	
1,2-Dichloroethane	ug/m3	41.2	50.5	123	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	58.1	116	73-136	
Benzene	ug/m3	32.5	37.2	114	69-134	
Carbon tetrachloride	ug/m3	64	76.1	119	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

LABORATORY CONTROL SAMPLE: 1638294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	42.8	119	60-140	
Chloroform	ug/m3	49.7	58.5	118	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	49.3	122	71-135	
Dichlorodifluoromethane	ug/m3	50.3	58.8	117	69-125	
Ethylbenzene	ug/m3	44.2	55.5	126	73-139	
m&p-Xylene	ug/m3	44.2	55.7	126	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	42.2	115	72-132	
Methylene Chloride	ug/m3	35.3	40.1	114	64-134	
Naphthalene	ug/m3	53.3	78.7	148	61-150	CH
o-Xylene	ug/m3	44.2	53.7	122	71-138	
Tetrachloroethene	ug/m3	69	83.4	121	69-136	
Toluene	ug/m3	38.3	42.3	110	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	50.2	125	70-131	
Trichloroethene	ug/m3	54.6	64.2	118	70-135	
Vinyl chloride	ug/m3	26	29.5	114	69-132	

SAMPLE DUPLICATE: 1638565

Parameter	Units	10259301010 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	3.1	3.1	.7	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	9.6	10.1	5	25	
1,2-Dichloroethane	ug/m3	4.1	4.4	8	25	
1,3,5-Trimethylbenzene	ug/m3	ND	2.9		25	
Benzene	ug/m3	25.6	28.0	9	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	3.1	3.5	12	25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	2.8	2.6	7	25	
Ethylbenzene	ug/m3	2.9	3.0	4	25	
m&p-Xylene	ug/m3	11.2	11.5	2	25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	91.4	105	14	25	
Naphthalene	ug/m3	4.3	4.6	8	25	CH
o-Xylene	ug/m3	4.7	4.9	5	25	
Tetrachloroethene	ug/m3	8.3	8.8	5	25	
Toluene	ug/m3	175	183	5	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

QC Batch: AIR/19661 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259332004, 10259332005, 10259332006, 10259332007, 10259332008, 10259332009, 10259332010,
10259332011, 10259332013, 10259332014, 10259332015, 10259332016, 10259332017, 10259332018,
10259332019, 10259332020

METHOD BLANK: 1639468 Matrix: Air
Associated Lab Samples: 10259332004, 10259332005, 10259332006, 10259332007, 10259332008, 10259332009, 10259332010,
10259332011, 10259332013, 10259332014, 10259332015, 10259332016, 10259332017, 10259332018,
10259332019, 10259332020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/14/14 12:50	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/14/14 12:50	
1,1-Dichloroethane	ug/m3	ND	0.82	03/14/14 12:50	
1,1-Dichloroethene	ug/m3	ND	0.81	03/14/14 12:50	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/14/14 12:50	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/14/14 12:50	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/14/14 12:50	
1,2-Dichloroethane	ug/m3	ND	0.41	03/14/14 12:50	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/14/14 12:50	
Benzene	ug/m3	ND	0.32	03/14/14 12:50	
Carbon tetrachloride	ug/m3	ND	0.64	03/14/14 12:50	
Chlorodifluoromethane	ug/m3	ND	0.20	03/14/14 12:50	
Chloroform	ug/m3	ND	0.99	03/14/14 12:50	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/14/14 12:50	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/14/14 12:50	
Ethylbenzene	ug/m3	ND	0.88	03/14/14 12:50	
m&p-Xylene	ug/m3	ND	1.8	03/14/14 12:50	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/14/14 12:50	
Methylene Chloride	ug/m3	ND	0.71	03/14/14 12:50	
Naphthalene	ug/m3	ND	1.1	03/14/14 12:50	
o-Xylene	ug/m3	ND	0.88	03/14/14 12:50	
Tetrachloroethene	ug/m3	ND	0.69	03/14/14 12:50	
Toluene	ug/m3	ND	0.77	03/14/14 12:50	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/14/14 12:50	
Trichloroethene	ug/m3	ND	0.55	03/14/14 12:50	
Vinyl chloride	ug/m3	ND	0.26	03/14/14 12:50	

LABORATORY CONTROL SAMPLE: 1639469

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	50.2	90	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	53.8	97	72-130	
1,1-Dichloroethane	ug/m3	41.2	39.8	97	68-128	
1,1-Dichloroethene	ug/m3	40.3	39.1	97	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	49.9	100	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	80.2	106	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	50.6	101	71-140	
1,2-Dichloroethane	ug/m3	41.2	37.6	91	71-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

LABORATORY CONTROL SAMPLE: 1639469

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3,5-Trimethylbenzene	ug/m3	50	47.8	96	73-136	
Benzene	ug/m3	32.5	33.3	103	69-134	
Carbon tetrachloride	ug/m3	64	58.3	91	66-134	
Chlorodifluoromethane	ug/m3	36	34.1	95	60-140	
Chloroform	ug/m3	49.7	46.9	94	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	44.3	110	71-135	
Dichlorodifluoromethane	ug/m3	50.3	46.0	92	69-125	
Ethylbenzene	ug/m3	44.2	46.4	105	73-139	
m&p-Xylene	ug/m3	44.2	45.9	104	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	36.7	100	72-132	
Methylene Chloride	ug/m3	35.3	34.3	97	64-134	
Naphthalene	ug/m3	53.3	56.6	106	61-150	
o-Xylene	ug/m3	44.2	43.6	99	71-138	
Tetrachloroethene	ug/m3	69	67.9	98	69-136	
Toluene	ug/m3	38.3	38.6	101	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	45.6	113	70-131	
Trichloroethene	ug/m3	54.6	59.1	108	70-135	
Vinyl chloride	ug/m3	26	28.3	109	69-132	

SAMPLE DUPLICATE: 1640109

Parameter	Units	10259332019 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	ND	ND		25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND		25	
Benzene	ug/m3	1.1	1.0	8	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	3.6	3.5	2	25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	2.3	2.2	4	25	
Ethylbenzene	ug/m3	ND	ND		25	
m&p-Xylene	ug/m3	ND	ND		25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	59.8	60.1	.5	25	
Naphthalene	ug/m3	2.5	2.3	9	25	
o-Xylene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	ND	ND		25	
Toluene	ug/m3	2.3	2.1	10	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

SAMPLE DUPLICATE: 1640109

Parameter	Units	10259332019 Result	Dup Result	RPD	Max RPD	Qualifiers
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

QC Batch: AIR/19678 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259332012, 10259332022, 10259332023, 10259332024, 10259332025, 10259332026, 10259332030,
10259332032, 10259332033

METHOD BLANK: 1640445

Matrix: Air

Associated Lab Samples: 10259332012, 10259332022, 10259332023, 10259332024, 10259332025, 10259332026, 10259332030,
10259332032, 10259332033

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/17/14 13:52	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/17/14 13:52	
1,1-Dichloroethane	ug/m3	ND	0.82	03/17/14 13:52	
1,1-Dichloroethene	ug/m3	ND	0.81	03/17/14 13:52	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/17/14 13:52	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/17/14 13:52	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/17/14 13:52	
1,2-Dichloroethane	ug/m3	ND	0.41	03/17/14 13:52	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/17/14 13:52	
Benzene	ug/m3	ND	0.32	03/17/14 13:52	
Carbon tetrachloride	ug/m3	ND	0.64	03/17/14 13:52	
Chlorodifluoromethane	ug/m3	ND	0.20	03/17/14 13:52	
Chloroform	ug/m3	ND	0.99	03/17/14 13:52	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/17/14 13:52	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/17/14 13:52	
Ethylbenzene	ug/m3	ND	0.88	03/17/14 13:52	
m&p-Xylene	ug/m3	ND	1.8	03/17/14 13:52	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/17/14 13:52	
Methylene Chloride	ug/m3	ND	0.71	03/17/14 13:52	
Naphthalene	ug/m3	ND	1.1	03/17/14 13:52	
o-Xylene	ug/m3	ND	0.88	03/17/14 13:52	
Tetrachloroethene	ug/m3	ND	0.69	03/17/14 13:52	
Toluene	ug/m3	ND	0.77	03/17/14 13:52	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/17/14 13:52	
Trichloroethene	ug/m3	ND	0.55	03/17/14 13:52	
Vinyl chloride	ug/m3	ND	0.26	03/17/14 13:52	

LABORATORY CONTROL SAMPLE: 1640446

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	59.4	107	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	60.8	110	72-130	
1,1-Dichloroethane	ug/m3	41.2	45.4	110	68-128	
1,1-Dichloroethene	ug/m3	40.3	44.7	111	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	52.8	106	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	85.4	113	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	53.3	107	71-140	
1,2-Dichloroethane	ug/m3	41.2	44.6	108	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	50.1	100	73-136	
Benzene	ug/m3	32.5	37.2	115	69-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

LABORATORY CONTROL SAMPLE: 1640446

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	64	69.2	108	66-134	
Chlorodifluoromethane	ug/m3	36	39.6	110	60-140	
Chloroform	ug/m3	49.7	54.2	109	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	48.8	121	71-135	
Dichlorodifluoromethane	ug/m3	50.3	54.7	109	69-125	
Ethylbenzene	ug/m3	44.2	49.5	112	73-139	
m&p-Xylene	ug/m3	44.2	49.5	112	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	41.3	113	72-132	
Methylene Chloride	ug/m3	35.3	39.3	111	64-134	
Naphthalene	ug/m3	53.3	60.1	113	61-150	
o-Xylene	ug/m3	44.2	47.2	107	71-138	
Tetrachloroethene	ug/m3	69	71.2	103	69-136	
Toluene	ug/m3	38.3	43.2	113	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	50.7	126	70-131	
Trichloroethene	ug/m3	54.6	64.4	118	70-135	
Vinyl chloride	ug/m3	26	31.2	120	69-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

QC Batch: AIR/19693 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10259332027, 10259332029

METHOD BLANK: 1640972 Matrix: Air

Associated Lab Samples: 10259332027, 10259332029

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/14/14 23:29	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/14/14 23:29	
1,1-Dichloroethane	ug/m3	ND	0.82	03/14/14 23:29	
1,1-Dichloroethene	ug/m3	ND	0.81	03/14/14 23:29	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/14/14 23:29	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/14/14 23:29	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/14/14 23:29	
1,2-Dichloroethane	ug/m3	ND	0.41	03/14/14 23:29	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/14/14 23:29	
Benzene	ug/m3	ND	0.32	03/14/14 23:29	
Carbon tetrachloride	ug/m3	ND	0.64	03/14/14 23:29	
Chlorodifluoromethane	ug/m3	ND	0.20	03/14/14 23:29	
Chloroform	ug/m3	ND	0.99	03/14/14 23:29	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/14/14 23:29	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/14/14 23:29	
Ethylbenzene	ug/m3	ND	0.88	03/14/14 23:29	
m&p-Xylene	ug/m3	ND	1.8	03/14/14 23:29	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/14/14 23:29	
Methylene Chloride	ug/m3	ND	0.71	03/17/14 13:52	
Naphthalene	ug/m3	ND	1.1	03/14/14 23:29	
o-Xylene	ug/m3	ND	0.88	03/14/14 23:29	
Tetrachloroethene	ug/m3	ND	0.69	03/14/14 23:29	
Toluene	ug/m3	ND	0.77	03/14/14 23:29	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/14/14 23:29	
Trichloroethene	ug/m3	ND	0.55	03/14/14 23:29	
Vinyl chloride	ug/m3	ND	0.26	03/14/14 23:29	

LABORATORY CONTROL SAMPLE: 1640973

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	60.1	108	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	66.7	120	72-130	
1,1-Dichloroethane	ug/m3	41.2	41.5	101	68-128	
1,1-Dichloroethene	ug/m3	40.3	44.0	109	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	57.4	115	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	89.5	119	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	57.1	114	71-140	
1,2-Dichloroethane	ug/m3	41.2	42.7	104	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	57.8	116	73-136	
Benzene	ug/m3	32.5	40.0	123	69-134	
Carbon tetrachloride	ug/m3	64	67.6	106	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/19/2014 06:10 PM

Page 50 of 58

10259332

Page 50 of 2722

QUALITY CONTROL DATA

Project: MRC SV/IAQ Study Feb 2014
Pace Project No.: 10259332

LABORATORY CONTROL SAMPLE: 1640973

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	32.9	91	60-140	
Chloroform	ug/m3	49.7	53.4	108	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	43.7	108	71-135	
Dichlorodifluoromethane	ug/m3	50.3	54.6	109	69-125	
Ethylbenzene	ug/m3	44.2	51.0	116	73-139	
m&p-Xylene	ug/m3	44.2	52.2	118	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	36.7	100	72-132	
Methylene Chloride	ug/m3	35.3	39.3	111	64-134	
Naphthalene	ug/m3	53.3	64.8	122	61-150	
o-Xylene	ug/m3	44.2	51.0	116	71-138	
Tetrachloroethene	ug/m3	69	91.8	133	69-136	
Toluene	ug/m3	38.3	40.3	105	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	39.9	99	70-131	
Trichloroethene	ug/m3	54.6	64.3	118	70-135	
Vinyl chloride	ug/m3	26	29.1	112	69-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07120.D
Report Date: 13-Mar-2014 11:48

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07120.D
Lab Smp Id: 10259332001
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m
Misc Info: 19645

Calibration Date: 12-MAR-2014
Calibration Time: 12:31

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	751790	451074	1052506	635407	-15.48
61 Chlorobenzene - d	483570	290142	676998	362947	-24.94

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.14

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031314.b\07231.D
 Report Date: 14-Mar-2014 07:46

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 07231.D
 Lab Smp Id: 10259332001
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\031314.b\TO15_072-14.m
 Misc Info: 19645

Calibration Date: 13-MAR-2014
 Calibration Time: 13:51

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	579828	8.21
61 Chlorobenzene - d	325358	195215	455501	333827	2.60

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07121.D
Report Date: 13-Mar-2014 11:50

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07121.D
Lab Smp Id: 10259332002
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m
Misc Info: 19645

Calibration Date: 12-MAR-2014
Calibration Time: 12:31

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	751790	451074	1052506	646320	-14.03
61 Chlorobenzene - d	483570	290142	676998	358533	-25.86

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031214.b\07122.D
Report Date: 13-Mar-2014 11:54

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07122.D
Lab Smp Id: 10259332003
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031214.b\TO15_069-14.m
Misc Info: 19645

Calibration Date: 12-MAR-2014
Calibration Time: 12:31

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	751790	451074	1052506	646095	-14.06
61 Chlorobenzene - d	483570	290142	676998	367525	-24.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.14

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07314.D
Report Date: 17-Mar-2014 08:57

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07314.D
Lab Smp Id: 10259332004
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	587605	9.66
61 Chlorobenzene - d	325358	195215	455501	347632	6.85

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07315.D
 Report Date: 17-Mar-2014 09:01

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 07315.D
 Lab Smp Id: 10259332005
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
 Misc Info: 19661

Calibration Date: 14-MAR-2014
 Calibration Time: 11:04

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	577588	7.79
61 Chlorobenzene - d	325358	195215	455501	331751	1.96

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.11	0.00
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07628.D
Report Date: 18-Mar-2014 09:54

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07628.D
Lab Smp Id: 10259332005
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	417024	-22.18
61 Chlorobenzene - d	325358	195215	455501	243898	-25.04

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07316.D
Report Date: 17-Mar-2014 09:05

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07316.D
Lab Smp Id: 10259332006
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	606975	13.27
61 Chlorobenzene - d	325358	195215	455501	347727	6.88

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.12	0.21
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07317.D
Report Date: 17-Mar-2014 09:08

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07317.D
Lab Smp Id: 10259332007
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	554869	3.55
61 Chlorobenzene - d	325358	195215	455501	323982	-0.42

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07318.D
Report Date: 17-Mar-2014 09:10

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07318.D
Lab Smp Id: 10259332008
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	590220	10.15
61 Chlorobenzene - d	325358	195215	455501	344312	5.83

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07319.D
Report Date: 17-Mar-2014 09:16

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07319.D
Lab Smp Id: 10259332009
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	563397	5.14
61 Chlorobenzene - d	325358	195215	455501	323671	-0.52

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.12	0.11
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07629.D
Report Date: 18-Mar-2014 09:57

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07629.D
Lab Smp Id: 10259332009
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	393918	-26.49
61 Chlorobenzene - d	325358	195215	455501	235818	-27.52

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07320.D
Report Date: 17-Mar-2014 09:19

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07320.D
Lab Smp Id: 10259332010
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	535855	321513	750197	586125	9.38
61 Chlorobenzene - d	325358	195215	455501	338725	4.11

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07321.D
Report Date: 17-Mar-2014 09:24

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07321.D
Lab Smp Id: 10259332011
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	559632	4.44
61 Chlorobenzene - d	325358	195215	455501	327931	0.79

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07630.D
Report Date: 18-Mar-2014 09:59

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07630.D
Lab Smp Id: 10259332011
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	387971	-27.60
61 Chlorobenzene - d	325358	195215	455501	234227	-28.01

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07631.D
Report Date: 18-Mar-2014 10:02

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07631.D
Lab Smp Id: 10259332012
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	417147	-22.15
61 Chlorobenzene - d	325358	195215	455501	261858	-19.52

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.20	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07323.D
Report Date: 17-Mar-2014 09:37

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07323.D
Lab Smp Id: 10259332013
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	588276	9.78
61 Chlorobenzene - d	325358	195215	455501	329736	1.35

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.13	0.40
61 Chlorobenzene - d	9.20	8.87	9.53	9.23	0.27

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07617.D
Report Date: 17-Mar-2014 15:55

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 07617.D

Lab Smp Id: 10259332013

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m

Misc Info: 19661

Calibration Date: 17-MAR-2014

Calibration Time: 08:50

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	444962	-16.96
61 Chlorobenzene - d	325358	195215	455501	263884	-18.89

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07325.D
Report Date: 17-Mar-2014 09:58

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07325.D
Lab Smp Id: 10259332015
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	596766	11.37
61 Chlorobenzene - d	325358	195215	455501	343866	5.69

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07326.D
 Report Date: 17-Mar-2014 10:00

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10air0.i
 Lab File ID: 07326.D
 Lab Smp Id: 10259332016
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: JAM
 Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
 Misc Info: 19661

Calibration Date: 14-MAR-2014
 Calibration Time: 11:04

Level: LOW
 Sample Type: AIR

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	592771	10.62
61 Chlorobenzene - d	325358	195215	455501	342790	5.36

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.10
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07327.D
Report Date: 17-Mar-2014 10:02

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07327.D
Lab Smp Id: 10259332017
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	576218	7.53
61 Chlorobenzene - d	325358	195215	455501	337749	3.81

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07328.D
Report Date: 17-Mar-2014 10:05

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07328.D
Lab Smp Id: 10259332018
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	535855	321513	750197	548281	2.32
61 Chlorobenzene - d	325358	195215	455501	334916	2.94

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07329.D
Report Date: 17-Mar-2014 10:54

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07329.D
Lab Smp Id: 10259332019
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	529195	-1.24
61 Chlorobenzene - d	325358	195215	455501	330243	1.50

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031414.b\07331.D
Report Date: 17-Mar-2014 10:07

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07331.D
Lab Smp Id: 10259332020
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031414.b\TO15_072-14.m
Misc Info: 19661

Calibration Date: 14-MAR-2014
Calibration Time: 11:04

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	516564	-3.60
61 Chlorobenzene - d	325358	195215	455501	306542	-5.78

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.09	-0.31
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031414.b\07340.d
Report Date: 17-Mar-2014 12:16

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 07340.d
Lab Smp Id: 10259332021
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m
Misc Info: 19668

Calibration Date: 14-MAR-2014
Calibration Time: 12:36

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	889865	533919	1245811	891798	0.22
61 Chlorobenzene - d	513489	308093	718885	468302	-8.80

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07632.D
Report Date: 18-Mar-2014 10:04

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07632.D
Lab Smp Id: 10259332022
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	416517	-22.27
61 Chlorobenzene - d	325358	195215	455501	247057	-24.07

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07633.D
Report Date: 18-Mar-2014 10:08

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07633.D
Lab Smp Id: 10259332023
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	406922	-24.06
61 Chlorobenzene - d	325358	195215	455501	234541	-27.91

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.09	-0.30
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07634.D
Report Date: 18-Mar-2014 10:10

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 07634.D

Lab Smp Id: 10259332024

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m

Misc Info: 19678

Calibration Date: 17-MAR-2014

Calibration Time: 08:50

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	407128	-24.02
61 Chlorobenzene - d	325358	195215	455501	234286	-27.99

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07635.D
Report Date: 18-Mar-2014 10:15

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07635.D
Lab Smp Id: 10259332025
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	399028	-25.53
61 Chlorobenzene - d	325358	195215	455501	233909	-28.11

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07636.D
Report Date: 18-Mar-2014 10:17

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07636.D
Lab Smp Id: 10259332026
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	535855	321513	750197	388785	-27.45
61 Chlorobenzene - d	325358	195215	455501	226781	-30.30

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07637.D
Report Date: 18-Mar-2014 13:28

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07637.D
Lab Smp Id: 10259332027
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19693

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	390016	-27.22
61 Chlorobenzene - d	325358	195215	455501	230488	-29.16

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031414.b\07337.d
Report Date: 18-Mar-2014 13:22

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 07337.d

Lab Smp Id: 10259332027

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m

Misc Info: 19693

Calibration Date: 14-MAR-2014

Calibration Time: 12:36

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	889865	533919	1245811	918329	3.20
61 Chlorobenzene - d	513489	308093	718885	470444	-8.38

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031814.b\07714.d
Report Date: 18-Mar-2014 15:05

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 07714.d
Lab Smp Id: 10259332027
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\031814.b\TO15_076-14.m
Misc Info: 19693

Calibration Date: 18-MAR-2014
Calibration Time: 08:42

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1149256	689554	1608958	856880	-25.44
61 Chlorobenzene - d	484353	290612	678094	452117	-6.66

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031414.b\07328.d
Report Date: 17-Mar-2014 12:15

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 07328.d
Lab Smp Id: 10259332028
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m
Misc Info: 19668

Calibration Date: 14-MAR-2014
Calibration Time: 12:36

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	889865	533919	1245811	965756	8.53
61 Chlorobenzene - d	513489	308093	718885	508475	-0.98

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07638.D
Report Date: 18-Mar-2014 13:28

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Lab File ID: 07638.D

Lab Smp Id: 10259332029

Analysis Type: VOA

Quant Type: ISTD

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m

Misc Info: 19693

Calibration Date: 17-MAR-2014

Calibration Time: 08:50

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	371865	-30.60
61 Chlorobenzene - d	325358	195215	455501	233468	-28.24

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.13

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031414.b\07326.d
Report Date: 18-Mar-2014 13:22

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 07326.d
Lab Smp Id: 10259332029
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m
Misc Info: 19693

Calibration Date: 14-MAR-2014
Calibration Time: 12:36

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	889865	533919	1245811	973035	9.35
61 Chlorobenzene - d	513489	308093	718885	506450	-1.37

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07639.D
Report Date: 18-Mar-2014 10:28

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07639.D
Lab Smp Id: 10259332030
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	397779	-25.77
61 Chlorobenzene - d	325358	195215	455501	231971	-28.70

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07641.D
Report Date: 18-Mar-2014 10:34

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07641.D
Lab Smp Id: 10259332032
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	411013	-23.30
61 Chlorobenzene - d	325358	195215	455501	242063	-25.60

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031814.b\07720.D
Report Date: 19-Mar-2014 09:52

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i

Calibration Date: 18-MAR-2014

Lab File ID: 07720.D

Calibration Time: 12:26

Lab Smp Id: 10259332032

Analysis Type: VOA

Level: LOW

Quant Type: ISTD

Sample Type: AIR

Operator: JAM

Method File: \\192.168.10.12\chem\10air0.i\031814.b\TO15_077-14.m

Misc Info: 19678

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	418903	251342	586464	305745	-27.01
61 Chlorobenzene - d	261334	156800	365868	165915	-36.51

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.14

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07642.D
Report Date: 18-Mar-2014 10:38

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 07642.D
Lab Smp Id: 10259332033
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m
Misc Info: 19678

Calibration Date: 17-MAR-2014
Calibration Time: 08:50

Level: LOW
Sample Type: AIR

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	535855	321513	750197	399094	-25.52
61 Chlorobenzene - d	325358	195215	455501	233680	-28.18

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.11	5.78	6.44	6.10	-0.20
61 Chlorobenzene - d	9.20	8.87	9.53	9.19	-0.20

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\031414.b\07335.d
 Report Date: 17-Mar-2014 12:15

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i Calibration Date: 14-MAR-2014
 Lab File ID: 07335.d Calibration Time: 12:36
 Lab Smp Id: 10259332034
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: AIR
 Operator: DR1
 Method File: \\192.168.10.12\chem\10airD.i\031414.b\TO15_071-14.m
 Misc Info: 19668

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	889865	533919	1245811	940645	5.71
61 Chlorobenzene - d	513489	308093	718885	505852	-1.49

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

MIDDLE RIVER AND TILLEY CHEMICAL

AIR DATA

10259332

FRACTION	CHEMICAL	SV-DUP4-A-16	UNITS	SV-018-A-16	RPD	D
OV	1,1-DICHLOROETHANE	3.2	UG/M3	3.1	3.17	0.10
OV	1,1-DICHLOROETHENE	192	UG/M3	230	18.01	38.00
OV	BENZENE	0.77	UG/M3	0.96	21.97	0.19
OV	CHLORODIFLUOROMETHANE	7.1	UG/M3	8.9	22.50	1.80
OV	CIS-1,2-DICHLOROETHENE	13.7	UG/M3	16.3	17.33	2.60
OV	DICHLORODIFLUOROMETHANE	1.9	UG/M3	2.2	14.63	0.30
OV	METHYLENE CHLORIDE	17.8	UG/M3	19.8	10.64	2.00
OV	NAPHTHALENE	3.1	UG/M3	2.8	10.17	0.30
OV	TOLUENE	2	UG/M3	2.6	26.09	0.60
OV	TRICHLOROETHENE	150	UG/M3	174	14.81	24.00
OV	VINYL CHLORIDE	0.59	UG/M3	0.57	3.45	0.02

Current RPD Quality Control Limit: 50 %.

Shaded cells indicate RPDs that exceed the applicable quality control limit.

MIDDLE RIVER AND TILLEY CHEMICAL

AIR DATA

10259332

FRACTION	CHEMICAL	IA-DUP3-A-16	UNITS	IA-015-A-16	RPD	D
OV	BENZENE	1.2	UG/M3	1.2	0.00	0.00
OV	CHLORODIFLUOROMETHANE	8.2	UG/M3	7.5	8.92	0.70
OV	DICHLORODIFLUOROMETHANE	3.2	UG/M3	2.9	9.84	0.30
OV	M+P-XYLENES OK	ND	UG/M3	3.3	200.00	3.30 NA ← 2X R.L.C.
OV	METHYLENE CHLORIDE	7.4	UG/M3	13.7	59.72	6.30
OV	TOLUENE	16.9	UG/M3	15.6	8.00	1.30

Current RPD Quality Control Limit: 50 %.

Shaded cells indicate RPDs that exceed the applicable quality control limit.

MIDDLE RIVER AND TILLEY CHEMICAL

AIR DATA

10259332

FRACTION	CHEMICAL	SV-DUP3-A-16	UNITS	SV-015-A-16	RPD	D
OV	1,1,1-TRICHLOROETHANE	112	UG/M3	76.3	37.92	35.70
OV	1,1-DICHLOROETHANE	21.6	UG/M3	14.6	38.67	7.00
OV	1,1-DICHLOROETHENE	473	UG/M3	369	24.70	104.00
OV	BENZENE <i>OK</i>	ND	UG/M3	0.64	200.00	0.64 <i>NA < 2XR, L</i>
OV	CHLORODIFLUOROMETHANE	(2.6)	UG/M3	(5.8)	76.19	3.20
OV	CHLOROFORM	93.6	UG/M3	64.7	36.51	28.90
OV	CIS-1,2-DICHLOROETHENE	1260	UG/M3	1110	12.66	150.00
OV	DICHLORODIFLUOROMETHANE <i>OK</i>	ND	UG/M3	2.1	200.00	2.10 <i>NA < 2XR, L</i>
OV	METHYLENE CHLORIDE	(18.6)	UG/M3	(31.6)	51.79	13.00
OV	TOLUENE	4.6	UG/M3	7.1	42.74	2.50
OV	TRANS-1,2-DICHLOROETHENE	37.7	UG/M3	25	40.51	12.70
OV	TRICHLOROETHENE	619	UG/M3	564	9.30	55.00
OV	VINYL CHLORIDE	(1.5)	UG/M3	ND	200.00	1.50

Current RPD Quality Control Limit: 50 %.

Shaded cells indicate RPDs that exceed the applicable quality control limit.

Sample Calculation Example and Curve Parameters

Beginning in early January 2014, a change was made to the TO-15 methods that altered the way concentrations were calculated. Prior to January, concentrations were calculated by response rather than by amount. The EPA TO-15 method requires that curves are evaluated by amount. The net result of this change is that the calculation for analyte concentration needs to be revised. Specifically, the average relative retention time factor (RRF) needs to be moved from the bottom of Equation 17 from the Pace TO-15 SOP below to the top of the division sign.

14.17. Calculate the concentration of the sample component using Equation 17:
Equation 17

$$C_x = \frac{(A_x)(C_i)(D_f)}{(A_i)(R_x)}$$

where:

C_x = Concentration of compound x in ppbv;
 A_i = EICP area of the quantitation ion for compound i;
 C_i = Concentration of the internal standard associated with compound i in ppbv;
 D_f = Dilution factor from Equation 12 (if no dilution was performed, D_f equals 1.)
 A_x = EICP area of the quantitation ion for the internal standard associated with compound x;
 R_x = Average RRF for compound x from the most recent calibration curve.

Below are images of the before and after change applied in target. In the before, you can see that the amount (Amt) is equal to the response (Rsp) divided by the average RRF (m1). In the after evaluation, you can see that the equation has moved the average RRF (m1) to be multiplied by the response (Rsp). It is important to note that this is before applying the internal standard calculation. Therefore, Rsp is equal to A_x from equation 17, and m1 is equal to R_x . Once you apply the internal standard to the revised equation 17, it should be as follows:

$$C_x = \frac{(A_x)(C_i)(D_f)(R_x)}{A_i}$$

Revised equation 17

Before

Method Configuration		Signal Calibration Parameters	
Integrator Type	HP RTE	Name:	Toluene
<input type="checkbox"/> Use Method Calibration Mode		Mass:	91.00
By Response		Target Ratio:	100.00
Max. Cal Levels	8	Ratio Limits:	80.00
Max. Signals	3	MS Tune Ratio Divisor Signal #:	1
Data Type	MS DATA	MS Tune Ratio Divisor Signal #:	
Show Detectors...			
High Res MS			
Select Example File:			
Falcon Integrator for HP MS DATA			
<input checked="" type="checkbox"/> Use Original Integrator			
<input checked="" type="checkbox"/> Use New Integrator for All Data			
<input checked="" type="checkbox"/> Use New Integrator for New Data			
<input type="checkbox"/> Process Mode			
<input type="checkbox"/> Processed Data ONLY			
<input type="checkbox"/> Enable Continuing Calibration			
<input type="checkbox"/> Enable Saving Method With Data			
<input type="checkbox"/> Enable Data Versioning			
<input type="checkbox"/> Enable Sublists			

Configure Auto Calibration	Update Calibration	Calibration Curve	Calibration History
Curve Type:	Averaged		
Curve Origin:	None		
Calibration Curve Info: Amt = Rsp/m1			
m1:	1.13463785e+000		
Initial Calibration %RSD:	19.3256045		
Continuing Calibration RF:	1.161e+000	% Difference:	2.338
Continuing Calibration Amt:	1.019e+001	% Drift:	1.889
<input type="checkbox"/> Use Initial Calib if no Continuing Calib			

After

Method Configuration		Signal Calibration Parameters	
Integrator Type: HP RTE	Fraction: VOA	Name: Trichloroethene	Ok
<input type="checkbox"/> Use Method Calibration Mod	By Amount	Mass: 130.00	Cancel
Max. Cal Levels: 8	Max Signals: 3	Target Ratio: 100.00	Help...
Data Type: MS DATA	Show Detectors...: High Res MS	Ratio Limits: 80.00 120.00	
Select Example File: 1		MS Tune Ratio Divisor Signal #: 1	
Falcon Integrator for HP MS DATA		Configure Auto Calibration	Update Calibration
<input checked="" type="checkbox"/> Use Original Integrator		Calibration Curve	Calibration History
<input checked="" type="checkbox"/> Use New Integrator for All Data		Curve Type: Averaged	
<input checked="" type="checkbox"/> Use New Integrator for New Data		Curve Origin: None	
		Calibration Curve Info.: Amt = m1*Rsp	
<input type="checkbox"/> Process Mode		m1: 2.21392469e+000	
<input type="checkbox"/> Processed Data ONLY		Initial Calibration %RSD: 15.3296785	
<input type="checkbox"/> Enable Continuing Calibration		Continuing Calibration RF: 2.002e+000	% Difference: -9.556
<input type="checkbox"/> Enable Saving Method With Data		<input type="checkbox"/> Use Initial Calib If no Continuing Calib	
<input type="checkbox"/> Enable Data Versioning			
<input type="checkbox"/> Enable Sublists			

Analytes		Instrument 10A1R0 SV-136-A-16	
SAMPLE			
COMPOUND RESPONSE COMPOUND RESPONSE	tetrachloroethene	345777	
COMPOUND RRF COMPOUND RRF	tetrachloroethene	1.791	
INTERNAL STD. AREA FOR 1,4-DICHLOROBENZENE INTERNAL STD. AREA FOR CHLOROBENZENE-D5	tetrachloroethene	444962	
INTERNAL STANDARD CONCENTRATION (PPBV) INTERNAL STANDARD CONCENTRATION (PPBV)	tetrachloroethene	10	
SAMPLE DILUTION FACTOR SAMPLE DILUTION FACTOR	tetrachloroethene	1196.8	
COMPOUND CALCULATED CONCENTRATION PPBV COMPOUND CALCULATED CONCENTRATION PPBV	tetrachloroethene	16656.75296	
COMPOUND CALCULATED CONCENTRATION $\mu\text{g}/\text{m}^3$ COMPOUND CALCULATED CONCENTRATION $\mu\text{g}/\text{m}^3$	tetrachloroethene	89517.27360	

ANALYTICAL RESULTS

Project: MRC SV/IAQ Study Feb 2014

Pace Project No.: 10259332

Sample: SV-136-A-16		Lab ID: 10259332013	Collected: 02/25/14 09:10	Received: 03/04/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	6.7	ug/m3	0.61	1.87		03/14/14 21:37	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.87		03/14/14 21:37	56-23-5	
Chlorodifluoromethane	ND	ug/m3	0.37	1.87		03/14/14 21:37	75-45-6	
Chloroform	217	ug/m3	1.9	1.87		03/14/14 21:37	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.9	1.87		03/14/14 21:37	75-71-8	
1,1-Dichloroethane	1.7	ug/m3	1.5	1.87		03/14/14 21:37	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.77	1.87		03/14/14 21:37	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.87		03/14/14 21:37	75-35-4	
cis-1,2-Dichloroethene	55.2	ug/m3	1.5	1.87		03/14/14 21:37	156-59-2	
trans-1,2-Dichloroethene	25.3	ug/m3	1.5	1.87		03/14/14 21:37	156-60-5	
Ethylbenzene	1.7	ug/m3	1.6	1.87		03/14/14 21:37	100-41-4	
Methylene Chloride	13.5	ug/m3	1.3	1.87		03/14/14 21:37	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.87		03/14/14 21:37	1634-04-4	
Naphthalene	9.3	ug/m3	2.0	1.87		03/14/14 21:37	91-20-3	
Tetrachloroethene	15.1	ug/m3	1.3	1.87		03/14/14 21:37	127-18-4	
Toluene	11.7	ug/m3	1.4	1.87		03/14/14 21:37	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.8	1.87		03/14/14 21:37	120-82-1	
1,1,1-Trichloroethane	3.4	ug/m3	2.1	1.87		03/14/14 21:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.87		03/14/14 21:37	79-00-5	
Trichloroethene	91000	ug/m3	658	1196.8		03/17/14 16:34	79-01-6	A3
1,2,3-Trimethylbenzene	6.1	ug/m3	0.37	1.87		03/14/14 21:37	526-73-8	
1,2,4-Trimethylbenzene	6.8	ug/m3	1.9	1.87		03/14/14 21:37	95-63-6	
1,3,5-Trimethylbenzene	5.4	ug/m3	1.9	1.87		03/14/14 21:37	108-67-8	
Vinyl chloride	ND	ug/m3	0.49	1.87		03/14/14 21:37	75-01-4	
m&p-Xylene	4.2	ug/m3	3.3	1.87		03/14/14 21:37	179601-23-1	
o-Xylene	3.4	ug/m3	1.6	1.87		03/14/14 21:37	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07617.D
Report Date: 17-Mar-2014 15:55

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\031714.b\07617.D
Lab Smp Id: 10259332013
Inj Date : 17-MAR-2014 16:34
Operator : JAM Inst ID: 10air0.i
Smp Info :
Misc Info : 19661
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\031714.b\TO15 072-14.m
Meth Date : 17-Mar-2014 08:15 jmasterman Quant Type: ISTD
Cal Date : 13-MAR-2014 14:52 Cal File: 07210.D
Als bottle: 17
Dil Factor: 1196.80000
Integrator: HP RTE Compound Sublist: TCEo.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	1196.800	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ppbv)	FINAL (ppbv)
\$ 26 Hexane-d14 (S)		66	4.943	4.949 (0.811)		201554	9.49784	9.49
* 43 1,4-Difluorobenzene		114	6.097	6.121 (1.000)		444262	10.0000	
* 47 Trichloroethene		130	6.481	6.506 (1.063)		345777	13.9186	1660C
\$ 54 Toluene-d8 (S)		98	7.591	7.616 (1.245)		415000	9.92528	9.92
* 61 Chlorobenzene - d5		117	9.186	9.210 (1.000)		263884	10.0000	
\$ 77 1,4-dichlorobenzene-d4 (S)		150	12.393	12.473 (1.349)		103336	9.32263	9.32 (H)

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: \\192.168.10.12\chem\10air0.i\031714.b\07602.D
Report Date: 17-Mar-2014 08:23

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air0.i Injection Date: 17-MAR-2014 08:50
Lab File ID: 07602.D Init. Cal. Date(s): 13-MAR-2014 13-MAR-2014
Analysis Type: AIR Init. Cal. Times: 12:08 14:52
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air0.i\031714.b\TO15_072-14.m

COMPOUND	RRF / AMOUNT	REFC	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	0.50854	0.45666	0.45666 0.010	-10.20071	30.00000	Averaged	
45 Heptane	1.53653	1.29016	1.29016 0.010	-16.03408	30.00000	Averaged	
46 1,2-Dichloropropane	2.12976	1.85274	1.85274 0.010	-13.00683	30.00000	Averaged	
47 Trichloroethene	1.79112	1.51868	1.51868 0.010	-15.21021	30.00000	Averaged	
48 1,4-Dioxane	3.75320	3.14447	3.14447 0.010	-16.21903	30.00000	Averaged	
49 Bromodichloromethane	0.80176	0.71482	0.71482 0.010	-10.84278	30.00000	Averaged	
50 Methylcyclohexane	3.25593	2.65694	2.65694 0.010	-18.39675	30.00000	Averaged	
51 Methyl Isobutyl Ketone	1.20846	0.88871	0.88871 0.010	-26.45909	30.00000	Averaged	
52 cis-1,3-Dichloropropene	1.40797	1.05893	1.05893 0.010	-24.79034	30.00000	Averaged	
53 trans-1,3-Dichloropropene	10.00000	12.08889	0.97070 0.010	20.88888	30.00000	Linear	
54 Toluene-d8 (S)	1.06419	1.02135	1.02135 0.200	-4.02562	30.00000	Averaged	
55 1,1,2-Trichloroethane	1.66798	1.52231	1.52231 0.010	-8.73300	30.00000	Averaged	
56 Toluene	0.62524	0.55422	0.55422 0.300	-11.35847	30.00000	Averaged	
57 Methyl Butyl Ketone	10.00000	12.22065	0.59554 0.010	22.20648	30.00000	Linear	
58 Dibromochloromethane	0.50990	0.48878	0.48878 0.010	-4.14343	30.00000	Averaged	
59 1,2-Dibromoethane	0.65813	0.57124	0.57124 0.010	-13.20202	30.00000	Averaged	
60 Tetrachloroethene	0.68082	0.65895	0.65895 0.010	-3.21269	30.00000	Averaged	
62 Chlorobenzene	0.48010	0.45954	0.45954 0.010	-4.28280	30.00000	Averaged	
63 Ethyl Benzene	0.28963	0.25803	0.25803 0.300	-10.90990	30.00000	Averaged<	
64 m,p-Xylene	0.34731	0.30942	0.30942 0.300	-10.90927	30.00000	Averaged	
65 Styrene	0.61765	0.50295	0.50295 0.010	-18.57010	30.00000	Averaged	
66 Bromoform	0.50990	0.48404	0.48404 0.010	-5.07132	30.00000	Averaged	
67 o-Xylene	0.33170	0.30990	0.30990 0.300	-6.57269	30.00000	Averaged	
68 1,1,2,2-Tetrachloroethane	0.48720	0.47647	0.47647 0.010	-2.20182	30.00000	Averaged	
69 Isopropylbenzene	0.26306	0.24782	0.24782 0.010	-5.79539	30.00000	Averaged	
70 N-Propylbenzene	0.24486	0.20698	0.20698 0.010	-15.47017	30.00000	Averaged	
71 4-Ethyltoluene	0.29824	0.26046	0.26046 0.010	-12.66917	30.00000	Averaged	
72 1,3,5-Trimethylbenzene	0.28046	0.27984	0.27984 0.010	-0.22077	30.00000	Averaged	
73 Tert-Butyl Benzene	0.33253	0.31109	0.31109 0.010	-6.44641	30.00000	Averaged	
74 1,2,4-Trimethylbenzene	0.31724	0.29752	0.29752 0.010	-6.21566	30.00000	Averaged	
75 Sec- Butylbenzene	0.26106	0.23016	0.23016 0.010	-11.83447	30.00000	Averaged	
76 1,3-Dichlorobenzene	0.50396	0.48045	0.48045 0.010	-4.66424	30.00000	Averaged	
77 1,4-dichlorobenzene-d4 (S)	2.38067	1.49798	1.49798 0.200	-37.07740	30.00000	Averaged<	
78 Benzyl Chloride	0.43298	0.34967	0.34967 0.010	-19.24035	30.00000	Averaged	
79 1,4-Dichlorobenzene	0.47823	0.47582	0.47582 0.010	-0.50369	30.00000	Averaged	
80 p-Isopropyltoluene	0.33828	0.27654	0.27654 0.010	-18.25285	30.00000	Averaged	
81 1,2,3-Trimethylbenzene	0.32506	0.30748	0.30748 0.010	-5.40622	30.00000	Averaged	
82 1,2-Dichlorobenzene	0.55134	0.48930	0.48930 0.010	-11.25284	30.00000	Averaged	
83 N-Butylbenzene	10.00000	11.44223	0.28501 0.010	14.42234	30.00000	Linear	
84 1,2,4-Trichlorobenzene	10.00000	11.32155	0.76344 0.010	13.21552	30.00000	Linear	
85 Naphthalene	10.00000	11.27618	0.41600 0.010	12.76180	30.00000	Linear	
86 Hexachlorobutadiene	10.00000	11.12658	0.71622 0.010	11.26576	30.00000	Linear	

TO:	M. MARTIN	DATE:	MAY 23, 2014
FROM:	EDWARD SEDLMYER	COPIES:	DV FILE
SUBJECT:	ORGANIC DATA VALIDATION – VOC MIDDLE RIVER CENTER SDG 10263934		
SAMPLES:	2/Air/VOC		
	IA-081-A-16R	IA-113-C-16R	

Overview

The sample set for Middle River Center, SDG 10263934 consists of two (2) indoor air environmental samples. Samples were analyzed for volatile organic compounds (VOC).

The samples were collected by Tetra Tech on April 17, 2014 and analyzed by Pace Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

- None.

Minor

- Positive results reported below the reporting limit but above the method detection limit were qualified as estimated, (J).

Notes

The laboratory stated in the case narrative that all surrogate recoveries were acceptable. The surrogate recoveries were not presented on a Form II but the recoveries were verified using the sample quantitation reports.

The laboratory reported the nondetected results to the reporting limit.

Samples IA-081-A-16R and IA-113-C-16R were analyzed at dilutions of 1.34 to 1.61, respectively. This accounts for the elevated detection limits for the nondetected compounds.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: Positive results reported below the reporting limit but above the method detection limit were qualified as estimated.

The data for these analyses were reviewed with reference to EPA Compendium Method TO-15 (Jan. 1999) and USEPA National Functional Guidelines for Organic Data Validation (June 2008). The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Edward Sedlmyer
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 06279 SDG: 10263934 FRACTION: OV MEDIA: AIR	NSAMPLE	IA-081-A-16R	IA-113-C-16R				
	LAB_ID	10263934001	10263934002				
	SAMP_DATE	4/17/2014	4/17/2014				
	QC_TYPE	NM	NM				
	UNITS	UG/M3	UG/M3				
	PCT_SOLIDS						
DUP_OF							
PARAMETER							
1,1,1-TRICHLOROETHANE		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,2-TRICHLOROETHANE			0.81 J	P		1.8 U	
1,1-DICHLOROETHANE			0.74 U			0.89 U	
1,1-DICHLOROETHENE			1.1 U			1.3 U	
1,2,3-TRIMETHYLBENZENE			1.1 U			1.3 U	
1,2,4-TRICHLOROBENZENE			1.3 U			1.6 U	
1,2,4-TRIMETHYLBENZENE			5.1 U			6.1 U	
1,2-DICHLOROETHANE			1.3 U			1.6 U	
1,3,5-TRIMETHYLBENZENE			0.55 U			0.66 U	
BENZENE			1.2 J	P		4 U	
CARBON TETRACHLORIDE			0.44			0.52 U	
CHLORODIFLUOROMETHANE			0.86 U			1 U	
CHLOROFORM			28			4	
CIS-1,2-DICHLOROETHENE			1.3 U			1.6 U	
DICHLORODIFLUOROMETHANE			1.1 U			1.3 U	
ETHYLBENZENE			2.1			2.5	
M+P-XYLENES			8			1.2 J	P
METHYL TERT-BUTYL ETHER			38.2			2 J	P
METHYLENE CHLORIDE			0.98 U			1.2 U	
NAPHTHALENE			1.9 J	P		3.1 J	P
O-XYLENE			3.6 U			2.1 J	P
TETRACHLOROETHENE			11.6			0.9 J	P
TOLUENE			1.6			1.6	
TRANS-1,2-DICHLOROETHENE			20.4			5.1	
TRICHLOROETHENE			1.1 U			1.3 U	
VINYL CHLORIDE			4.1			0.89 U	
			0.35 U			0.42 U	

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

Sample: IA-081-A-16R		Lab ID: 10263934001	Collected: 04/17/14 16:35	Received: 04/18/14 09:05	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.44 ug/m3		0.44	1.34		04/30/14 15:25	71-43-2	
Carbon tetrachloride	ND ug/m3		0.86	1.34		04/30/14 15:25	56-23-5	
Chlorodifluoromethane	28.0 ug/m3		0.96	1.34		04/30/14 15:25	75-45-6	
Chloroform	ND ug/m3		1.3	1.34		04/30/14 15:25	67-66-3	
Dichlorodifluoromethane	2.1 ug/m3		1.4	1.34		04/30/14 15:25	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.1	1.34		04/30/14 15:25	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.55	1.34		04/30/14 15:25	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.1	1.34		04/30/14 15:25	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.1	1.34		04/30/14 15:25	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.1	1.34		04/30/14 15:25	156-60-5	
Ethylbenzene	8.0 ug/m3		1.2	1.34		04/30/14 15:25	100-41-4	
Methylene Chloride	1.9J ug/m3		4.7	1.34		04/30/14 15:25	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		0.98	1.34		04/30/14 15:25	1634-04-4	
Naphthalene	ND ug/m3		3.6	1.34		04/30/14 15:25	91-20-3	
Tetrachloroethene	1.6 ug/m3		0.92	1.34		04/30/14 15:25	127-18-4	
Toluene	20.4 ug/m3		1.0	1.34		04/30/14 15:25	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		5.1	1.34		04/30/14 15:25	120-82-1	
1,1,1-Trichloroethane	0.81J ug/m3		1.5	1.34		04/30/14 15:25	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.74	1.34		04/30/14 15:25	79-00-5	
Trichloroethene	4.1 ug/m3		0.74	1.34		04/30/14 15:25	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.3	1.34		04/30/14 15:25	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.3	1.34		04/30/14 15:25	95-63-6	
1,3,5-Trimethylbenzene	1.2J ug/m3		3.3	1.34		04/30/14 15:25	108-67-8	
Vinyl chloride	ND ug/m3		0.35	1.34		04/30/14 15:25	75-01-4	
m&p-Xylene	38.2 ug/m3		2.4	1.34		04/30/14 15:25	179601-23-1	
o-Xylene	11.6 ug/m3		1.2	1.34		04/30/14 15:25	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

Sample: IA-113-C-16R		Lab ID: 10263934002	Collected: 04/17/14 16:43	Received: 04/18/14 09:05	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.52	1.61		04/30/14 15:53	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.0	1.61		04/30/14 15:53	56-23-5	
Chlorodifluoromethane	4.0	ug/m3	1.2	1.61		04/30/14 15:53	75-45-6	
Chloroform	ND	ug/m3	1.6	1.61		04/30/14 15:53	67-66-3	
Dichlorodifluoromethane	2.5	ug/m3	1.6	1.61		04/30/14 15:53	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.3	1.61		04/30/14 15:53	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.66	1.61		04/30/14 15:53	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.3	1.61		04/30/14 15:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		04/30/14 15:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		04/30/14 15:53	156-60-5	
Ethylbenzene	1.2J	ug/m3	1.4	1.61		04/30/14 15:53	100-41-4	
Methylene Chloride	3.1J	ug/m3	5.7	1.61		04/30/14 15:53	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.61		04/30/14 15:53	1634-04-4	
Naphthalene	2.1J	ug/m3	4.3	1.61		04/30/14 15:53	91-20-3	
Tetrachloroethene	1.6	ug/m3	1.1	1.61		04/30/14 15:53	127-18-4	
Toluene	5.1	ug/m3	1.2	1.61		04/30/14 15:53	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.1	1.61		04/30/14 15:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.61		04/30/14 15:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.89	1.61		04/30/14 15:53	79-00-5	
Trichloroethene	ND	ug/m3	0.89	1.61		04/30/14 15:53	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.6	1.61		04/30/14 15:53	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.6	1.61		04/30/14 15:53	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	4.0	1.61		04/30/14 15:53	108-67-8	
Vinyl chloride	ND	ug/m3	0.42	1.61		04/30/14 15:53	75-01-4	
m&p-Xylene	2.0J	ug/m3	2.8	1.61		04/30/14 15:53	179601-23-1	
o-Xylene	0.90J	ug/m3	1.4	1.61		04/30/14 15:53	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation



AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

www.pacelabs.com

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: TETRA TECH		Report To: Tony Arpanavage		Page: 13045 of 1	
Address: 20351 CENTURY BLVD, STE 200		Company Name:		Program:	
City: GERMANTOWN, MD 20874		Address:		<input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act	
Phone: 301528 3021		Pace Quote Reference:		<input checked="" type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Fax: 301528 3000		Pace Project Manager/Sales Rep:		Reporting Units ug/m ³ _____ ppbv _____ ppmv _____	
Requested Due Date/AT: 301528 3021		Project Number: 111006279		Location of Sampling by State: MD	
Project Name: 111006279		Pace Profile #:		Report Level: I. _____ II. _____ III. _____ IV. _____ Other _____	
Valid Media Codes MEDIA Tetlar Bag 1 Liter Summa Can 6 Liter Summa Can Low Volume Puff High Volume Puff Other		COLLECTED START END COMPOSITE DATE TIME DATE TIME 4/17/14 0755 4/17/14 1635 4/17/14 0843 4/17/14 1643		Method: PM10 3C Fixed Gas (%) TO-3M (Methane) TO-4 (PCBs) TO-13 (PAH) TO-14 TO-15 TO-15 Short List	
'Section: D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE 1A-081-A-16R 1A-113-C-16R		PID Reading (Client only)		Pace Lab ID 881 882	
MEDIA CODE 6LC 6LC		Canister Pressure (Initial Field - psig)		Summa Can Number 1195 0285	
Canister Pressure (Final Field - psig)		Flow Control Number 0377			
RELINQUISHED BY / AFFILIATION TETRA TECH		DATE 4/17/14		TIME 1715	
ACCEPTED BY / AFFILIATION ARPA		DATE 4/18/14		TIME 0905	
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: TONY ARPANAVAGE SIGNATURE of SAMPLER: <i>[Signature]</i>		DATE Signed (MM/DD/YYYY) 4/17/14		SAMPLE CONDITIONS Temp in °C Received on Ice Custody Sealed Cooler Samples Intact	

ORIGINAL

HOLD TIME

SDG 10263934

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/M3	IA-113-C-16R	10263934002	NM	04/17/2014	04/30/2014	04/30/2014	13	0	13
OV	UG/M3	IA-081-A-16R	10263934001	NM	04/17/2014	04/30/2014	04/30/2014	13	0	13

May 01, 2014

Tony Apanavage
Tetra Tech
20251 Century Blvd
Suite 200
Germantown, MD 20874

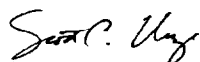
RE: Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

Dear Tony Apanavage:

Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Unze for
Nathan Boberg

Project Manager

Enclosures

cc: Samantha Brenner
Dawn Monico, Tetra Tech GEO



10263934

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10263934001	IA-081-A-16R	Air	04/17/14 16:35	04/18/14 09:05
10263934002	IA-113-C-16R	Air	04/17/14 16:43	04/18/14 09:05

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10263934001	IA-081-A-16R	TO-15	JAM	26
10263934002	IA-113-C-16R	TO-15	JAM	26

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: May 01, 2014

General Information:

2 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10263934001	IA-081-A-16R	TO-15	AIR/20098		
10263934002	IA-113-C-16R	TO-15	AIR/20098		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..


Air Sample Condition
Upon Receipt

Client Name:
tofu tech

Project #:
WO# : 10263934

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: 8007 7903 7642


10263934

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other: _____

Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): _____ Corrected Temp (°C): _____

Thermom. Used: ☐ B88A912167504 ☐ 72337080
☐ B88A9132521491 ☐ 80512447

Temp should be above freezing to 6°C Correction Factor: _____

Date & Initials of Person Examining Contents: 4/18/14

Type of ice Received ☐ Blue ☐ Wet ☒ None

Comments:			
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Media: <u>air can</u>		11.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	

Samples Received:					
Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
<u>081-A</u>	<u>1195</u>		<u>0285</u>		
<u>113-C</u>	<u>2357</u>		<u>0377</u>		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: [Signature] Date: 4-21-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

QUALITY CONTROL DATA

Project: 112IC06279 MRC SV/IAQ
Pace Project No.: 10263934

QC Batch: AIR/20098 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10263934001, 10263934002

METHOD BLANK: 1667397 Matrix: Air
Associated Lab Samples: 10263934001, 10263934002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	04/30/14 10:27	
1,1,2-Trichloroethane	ug/m3	ND	0.55	04/30/14 10:27	
1,1-Dichloroethane	ug/m3	ND	0.82	04/30/14 10:27	
1,1-Dichloroethene	ug/m3	ND	0.81	04/30/14 10:27	
1,2,3-Trimethylbenzene	ug/m3	ND	1.0	04/30/14 10:27	
1,2,4-Trichlorobenzene	ug/m3	ND	3.8	04/30/14 10:27	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	04/30/14 10:27	
1,2-Dichloroethane	ug/m3	ND	0.41	04/30/14 10:27	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	04/30/14 10:27	
Benzene	ug/m3	ND	0.32	04/30/14 10:27	
Carbon tetrachloride	ug/m3	ND	0.64	04/30/14 10:27	
Chlorodifluoromethane	ug/m3	ND	0.72	04/30/14 10:27	
Chloroform	ug/m3	ND	0.99	04/30/14 10:27	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	04/30/14 10:27	
Dichlorodifluoromethane	ug/m3	ND	1.0	04/30/14 10:27	
Ethylbenzene	ug/m3	ND	0.88	04/30/14 10:27	
m&p-Xylene	ug/m3	ND	1.8	04/30/14 10:27	
Methyl-tert-butyl ether	ug/m3	ND	0.73	04/30/14 10:27	
Methylene Chloride	ug/m3	ND	3.5	04/30/14 10:27	
Naphthalene	ug/m3	ND	2.7	04/30/14 10:27	
o-Xylene	ug/m3	ND	0.88	04/30/14 10:27	
Tetrachloroethene	ug/m3	ND	0.69	04/30/14 10:27	
Toluene	ug/m3	ND	0.77	04/30/14 10:27	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	04/30/14 10:27	
Trichloroethene	ug/m3	ND	0.55	04/30/14 10:27	
Vinyl chloride	ug/m3	ND	0.26	04/30/14 10:27	

LABORATORY CONTROL SAMPLE: 1667398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	52.6	95	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	53.2	96	72-130	
1,1-Dichloroethane	ug/m3	41.2	38.3	93	68-128	
1,1-Dichloroethene	ug/m3	40.3	39.1	97	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	63.9	128	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	85.0	113	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	59.1	118	71-140	
1,2-Dichloroethane	ug/m3	41.2	39.0	95	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	51.1	102	73-136	
Benzene	ug/m3	32.5	36.1	111	69-134	
Carbon tetrachloride	ug/m3	64	58.2	91	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 112IC06279 MRC SV/IAQ

Pace Project No.: 10263934

LABORATORY CONTROL SAMPLE: 1667398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	33.3	93	60-140	
Chloroform	ug/m3	49.7	47.5	96	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	42.0	104	71-135	
Dichlorodifluoromethane	ug/m3	50.3	44.7	89	69-125	
Ethylbenzene	ug/m3	44.2	47.4	107	73-139	
m&p-Xylene	ug/m3	44.2	46.3	105	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	38.2	104	72-132	
Methylene Chloride	ug/m3	35.3	29.6	84	64-134	
Naphthalene	ug/m3	53.3	61.9	116	61-150	
o-Xylene	ug/m3	44.2	47.1	107	71-138	
Tetrachloroethene	ug/m3	69	70.9	103	69-136	
Toluene	ug/m3	38.3	36.1	94	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	40.0	99	70-131	
Trichloroethene	ug/m3	54.6	61.0	112	70-135	
Vinyl chloride	ug/m3	26	25.9	100	69-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Instrument Run Log

1

Instrument: 10AIRD
Column: J&W DB-5 0.32mm Helium

Method:
Tune Standard: 10288-9-7

Misc. Prep. Info:
ISTD Lot: 10288-9-7

Surrogate Lot: 10288-9-7
Cal. Standard: 10288-8-18

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
11901BFB.D	BFB	L/	Tune	1		50NG_BFB	4/29/14 08:43	JAM	
11902.D	CCV	G/	CCal	1		TO15_117-14	4/29/14 09:10	JAM	
11903.D	CCV	G/	CCal	1		TO15_117-14	4/29/14 10:16	JAM	
11905.D	CAL1	G/	Ical	1		TO15_119-14	4/29/14 11:21	JAM	
11906.D	CAL2	G/	Ical	1		TO15_119-14	4/29/14 11:49	JAM	
11907.D	CAL3	G/	Ical	1		TO15_119-14	4/29/14 12:16	JAM	
11908.D	CAL4	G/	Ical	1		TO15_119-14	4/29/14 12:44	JAM	
11909.D	CAL5	G/	Ical	1		TO15_119-14	4/29/14 13:11	JAM	
11910.D	CAL6	G/	Ical	1		TO15_119-14	4/29/14 13:41	JAM	
11911.D	CAL7	G/	Ical	1		TO15_119-14	4/29/14 14:14	JAM	
11912.D	ICV ADDL	G/	LCS	1		TO15_119-14	4/29/14 14:42	JAM	
11913.D	0	G/	Sample	1		TO15_119-14	4/29/14 15:18	JAM	
11914.D	ICV	G/	LCS	1		TO15_119-14	4/29/14 15:46	JAM	
11915_20112.D	1668247	G/20112	LCS	1		TO15_119-14	4/29/14 16:14	JAM	
11915.D	LCS	G/	LCS	1		TO15_119-14	4/29/14 16:14	JAM	
11916.D	0	G/	Sample	1		TO15_119-14	4/29/14 16:41	JAM	
11917_20112.D	1668246	G/20112	Blank	1		TO15_119-14	4/29/14 17:09	JAM	
11917.D	BLANK	G/	Blank	1		TO15_119-14	4/29/14 17:09	JAM	
11918.D	10265102001	G/20112	Sample	1.92		TO15_119-14	4/29/14 17:52	JAM	
11919.D	10265102002	G/20112	Sample	1.92		TO15_119-14	4/29/14 18:21	JAM	
11920.D	1668248	G/20112	Duplicate	1.92		TO15_119-14	4/29/14 18:50	JAM	
11921.D	10265102003	G/20112	Sample	2.01		TO15_119-14	4/29/14 19:19	JAM	

Check Maintenance Items Performed:

Changed septum	Clipped column	Changed column - Lot #
Cleaned liner	Changed trap - Lot #	Other minor parts replaced
Replaced/Cleaned gold seal	Cleaned MS Source	No maintenance performed today

Additional Comments:

File Path 1: U:\10AIRD\1042914.B\
Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 04/30/2014 12:56
Reviewed By/Date:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10263934

Lab File ID: 11901BFB.D

BFB Injection Date: 04/29/2014

Instrument ID: 10AIRD

BFB Injection Time: 08:43

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	21.01
75	30.00 - 66.00% of mass 95	58.96
96	5.00 - 9.00% of mass 95	6.14
173	Less than 2.00% of mass 174	0.38 (0.46)
174	50.00 - 120.00% of mass 95	82.05
175	4.00 - 9.00% of mass 174	6.54 (7.97)
176	93.00 - 101.00% of mass 174	79.44 (96.82)
177	5.00 - 9.00% of mass 176	4.90 (6.16)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	11905.D	04/29/2014	11:21
2	CAL2	CAL2	11906.D	04/29/2014	11:49
3	CAL3	CAL3	11907.D	04/29/2014	12:16
4	CAL4	CAL4	11908.D	04/29/2014	12:44
5	CAL5	CAL5	11909.D	04/29/2014	13:11
6	CAL6	CAL6	11910.D	04/29/2014	13:41
7	CAL7	CAL7	11911.D	04/29/2014	14:14
8	ICVADDL (LCS)	ICVADDL	11912.D	04/29/2014	14:42
9	ICV (LCS)	ICV	11914.D	04/29/2014	15:46

Report Date : 30-Apr-2014 10:15

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\042914.b\11905.d
 Level 2: \\192.168.10.12\chem\10airD.i\042914.b\11906.d
 Level 3: \\192.168.10.12\chem\10airD.i\042914.b\11907.d
 Level 4: \\192.168.10.12\chem\10airD.i\042914.b\11908.d
 Level 5: \\192.168.10.12\chem\10airD.i\042914.b\11909.d
 Level 6: \\192.168.10.12\chem\10airD.i\042914.b\11910.d
 Level 7: \\192.168.10.12\chem\10airD.i\042914.b\11911.d

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
1 Chlorodifluoromethane	1.10863	1.33430	1.43178	1.55272	1.74916	1.80929					
	1.63956						AVRG		1.51792		16.20499
2 Propylene	4.79658	5.26361	5.81292	5.79622	5.52600	5.21214					
	4.24928						AVRG		3.23811		10.73858
3 Dichlorodifluoromethane	0.44404	0.49534	0.52875	0.58204	0.66841	0.66932					
	0.66543						AVRG		0.57891		15.95599
4 Dichlorotetrafluoroethane	0.57367	0.58133	0.66756	0.73438	0.77002	0.75184					
	0.72119						AVRG		0.68571		11.74035

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
5 Chloromethane	1.79224	1.82702	2.20033	2.39301	2.47470	2.42529					
	2.21316						AVRG		2.18725		12.76721
6 Vinyl chloride	2.15255	2.43416	2.34712	2.62380	2.73606	2.52999					
	2.37317						AVRG		2.45669		7.85336
7 1,3-Butadiene	3.05638	3.98210	3.63061	4.48777	4.65555	4.31839					
	3.87216						AVRG		4.01471		13.32418
8 Bromomethane	1.38474	1.72285	1.90099	2.19492	2.28972	1.93163					
	2.03095						AVRG		1.92226		15.79635
9 Chloroethane	3.51241	5.44555	4.30858	5.39917	5.86014	4.74270					
	4.95585						AVRG		4.88920		16.21468
10 Ethanol	2.37597	3.90222	4.52342	5.30530	5.34790	4.41430					
	5.17615						AVRG		4.43504		23.77656
11 Vinyl Bromide	1.92642	1.68976	2.00381	2.31623	2.32214	1.94462					
	2.08819						AVRG		2.04159		11.02861

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
12 Isopentane	2.11147	2.38367	2.49027	3.02685	2.89457	2.25994					
	2.44100						IAVRG		2.51539		13.15834
13 Trichlorofluoromethane	0.42664	0.45396	0.50242	0.56726	0.62382	0.56666					
	0.65730						IAVRG		0.54258		15.75701
14 Acrolein	5.77257	5.26361	6.48200	6.58637	9.93757	7.50214					
	7.89282						IAVRG		7.06101		22.05782
15 Acetone	15584	12327	24338	41748	275133	711401					
	1146814						ILNR	-0.03602	1.29651		0.99591
16 Isopropyl Alcohol	1.10494	1.54946	1.67953	1.90720	1.79540	1.53976					
	1.76695						IAVRG		1.62046		16.23140
17 1,1-Dichloroethene	1.00188	1.17425	1.24717	1.36400	1.40354	1.19925					
	1.33620						IAVRG		1.23904		10.57299
18 Tert Butyl Alcohol	1.04149	1.24071	1.64383	1.71616	1.19648	1.06163					
	1.24019						IAVRG		1.30578		20.56426

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	b	Coefficients		RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
19 Acrylonitrile	3.03959	3.63036	3.77546	4.13672	3.89070	2.96476					
	3.20226						AVRG		3.52312		12.77713
20 Freon 113	0.71045	0.82182	0.95271	1.03614	1.10108	0.93890					
	1.06252						AVRG		0.94652		14.76039
21 Methylene chloride	++++	++++	1.12261	1.22649	2.18607	1.79755					
	1.98342						AVRG		1.66363		28.11690
22 Allyl Chloride	5.09084	4.26479	4.61930	5.00066	5.29713	4.14018					
	4.54121						AVRG		4.72487		6.68754
23 Carbon Disulfide	0.46011	0.53383	0.60034	0.68368	0.72077	0.59651					
	0.66231						AVRG		0.60822		14.85178
24 trans-1,2-dichloroethene	1.61835	1.56499	1.95457	2.07176	2.17877	1.60941					
	1.94776						AVRG		1.89080		11.62250
25 Methyl Tert Butyl Ether	0.62090	0.60620	0.70477	0.76442	0.78240	0.66664					
	0.70576						AVRG		0.69293		9.66467

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.000000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
26 Vinyl Acetate	0.87005	0.76954	0.89461	1.02673	1.04556	0.78872					
	0.86929						AVRG		0.69493		11.92577
27 1,1-Dichloroethane	0.85790	0.79669	0.95390	1.10081	1.25074	0.99782					
	1.09172						AVRG		1.00708		15.42302
29 Methyl Ethyl Ketone	3.49025	3.02422	3.59972	4.41507	4.91513	4.02889					
	4.34902						AVRG		3.97462		16.24080
30 n-Hexane	++++	1.19518	1.54402	1.77688	1.80132	1.47291					
	1.54702						AVRG		1.55622		14.26163
31 Di-isopropyl Ether	0.76462	0.73378	0.79486	0.83588	0.85342	0.70632					
	0.73256						AVRG		0.77449		7.18390
32 cis-1,2-Dichloroethene	2.01287	1.94551	2.18971	2.54325	2.35482	1.93474					
	2.00920						AVRG		2.14144		10.65897
33 Ethyl Acetate	0.95189	1.07579	1.17627	1.25346	1.11085	0.99431					
	1.02279						AVRG		1.09791		10.60089

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0060	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
34 Chloroform	0.61229	0.59638	0.72224	0.78105	0.80482	0.72333				
	0.79596						AVRG		0.71944	11.84705
35 Ethyl Tert-Butyl Ether	0.79943	0.79998	0.95271	0.92887	0.85251	0.71325				
	0.74700						AVRG		0.82768	10.76764
36 Tetrahydrofuran	3.66766	2.86802	3.22233	3.32477	3.10665	2.52809				
	2.57199						AVRG		3.04136	13.37927
37 1,1,1-Trichloroethane	0.59506	0.65211	0.68773	0.77031	0.79341	0.73391				
	0.81697						AVRG		0.72136	11.14269
38 1,2-Dichloroethane	0.80681	0.89892	0.97174	1.09780	1.11741	1.01242				
	1.17673						AVRG		1.01169	12.89517
39 Benzene	0.62345	0.76649	0.83215	0.84424	0.78558	0.62911				
	0.64296						AVRG		0.73200	13.31317
40 Carbon tetrachloride	0.66054	0.61551	0.74037	0.78352	0.84331	0.80417				
	0.89510						AVRG		0.76322	12.96862

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		m1	m2	
	30.0000									
	Level 7									
41 Cyclohexane	2.16377	2.22691	2.39434	2.20263	2.05875	1.63834				
	1.66345						AVRG	2.04974		14.15468
42 Tert Amyl Methyl Ether	++++	0.48099	0.72788	0.82832	0.92897	0.82682				
	0.76138						AVRG	0.75906		20.11461
44 2,2,4-Trimethylpentane	0.66678	0.66343	0.67803	0.70618	0.65716	0.60958				
	0.54684						AVRG	0.64686		9.14678
45 Heptane	1.94221	1.87965	2.04932	2.00769	1.89340	1.80275				
	1.52932						AVRG	1.67205		9.18826
46 1,2-Dichloropropane	2.19381	2.02217	2.21690	2.42279	2.29877	2.13928				
	1.93016						AVRG	2.17484		7.58816
47 Trichloroethene	2849	2942	8857	17485	193643	449574				
	851950						QUAD	0.00370	0.45554	0.03736
48 Bromodichloromethane	0.61513	0.60050	0.71455	0.72686	0.73858	0.72989				
	0.70687						AVRG	0.69034		9.32397

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
49 1,4-Dioxane	++++	4.66668	4.06933	4.46588	3.79898	3.91347					
	4.20410						{AVRG		4.18674		7.91678
50 Methylcyclohexane	++++	5.51201	4.29864	4.28525	3.86643	3.60745					
	3.34857						{AVRG		4.15306		18.37713
51 Methyl Isobutyl Ketone	1.52469	1.64984	1.46592	1.40825	1.31608	1.19939					
	1.06251						{AVRG		1.37524		14.52113
52 cis-1,3-Dichloropropene	1.44064	1.36440	1.32632	1.39227	1.30928	1.19932					
	1.10480						{AVRG		1.30529		8.91582
53 trans-1,3-Dichloropropene	1909	4756	10917	23623	342871	766856					
	++++						{LINR	0.01324	1.10199		0.99987
55 Toluene	0.30737	0.55600	0.64548	0.65619	0.60723	0.56997					
	0.52698						{AVRG		0.56130		17.37918
56 1,1,2-Trichloroethane	1.55322	1.53229	1.72991	1.75946	1.69913	1.60184					
	1.48103						{AVRG		1.62241		6.63591

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
57 Methyl Butyl Ketone	1682	3660	10586	23346	301003	664972				
	++++						LINR	0.00865	0.57753	0.99993
58 Dibromochloromethane	0.42039	0.39262	0.46712	0.45729	0.42342	0.42085				
	0.41159						AVRG		0.42761	6.06710
59 1,2-Dibromoethane	0.45088	0.45021	0.49823	0.52212	0.47109	0.46021				
	0.43366						AVRG		0.46949	6.55742
60 Tetrachloroethene	0.50662	0.55469	0.56536	0.57757	0.54174	0.51792				
	0.49184						AVRG		0.53653	5.94788
62 Chlorobenzene	0.36438	0.36958	0.40938	0.43219	0.39748	0.37483				
	0.36372						AVRG		0.38736	6.79533
63 Ethyl Benzene	5182	10817	29397	64649	833929	1926819				
	++++						LINR	0.01400	0.20041	0.99970<-
64 m,p-Xylene	3928	8239	24507	52546	688538	1596537				
	++++						LINR	0.01504	0.24189	0.99965<-

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			tRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
65 Bromoform	0.42004	0.40509	0.44330	0.44891	0.36947	0.36427					
	0.35393						AVRG		0.40072		9.67732
66 Styrene	2062	4051	12692	31221	450016	1053102					
	1612694						LINK	0.03874	0.34290		3.99727
67 o-Xylene	3570	9617	27383	56860	706616	1565586					
	++++						LINK	0.00730	0.24563		0.99996<
68 1,1,2,2-Tetrachloroethane	0.38450	0.35260	0.41465	0.43661	0.37696	0.36481					
	0.34073						AVRG		0.36155		8.91444
69 Isopropylbenzene	0.28998	0.24879	0.25777	0.25326	0.20594	0.20104					
	0.19086						AVRG		0.23538		15.52282
70 N-Propylbenzene	++++	10639	33802	75774	1066669	2470640					
	4073483						LINK	0.03363	0.15060		0.99923
71 4-Ethyltoluene	++++	8452	27295	58160	792764	1845068					
	3057759						LINK	0.03432	0.20099		0.99899

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
72 1,3,5-Trimethylbenzene	3460	8790	26701	56783	721660	1668125					
	++++						LINK	0.01539	0.22909		0.99950
73 Tert-Butyl Benzene	++++	0.45847	0.35677	0.34699	0.26318	0.24904					
	0.24674						AVRG		0.32020		26.05608
74 1,2,4-Trimethylbenzene	++++	0.34338	0.29189	0.28889	0.22815	0.21912					
	0.21857						AVRG		0.26500		19.28292
75 1,3-Dichlorobenzene	0.60142	0.50822	0.51389	0.50245	0.40554	0.37624					
	0.38532						AVRG		0.47044		17.74804
76 Sec- Butylbenzene	3744	11127	32176	73237	966960	2317866					
	3453786						LINK	0.00929	0.17358		0.99860
78 Benzyl Chloride	3501	7859	18105	39661	602878	1437471					
	2342750						LINK	0.02936	0.26182		0.99916
79 1,4-Dichlorobenzene	0.46931	0.45342	0.48022	0.48613	0.40158	0.38350					
	0.37148						AVRG		0.43509		11.09362

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\T015_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
80 p-Isopropyltoluene	++++	0.39148	0.32023	0.30792	0.24143	0.23172				
	0.23283						AVRG		0.28760	22.27694
81 1,2,3-Trimethylbenzene	0.48256	0.33891	0.31728	0.31891	0.26316	0.24992				
	0.24246						AVRG		0.31617	26.09567
82 1,2-Dichlorobenzene	0.74908	0.58132	0.57822	0.59773	0.45095	0.43389				
	0.41410						AVRG		0.54361	21.91629
83 N-Butylbenzene	2592	7224	24972	55815	740663	1829597				
	2961925						LNLR	0.03157	0.20686	0.99882
84 1,2,4-Trichlorobenzene	921	2246	6975	15433	212786	526363				
	++++						LNLR	0.02491	0.73813	0.99786
85 Naphthalene	1353	2734	9381	23661	340101	766785				
	++++						LNLR	0.01661	0.50041	0.99990
86 Hexachlorocyclopentadiene	0.74871	0.64520	0.65366	0.65771	0.72977	0.68856				
	0.73965						AVRG		0.69475	6.35821

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-APR-2014 11:21
 End Cal Date : 29-APR-2014 14:14
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Last Edit : 30-Apr-2014 10:00 10airD.i

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
\$ 58 Hexane-d14 (S)	1.78262	1.66177	1.49128	1.84534	1.89891	1.74150				
	1.93376						AVRG		1.76502	6.63300
\$ 54 Toluene-d8 (S)	1.22279	1.20080	1.15363	1.19395	1.18181	1.24511				
	1.20406						AVRG		1.20031	2.42635
\$ 77 1,4-dichlorobenzene-d4 (S)	2.09866	2.08081	1.97951	1.93528	1.69051	1.83931				
	1.87271						AVRG		1.92811	7.41086

Data File: \\192.168.10.12\chem\10airD.i\042914.b\11914.d
 Report Date: 30-Apr-2014 10:01

Pace Analytical Services, Inc.

RECOVERY REPORT

Client Name: Client SDG: 042914.b
 Sample Matrix: GAS Fraction: VOA
 Lab Smp Id: ICV
 Level: LOW Operator: JAM
 Data Type: MS DATA SampleType: LCS
 SpikeList File: SSV_new.spk Quant Type: ISTD
 Sublist File: all.sub
 Method File: \\192.168.10.12\chem\10airD.i\042914.b\TO15_119-14.m
 Misc Info:

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
2 Propylene	10.6	11.4	107.96	60-140
3 Dichlorodifluorome	9.60	9.21	95.98	60-140
4 Dichlorotetrafluor	11.0	9.41	85.54	60-140
5 Chloromethane	10.8	10.6	98.69	60-140
6 Vinyl chloride	9.60	10.3	107.38	60-140
7 1,3-Butadiene	9.90	10.1	101.75	60-140
8 Bromomethane	7.20	7.03	97.64	60-140
9 Chloroethane	7.60	7.58	99.67	60-140
10 Ethanol	7.90	8.99	113.82	60-140
11 Vinyl Bromide	9.70	9.60	98.99	60-140
13 Trichlorofluoromet	9.90	9.50	95.99	60-140
15 Acetone	9.40	10.5	112.13	60-140
16 Isopropyl Alcohol	10.2	11.3	110.48	60-140
17 1,1-Dichloroethene	11.5	14.1	122.48	60-140
20 Freon 113	9.30	10.9	116.94	60-140
21 Methylene chloride	9.90	10.1	102.02	60-140
23 Carbon Disulfide	10.0	7.37	73.71	60-140
24 trans-1,2-dichloro	10.2	11.3	110.55	60-140
25 Methyl Tert Butyl	9.60	10.6	110.84	60-140
27 1,1-Dichloroethane	10.2	11.3	110.97	60-140
26 Vinyl Acetate	10.3	11.1	107.82	60-140
29 Methyl Ethyl Keton	10.2	10.8	105.89	60-140
30 n-Hexane	10.1	10.4	103.09	60-140
32 cis-1,2-Dichloroet	10.1	11.7	116.22	60-140
33 Ethyl Acetate	10.7	11.7	109.48	60-140
34 Chloroform	10.9	11.0	101.16	60-140
36 Tetrahydrofuran	10.8	13.4	123.93	60-140
37 1,1,1-Trichloroeth	9.90	9.78	98.78	60-140
38 1,2-Dichloroethane	11.0	10.7	97.19	60-140
39 Benzene	10.6	11.2	105.76	60-140
40 Carbon tetrachlori	10.2	9.69	95.03	60-140
41 Cyclohexane	10.5	12.0	114.18	60-140
44 2,2,4-Trimethylpen	10.0	11.5	114.87	60-140
45 Heptane	11.3	12.9	113.96	60-140
46 1,2-Dichloropropan	10.1	10.8	106.74	60-140
47 Trichloroethene	9.50	11.3	119.21	60-140
48 Bromodichlorometha	9.80	10.5	106.97	60-140
49 1,4-Dioxane	9.70	10.2	105.18	60-140
51 Methyl Isobutyl Ke	9.80	12.4	126.84	60-140
52 cis-1,3-Dichloropr	11.6	13.0	112.36	60-140

Data File: \\192.168.10.12\chem\10airD.i\042914.b\11914.d
 Report Date: 30-Apr-2014 10:01

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
53 trans-1,3-Dichloro	9.90	9.90	100.05	60-140
55 Toluene	10.4	9.96	95.82	60-140
56 1,1,2-Trichloroeth	9.60	9.70	101.05	60-140
57 Methyl Butyl Keton	9.70	10.4	107.80	60-140
58 Dibromochlorometha	9.30	9.48	101.97	60-140
59 1,2-Dibromoethane	9.60	9.88	102.91	60-140
60 Tetrachloroethene	9.60	9.75	101.61	60-140
62 Chlorobenzene	10.3	10.0	97.31	60-140
63 Ethyl Benzene	9.90	9.72	98.15	60-140
64 m&p-Xylene	20.2	19.5	96.69	60-140
65 Bromoform	9.80	10.8	110.46	60-140
66 Styrene	11.6	10.8	92.89	60-140
67 o-Xylene	9.30	8.64	92.95	60-140
68 1,1,2,2-Tetrachlor	9.30	10.9	117.17	60-140
69 Isopropylbenzene	9.30	11.7	125.47	60-140
70 N-Propylbenzene	8.90	9.27	104.14	60-140
71 4-Ethyltoluene	8.30	8.54	102.89	60-140
72 1,3,5-Trimethylben	9.60	9.59	99.95	60-140
74 1,2,4-Trimethylben	9.00	10.2	113.17	60-140
76 Sec- Butylbenzene	9.40	10.2	108.65	60-140
75 1,3-Dichlorobenzen	10.0	12.3	122.86	60-140
78 Benzyl Chloride	9.80	9.83	100.29	60-140
79 1,4-Dichlorobenzen	9.70	11.2	115.96	60-140
82 1,2-Dichlorobenzen	9.70	12.6	129.68	60-140
83 N-Butylbenzene	9.50	10.4	110.07	60-140
84 1,2,4-Trichloroben	9.10	12.3	135.14	60-140
85 Naphthalene	9.30	12.8	137.13	60-140
86 Hexachlorobutadien	9.10	11.5	126.28	60-140

SURROGATE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
\$ 28 Hexane-d14(S)	10.0	10.7	106.85	70-130
\$ 54 Toluene-d8 (S)	10.0	10.2	102.17	70-130
\$ 77 1,4-dichlorobenzen	10.0	10.5	105.00	70-130



Instrument Run Log

1

Instrument: 10AIRD
Column: J&W DB-5 0.32mm

Method:
Tune Standard: 10288-9-7

Misc. Prep. Info:
ISTD Lot: 10288-9-7

Surrogate Lot: 10288-9-7
Cal. Standard: 10288-8-18

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
12001BFB.D	BFB	L/	Tune	1		50NG_BFB	4/30/14 08:35	DL1	
12002_20099.D	1667404	G/20099	LCS	1		TO15_119-14	4/30/14 09:03	JAM	
12002_LCS.D	LCS	G/	LCS	1		TO15_119-14	4/30/14 09:03	JAM	
12002.D	CCV	G/	CCal	1		TO15_119-14	4/30/14 09:03	DL1	
12002_20098.D	1667398	G/20098	LCS	1		TO15_119-14	4/30/14 09:03	JAM	
12003.D	0	G/	Sample	1		TO15_119-14	4/30/14 09:59	JAM	
12004.D	CERT	G/	Sample	1		TO15_119-14	4/30/14 10:27	JAM	
12004_20099.D	1667403	G/20099	Blank	1		TO15_119-14	4/30/14 10:27	JAM	
12004_20098.D	1667397	G/20098	Blank	1		TO15_119-14	4/30/14 10:27	JAM	
12005.D	10264240001	G/20098	Sample	2.01		TO15_119-14	4/30/14 11:25	JAM	
12006.D	10264229001	G/20098	Sample	1.68		TO15_119-14	4/30/14 11:57	JAM	
12007.D	10264229002	G/20098	Sample	1.74		TO15_119-14	4/30/14 12:25	JAM	
12008.D	10263139001	G/20098	Sample	1.75		TO15_119-14	4/30/14 12:59	JAM	
12009.D	10262921002	G/20098	Sample	85.76		TO15_119-14	4/30/14 13:28	JAM	
12010.D	10263100002	G/20098	Sample	1.8		TO15_119-14	4/30/14 13:57	JAM	
12011.D	92197533024	G/20099	Sample	1.39		TO15_119-14	4/30/14 14:28	JAM	
12012.D	10262921002	G/20098	Sample	85.76		TO15_119-14	4/30/14 14:56	JAM	
12013.D	10263934001	G/20098	Sample	1.34		TO15_119-14	4/30/14 15:25	JAM	
12014.D	10263934002	G/20098	Sample	1.61		TO15_119-14	4/30/14 15:53	JAM	
12015.D	30117703002	G/20098	Sample	1.44		TO15_119-14	4/30/14 16:22	JAM	
12016.D	30117703001	G/20098	Sample	107.2		TO15_119-14	4/30/14 16:50	JAM	
12017.D	DNE	G/	Sample	1		TO15_119-14	4/30/14 17:17	JAM	
12018.D	10262914002	G/20099	Sample	2.1		TO15_119-14	4/30/14 17:46	JAM	
12019.D	10262914001	G/20099	Sample	1.94		TO15_119-14	4/30/14 18:14	JAM	
12020.D	10262914003	G/20099	Sample	2.29		TO15_119-14	4/30/14 18:45	JAM	
12021.D	10262914004	G/20099	Sample	2.02		TO15_119-14	4/30/14 19:14	JAM	
12022.D	10264229002	G/20098	Sample	34.8		TO15_119-14	4/30/14 19:41	JAM	
12023.D	30117703001	G/20098	Sample	5.36		TO15_119-14	4/30/14 20:09	JAM	
12024.D	1669764	G/20098	Duplicate	5.36		TO15_119-14	4/30/14 20:38	JAM	
12025.D	10263412001	G/20099	Sample	2.0286		TO15_119-14	4/30/14 21:09	JAM	
12026.D	10262933002	G/20098	Sample	33.6		TO15_119-14	4/30/14 21:36	JAM	
12027.D	10262934002	G/20098	Sample	38.8		TO15_119-14	4/30/14 22:04	JAM	
12028.D	10262933001	G/20098	Sample	537.6		TO15_119-14	4/30/14 22:31	JAM	
12029.D	10262934001	G/20098	Sample	1196.8		TO15_119-14	4/30/14 22:59	JAM	
12030.D	10263139001	G/20098	Sample	17920		TO15_119-14	4/30/14 23:26	JAM	
12031.D	10262914001	G/20099	Sample	38.8		TO15_119-14	4/30/14 23:53	JAM	
12032.D	10262914002	G/20099	Sample	42		TO15_119-14	5/01/14 00:21	JAM	
12033.D	0	G/	Sample	1		TO15_119-14	5/01/14 00:48	JAM	
12034.D	LCS	G/	LCS	1		TO15_119-14	5/01/14 01:16	JAM	
12035.D	0	G/	Sample	1		TO15_119-14	5/01/14 01:43	JAM	
12036.D	BLANK	G/	Blank	1		TO15_119-14	5/01/14 02:14	JAM	
12037.D	10263933001	G/20121	Sample	1.49		TO15_119-14	5/01/14 02:43	JAM	
12038.D	10263933002	G/20121	Sample	1.34		TO15_119-14	5/01/14 03:11	JAM	
12039.D	-DUP	G/20121	Duplicate	1.34		TO15_119-14	5/01/14 03:41	JAM	
12040.D	10263933003	G/20121	Sample	1.34		TO15_119-14	5/01/14 04:09	JAM	
12041.D	10263933004	G/20121	Sample	1.34		TO15_119-14	5/01/14 04:37	JAM	

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10263934

Lab File ID: 12001BFB.D

BFB Injection Date: 04/30/2014

Instrument ID: 10AIRD

BFB Injection Time: 08:35

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.12
75	30.00 - 66.00% of mass 95	58.32
96	5.00 - 9.00% of mass 95	6.80
173	Less than 2.00% of mass 174	0.70 (0.81)
174	50.00 - 120.00% of mass 95	86.02
175	4.00 - 9.00% of mass 174	6.35 (7.39)
176	93.00 - 101.00% of mass 174	81.35 (94.57)
177	5.00 - 9.00% of mass 176	5.15 (6.33)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV	CCV	12002.D	04/30/2014	09:03
2	LCS for HBN 294484 [AIR/	1667398	12002_20098.D	04/30/2014	09:03
3	BLANK for HBN 294484 [AI	1667397	12004_20098.D	04/30/2014	10:27
4	IA-081-A-16R	10263934001	12013.D	04/30/2014	15:25
5	IA-113-C-16R	10263934002	12014.D	04/30/2014	15:53
6	VP-1(1657123DUP)	1669764-DUP	12024.D	04/30/2014	20:38

Data File: \\192.168.10.12\chem\10airD.i\043014.b\12002.d
Report Date: 30-Apr-2014 10:02

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 30-APR-2014 09:03
Lab File ID: 12002.d Init. Cal. Date(s): 29-APR-2014 29-APR-2014
Analysis Type: AIR Init. Cal. Times: 11:21 14:14
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\043014.b\TO15_119-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	1.51792	1.64018	1.64018	0.010	8.05455	30.00000	Averaged
2 Propylene	5.23811	4.70295	4.70295	0.010	-10.21662	30.00000	Averaged
3 Dichlorodifluoromethane	0.57891	0.65034	0.65034	0.010	12.33937	30.00000	Averaged
4 Dichlorotetrafluoroethane	0.68571	0.76497	0.76497	0.010	11.55817	30.00000	Averaged
5 Chloromethane	2.18725	2.44491	2.44491	0.010	11.77994	30.00000	Averaged
6 Vinyl chloride	2.45669	2.46594	2.46594	0.010	0.37639	30.00000	Averaged
7 1,3-Butadiene	4.01471	4.07594	4.07594	0.010	1.52505	30.00000	Averaged
8 Bromomethane	1.92226	2.02656	2.02656	0.010	5.42594	30.00000	Averaged
9 Chloroethane	4.88920	5.02797	5.02797	0.010	2.83830	30.00000	Averaged
10 Ethanol	4.43504	5.02013	5.02013	0.100	13.19248	30.00000	Averaged
11 Vinyl Bromide	2.04159	2.04250	2.04250	0.010	0.04422	30.00000	Averaged
12 Isopentane	2.51539	2.35740	2.35740	0.010	-6.28101	30.00000	Averaged
13 Trichlorofluoromethane	0.54258	0.60106	0.60106	0.010	10.77789	30.00000	Averaged
14 Acrolein	7.06101	7.96121	7.96121	0.010	12.74891	30.00000	Averaged
15 Acetone	10.00000	10.24685	1.22231	0.010	2.46848	30.00000	Linear
16 Isopropyl Alcohol	1.62046	1.58275	1.58275	0.010	-2.32734	30.00000	Averaged
17 1,1-Dichloroethene	1.23804	1.27469	1.27469	0.010	2.95992	30.00000	Averaged
18 Tert Butyl Alcohol	1.30578	1.01739	1.01739	0.100	-22.08612	30.00000	Averaged
19 Acrylonitrile	3.52312	3.18998	3.18998	0.010	-9.45587	30.00000	Averaged
20 Freon 113	0.94652	1.02179	1.02179	0.010	7.95314	30.00000	Averaged
21 Methylene chloride	1.66363	1.98498	1.98498	0.010	19.31660	30.00000	Averaged
22 Allyl Chloride	4.72487	4.57449	4.57449	0.010	-3.18286	30.00000	Averaged
23 Carbon Disulfide	0.60822	0.63465	0.63465	0.010	4.34516	30.00000	Averaged
24 trans-1,2-dichloroethene	1.88080	1.89579	1.89579	0.010	0.79692	30.00000	Averaged
25 Methyl Tert Butyl Ether	0.69293	0.66436	0.66436	0.010	-4.12300	30.00000	Averaged
26 Vinyl Acetate	0.89493	0.86153	0.86153	0.010	-3.73219	30.00000	Averaged
27 1,1-Dichloroethane	1.00708	1.08247	1.08247	0.010	7.48545	30.00000	Averaged
28 Hexane-d14(S)	1.76502	1.90895	1.90895	0.200	8.15422	30.00000	Averaged
29 Methyl Ethyl Ketone	3.97462	4.13736	4.13736	0.010	4.09468	30.00000	Averaged
30 n-Hexane	1.55622	1.54966	1.54966	0.010	-0.42194	30.00000	Averaged
31 Di-isopropyl Ether	0.77449	0.71650	0.71650	0.010	-7.48756	30.00000	Averaged
32 cis-1,2-Dichloroethene	2.14144	2.05312	2.05312	0.010	-4.12450	30.00000	Averaged
33 Ethyl Acetate	1.09791	1.01543	1.01543	0.010	-7.51234	30.00000	Averaged
34 Chloroform	0.71944	0.75117	0.75117	0.010	4.41144	30.00000	Averaged
35 Ethyl Tert-Butyl Ether	0.82768	0.70002	0.70002	0.010	-15.42388	30.00000	Averaged
36 Tetrahydrofuran	3.04136	2.53496	2.53496	0.010	-16.65051	30.00000	Averaged
37 1,1,1-Trichloroethane	0.72136	0.76063	0.76063	0.010	5.44398	30.00000	Averaged
38 1,2-Dichloroethane	1.01169	1.06831	1.06831	0.010	5.59674	30.00000	Averaged
39 Benzene	0.73200	0.65924	0.65924	0.300	-9.94040	30.00000	Averaged
40 Carbon tetrachloride	0.76322	0.83856	0.83856	0.010	9.87148	30.00000	Averaged
41 Cyclohexane	2.04974	1.70844	1.70844	0.010	-16.65115	30.00000	Averaged
42 Tert Amyl Methyl Ether	0.75906	0.72435	0.72435	0.010	-4.57305	30.00000	Averaged

Data File: \\192.168.10.12\chem\10airD.i\043014.b\12002.d
Report Date: 30-Apr-2014 10:02

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 30-APR-2014 09:03
Lab File ID: 12002.d Init. Cal. Date(s): 29-APR-2014 29-APR-2014
Analysis Type: AIR Init. Cal. Times: 11:21 14:14
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\043014.b\TO15_119-14.m

COMPOUND			CCAL	MIN	MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT	
44 2,2,4-Trimethylpentane	0.64686	0.53418	0.53418	0.010	-17.41916	30.00000	Averaged
45 Heptane	1.87205	1.51156	1.51156	0.010	-19.25623	30.00000	Averaged
46 1,2-Dichloropropane	2.17484	1.91454	1.91454	0.010	-11.96842	30.00000	Averaged
47 Trichloroethene	10.00000	11.15955	1.79022	0.010	11.59547	30.00000	Quadratic
48 Bromodichloromethane	0.69034	0.69528	0.69528	0.010	0.71496	30.00000	Averaged
49 1,4-Dioxane	4.18674	3.75993	3.75993	0.010	-10.19428	30.00000	Averaged
50 Methylcyclohexane	4.15306	3.65858	3.65858	0.010	-11.90636	30.00000	Averaged
51 Methyl Isobutyl Ketone	1.37524	1.23117	1.23117	0.010	-10.47594	30.00000	Averaged
52 cis-1,3-Dichloropropene	1.30529	1.22990	1.22990	0.010	-5.77575	30.00000	Averaged
53 trans-1,3-Dichloropropene	10.00000	10.11006	1.10445	0.010	1.10061	30.00000	Linear
54 Toluene-d8 (S)	1.20031	1.32049	1.32049	0.200	10.01277	30.00000	Averaged
55 Toluene	0.56130	0.59636	0.59636	0.300	6.24578	30.00000	Averaged
56 1,1,2-Trichloroethane	1.62241	1.69146	1.69146	0.010	4.25585	30.00000	Averaged
57 Methyl Butyl Ketone	10.00000	11.05240	0.52666	0.010	10.52402	30.00000	Linear
58 Dibromochloromethane	0.42761	0.40284	0.40284	0.010	-5.79307	30.00000	Averaged
59 1,2-Dibromoethane	0.46949	0.44318	0.44318	0.010	-5.60435	30.00000	Averaged
60 Tetrachloroethene	0.53653	0.52189	0.52189	0.010	-2.73000	30.00000	Averaged
62 Chlorobenzene	0.38736	0.37160	0.37160	0.010	-4.06894	30.00000	Averaged
63 Ethyl Benzene	10.00000	10.73702	0.18912	0.300	7.37015	30.00000	Linear<
64 m&p-Xylene	10.00000	10.49026	0.23394	0.300	4.90256	30.00000	Linear<
65 Bromoform	0.43072	0.36323	0.36323	0.010	-9.35470	30.00000	Averaged
66 Styrene	10.00000	9.71938	0.36744	0.010	-2.80619	30.00000	Linear
67 o-Xylene	10.00000	10.66224	0.23196	0.300	6.62237	30.00000	Linear<
68 1,1,2,2-Tetrachloroethane	0.38155	0.34336	0.34336	0.010	-10.01024	30.00000	Averaged
69 Isopropylbenzene	0.23538	0.19575	0.19575	0.010	-16.83396	30.00000	Averaged
70 N-Propylbenzene	10.00000	10.34723	0.15044	0.010	3.47235	30.00000	Linear
71 4-Ethyltoluene	10.00000	10.31621	0.20153	0.010	3.16208	30.00000	Linear
72 1,3,5-Trimethylbenzene	10.00000	10.23518	0.22724	0.010	2.35176	30.00000	Linear
73 Tert-Butyl Benzene	0.32020	0.25878	0.25878	0.010	-19.18154	30.00000	Averaged
74 1,2,4-Trimethylbenzene	0.26500	0.22425	0.22425	0.010	-15.37600	30.00000	Averaged
75 1,3-Dichlorobenzene	0.47044	0.38997	0.38997	0.010	-17.10518	30.00000	Averaged
76 Sec- Butylbenzene	10.00000	10.34535	0.16931	0.010	3.45350	30.00000	Linear
77 1,4-dichlorobenzene-d4 (S)	1.92811	2.03377	2.03377	0.200	5.47972	30.00000	Averaged
78 Benzyl Chloride	10.00000	9.64164	0.28008	0.010	-3.58355	30.00000	Linear
79 1,4-Dichlorobenzene	0.43509	0.40536	0.40536	0.010	-6.83376	30.00000	Averaged
80 p-Isopropyltoluene	0.28760	0.22730	0.22730	0.010	-20.96728	30.00000	Averaged
81 1,2,3-Trimethylbenzene	0.31617	0.24729	0.24729	0.010	-21.78552	30.00000	Averaged
82 1,2-Dichlorobenzene	0.54361	0.44100	0.44100	0.010	-18.87660	30.00000	Averaged
83 N-Butylbenzene	10.00000	10.19666	0.20936	0.010	1.96658	30.00000	Linear
84 1,2,4-Trichlorobenzene	10.00000	11.26204	0.67024	0.010	12.62037	30.00000	Linear
85 Naphthalene	10.00000	11.60994	0.43735	0.010	16.09936	30.00000	Linear
86 Hexachlorobutadiene	0.69475	0.63339	0.63339	0.010	-8.83197	30.00000	Averaged

Data File: \\192.168.10.12\chem\10airD.i\043014.b\12013.d
Report Date: 30-Apr-2014 15:31

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 12013.d
Lab Smp Id: 10263934001
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10airD.i\043014.b\TO15_119-14.m
Misc Info: 20098

Calibration Date: 30-APR-2014
Calibration Time: 09:03

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	386113	231668	540558	423357	9.65
61 Chlorobenzene - d	173857	104314	243400	205773	18.36

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.05
61 Chlorobenzene - d	10.09	9.76	10.42	10.09	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\043014.b\12014.d
Report Date: 30-Apr-2014 15:52

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 12014.d
Lab Smp Id: 10263934002
Analysis Type: VOA
Quant Type: ISTD
Operator: JAM
Method File: \\192.168.10.12\chem\10airD.i\043014.b\TO15_119-14.m
Misc Info: 20098

Calibration Date: 30-APR-2014
Calibration Time: 09:03

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	386113	231668	540558	404552	4.78
61 Chlorobenzene - d	173857	104314	243400	190400	9.52

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	0.05
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\043014.b\12013.d
Report Date: 30-Apr-2014 15:31

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10airD.i\043014.b\12013.d
Lab Smp Id: 10263934001 *TA-081-A-16R*
Inj Date : 30-APR-2014 15:25
Operator : JAM Inst ID: 10airD.i
Smp Info :
Misc Info : 20098
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10airD.i\043014.b\TO15 119-14.m
Meth Date : 30-Apr-2014 10:02 10airD.i Quant Type: ISTD
Cal Date : 29-APR-2014 14:14 Cal File: 11911.d
Als bottle: 13
Dil Factor: 1.34000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14
Processing Host: VIRTUALXP-96992

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	1.340	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ppbv)	FINAL (ppbv)
1 Chlorodifluoromethane	51	3.118	3.124 (0.487)		162223	5.81640	7.79
2 Propylene	41				Compound Not Detected.		
3 Dichlorodifluoromethane	85	3.160	3.167 (0.494)		23224	0.31757	0.426
4 Dichlorotetrafluoroethane	85				Compound Not Detected.		
5 Chloromethane	50	3.268	3.272 (0.510)		5315	0.27460	0.368(M)
6 Vinyl chloride	62				Compound Not Detected.		
7 1,3-Butadiene	54				Compound Not Detected.		
8 Bromomethane	94				Compound Not Detected.		
9 Chloroethane	64				Compound Not Detected.		
10 Ethanol	31	3.675	3.675 (0.574)		83413	8.73877	11.7
11 Vinyl Bromide	106				Compound Not Detected.		
12 Isopentane	43	3.803	3.806 (0.594)		18923	1.12432	1.51(M)
13 Trichlorofluoromethane	101	3.901	3.904 (0.609)		11159	0.14302	0.192
14 Acrolein	56				Compound Not Detected.		
15 Acetone	43	3.931	3.931 (0.614)		802705	24.2223	32.4
16 Isopropyl Alcohol	45	3.970	3.970 (0.620)		825851	31.6107	42.4(A)
17 1,1-Dichloroethene	61				Compound Not Detected.		
18 Tert Butyl Alcohol	59				Compound Not Detected.		
19 Acrylonitrile	53				Compound Not Detected.		
20 Freon 113	101				Compound Not Detected.		
21 Methylene chloride	49	4.328	4.327 (0.676)		10460	0.41104	0.551
22 Allyl Chloride	76				Compound Not Detected.		
23 Carbon Disulfide	76				Compound Not Detected.		

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ppbv)	FINAL (ppbv)
24 trans-1,2-dichloroethene	96				Compound Not Detected.		
25 Methyl Tert Butyl Ether	73				Compound Not Detected.		
26 Vinyl Acetate	43	4.892	4.832	(0.764)	7470	0.15791	0.212(M)
27 1,1-Dichloroethane	63				Compound Not Detected.		
* 28 Hexane-d14 (S)	66	4.954	4.957	(0.774)	265043	11.0499	11.0
29 Methyl Ethyl Ketone	72	5.036	5.039	(0.786)	93286	8.75800	11.7(M)
30 n-Hexane	57	5.082	5.082	(0.794)	6343	0.23316	0.312(QM)
31 Di-isopropyl Ether	45				Compound Not Detected.		
32 cis-1,2-Dichloroethene	96				Compound Not Detected.		
33 Ethyl Acetate	43	5.272	5.269	(0.823)	4010	0.10399	0.139(QM)
34 Chloroform	83				Compound Not Detected.		
35 Ethyl Tert-Butyl Ether	59				Compound Not Detected.		
36 Tetrahydrofuran	42	5.600	5.590	(0.875)	6343	0.45568	0.611(QM)
37 1,1,1-Trichloroethane	97	5.898	5.905	(0.921)	6397	0.10900	0.146(M)
38 1,2-Dichloroethane	62				Compound Not Detected.		
39 Benzene	78	6.190	6.203	(0.967)	5880	0.10167	0.136
40 Carbon tetrachloride	117				Compound Not Detected.		
41 Cyclohexane	56				Compound Not Detected.		
42 Tert Amyl Methyl Ether	73				Compound Not Detected.		
* 43 1,4-Difluorobenzene	114	6.403	6.413	(1.000)	423357	10.0000	
44 2,2,4-Trimethylpentane	57	6.577	6.590	(1.027)	96042	1.46745	1.97
45 Heptane	43	6.758	6.761	(1.055)	11566	0.51144	0.685(M)
46 1,2-Dichloropropane	63				Compound Not Detected.		
47 Trichloroethene	130	6.863	6.869	(1.072)	12379	0.55801	0.748
48 Bromodichloromethane	83				Compound Not Detected.		
49 1,4-Dioxane	88				Compound Not Detected.		
50 Methylcyclohexane	98				Compound Not Detected.		
51 Methyl Isobutyl Ketone	43				Compound Not Detected.		
52 cis-1,3-Dichloropropene	75				Compound Not Detected.		
53 trans-1,3-Dichloropropene	75				Compound Not Detected.		
* 54 Toluene-d8 (S)	98	8.210	8.213	(1.282)	369961	10.4892	10.5
55 Toluene	91	8.299	8.309	(1.296)	300323	3.98181	5.34
56 1,1,2-Trichloroethane	97				Compound Not Detected.		
57 Methyl Butyl Ketone	43				Compound Not Detected.		
58 Dibromochloromethane	129				Compound Not Detected.		
59 1,2-Dibromoethane	107				Compound Not Detected.		
60 Tetrachloroethene	166	9.302	9.302	(0.922)	6805	0.17743	0.238(M)
* 61 Chlorobenzene - d5	117	10.086	10.089	(1.000)	205773	10.0000	
62 Chlorobenzene	112				Compound Not Detected.		
63 Ethyl Benzene	91	10.437	10.440	(1.035)	125281	1.36022	1.82
64 m&p-Xylene	91	10.604	10.611	(1.051)	536797	6.46044	8.66
65 Bromoform	173				Compound Not Detected.		
66 Styrene	104				Compound Not Detected.		
67 o-Xylene	91	11.181	11.191	(1.109)	157534	1.95345	2.62
68 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
69 Isopropylbenzene	105				Compound Not Detected.		
70 N-Propylbenzene	91	12.532	12.539	(1.243)	2035	0.35120	0.471(M)
71 4-Ethyltoluene	105				Compound Not Detected.		
72 1,3,5-Trimethylbenzene	105	12.818	12.844	(1.271)	1659	0.17240	0.231(M)
73 Tert-Butyl Benzene	119				Compound Not Detected.		
74 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
76 Sec- Butylbenzene	105				Compound Not Detected.		
* 77 1,4-dichlorobenzene-d4 (S)	150	13.877	13.893	(1.376)	98736	9.25166	9.25
78 Benzyl Chloride	91				Compound Not Detected.		

72.14 =
5.34 * 34.45
20.1

APPENDIX E—COMPARISON TO BACKGROUND

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 1 OF 9

LOCATION ⁽¹⁾ SAMPLE ID SAMPLE DATE	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-001-ER IA-001-ER-1 20140226	AIR-001-PB IA-001-PB-1 20140226	IA-001-PB-1-D Dup 20140226	AIR-002-ER IA-002-ER-1 20140226	AIR-002-PB IA-002-PB-1 20140226	AIR-003-ER IA-003-ER-1 20140226	IA-003-ER-1-D Dup 20140226
Volatile Organic Compounds (µg/m³)												
BENZENE	319	16	ca	2.8	2.7	0.83	0.86	0.8	1.1	0.65	0.89	1.3
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.5 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	4.8	2.8	2.6	4.3	11.5	4.5 J	12.9 J
CHLOROFORM	240,000	5.3	ca	0.48	NA	2.3 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U	1.7 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	2.5	2.2	2.2	2.5	2	2	2.9
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.9 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.94 U	0.69 U	0.69 U	0.74 U	0.74 U	0.69 U	0.69 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	1.9 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.9 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.9 U	1.4 U	1.4 U	19.9	1.5 U	17.4 J	70.1 J
ETHYLBENZENE	435,000	49	ca	2.6	2.6	2 U	1.6	1.5 U	5.2	1.2 J	5 J	17.1 J
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.7 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	20.8	9.6	6.5	14.4	11.3	605 J	22.2 J
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	2.5 UJ	1.2 J	1.8 U	1.9 UJ	1.3 J	1.1 J	1.8 UJ
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.6 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
TOLUENE	754,000	22,000	nc	24.0	24.0	2.7	1.4	1.4	14.8	3.9	14.6 J	44.7 J
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	3.5 UJ	2.5 U	2.5 U	2.7 UJ	2.7 U	2.5 U	2.5 UJ
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	2.5 U	1.9 U	1.9 U	2 U	2 U	1.9 U	1.9 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	1.3 U	0.92 U	0.92 U	0.99 U	0.99 U	0.92 U	0.92 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	1.3 U	0.92 U	0.92 U	0.99 U	0.99 U	0.92 U	0.92 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	2.3 U	0.97	0.34 U	1.8 U	0.94	0.88	1.7 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	2.3 U	1.7	1.7 U	1.8 U	1.4 J	1.3 J	3
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	2.3 U	1.5 J	1.7 U	1.8 U	1.8 U	1.4 J	1.7 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.6 U	0.44 U	0.44 U	0.47 U	0.47 U	0.44 U	0.44 U
M+P-XYLENES	434000	440	nc	19.0	5.8	4 U	2.9 J	1.5 J	25.7	1.5 J	21.5 J	81.5 J
O-XYLENE	434000	440	nc	5.2	2.3	2 U	0.95 J	1.5 U	8.9	1.6 U	7.8 J	29.5 J
TOTAL XYLENES	434000	440	nc	8.1	8.1	0	3.85 J	1.5 J	34.6	1.5 J	29.3	111 J

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 2 OF 9

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-015-A		AIR-018-A IA-018-A-16	AIR-033-B IA-033-B-16	AIR-060-C IA-060-C-16	AIR-063-B IA-063-B-16	AIR-065-C IA-065-C-16
SAMPLE DATE						IA-015-A-16 20140225	IA-015-A-16-D Dup 20140225	20140225	20140224	20140224	20140224	20140224
Volatile Organic Compounds (µg/m³)												
BENZENE	319	16	ca	2.8	2.7	1.2	1.2	0.75	0.87	0.81	0.68 U	0.64
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.1 U	1.6 U	1.1 U	1.2 U	1.1 U	1.3 U	1.1 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	7.5	8.2	2.6	42.6	9.4	6.9	23.9
CHLOROFORM	240,000	5.3	ca	0.48	NA	1.7 U	2.5 U	1.4 J	1.8 U	1.7 U	2.1 U	1.7 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	2.9	3.2	2	3.1	2.4	2.5	2.3
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.4 U	2 U	1.4 U	1.5 U	1.4 U	1.7 U	1.4 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.69 U	1 U	0.71 U	0.74 U	0.71 U	0.86 U	0.69 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	1.4 U	2 U	1.4 U	1.5 U	1.4 U	1.7 U	1.4 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.4 U	2 U	1.4 U	1.5 U	1.4 U	1.7 U	1.4 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.4 U	2 U	1.4 U	1.5 U	1.4 U	1.7 U	1.4 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	0.77 J	2.2 U	1.5 U	1.7	1.5 U	1.8 U	1.5 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.2 U	1.8 U	1.3 U	1.3 U	1.3 U	1.5 U	1.2 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	13.7 J	7.4 J	14.4	12.6	8.1	4.9 J	5.8 J
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	1.8 UJ	2.1 J	2.8	4 J	3.6 J	5.6 U	5.1
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.2 U	1.7 U	1.2 U	1.2 U	1.2 U	1.4 U	1.2 U
TOLUENE	754,000	22,000	nc	24.0	24.0	15.6	16.9	1.7	44.1	3.8	15.1	2.1
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	2.5 UJ	3.8 U	2.6 U	6.8 U	6.6 U	7.9 U	6.3 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	1.9 U	2.8 U	1.9 U	2 U	1.9 U	2.3 U	1.9 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	0.92 U	1.4 U	0.96 U	0.99 U	0.96 U	1.2 U	0.92 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	0.92 U	1.4 U	1	0.99 U	0.96 U	1.2 U	0.92 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	1.7 U	0.5 U	0.35 U	0.36 U	0.35 U	0.42 U	0.34 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	1.7 U	2.5 U	1.7 U	1.4 J	1.7 U	1.1 J	1.7 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	1.7 U	2.5 U	1.7 U	1.8 U	1.7 U	2.1 U	1.7 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.44 U	0.65 U	0.45 U	0.47 U	0.45 U	0.55 U	0.44 U
M+P-XYLENES	434000	440	nc	19.0	5.8	3.3	3.4 J	3.1 U	7.4	2.5 J	2.7 J	3 U
O-XYLENE	434000	440	nc	5.2	2.3	1.3 J	1.4 J	1.5 U	2.5	0.98 J	0.95 J	1.5 U
TOTAL XYLENES	434000	440	nc	8.1	8.1	4.6 J	4.8 J	0	9.9	3.48	3.65 J	0

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 3 OF 9

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-075-A IA-075-A-16	AIR-076-A IA-076-A-16	AIR-079-A IA-079-A-16	AIR-081-A IA-081-A-16	AIR-081-A IA-081-A-16R	AIR-088-C IA-088-C-16	AIR-093-A IA-093-A-16
SAMPLE DATE						20140225	20140225	20140225	20140225	4/17/2014	20140224	20140225
Volatile Organic Compounds (µg/m³)												
BENZENE	319	16	ca	2.8	2.7	15.9	0.96	0.88	1.4	0.44	11.8 U	0.98
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.2 U	1.2 U	1.2 U	1.7 U	0.86 U	23.3 U	1.7 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	3.9	2.9	4.8	36.6	28	7.3 U	4.4
CHLOROFORM	240,000	5.3	ca	0.48	NA	1.9 U	1.9 U	1.9 U	2.6 U	1.3 U	36 U	2.6 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	2.2	2.1	2.4	2.9	2.1	36.7 U	3.1
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	29.8 U	2.1 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.77 U	0.77 U	0.77 U	1.1 U	0.55 U	14.9 U	1.1 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	29.5 U	2.1 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	29.5 U	2.1 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.5 U	1.5 U	1.5 U	2.2 U	1.1 U	29.5 U	2.1 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	0.87 J	0.83 J	1.6 U	36.6	8	32 UJ	2.3 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.4 U	1.4 U	1.4 U	1.9 U	0.98 U	26.5 U	1.9 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	14.7	9.8	12.7	37	1.9 J	33.6 J	14
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	3.6	3.6	2.1	3.7	3.6 U	96.7 UJ	2.8
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.3 U	1.3 U	1.3 U	1.8 U	1.6	25.1 U	1.8 U
TOLUENE	754,000	22,000	nc	24.0	24.0	49.3	54.5	41.8	163	20.4	28 U	3
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	2.8 U	2.8 U	2.8 U	4 U	5.1 U	137 UJ	3.9 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	2.1 U	2.1 U	2.1 U	3 U	0.81 J	40.4 U	2.9 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	1 U	1 U	1 U	1.5 U	0.74 U	20 U	1.4 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	1.6	1.9	1 U	19.2	4.1	20 U	5.9
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	0.37 U	0.37 U	0.37 U	3.6	1.3 U	7.3 UJ	0.52 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	1.9 U	1.9 U	1.9 U	11.7	1.3 U	36.3 UJ	2.6 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	1.9 U	1.9 U	1.9 U	4.9	1.2 J	36.3 UJ	2.6 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.49 U	0.49 U	0.49 U	0.69 U	0.35 U	9.5 U	0.67 U
M+P-XYLENES	434000	440	nc	19.0	5.8	3 J	2.9 J	2.6 J	161	38.2	64 UJ	4.5 U
O-XYLENE	434000	440	nc	5.2	2.3	1.1 J	1.2 J	0.9 J	48.5	11.6	32 UJ	2.3 U
TOTAL XYLENES	434000	440	nc	8.1	8.1	4.1 J	4.1 J	3.5 J	209.5	49.8	0	0

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 4 OF 9

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-093X-A IA-093X-A-16	AIR-094-A IA-094-A-16	AIR-101-B IA-101-B-16	AIR-102-C IA-102-C-16	AIR-105-Z IA-105-Z-16	AIR-108-A IA-108-A-16	AIR-113-C IA-113-C-16
SAMPLE DATE						20140226	20140225	20140224	20140224	20140224	20140225	20140224
Volatile Organic Compounds (µg/m³)												
BENZENE	319	16	ca	2.8	2.7	0.58	0.93	0.65	0.61 J	1.6	0.9	1.9
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	3.4 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	1.4	1.7	18.9	1.8 J	1.4	4	6.5 J
CHLOROFORM	240,000	5.3	ca	0.48	NA	1.7 U	1.7 U	1.9 U	1.9 U	1.8 U	1.8 U	5.3 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	1.9	2.2	2.7	2.6	1.8	2.2	4.7 J
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.4 U	1.4 U	1.5 U	1.6 U	1.5 U	1.5 U	43.7
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.71 U	0.71 U	0.77 U	0.8 U	0.74 U	0.74 U	2.2 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	0.75 J	1.4 U	1.5 U	1.6 U	1.5 U	1.5 U	17.1
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	0.91 J	1.4 U	1.5 U	1.6 U	1.5 U	1.5 U	4.3 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.4 U	1.4 U	1.5 U	1.6 U	1.5 U	1.5 U	4.3 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	1.1 J	1.5 U	1.6 U	1.7 U	113	0.94 J	4.7 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.3 U	1.3 U	1.4 U	1.4 U	1.3 U	1.3 U	3.9 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	6.6	5	11.5	8.6	14.8	8.8	79.7 J
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	1.7 J	2.2	1.3 J	1.1 J	3.2 J	2.2	14.1 U
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	3.7 U
TOLUENE	754,000	22,000	nc	24.0	24.0	1.2 J	1.6	17.1	3.2	9300	43.8	24.7
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	2.6 U	2.6 U	2.8 U	2.9 U	6.8 U	2.7 U	20 UJ
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	0.87 J	1.9 U	2.1 U	2.2 U	2 U	2 U	13.2
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	0.96 U	0.96 U	1 U	1.1 U	0.99 U	0.99 U	2.9 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	8.4	0.96 U	1 U	1.1 U	0.99 U	0.99 U	20
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	0.35 U	0.35 U	0.37 U	0.39 U	0.36 U	0.36 U	1.1 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	1.3 J	1.7 U	1.9 U	1.9 U	1.7 J	1.8 U	3.2 J
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	1.7 U	1.7 U	1.9 U	1.9 U	1.8 U	1.8 U	5.3 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.45 U	0.45 U	0.49 U	0.5 U	0.47 U	0.47 U	1.4 U
M+P-XYLENES	434000	440	nc	19.0	5.8	1.4 J	3.1 U	2.5 J	1.9 J	476	3.4	76.6 J
O-XYLENE	434000	440	nc	5.2	2.3	1.5 U	1.5 U	0.95 J	1.7 U	142	1.3 J	26.6 J
TOTAL XYLENES	434000	440	nc	8.1	8.1	1.4 J	0	3.45 J	1.9 J	618	4.7 J	103.2 J

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 5 OF 9

LOCATION ⁽¹⁾ SAMPLE ID SAMPLE DATE	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	13-C IA-113-C-16-D Dup 20140224	AIR-113-C IA-113-C-16R 4/17/2014	AIR-117-A IA-117-A-16 20140225	AIR-117X-A IA-117X-A-16 20140226	AIR-118-A IA-118-A-16 20140225	AIR-121-B IA-121-B-16 20140224	AIR-123-Z IA-123-Z-16 20140224
Volatile Organic Compounds (µg/m³)												
BENZENE	319	16	ca	2.8	2.7	0.89	0.52 U	0.89	0.44 J	1	0.78	2.3
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.1 U	1 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	3.1 J	4	3.5	1.5	12.4	37.5	1.3
CHLOROFORM	240,000	5.3	ca	0.48	NA	1.7 U	1.6 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	2.1	2.5	2	1.4 J	1.9	1.9	2.1
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.4 U	1.3 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.69 U	0.66 U	0.77 U	0.74 U	0.74 U	0.77 U	0.77 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	1.4 U	1.3 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.4 U	1.3 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.4 U	1.3 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	1.5 U	1.2 J	0.84 J	1.3 J	1.4 J	1.6 U	164
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.2 U	1.2 U	1.4 U	1.3 U	1.3 U	1.4 U	1.4 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	5.1 J	3.1 J	8.9	89.7	8.8	4.5 J	8.7
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	3.2 J	2.1 J	2.2	1.3 J	2.2	3.4 J	5 U
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.2 U	1.6	1.3 U	1.2 U	1.2 U	1.3 U	1.3 U
TOLUENE	754,000	22,000	nc	24.0	24.0	1.3 U	5.1	67.5	15.7	16.5	19.4	20000
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	6.3 U	6.1 U	2.8 U	2.7 U	2.7 U	7 U	7 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	1.9 U	1.8 U	2.1 U	2 U	1.2 J	2.1 U	2.1 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	0.92 U	0.89 U	1 U	0.99 U	0.99 U	1 U	1 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	0.92 U	0.89 U	1 U	0.99 U	5.6	1.1	1 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	0.34 U	1.6 U	0.37 U	0.36 U	0.36 U	0.37 U	0.37 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	0.94 J	1.6 U	1.9 U	1.2 J	1.8 U	1.9 U	1.3 J
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	1.7 U	4 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.44 U	0.42 U	0.49 U	0.47 U	0.47 U	0.49 U	0.49 U
M+P-XYLENES	434000	440	nc	19.0	5.8	3.4 J	2 J	2.7 J	1.9 J	5.6	2.8 J	1030
O-XYLENE	434000	440	nc	5.2	2.3	1.2 J	0.9 J	0.92 J	0.74 J	2	1.1 J	210
TOTAL XYLENES	434000	440	nc	8.1	8.1	4.6 J	2.9	3.62 J	2.64 J	7.6	3.9 J	1240

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 6 OF 9

LOCATION ⁽¹⁾ SAMPLE ID SAMPLE DATE	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-126-C IA-126-C-16 20140224	AIR-128-C IA-128-C-16 20140224	AIR-130-C IA-130-C-16 20140224	AIR-133-C IA-133-C-16 IA-133-C-16-D Dup 20140224		AIR-135-C IA-135-C-16 20140224	AIR-136-A IA-136-A-16 20140225
Volatile Organic Compounds (µg/m ³)												
BENZENE	319	16	ca	2.8	2.7	0.79	0.84	1.3	0.93	0.83	0.8	0.94
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	2	23.2	4	4.4	3.9	2.1	3.3
CHLOROFORM	240,000	5.3	ca	0.48	NA	1.7 U	1.9 U	1.7 U	1.7 U	1.7 U	1.8 U	1.8 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	2.3	2.4	2.4	2.4	2.3	2.3	2.2
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.71 U	0.77 U	0.69 U	0.69 U	0.69 U	0.74 U	0.74 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	1.5 U	1.6 U	1.5 U	1.5 U	1.5 U	1.6 U	0.75 J
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.3 U	1.4 U	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	14.6	14.5	14.1	8.4 J	1.9 J	13.2	7.3
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	3.4 J	3.9 J	3.6 J	3.7 J	3.5 J	4.8 U	2.9
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
TOLUENE	754,000	22,000	nc	24.0	24.0	6	4.3	3.5	2.9	2.4	1.4 U	53.6
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	6.6 U	7 U	6.3 U	6.3 U	6.3 U	6.8 U	2.7 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	1.9 U	2.1 U	1.9 U	1.9 U	1.9 U	2 U	2 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	0.96 U	1 U	0.92 U	0.92 U	0.92 U	0.99 U	0.99 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	0.96 U	1 U	0.92 U	1.2	1.4	0.99 U	4.2
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	0.35 U	0.37 U	0.34 U	0.34 U	0.34 U	0.36 U	0.36 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	1.7 U	1.9 U	1.7 U	1.7 U	1.7 U	1.8 U	1.8 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	1.7 U	1.9 U	1.7 U	1.7 U	1.7 U	1.8 U	1.8 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.45 U	0.49 U	0.44 U	0.44 U	0.44 U	0.47 U	0.47 U
M+P-XYLENES	434000	440	nc	19.0	5.8	3.1 U	2.6 J	1.6 J	2.1 J	1.9 J	3.2 U	2.6 J
O-XYLENE	434000	440	nc	5.2	2.3	1.5 U	1.1 J	1.5 U	0.84 J	1.5 U	1.6 U	0.99 J
TOTAL XYLENES	434000	440	nc	8.1	8.1	0	3.7 J	1.6 J	2.94 J	1.9 J	0	3.59 J

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 7 OF 9

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-138-A IA-138-A-16	AIR-140-B IA-140-B-16	AIR-141-C IA-141-C-16	AIR-142-C IA-142-C-16	AIR-143-C IA-143-C-16	AIR-144-C IA-144-C-16	AIR-145-C IA-145-C-16
SAMPLE DATE						20140225	20140226	20140224	20140224	20140224	20140224	20140224
Volatile Organic Compounds (µg/m³)												
BENZENE	319	16	ca	2.8	2.7	1.1	0.58 U	0.92	0.67	0.81	0.71	3.6
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.7 U	1.2 U	1.1 U	1.2 U	1.2 U	1.2 U	1.4
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	4.8	13.6	7.1	1.9	2.5	18	37.2
CHLOROFORM	240,000	5.3	ca	0.48	NA	2.6 U	1.8 U	1.7 U	1.9 U	1.8 U	1.9 U	1.9 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	3	2.4	3	2	2.4	2	4.8
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	2.1 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	1.1 U	0.74 U	0.71 U	0.77 U	0.74 U	0.77 U	0.77 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	2.1 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	2.1 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	2.1 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	2.3 U	2.1	1.5 U	1.6 U	1.6 U	1.6 U	1.7
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.9 U	1.3 U	1.3 U	1.4 U	1.3 U	1.4 U	1.4 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	17.2	18.3	7.8	3.8 J	6.1 J	6.6	1140
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	3	6.5 J	4.6 U	3.4 J	4.4 J	3.6 J	4.1 J
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.8 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U
TOLUENE	754,000	22,000	nc	24.0	24.0	2.5	84	2.1	1.4 U	1.4 U	3.5	16.2
1,2,4-TRICHLOROETHENE	40,000 ^N	8.8	nc	0.41	NA	3.9 U	2.7 UJ	6.6 U	7 U	6.8 U	7 U	7 U
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	2.9 U	2 U	1.9 U	2.1 U	2 U	2.1 U	2.1 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	1.4 U	0.99 U	0.96 U	1 U	0.99 U	1 U	1 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	1.6	0.99 U	0.96 U	1 U	0.99 U	1 U	1 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	0.52 U	1.8 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	2.6 U	1.8 U	1.7 U	1.9 U	1.2 J	1.9 U	3.4
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	2.6 U	1.8 U	1.7 U	1.9 U	1.8 U	1.9 U	1 J
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.67 U	0.47 U	0.45 U	0.49 U	0.47 U	0.49 U	0.49 U
M+P-XYLENES	434000	440	nc	19.0	5.8	4.5 U	8.1	1.6 J	1.7 J	3.2 U	2.3 J	6.1
O-XYLENE	434000	440	nc	5.2	2.3	2.3 U	2.6	1.5 U	1.6 U	1.6 U	0.88 J	2.3
TOTAL XYLENES	434000	440	nc	8.1	8.1	0	10.7	1.6 J	1.7 J	0	3.18 J	8.4

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 8 OF 9

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m3)	Industrial Air Screening Level (µg/m3)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-146-C IA-146-C-16	AIR-146-VLS IA-146-VLS-2	AIR-147-C IA-147-C-16	AIR-147-VLS		AIR-148-C IA-148-C-16	AIR-148-VLS IA-148-VLS-2
SAMPLE DATE						20140224	20140226	20140224	20140226	IA-147-VLS-2-D Dup 20140226	20140224	20140226
Volatile Organic Compounds (µg/m³)												
BENZENE	319	16	ca	2.8	2.7	0.76	0.66	0.8	2.5 J	0.92 J	0.61	0.98
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	54.2	2.3	18.2	5	4.6	24.4	3.2
CHLOROFORM	240,000	5.3	ca	0.48	NA	1.8 U	1.9 U	1.9 U	1.7 U	1.7 U	1.9 U	1.8 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	2.3	1.9	2.1	1.7 U	2.6	2.7	2.7
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.5 U	1.5 U	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.74 U	0.77 U	0.77 U	0.69 U	0.69 U	0.77 U	0.74 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	1.5 U	1.5 U	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.5 U	1.5 U	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.5 U	1.5 U	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	1.6 U	9.8	1.6 U	12.1	14.7	1.6 U	17.9
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.3 U	1.4 U	1.4 U	1.2 U	1.2 U	1.4 U	1.3 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	6.7	6.8	19.1	483 J	11.7 J	11	21.9
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	3.7 J	1.4 J	4.9 J	71 J	1.8 UJ	1.2 J	1.9 UJ
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.3 U	1.2 U
TOLUENE	754,000	22,000	nc	24.0	24.0	2.5	10	5.4	120 J	18.9 J	2.9	17.4
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	6.8 U	2.8 U	7 U	2.5 UJ	2.5 UJ	2.8 U	2.7 UJ
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	2 U	2.1 U	2.1 U	1.9 U	1.9 U	2.1 U	2 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	0.99 U	1 U	1 U	0.92 U	0.92 U	1 U	0.99 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	0.99 U	1 U	1 U	0.92 U	0.92 U	1 U	0.99 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	0.36 U	1.4	0.37 U	1.3 J	1.6 J	0.37 U	1.8 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	1.8 U	2.6	1.9 U	4.1	4.9	1.9 U	2.9
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	1.8 U	1.9 J	1.9 U	1.8	1.7 U	1.9 U	1.8 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.47 U	0.49 U	0.49 U	0.44 U	0.44 U	0.49 U	0.47 U
M+P-XYLENES	434000	440	nc	19.0	5.8	2.3 J	26.1	2.7 J	31.9	38.5	2.3 J	47.9
O-XYLENE	434000	440	nc	5.2	2.3	0.88 J	6.8	1.1 J	8.5	10.3	0.93 J	12
TOTAL XYLENES	434000	440	nc	8.1	8.1	3.18 J	32.9	3.8 J	40.4	48.8	3.23 J	59.9

TABLE E-1

COMPARISON OF ROUND 16 IAQ RESULTS TO BACKGROUND CONCENTRATIONS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND
PAGE 9 OF 9

LOCATION ⁽¹⁾ SAMPLE ID	OSHA PEL (µg/m ³)	Industrial Air Screening Level (µg/m ³)	KEY	Maximum Background Value - All Rounds	Maximum Background Value - Round 16	AIR-149-VLS IA-149-VLS-2	AIR-150-VLS IA-150-VLS-2	AIR-151-VLS IA-151-VLS-2	AIR-152-VLS IA-152-VLS-2
SAMPLE DATE						20140226	20140226	20140226	20140226
Volatile Organic Compounds (µg/m³)									
BENZENE	319	16	ca	2.8	2.7	0.66	0.67	0.75	0.83
CARBON TETRACHLORIDE	62,900	20	ca	0.8	NA	1.2 U	1.2 U	1.1 U	1.2 U
CHLORODIFLUOROMETHANE	3,590,000	220,000	nc	10.8	10.8	2	2.1	2.7	3.8
CHLOROFORM	240,000	5.3	ca	0.48	NA	1.8 U	1.8 U	1.7 U	1.8 U
DICHLORODIFLUOROMETHANE	4,950,000	440	nc	4.3	3.4	1.8	1.9	2.4	2.6
1,1-DICHLOROETHANE	400,000	77	ca	NA	NA	1.5 U	1.5 U	1.4 U	1.5 U
1,2-DICHLOROETHANE	400,000	4.7	ca	1.1	NA	0.74 U	0.74 U	0.69 U	0.74 U
1,1-DICHLOROETHENE	--	880	nc	NA	NA	1.5 U	1.5 U	1.4 U	1.5 U
CIS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.5 U	1.5 U	1.4 U	1.5 U
TRANS-1,2-DICHLOROETHENE	790,000	--	--	NA	NA	1.5 U	1.5 U	1.4 U	1.5 U
ETHYLBENZENE	435,000	49	ca	2.6	2.6	10.5	12.8	1.5 U	1.6 U
METHYL TERT-BUTYL ETHER	180,000 ^A	470	ca	0.7	NA	1.3 U	1.3 U	1.2 U	1.3 U
METHYLENE CHLORIDE	87,000	2,600	nc	580	580	11.7	11.8	7.3	19.3
NAPHTHALENE	50,000	3.6	ca	8.1	3.5	1.3 J	1.3 J	1.8 UJ	1.9 UJ
TETRACHLOROETHENE	678,000	180	nc	1.9	1.9	1.2 U	1.2 U	1.2 U	1.2 U
TOLUENE	754,000	22,000	nc	24.0	24.0	9.5	11.2	5	4.4
1,2,4-TRICHLOROBENZENE	40,000 ^N	8.8	nc	0.41	NA	2.7 U	2.7 U	2.5 UJ	2.7 UJ
1,1,1-TRICHLOROETHANE	1,900,000	22,000	nc	0.95	NA	2 U	2 U	1.9 U	2 U
1,1,2-TRICHLOROETHANE	45,000	0.88	nc	NA	NA	0.99 U	0.99 U	0.92 U	0.99 U
TRICHLOROETHENE	537,000	8.8	nc	4.2	4.2	0.99 U	0.99 U	0.92 U	0.99 U
1,2,3-TRIMETHYLBENZENE	123,000	22	nc	1.4	1.4	1.4	1.4	1.7 U	1.8 U
1,2,4-TRIMETHYLBENZENE	123,000	31	nc	2.8	2.8	2.5	2.7	1.7 U	1.8 U
1,3,5-TRIMETHYLBENZENE	123,000	22	nc ⁽²⁾	1.9	1.7	1.9	1.9	1.7 U	1.8 U
VINYL CHLORIDE	21,560	28	ca	NA	NA	0.47 U	0.47 U	0.44 U	0.47 U
M+P-XYLENES	434000	440	nc	19.0	5.8	27.4	32.2	3 U	3.2 U
O-XYLENE	434000	440	nc	5.2	2.3	7.3	8.8	1.5 U	1.6 U
TOTAL XYLENES	434000	440	nc	8.1	8.1	34.7	41	0	0

Concentrations exceeding the maximum background value from all rounds are italicized and shaded light gray.
Concentrations exceeding the maximum background value from Round 16 are bolded and shaded dark gray.
Concentrations exceeding both the maximum background value from all rounds and the maximum background value from Round 16 are bolded with white font and shaded black.

-- = not available

J = estimated value

NA = not applicable/not available

U = not detected

USEPA = United States Environmental Protection Agency

TOTAL XYLENES values are calculated.

ca = screening value based on 1x 10⁻⁹ carcinogenic risk

nc = screening value based on noncarcinogenic hazard index = 1

A = American Council of Governmental Industrial Hygienists Theshold Limit Value

N = National Institute for Occupational Safety and Health Recommended Exposure Limit

OSHA PEL = Occupational Safety and Health Administration Pmissible Exposure Limit

Screening Levels for Chemical Contaminants at Superfund

Sites May-2014

(1) Locations AIR-081-A and AIR-113-C were resampled in April 2014 (IA-081-A-16R and IA-113-C-16R, respectively). The February 2014 trichloroethene concentrations greater than screening criteria were not confirmed in these April 2014 resamples.

(2) Value is for 1,2,3-trimethylbenzene.

APPENDIX F—HISTORICAL DATA TABLES AND PLOTS

location_id	former location id	Site	Area	bldg	area	sample types
AIR-001-C	SV-01-C/IAQ-C01		CBS	C	basement	IAQ/SV
AIR-002-C	SV-02-C		CBS	C	first floor	SV
AIR-003-C	SV-03-C		CBS	C	first floor	SV
AIR-004-C	SV-04-C/C-8		CBS	C	basement	IAQ/SV
AIR-005-C	SV-05-C/IAQ-C02		CBS	C	basement	IAQ/SV
AIR-006-C	SV-06-C		CBS	C	first floor	SV
AIR-007-C	SV-07-C/IAQ-C03		CBS	C	basement	IAQ/SV
AIR-008-C	SV-08-C		CBS	C	first floor	SV
AIR-009-C	SV-09-C/IAQ-C04		CBS	C	basement	IAQ/SV
AIR-010-C	SV-10-C		CBS	C	basement	SV
AIR-011-A	SV-11-A		APS	A	first floor	SV
AIR-012-A	SV-12-A		APS	A	first floor	SV
AIR-013-A	SV-13-A/A-6		APS	A	first floor	SV
AIR-014-A	SV-14-A		APS	A	first floor	SV
AIR-015-A	SV-15-A/IAQ-A05		APS	A	first floor	IAQ/SV
AIR-016-A	SV-16-A/IAQ-A17		APS	A	first floor	IAQ/SV
AIR-017-A	SV-17-A/IAQ-A07		APS	A	first floor	IAQ/SV
AIR-018-A	SV-18-A/IAQ-A06		APS	A	basement	IAQ/SV
AIR-019-A	A-1		AN	A	first floor	IAQ
AIR-020-A	A-2		AN	A	first floor	IAQ
AIR-021-A	A-3		AC	A	first floor	IAQ
AIR-022-A	A-4		AC	A	first floor	IAQ
AIR-023-A	A-5		AC	A	first floor	IAQ
AIR-024-A	A-7		APS	A	first floor	IAQ
AIR-024-AX	A-7-b		APS	A	first floor	IAQ
AIR-025-A	A-8		APS	A	first floor	IAQ
AIR-026-A	A-9		APS	A	basement	IAQ
AIR-027-A	A-10		AS	A	first floor	IAQ
AIR-028-A	A-11		AS	A	first floor	IAQ
AIR-029-B	B-1		BN	B	first floor	IAQ
AIR-030-B	B-2		BN	B	first floor	IAQ
AIR-030-BX	B-2-b		BN	B	first floor	IAQ
AIR-031-B	B-3		BC	B	first floor	IAQ
AIR-032-B	B-4		BC	B	first floor	IAQ
AIR-032-BX	B-4-b		BC	B	first floor	IAQ
AIR-033-B	SV-B-1/IAQ-B06/B-5		BBN	B	basement	IAQ/SV
AIR-034-B	ISG-05-B/IAQ-B09/B-6		BUS	B	basement	IAQ/SV
AIR-035-C	ISG-12-C/IAQ-C13/C-1		CBN	C	basement	IAQ/SV
AIR-035-CX	C-1-b		CBN	C	basement	IAQ
AIR-036-C	C-2		CN	C	first floor	IAQ
AIR-036-CX	C-2-b		CN	C	first floor	IAQ
AIR-036-CXX	C-2-c		CN	C	first floor	IAQ
AIR-037-C	C-3		CN	C	first floor	IAQ
AIR-037-CX	C-3-b		CN	C	first floor	IAQ
AIR-038-C	C-4		CC	C	first floor	IAQ
AIR-039-C	C-5		CS	C	first floor	IAQ
AIR-040-C	C-6		CS	C	first floor	IAQ
AIR-041-C	C-7		CS	C	first floor	IAQ
AIR-041-CX	C-7-b		CS	C	first floor	IAQ
AIR-042-C	C-9		CBS	C	basement	IAQ
AIR-043-B	SV-B-4/IAQ-B12/TOO-1		BS	B	first floor	IAQ/SV
AIR-044-C	ISG-03-C/IAQ-C05/TOO-2		CBS	C	basement	IAQ/SV
AIR-045-B	ISG-06-B/IAQ-B07/TOO-3		BUC	B	basement	IAQ/SV
AIR-046-A	TOO-4		APS	A	first floor	IAQ

location_id	former location id	Site	Area	bldg	area	sample types
AIR-046-AX	TOO-4-b		APS	A	first floor	IAQ
AIR-047-A	TOO-5		APS	A	first floor	IAQ
AIR-048-B	TOO-6		BC	B	first floor	IAQ
AIR-049-B	TOO-7		BC	B	first floor	IAQ
AIR-050-C	ISG-14-C/IAQ-C10/TOO-8		CBC	C	basement	IAQ/SV
AIR-051-C	ISG-13-C/IAQ-C11/TOO-9		CBN	C	basement	IAQ/SV
AIR-052-B	TOO-10		BBN	B	basement	IAQ
AIR-053-B	TOO-11		BBN	B	basement	IAQ
AIR-054-Z	TOO-6-2			Z		
AIR-055-Z	TOO-7-2			Z		
AIR-056-Z	TOO-12			Z		
AIR-057-B	ISG-04-B/IAQ-B10/TOO-13		BUS	B	basement	IAQ/SV
AIR-058-C	TOO-14		CBS	C	basement	IAQ
AIR-059-C	TOO-15		CBC	C	basement	IAQ
AIR-060-C	SV-C-3/IAQ-C09/TOO-16		CBC	C	basement	IAQ/SV
AIR-060-CX	TOO-16-b		CBC	C	basement	IAQ
AIR-061-B	ISG-07-B/IAQ-B03/TOO-17		BUN	B	basement	IAQ/SV
AIR-062-B	TOO-18		BBN	B	basement	IAQ
AIR-063-B	ISG-09-B/IAQ-B01/TOO-19		BBN	B	basement	IAQ/SV
AIR-064-B	ISG-10-B/IAQ-B02/TOO-20		BBN	B	basement	IAQ/SV
AIR-065-C	ISG-11-C/IAQ-C15/TOO-21		CBN	C	basement	IAQ/SV
AIR-066-C	TOO-22		CC	C	first floor	IAQ
AIR-067-C	TOO-23		CBS	C	first floor	IAQ
AIR-068-B	TOO-24		BC	B	first floor	IAQ
AIR-069-B	TOO-25		BN	B	first floor	IAQ
AIR-070-A	TOO-26		AC	A	first floor	IAQ
AIR-071-A	TOO-27		AC	A	first floor	IAQ
AIR-072-A	TOO-28		AC	A	first floor	IAQ
AIR-073-A	TOO-29		AS	A	first floor	IAQ
AIR-074-A	SV-A-1/IAQ-A01		AN	A	first floor	IAQ/SV
AIR-075-A	SV-A-2/IAQ-A10		AN	A	first floor	IAQ/SV
AIR-076-A	SV-A-3/IAQ-A11		AN	A	first floor	IAQ/SV
AIR-077-A	SV-A-4/IAQ-A02		AC	A	first floor	IAQ/SV
AIR-078-A	SV-A-5/IAQ-A03		AC	A	first floor	IAQ/SV
AIR-079-A	SV-A-6/IAQ-A04		AC	A	first floor	IAQ/SV
AIR-080-A	SV-A-7/IAQ-A08		AS	A	first floor	IAQ/SV
AIR-081-A	SV-A-8/IAQ-A09		AS	A	first floor	IAQ/SV
AIR-082-B	SV-B-2/IAQ-B04		BBN	B	basement	IAQ/SV
AIR-083-B	SV-B-3/IAQ-B05		BUC	B	basement	IAQ/SV
AIR-084-B	SV-B-5/IAQ-B08		BUS	B	basement	IAQ/SV
AIR-085-B	SV-B-6/IAQ-B13		BS	B	first floor	IAQ/SV
AIR-086-C	SV-C-1/IAQ-C14		CBN	C	basement	IAQ/SV
AIR-087-C	SV-C-2/IAQ-C08		CBC	C	basement	IAQ/SV
AIR-088-C	SV-C-4/IAQ-C07		CBC	C	basement	IAQ/SV
AIR-089-C	SV-C-5/IAQ-C06		CBS	C	basement	IAQ/SV
AIR-090-C	SV-C-6/IAQ-C16		CBS	C	basement	IAQ/SV
AIR-091-C	SV-C-7/IAQ-C12		CBN	C	basement	IAQ/SV
AIR-092-B	ISG-08-B/IAQ-GG6		BBN	B	basement	IAQ/SV
AIR-093-A	SV-19-A/IAQ-A12		ABS	A	basement	IAQ/SV
AIR-094-A	SV-20-A/IAQ-A13		ABN	A	basement	IAQ/SV
AIR-095-A	SV-21-A/IAQ-A14		AN	A	first floor	IAQ/SV
AIR-096-A	SV-22-A/IAQ-A15		AC	A	first floor	IAQ/SV
AIR-097-A	SV-23-A/IAQ-A16		AC	A	first floor	IAQ/SV
AIR-098-B	SV-24-B/IAQ-B14		BS	B	first floor	IAQ/SV

location_id	former location id	Site	Area	bldg	area	sample types
AIR-099-B	SV-25-B/IAQ-B15		BS	B	first floor	IAQ/SV
AIR-100-B	SV-26-B/IAQ-B16		BC	B	first floor	IAQ/SV
AIR-101-B	SV-27-B/IAQ-B17		BC	B	first floor	IAQ/SV
AIR-102-C	SV-28-C/IAQ-C17		CBC	C	basement	IAQ/SV
AIR-103-C	SV-29-C/IAQ-C18		CBN	C	basement	IAQ/SV
AIR-104-C	ISG-01-C/IAQ-C19		CBS	C	basement	IAQ/SV
AIR-105-Z	SV-30-FC/IAQ-FC-30		FC	Z	first floor	IAQ/SV
AIR-106-A	SV-31-A/IAQ-A31		AC	A	first floor	IAQ/SV
AIR-107-A	SV-32-A/IAQ-A32		AC	A	first floor	IAQ/SV
AIR-108-A	SV-33-A/IAQ-A33		APS	A	first floor	IAQ/SV
AIR-109-A	SV-34-A/IAQ-A34		ABC	A	basement	IAQ/SV
AIR-110-A	SV-35-A/IAQ-A35		ABC	A	basement	IAQ/SV
AIR-111-C	SV-36-C/IAQ-C36		CBC	C	basement	IAQ/SV
AIR-112-C	SV-37-C/IAQ-C37		CBS	C	basement	IAQ/SV
AIR-113-C	SV-38-C/IAQ-C38		CBC	C	basement	IAQ/SV
AIR-114-C	SV-39-C/IAQ-C39		CBS	C	basement	IAQ/SV
AIR-115-C	SV-40-C/IAQ-C40		CBC	C	basement	IAQ/SV
AIR-116-A			ABC	A	basement	IAQ/SV
AIR-117-A			AC	A	first floor	IAQ/SV
AIR-118-A			APS	A	first floor	IAQ/SV
AIR-119-A			AC	A	first floor	IAQ/SV
AIR-120-A			AC	A	first floor	IAQ/SV
AIR-121-B			BC	B	first floor	IAQ/SV
AIR-122-B			BS	B	first floor	IAQ/SV
AIR-123-Z			FC	Z	first floor	IAQ/SV
AIR-124-C			CBN	C	basement	IAQ/SV
AIR-125-C			CBN	C	basement	IAQ/SV
AIR-126-C			CBN	C	basement	IAQ/SV
AIR-127-C			CBC	C	basement	IAQ/SV
AIR-128-C			CBC	C	basement	IAQ/SV
AIR-129-C			CBC	C	basement	IAQ/SV
AIR-130-C			CBC	C	basement	IAQ/SV
AIR-131-C			CBC	C	basement	IAQ/SV
AIR-132-C			CBC	C	basement	IAQ/SV
AIR-133-C			CBC	C	basement	IAQ/SV
AIR-134-C			CBC	C	basement	IAQ/SV
AIR-135-C			CBC	C	basement	IAQ/SV
AIR-BCK-1	BCK-1				northwest	IAQ
AIR-BCK-2	BCK-2				southwest	IAQ
AIR-BCK-3	BCK-3				southeast	IAQ
AIR-BCK-4	BCK-4				northeast	IAQ
AIR-VLS-1	VLS-1			VLS	first floor	IAQ
AIR-VLS-2	VLS-2			VLS	first floor	IAQ
AIR-VLS-3	VLS-3			VLS	first floor	IAQ
AIR-VLS-4	VLS-4			VLS	first floor	IAQ
AIR-VLS-5	VLS-5			VLS	first floor	IAQ
AIR-VLS-6	VLS-6			VLS	first floor	IAQ
AIR-VLS-7	VLS-7			VLS	first floor	IAQ
AIR-VLS-8	VLS-8			VLS	first floor	IAQ

TABLE F-1

DESCRIPTIVE STATISTICS OF IAQ RESULTS, ALL BUILDINGS, ALL SAMPLING ROUNDS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

PARAMETER	FREQUENCY OF DETECTION ⁽¹⁾	MINIMUM DETECTED VALUE ⁽¹⁾	MAXIMUM DETECTED VALUE ⁽¹⁾	LOCATION OF MAXIMUM DETECTED VALUE	SAMPLE OF MAXIMUM DETECTED VALUE	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	AVERAGE OF DETECTED VALUES ⁽¹⁾	AVERAGE OF ALL VALUES ⁽¹⁾	STANDARD DEVIATION ⁽¹⁾	AVERAGE OF DETECTED BACKGROUND VALUES	MAXIMUM BACKGROUND VALUE	NUMBER OF EXCEEDANCES - MAXIMUM BACKGROUND VALUE ⁽¹⁾	ADJUSTED USEPA RSL INDUSTRIAL AIR ⁽²⁾	NUMBER OF EXCEEDANCES ⁽¹⁾	OSHA PEL ⁽³⁾	NUMBER OF EXCEEDANCES ⁽¹⁾		
Volatile organic compounds (µg/m ³)																			
1,1,1-TRICHLOROETHANE	114/358	0.069	J	13.2		AIR-113-C	IA-113-C-16	0.065	40.4	0.90	0.66	1.5	0.21	0.95	32	22000 N	0	1900000	0
1,1,2-TRICHLOROETHANE	4/358	0.0925		0.6	J	AIR-115-C	115-C-IA-R11	0.11	20	0.33	0.38	0.96	ND	0	0	0.88 N ⁽⁴⁾	0	45000	0
1,1-DICHLOROETHANE	38/644	0.042	J	43.7		AIR-113-C	IA-113-C-16	0.04	29.8	2.4	0.47	2.0	ND	0	0	77 C	0	400000	0
1,1-DICHLOROETHENE	67/471	0.052	J	62		AIR-117-A	IA-117-A-15	0.052	29.5	1.9	0.50	3.0	ND	0	0	880 N	0	NC	NC
1,2,3-TRIMETHYLBENZENE	52/245	0.445		4	J	AIR-133-C	IAQ-133-C-13	0.18	64	1.3	1.0	3.2	1.5	1.5	14	22 N	0	123000	0
1,2,4-TRICHLOROBEZENE	10/644	0.36	J	1.7	J	AIR-007-C	007-C-IA-R06	0.29	150	1.1	1.3	4.6	0.41	0.41	9	8.8 N	0	40000	0
1,2,4-TRIMETHYLBENZENE	170/245	0.12	J	26	J	AIR-133-C	IAQ-133-C-13	0.12	36.3	1.6	1.5	2.1	1.8	2.8	27	31 N	0	123000	0
1,2-DICHLOROETHANE	93/471	0.06775		8		AIR-076-A	076-A-IA-R11	0.077	14.9	0.66	0.34	0.79	0.34	1.1	12	4.7 C	2	400000	0
1,3,5-TRIMETHYLBENZENE	77/245	0.1175		10	J	AIR-133-C	IAQ-133-C-13	0.13	36.3	1.2	0.84	1.7	1.5	1.9	17	22 N ⁽⁵⁾	0	123000	0
BENZENE	571/644	0.13	J	16.2		AIR-029-B	029-B-IA-R02	0.13	13	0.97	0.98	1.2	0.87	2.8	13	16 C	1	319	0
CARBON TETRACHLORIDE	389/644	0.19	J	8		AIR-143-C	IA-143-C-15	0.19	25	0.61	0.72	0.95	0.56	0.8	36	20 C	0	62900	0
CHLORODIFLUOROMETHANE	252/278	0.93		1700		AIR-001-C	IA001-C-12	0.18	8.7	39.9	36.3	136	2.4	4.7	150	220000 N	0	3590000	0
CHLOROFORM	318/644	0.076	J	4.1		AIR-094-A	094-A-IA-R09	0.073	36	0.53	0.61	1.0	0.14	0.48	146	5.3 C	0	240000	0
CIS-1,2-DICHLOROETHENE	59/644	0.098	J	9.5		AIR-001-C	001-C-IA-R06	0.095	29.5	1.1	0.46	1.1	0.56	0.56	27	NC	NC	790000	0
DICHLORODIFLUOROMETHANE	603/644	0.55	J	9.5		AIR-052-B	052-B-IA-R04	0.2	36.7	2.5	2.5	1.1	2.5	3.7	20	440 N	0	4950000	0
ETHYLBENZENE	552/644	0.13	J	164		AIR-123-Z	IA-123-Z-16	0.12	32	3.7	3.3	11.5	0.74	2.6	136	49 C	8	435000	0
M+P-XYLENES	365/386	0.25	J	1030		AIR-123-Z	IA-123-Z-16	0.22	64	14.0	13.4	61.2	2.4	19	45	440 N ⁽⁷⁾	2	434000	0
METHYL TERT-BUTYL ETHER	65/644	0.25	J	11		AIR-109-A	109-A-IA-R11	0.24	72	1.0	0.71	2.2	0.53	0.7	12	470 C	0	180000	0
METHYLENE CHLORIDE	271/471	0.335		1140		AIR-145-C	IA-145-C-16	0.14	21	14.9	9.1	56.7	30.0	580	2	2600 N ⁽⁴⁾	0	87000	0
NAPHTHALENE	272/471	0.1775		71	J	AIR-147-VLS	IA-147-VLS-2	0.19	96.7	1.7	1.4	3.2	1.4	8.1	3	3.6 C	30	50000	0
O-XYLENE	336/386	0.13	J	210		AIR-123-Z	IA-123-Z-16	0.1	32	4.4	3.9	14.6	1.0	5.2	52	440 N	0	434000	0
TETRACHLOROETHENE	292/644	0.11	J	82		AIR-045-B	045-B-IA-R04	0.11	27	1.5	1.1	3.91	0.45	1.9	31	180 N ⁽⁴⁾	0	678000	0
TOLUENE	632/644	0.53		20000		AIR-123-Z	IA-123-Z-16	0.3	28	142	139	944	2.6	24	289	22000 N	0	754000	0
TOTAL XYLENES	232/258	0.25	J	740		AIR-015-A	IA015-A-12	0.1	6.5	18.7	17.0	64.8	2.6	8.1	71	440 N	2	435000	0
TRANS-1,2-DICHLOROETHENE	18/644	0.1	J	70.1	J	AIR-003-ER	IA-003-ER-1-D	0.079	29.5	4.2	0.48	2.1	ND	0	0	NC	NC	790000	0
TRICHLOROETHENE	353/644	0.077	J	36		AIR-051-C	051-C-IA-R03-D	0.075	20	1.5	1.0	2.3	11.5	4.2	37	8.8 N ⁽⁴⁾	7	537000	0
VINYL CHLORIDE	9/644	0.065		0.39		AIR-063-B	IA-063-B-15	0.074	12	0.23	0.24	0.50	ND	0	0	28 C	0	21560	0
Tentatively identified compounds (µg/m ³)																			
CHLORODIFLUOROMETHANE	23/23	0.29	NJ	57	NJ	AIR-103-C	103-C-IA-R11	--	--	16.6	16.6	17.2	2.4	10.8	110	220000 N	0	3590000	0

A bolded chemical name indicates that the chemical exceeds the industrial air RSL based on an HQ of 0.1 or an ILCR of 1E-06 and background. A bolded/shaded chemical name indicates that the chemical exceeds the industrial air RSL based on an HQ of 1 or an ILCR of 1E-05 and background.

Footnotes:

- 1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations. Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
- 2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2014. RSLs for carcinogens are adjusted to represent a lifetime cancer risk of 1E-05. RSLs for noncarcinogens were not adjusted and are based on hazard quotient (HQ) of 1.
- 3 - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL).
- 4 - One-tenth the noncarcinogenic value is less than the carcinogenic value; therefore, the noncarcinogenic value is presented.
- 5 - The value for 1,2,3-trimethylbenzene is presented for 1,3,5-trimethylbenzene.
- 6 - The value for m-xylene and p-xylene is presented for m+p-xylenes.

Definitions:

- C = Carcinogen
- HQ = hazard quotient
- ILCR = Incremental lifetime cancer risk
- J = Estimated value.
- N = Noncarcinogen
- NA = Not applicable/not available
- NC = No criterion available
- ND = Not detected
- RSL = Regional Screening Level

TABLE F-2

DESCRIPTIVE STATISTICS OF SV RESULTS, ALL BUILDINGS, ALL SAMPLING ROUNDS
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

PARAMETER	FREQUENCY OF DETECTION ⁽¹⁾	MINIMUM DETECTED VALUE ⁽¹⁾		MAXIMUM DETECTED VALUE ⁽¹⁾		LOCATION OF MAXIMUM DETECTED VALUE	SAMPLE OF MAXIMUM DETECTED VALUE	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	AVERAGE OF DETECTED VALUES ⁽¹⁾	AVERAGE OF ALL VALUES ⁽¹⁾	STANDARD DEVIATION ⁽¹⁾	USEPA RSL - INDUSTRIAL AIR DIVIDED BY 0.03 ⁽²⁾	NUMBER OF EXCEEDANCES ⁽¹⁾
Volatile organic compounds (µg/m ³)														
1,1,1-TRICHLOROETHANE	175/323	0.094	J	2200		AIR-102-C	SV-102-C-15	0.065	360	147.9	81.3	268	733333 N	0
1,1,2-TRICHLOROETHANE	5/323	2		11		AIR-018-A	018-A-SV-RS-R11	0.11	620	4.7	3.6	22.4	29.3 N ⁽³⁾	0
1,1-DICHLOROETHANE	188/456	0.05	J	78600		AIR-018-A	018-A-SV-R02	0.04	2388	1207	502	4229	2567 C	20
1,1-DICHLOROETHENE	174/456	0.064	J	130000		AIR-018-A	018-A-SV-RS-R11	0.052	280	4418	1687	9823	29333 N	11
1,2,3-TRIMETHYLBENZENE	131/211	0.345		4140		AIR-081-A	SV-081-A-16	0.18	1400	97.4	69.5	394	733 N	3
1,2,4-TRICHLOROBENZENE	10/474	0.36	J	18		AIR-075-A	SV-075-A-15	0.29	118773	3.2	113	1480	293 N	0
1,2,4-TRIMETHYLBENZENE	168/211	0.4825		7200		AIR-081-A	SV-081-A-15	0.23	420	149	121	740	1033 N	4
1,2-DICHLOROETHANE	58/438	0.082	J	750		AIR-018-A	018-A-SV-R09	0.077	420	16.4	4.1	38.1	157 C	1
1,3,5-TRIMETHYLBENZENE	132/211	0.545		3500		AIR-081-A	SV-081-A-16	0.18	440	64.6	43.3	279	733 N ⁽⁴⁾	3
BENZENE	335/474	0.09	J	24000	J	AIR-018-A	018-A-SV-R08	0.073	10542	44.2	42.3	575	533 C	1
CARBON TETRACHLORIDE	216/474	0.14	J	430		AIR-063-B	063-B-SV-R06	0.26	20758	7.4	25.8	259	667 C	0
CHLORODIFLUOROMETHANE	184/244	0.645		1500		AIR-133-C	SV133-C-12	0.18	1100	31.2	26.9	111	7333333 N	0
CHLOROFORM	377/474	0.087	J	680		AIR-136-A	SV-136-A-14	0.15	16115	25.5	36.5	208	177 C	12
CIS-1,2-DICHLOROETHENE	230/474	0.09375		1550000		AIR-001-C	001-C-SV-R02	0.095	520	23344	11329	88324	8667 N ⁽⁵⁾	29
DICHLORODIFLUOROMETHANE	380/474	0.25	J	150	J	AIR-018-A	018-A-SV-R08	0.2	16318	5.4	23.4	204	14667 N	0
ETHYLBENZENE	363/474	0.13	J	8100	J	AIR-018-A	018-A-SV-R08	0.12	14334	85.8	81.8	402	1633 C	6
M+P-XYLENES ⁽⁶⁾	275/293	0.24	J	31000		AIR-107-A	107-A-SV-R11	0.22	14334	502	493	2674	14667 N ⁽⁶⁾	4
METHYL TERT-BUTYL ETHER	41/474	0.2325		4050	J	AIR-010-C	010-C-SV-R00	0.24	57685	350	87.1	754	15667 C	0
METHYLENE CHLORIDE	166/438	0.335		13000	J	AIR-133-C	SV-133-C-13-D	0.14	1900	78.8	37.6	347	86667 N ⁽³⁾	0
NAPHTHALENE	358/434	0.2	J	4800	J	AIR-102-C	102-C-SV-R11	0.19	650	181	151	418	120 C	114
O-XYLENE	267/293	0.095		12000		AIR-107-A	107-A-SV-R11	0.1	14334	182	187	926	14667 N	0
TETRACHLOROETHENE	325/474	0.11	J	4470		AIR-018-A	018-A-SV-R02	0.27	22378	56.1	59.6	370	6000 N ⁽³⁾	0
TOLUENE	447/474	0.12	J	10000		AIR-050-C	050-C-SV-R06	0.4	12436	105	112	592	733333 N	0
TOTAL XYLENES	140/181	0.9	J	12000		AIR-102-C	SV-102-C-13	1	1300	363	295	1060	14667 N	0
TRANS-1,2-DICHLOROETHENE	150/474	0.17	J	5930		AIR-001-C	001-C-SV-R02	0.079	13084	373	127	627	8667 N	0
TRICHLOROETHENE	435/474	0.06175		6200000		AIR-018-A	018-A-SV-R02	0.075	22.2	30137	27658	302242	293 N ⁽³⁾	156
VINYL CHLORIDE	81/474	0.078	J	110000		AIR-126-C	SV-126-C-13	0.074	8436	3210	557	5946	933 C	9

A bolded chemical name indicates that the chemical exceeds the industrial air RSL divided by 0.03 based on an HQ of 0.1 or an ILCR of 1E-06. A bolded/shaded chemical name indicates that the chemical exceeds the industrial air RSL divided by 0.03 based on an HQ of 1 or an ILCR of 1E-05.

Footnotes:

- 1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations. Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
- 2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, November 2013, divided by an attenuation factor of 0.03. RSLs for carcinogens were adjusted to be based on a lifetime cancer risk of 1E-05. RSLs for noncarcinogens were not adjusted and represent a hazard quotient (HQ) of 1.
- 3 - One-tenth the noncarcinogenic value is less than the carcinogenic value; therefore, the noncarcinogenic value is presented.
- 4 - The value for 1,2,3-trimethylbenzene is presented for 1,3,5-trimethylbenzene.
- 5 - The value for trans-1,2-dichloroethene is presented for cis-1,2-dichloroethene.
- 6 - The value for m-xylene and p-xylene is presented for m+p-xylenes.

Definitions:

C = Carcinogen
HQ = hazard quotient
ILCR = Incremental lifetime cancer risk
J = Estimated value
N = Noncarcinogen
RSL = Regional Screening Level

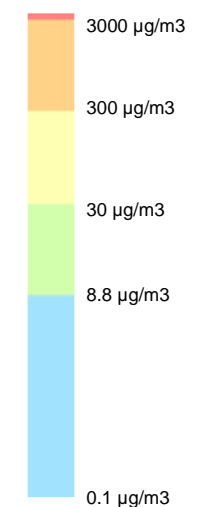


Figure F-1
Trichloroethene
Isocontours for Indoor Air - February 2014
Building A, B, and C
Lockheed Martin Middle River Complex
Middle River, Maryland

Legend

Indoor Air Sample Location
 $\mu\text{g}/\text{m}^3$

- \bullet < 8.8
- \bullet 8.8 - 30
- \bullet 30 - 300
- \bullet 300 - 3000
- \bullet > 3000



The current MDE screening level is 8.8 $\mu\text{g}/\text{m}^3$.
The concentration circle sizes are approximate.

Drawn By: S. PAXTON 06/17/14
Checked By: R. KOTUN 07/14/14
Approved By:

Contract Number: 112IC04792

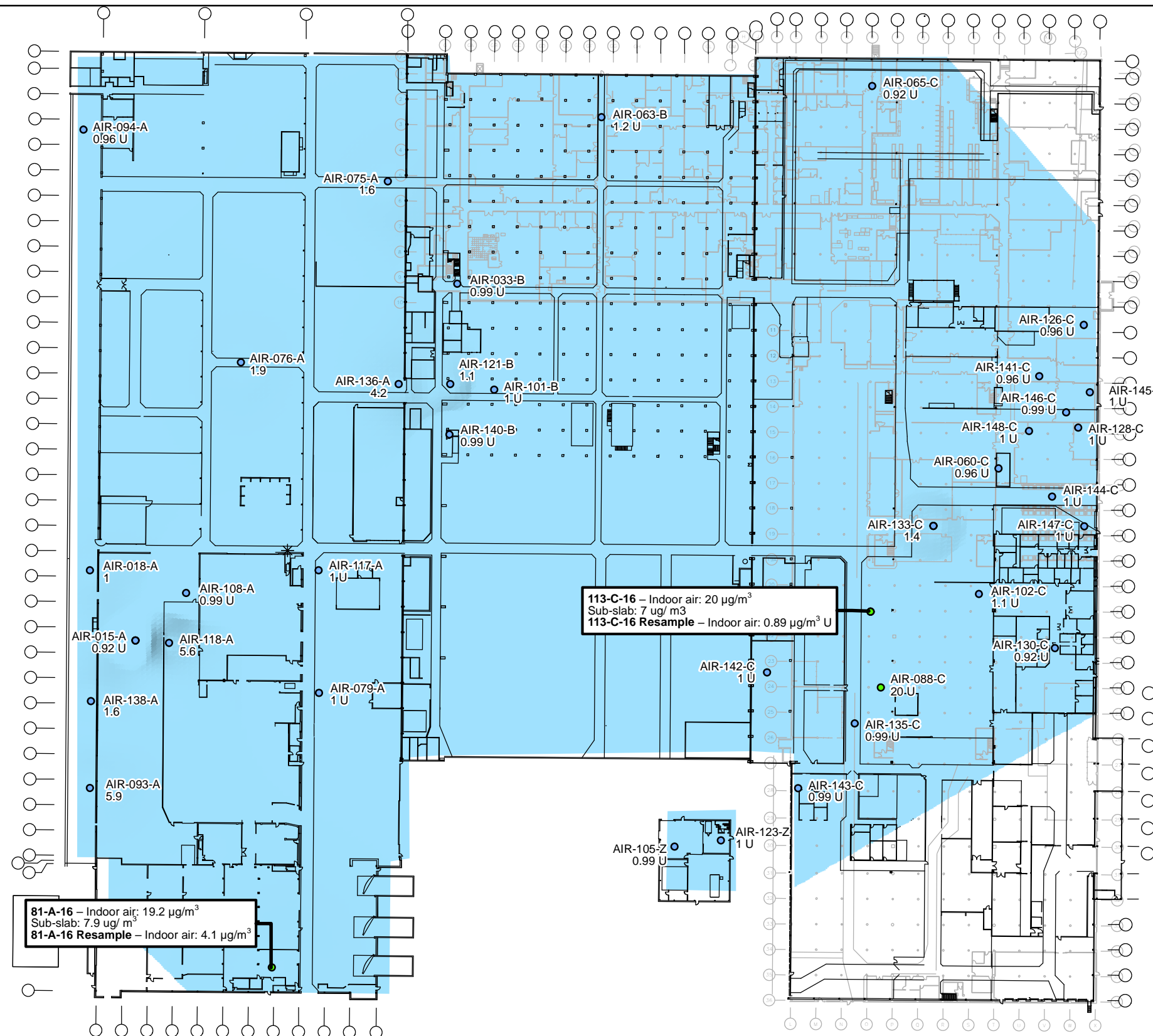
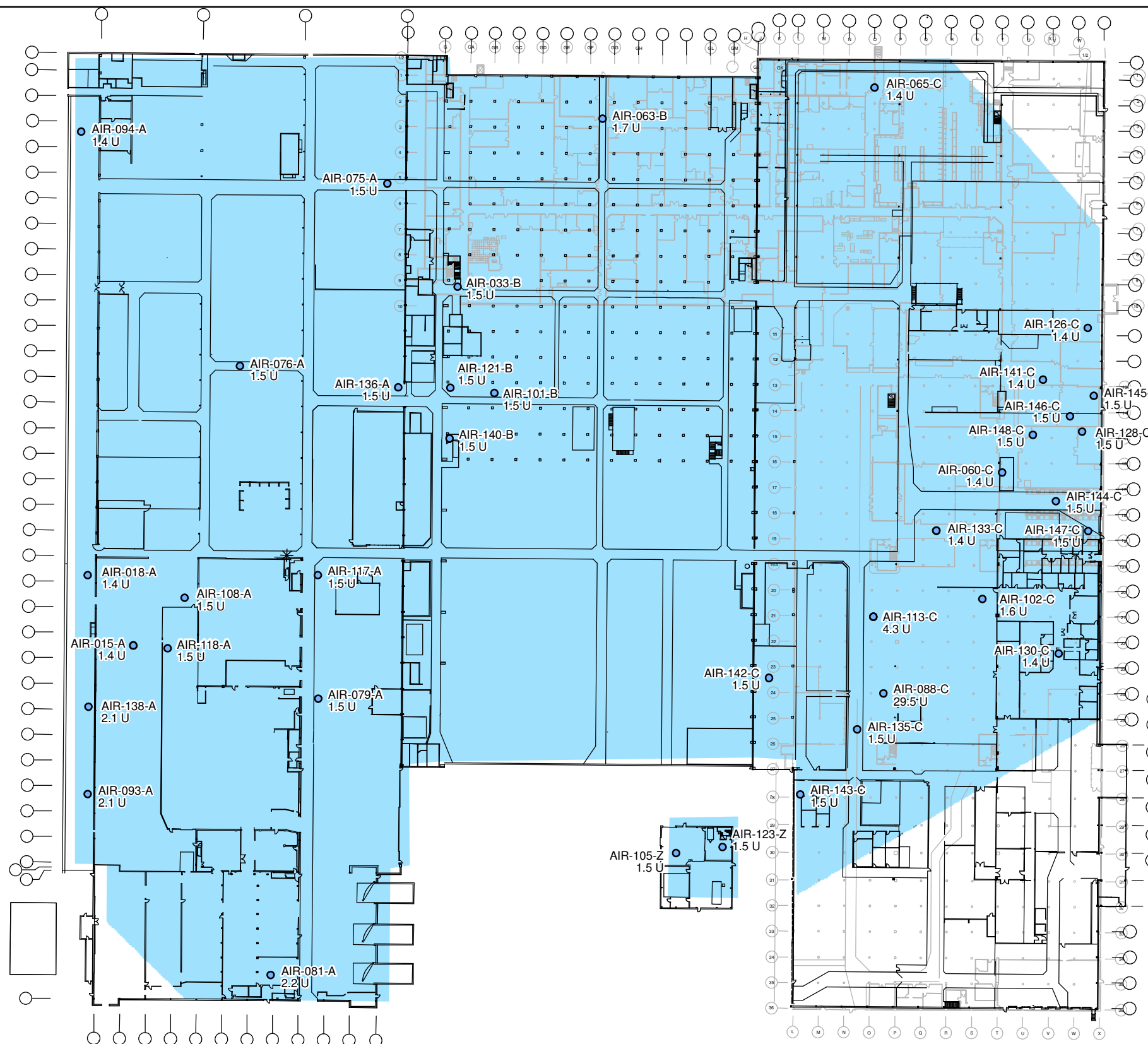




Figure F-2
cis-1,2-Dichloroethene
Isocontours for Indoor Air - February 2014
Building A, B, and C
Lockheed Martin Middle River Complex
Middle River, Maryland



Drawn By: S. PAXTON 06/18/14
Checked By: R. KOTUN 06/18/14
Approved By:

Contract Number: 112IC04792

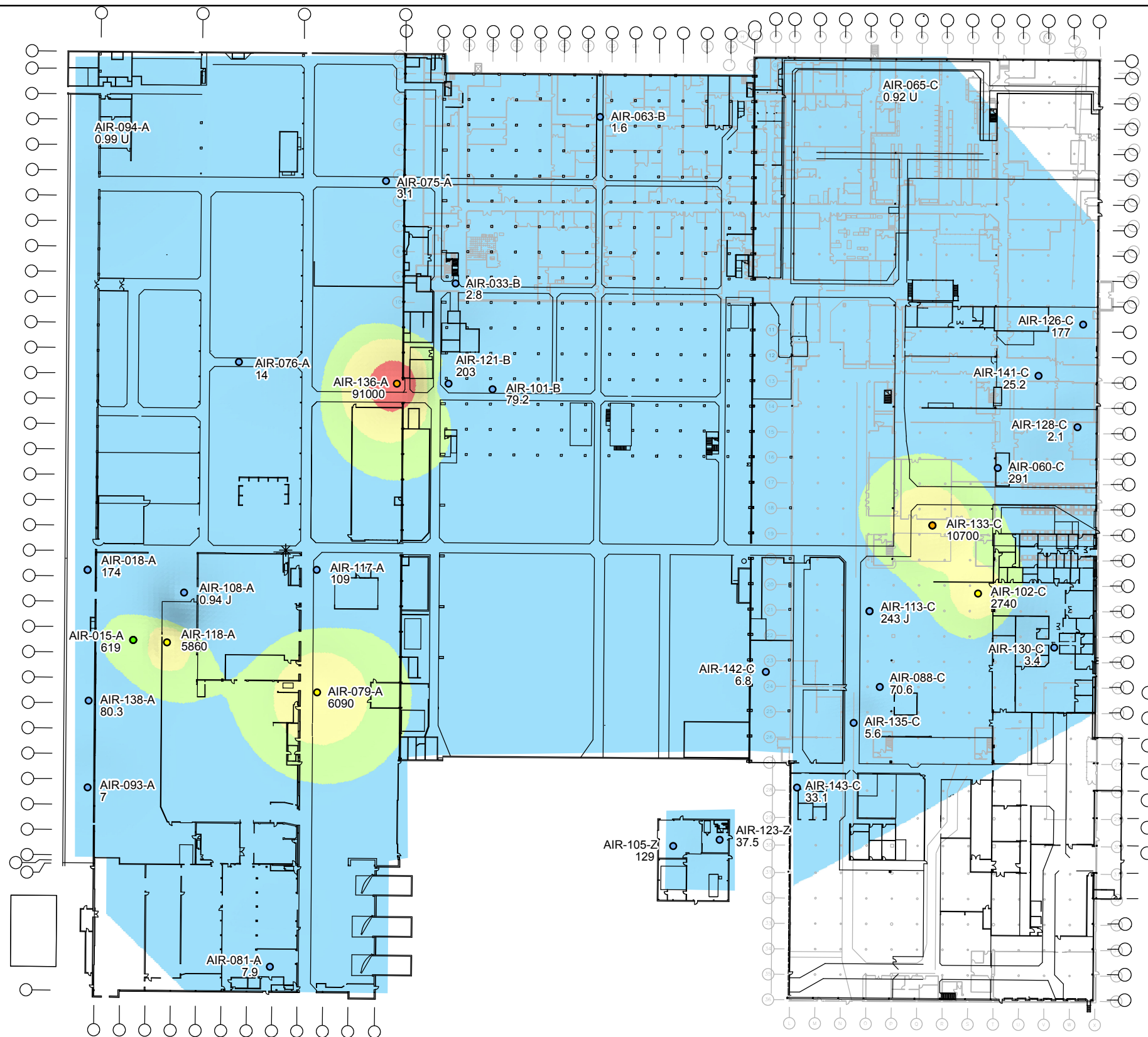
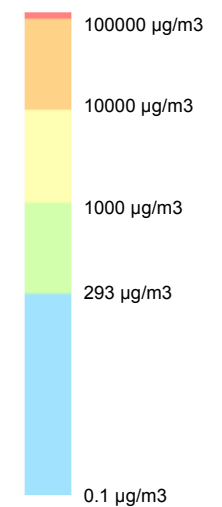


Figure F-3
Trichloroethene
Isocontours for Soil Vapor - February 2014
Building A, B, and C
Lockheed Martin Middle River Complex
Middle River, Maryland

Legend

Soil Vapor Sample Location
 $\mu\text{g}/\text{m}^3$

- < 293
- 293 - 1000
- 1000 - 10000
- 10000 - 100000
- > 100000



- Notes:**
1. Soil gas vapor contours are approximate and represent analytical results collected in August 2013.
 2. Soil Vapor samples are collected from the beneath the floor of the building.

Drawn By: S. PAXTON 06/17/14
 Checked By: R. KOTUN 06/17/14
 Approved By:

Contract Number: 112IC06254

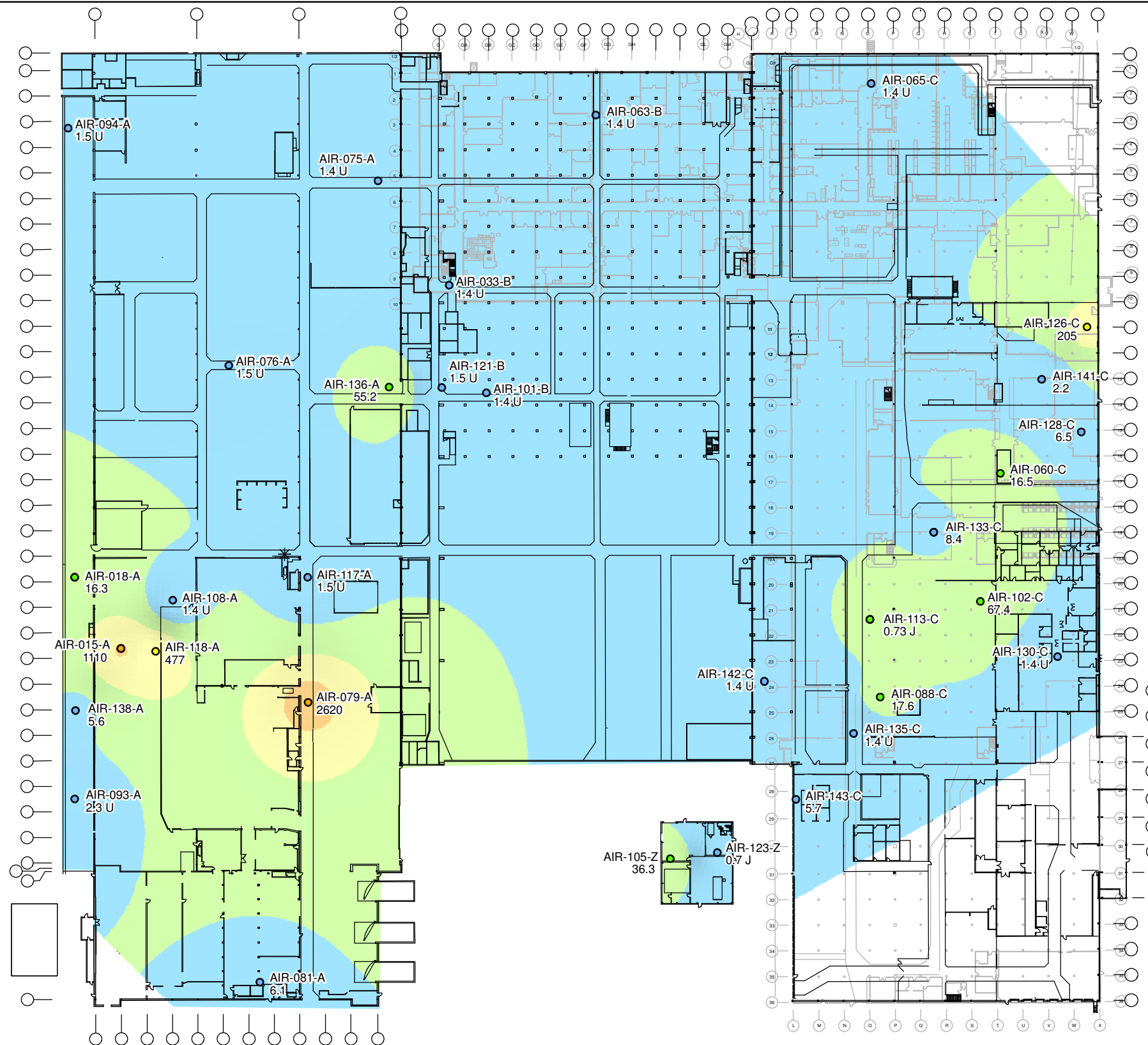


Figure F-4
cis-1,2-Dichloroethene
Isocontours for Soil Vapor - February 2014
Building A, B, and C
Lockheed Martin Middle River Complex
Middle River, Maryland

Drawn By: S. PAXTON 06/18/14
 Checked By: R. KOTUN 06/18/14
 Approved By:
 Contract Number: 112IC04792

Figure F-9
Building C Historical Maximum IAQ
TCE Concentrations

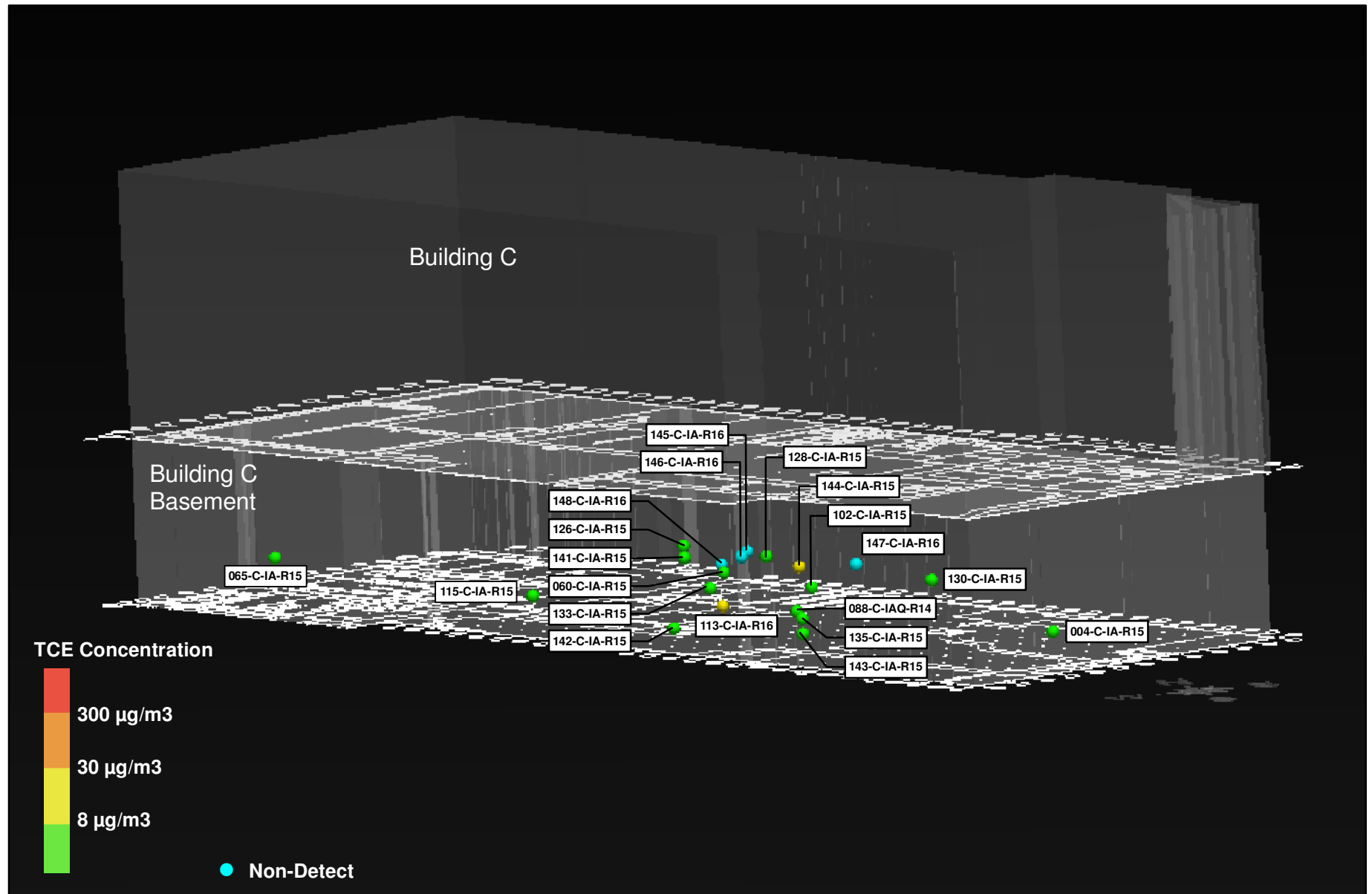


Figure F-5
Building A Historical Maximum IAQ
TCE Concentrations

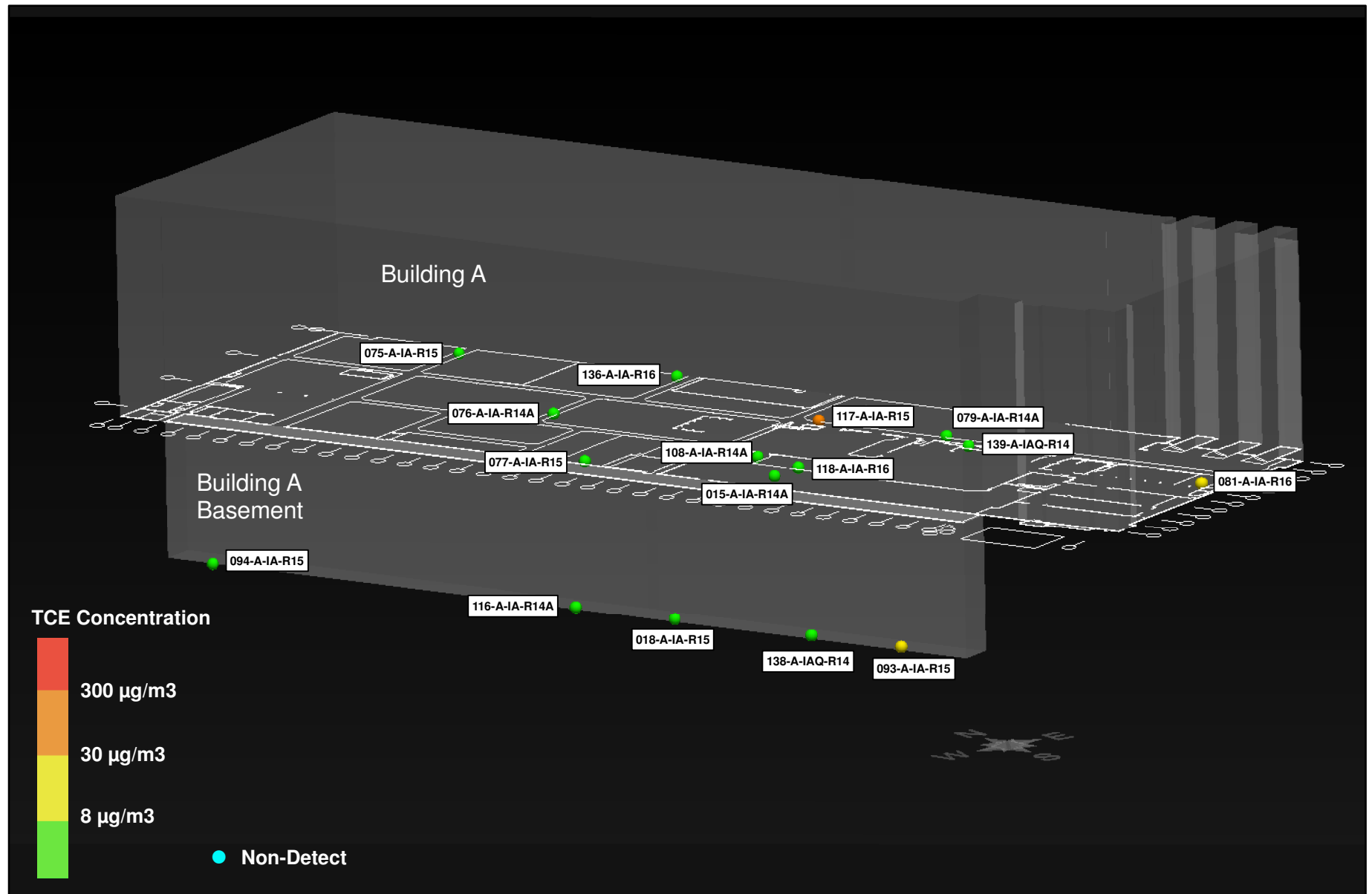


Figure F-6
Building A Historical Maximum SV
TCE Concentrations

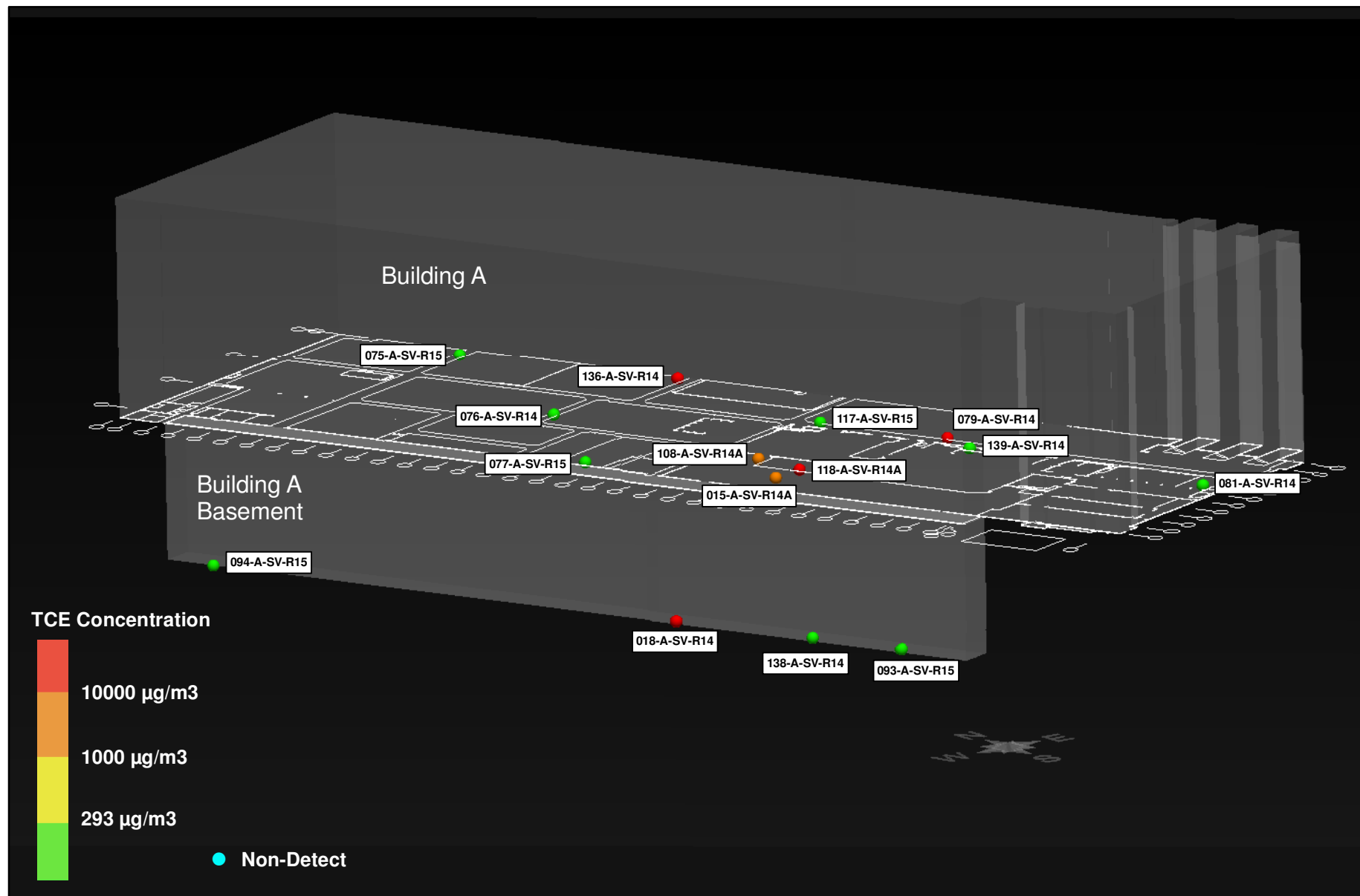


Figure F-7
Building B Historical Maximum IAQ
TCE Concentrations

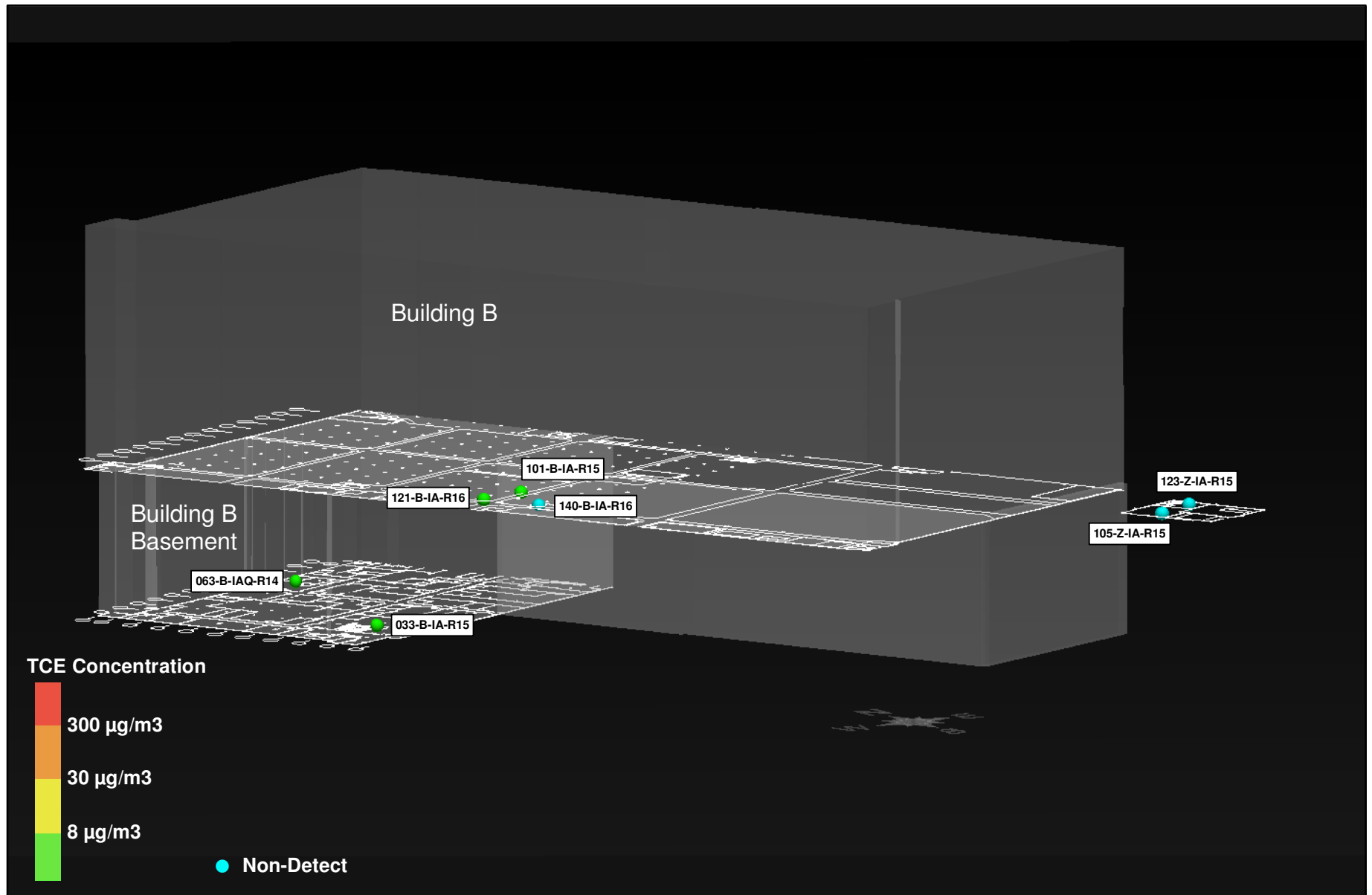


Figure F-8
Building B Historical Maximum SV
TCE Concentrations

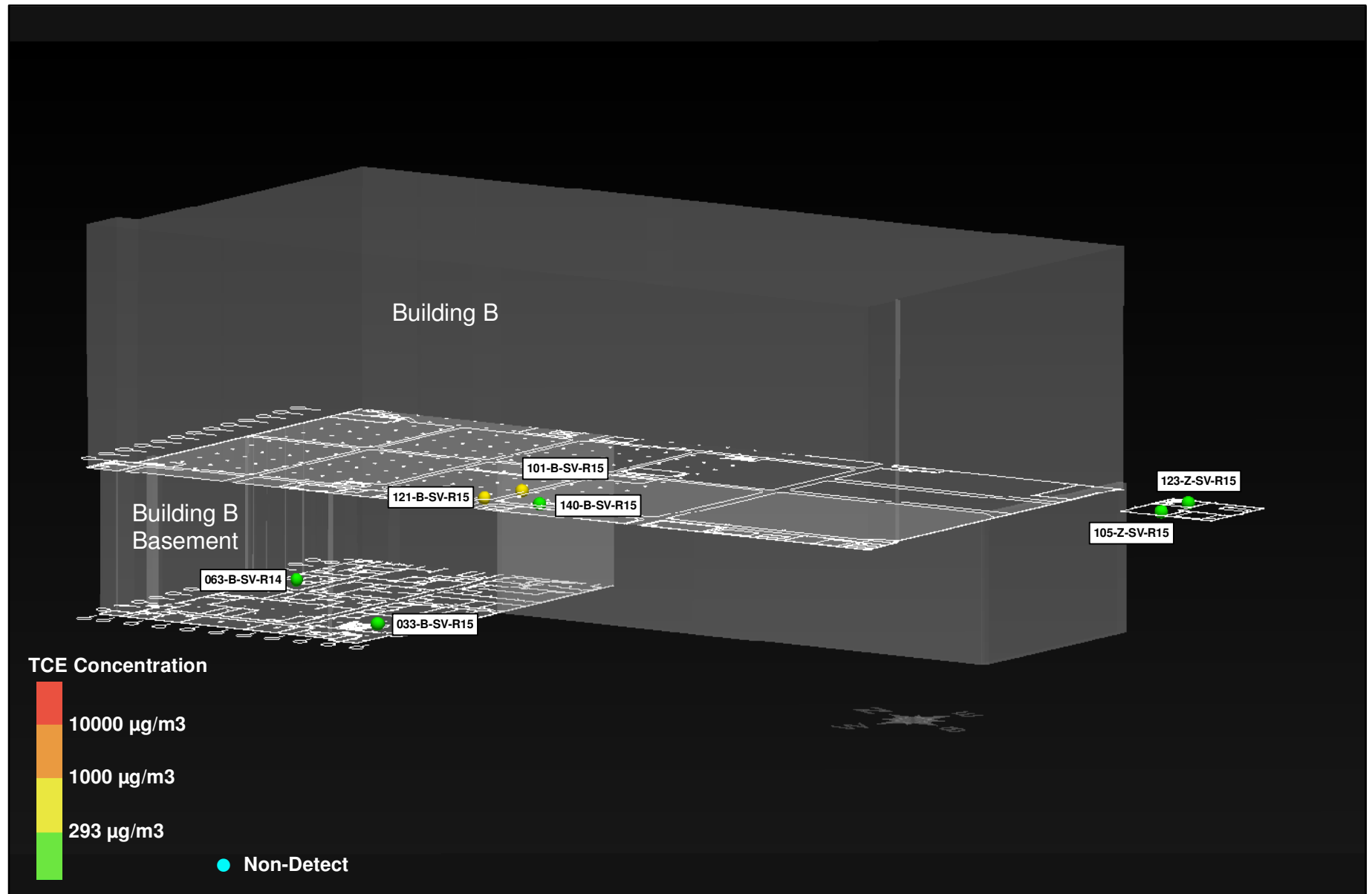


Figure F-10
Building C Historical Maximum SV
TCE Concentrations

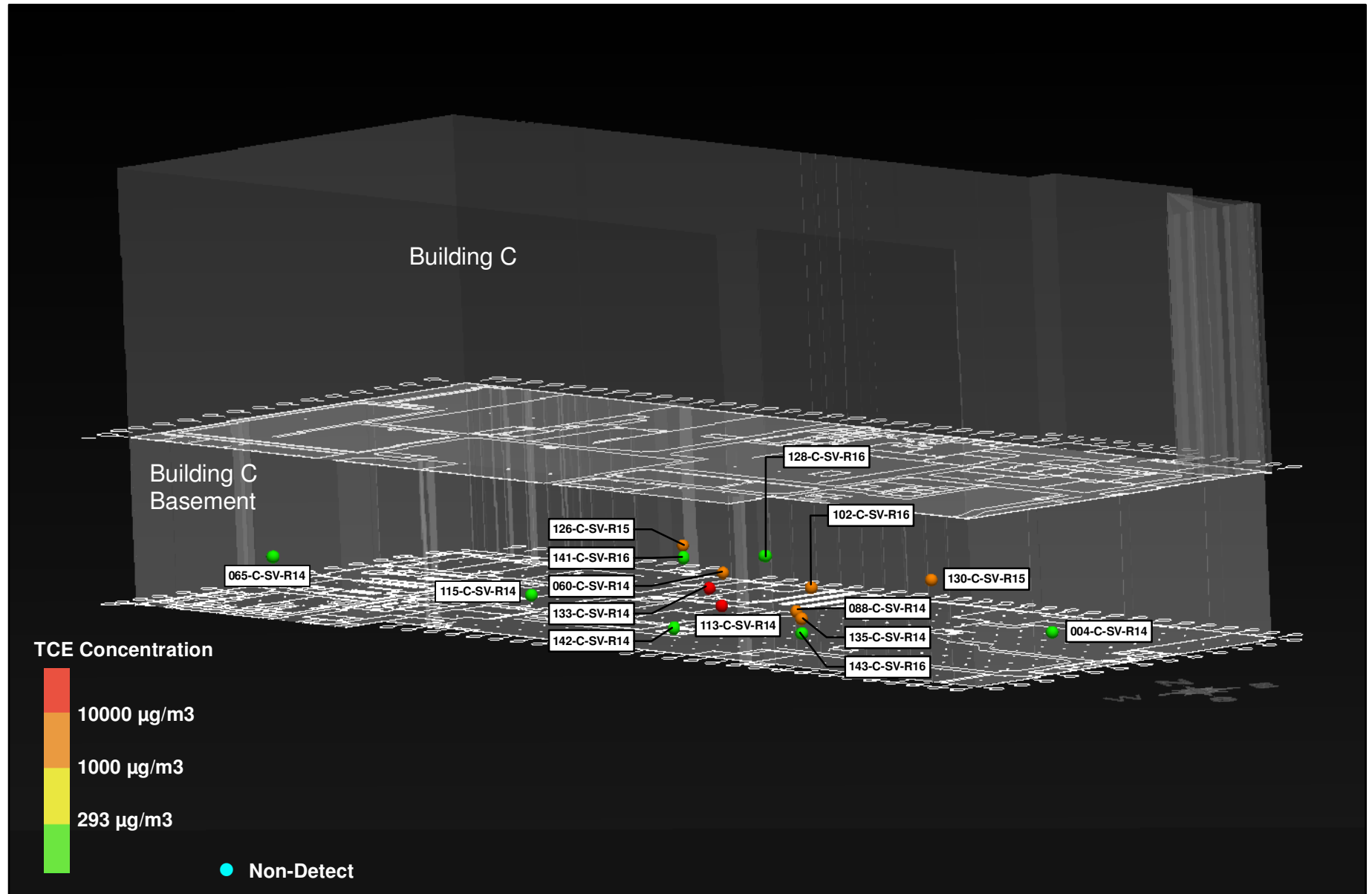


Figure F-11
Building A Historical Maximum IAQ
Naphthalene Concentrations

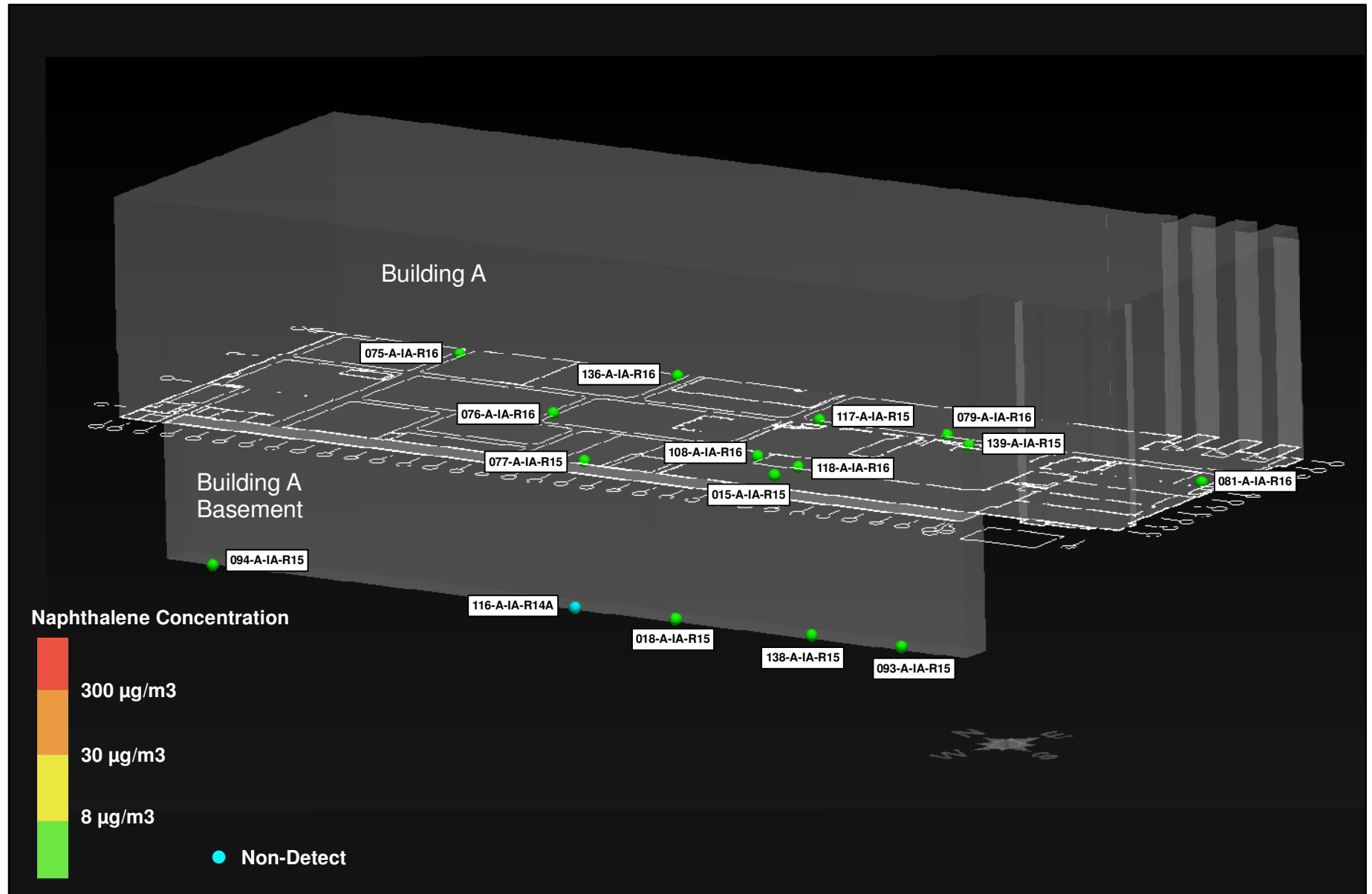


Figure F-12
Building A Historical Maximum SV
Naphthalene Concentrations

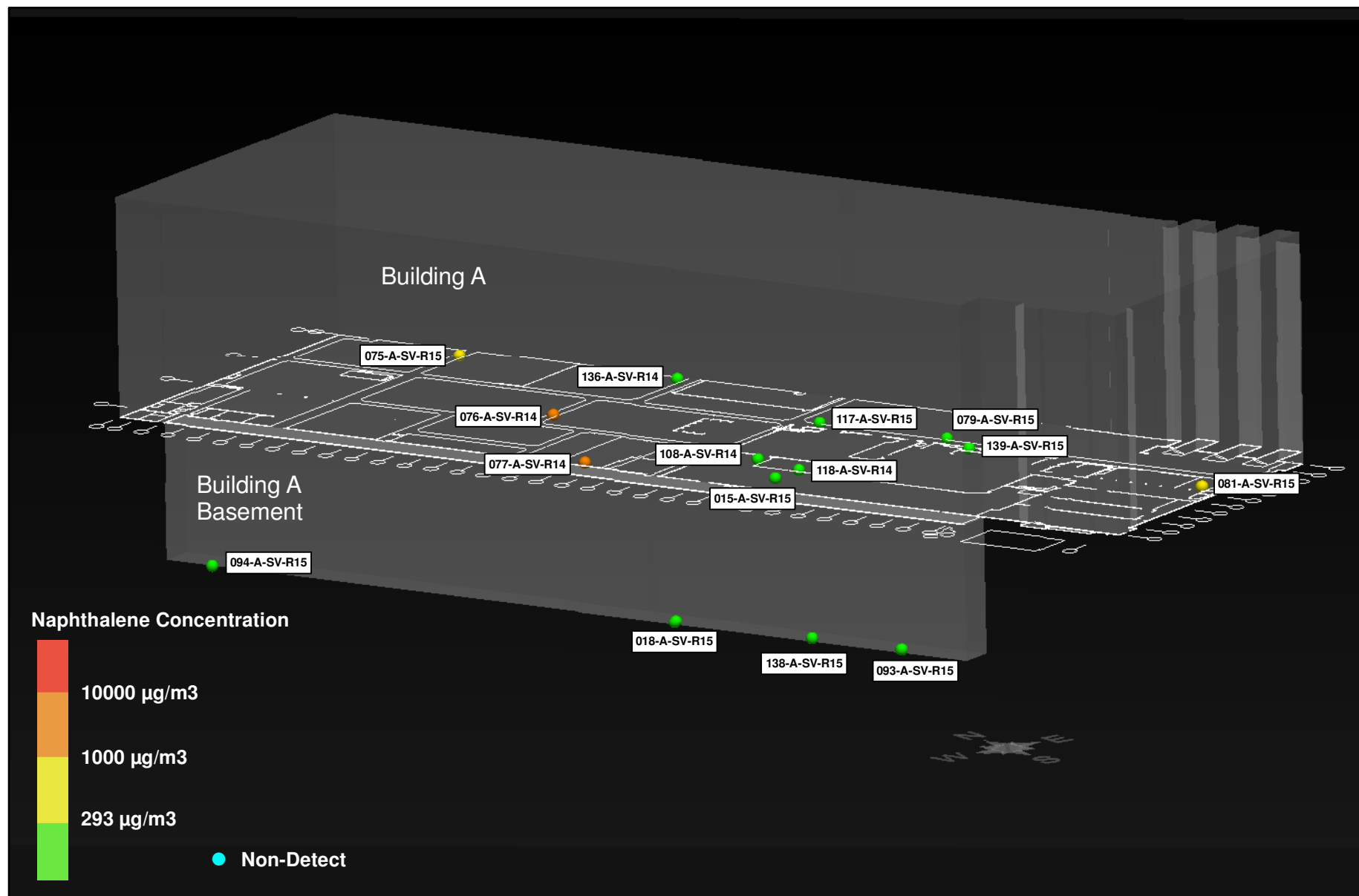


Figure F-13
Building B Historical Maximum IAQ
Naphthalene Concentrations

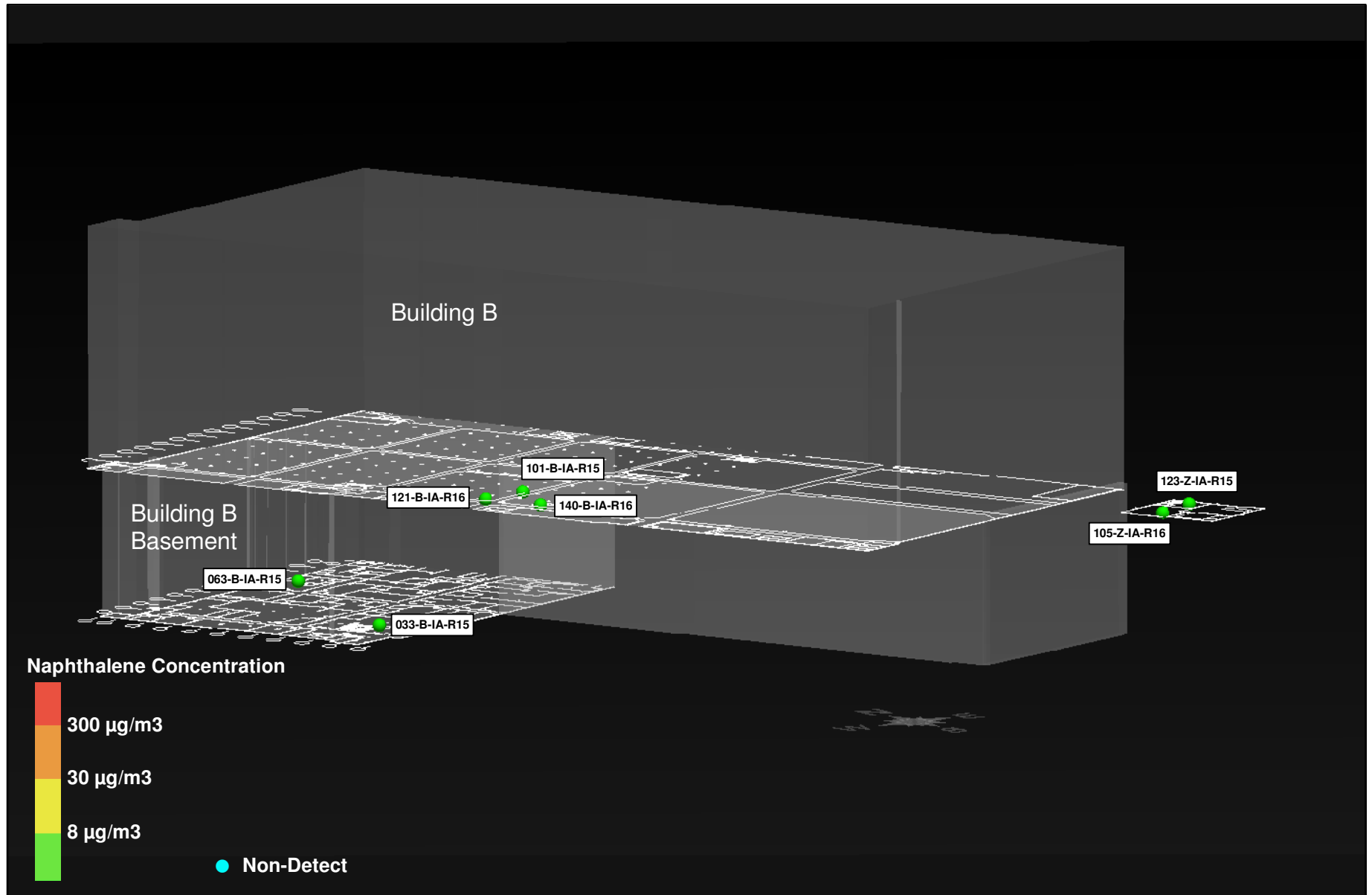


Figure F-14
Building B Historical Maximum SV
Naphthalene Concentrations

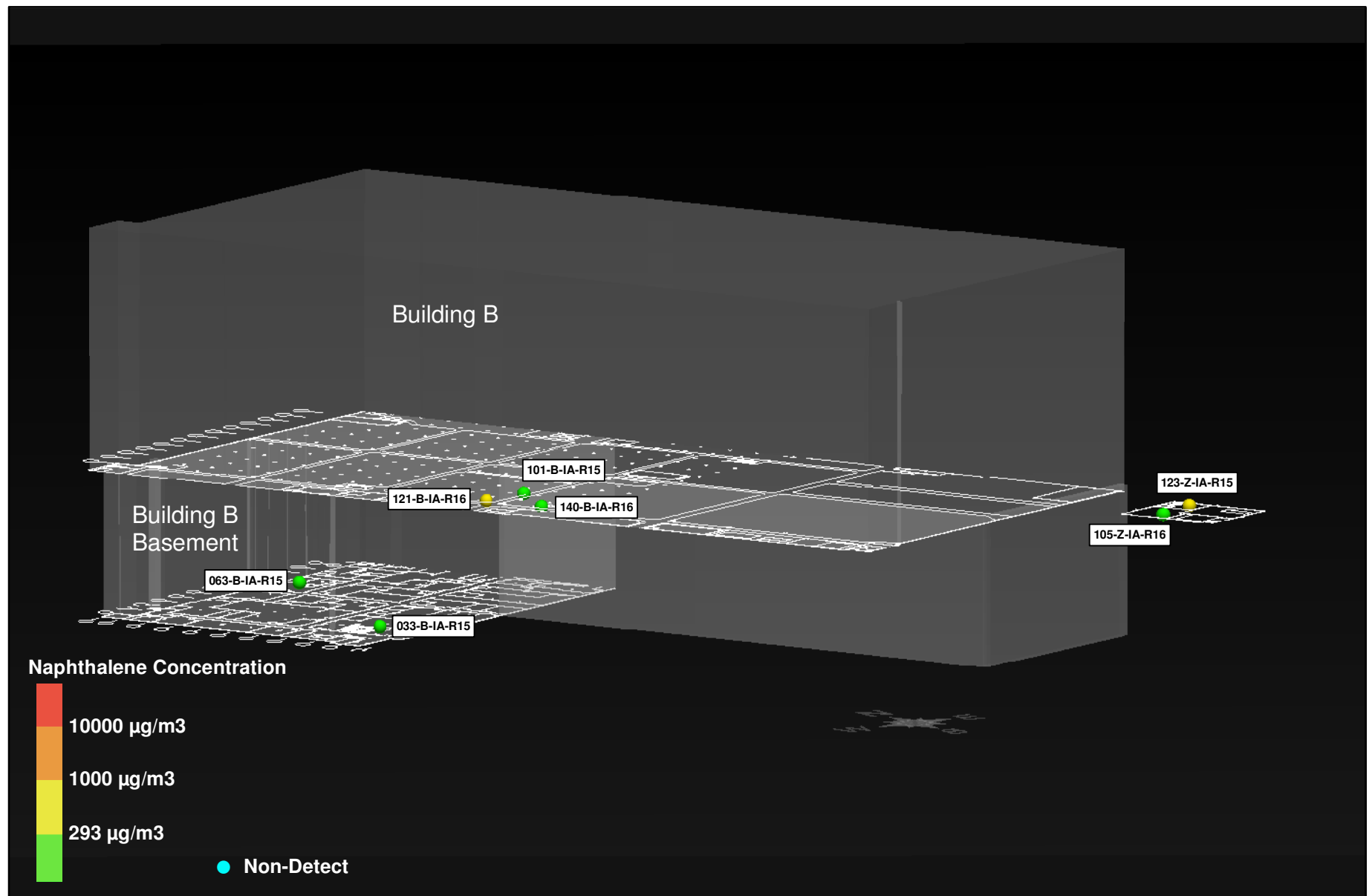


Figure F-15
Building C Historical Maximum IAQ
Naphthalene Concentrations

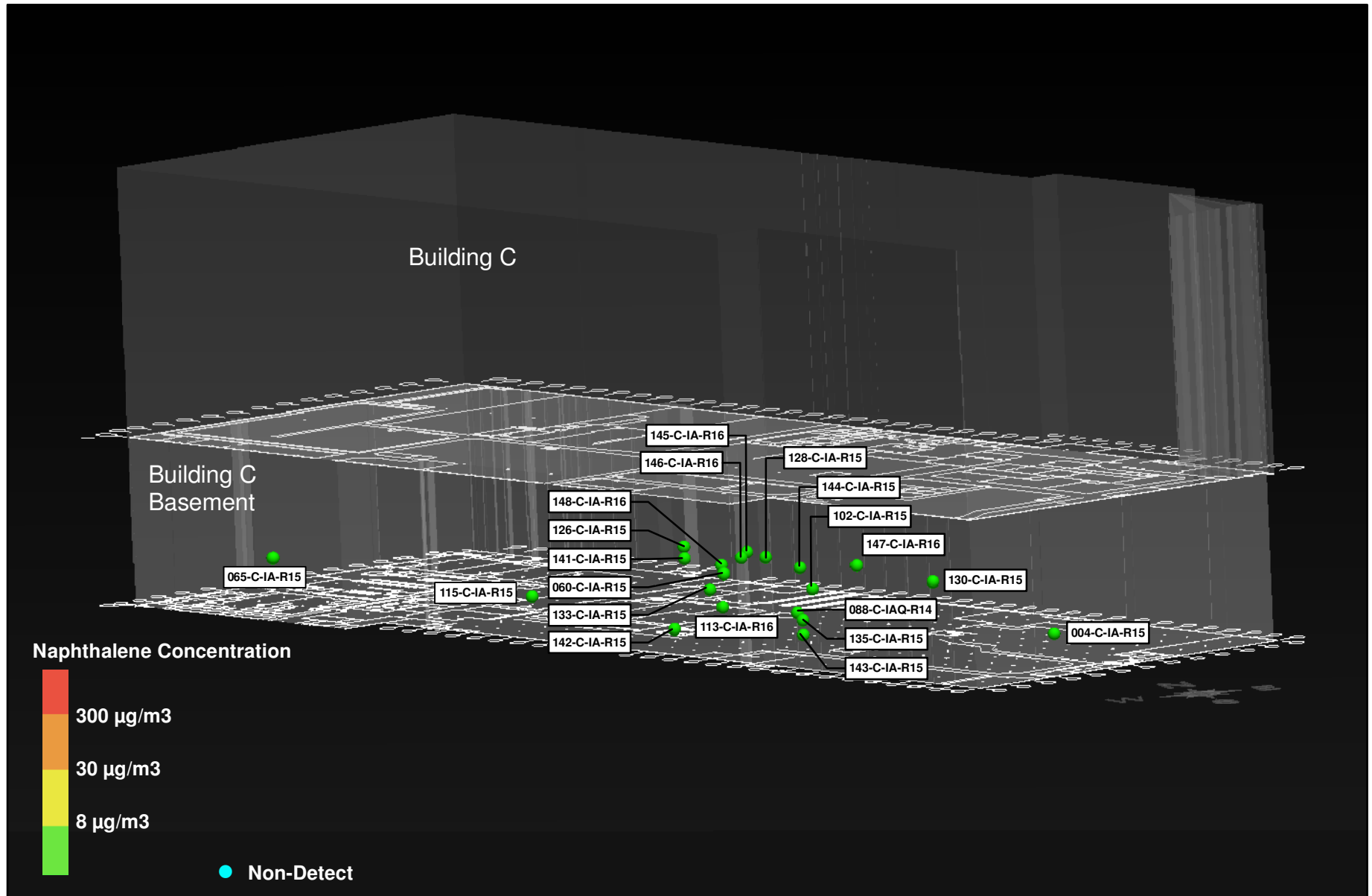


Figure F-16
Building C Historical Maximum SV
Naphthalene Concentrations

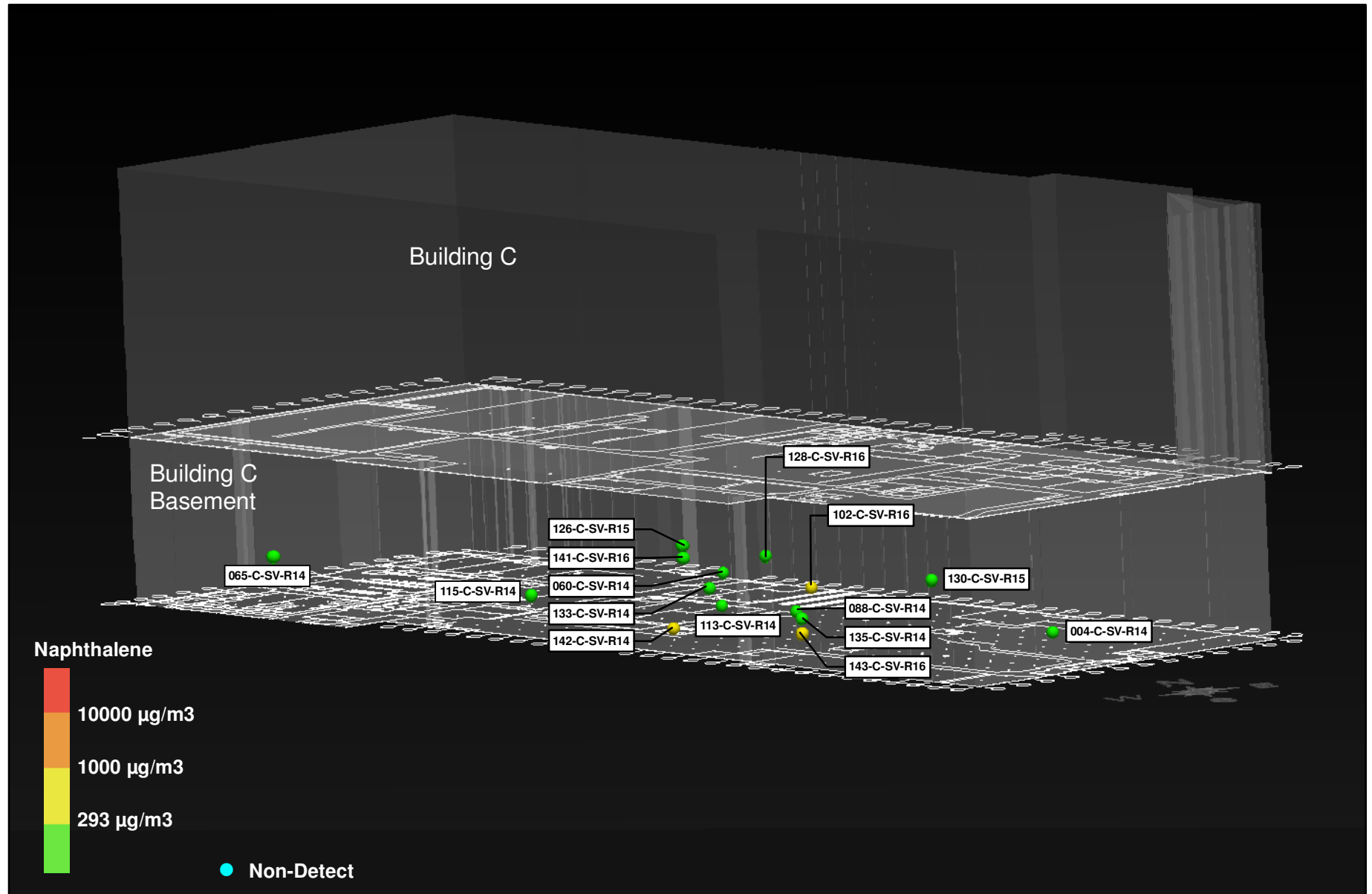


Figure F-17
Naphthalene Results Indoor Air Monitoring Locations
for Building A, Round 16, February 2014

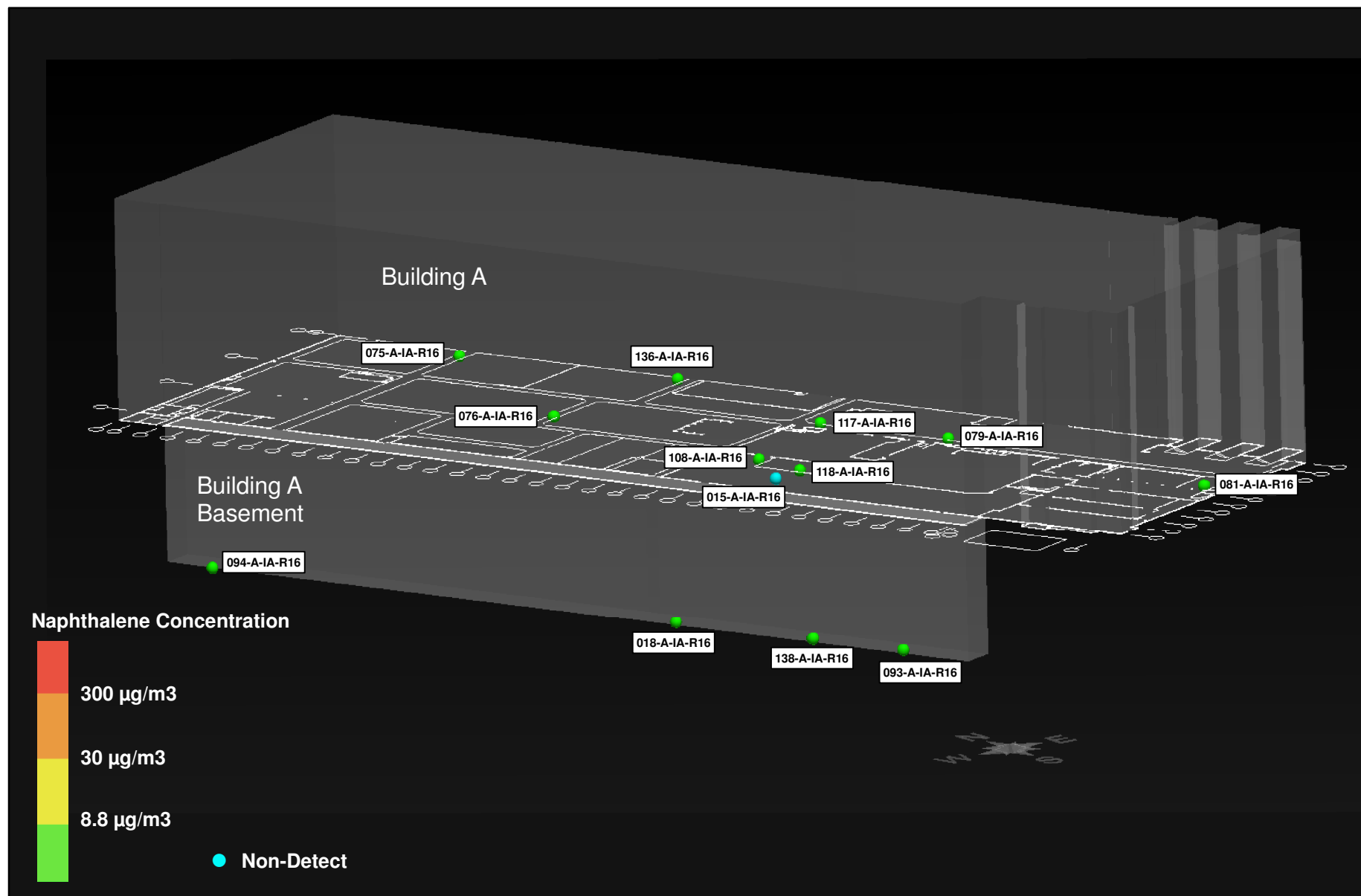


Figure F-18
Naphthalene Results Sub-Slab Vapor Monitoring Locations
for Building A, Round 16, February 2014

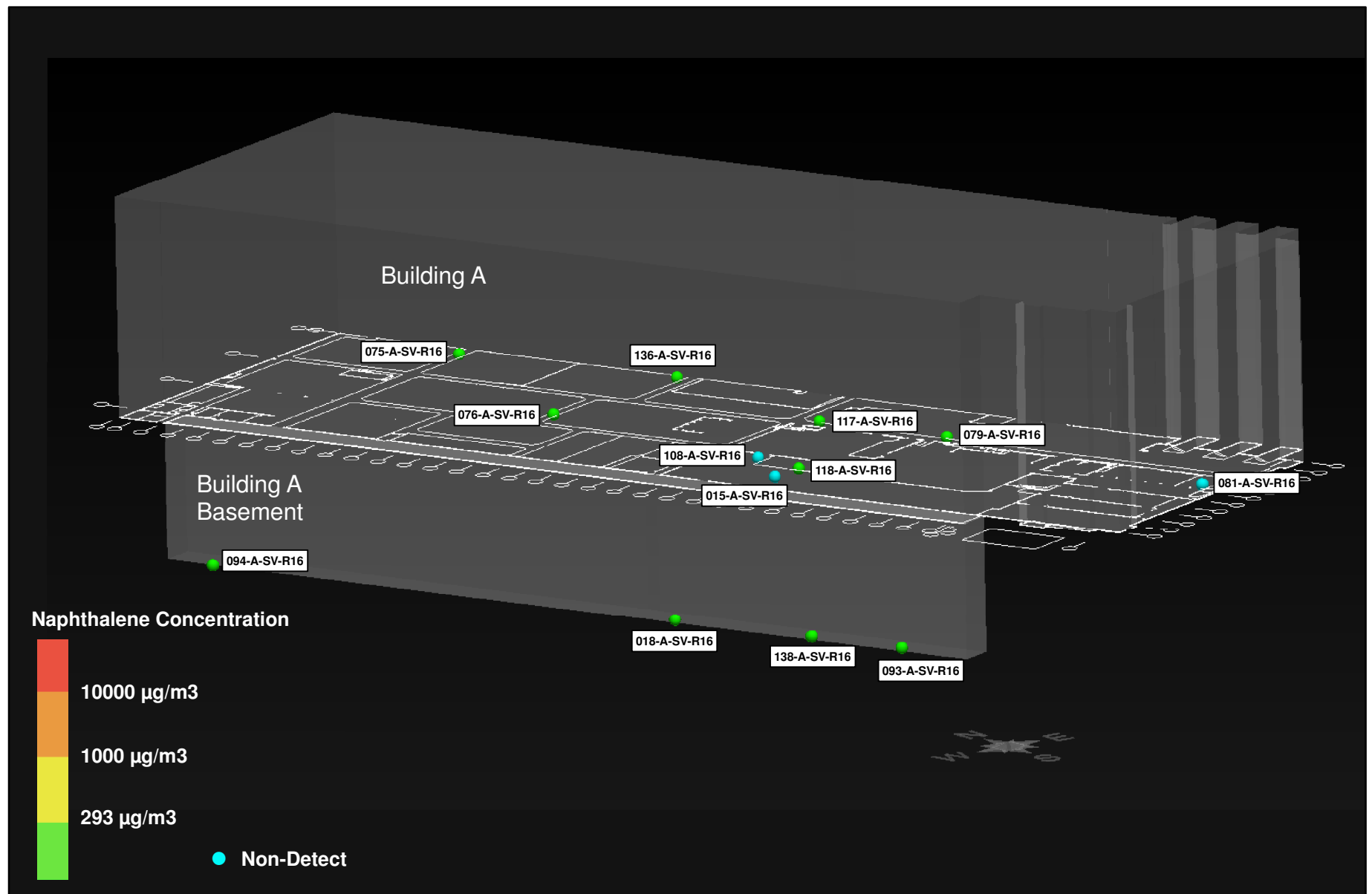


Figure F-19
Naphthalene Results for Indoor Air Monitoring Locations
for Building B, Round 16, February 2014

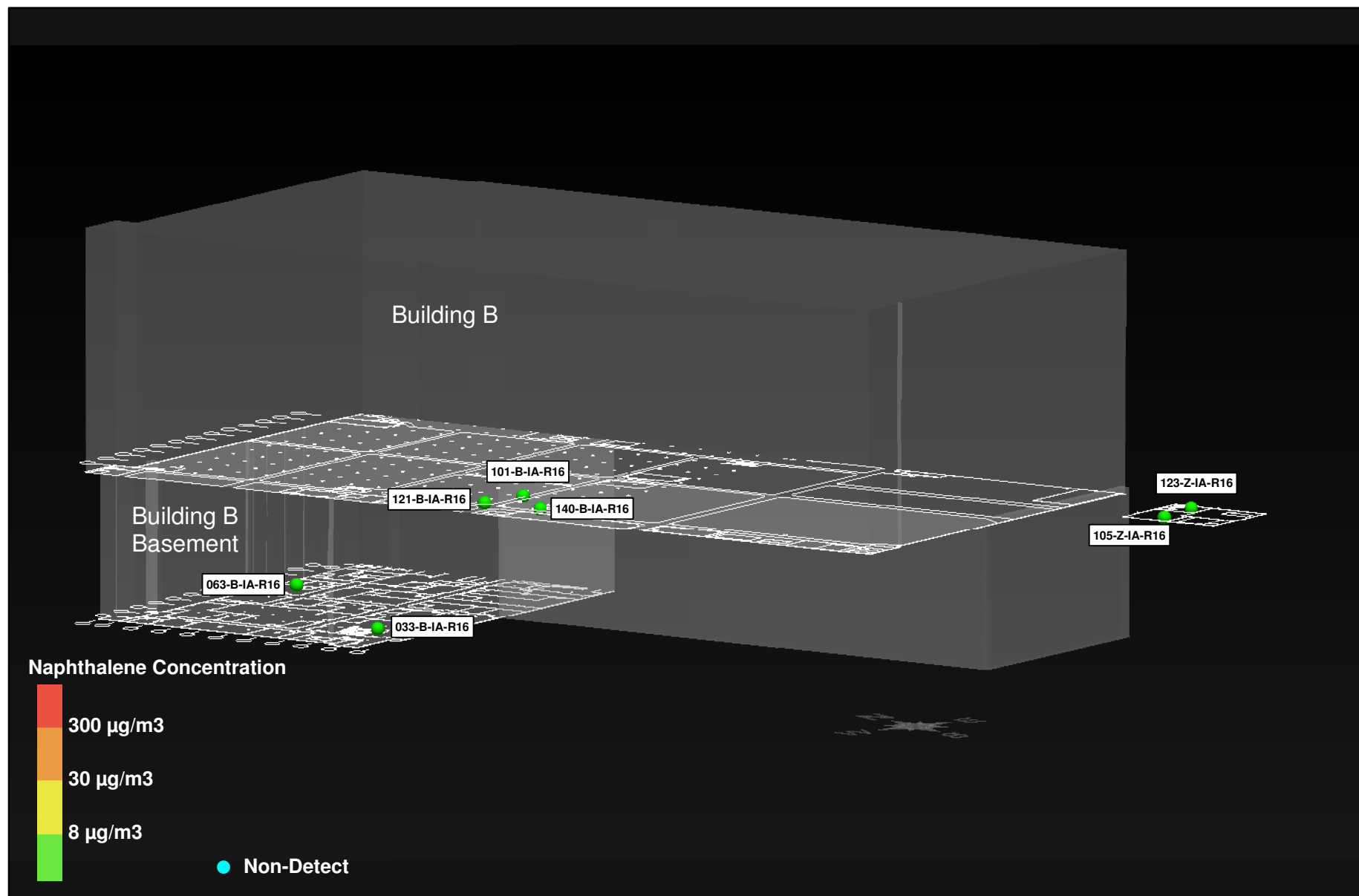


Figure F-20
Naphthalene Results for Sub-Slab Vapor Monitoring Locations
for Building B, Round 16, February 2014

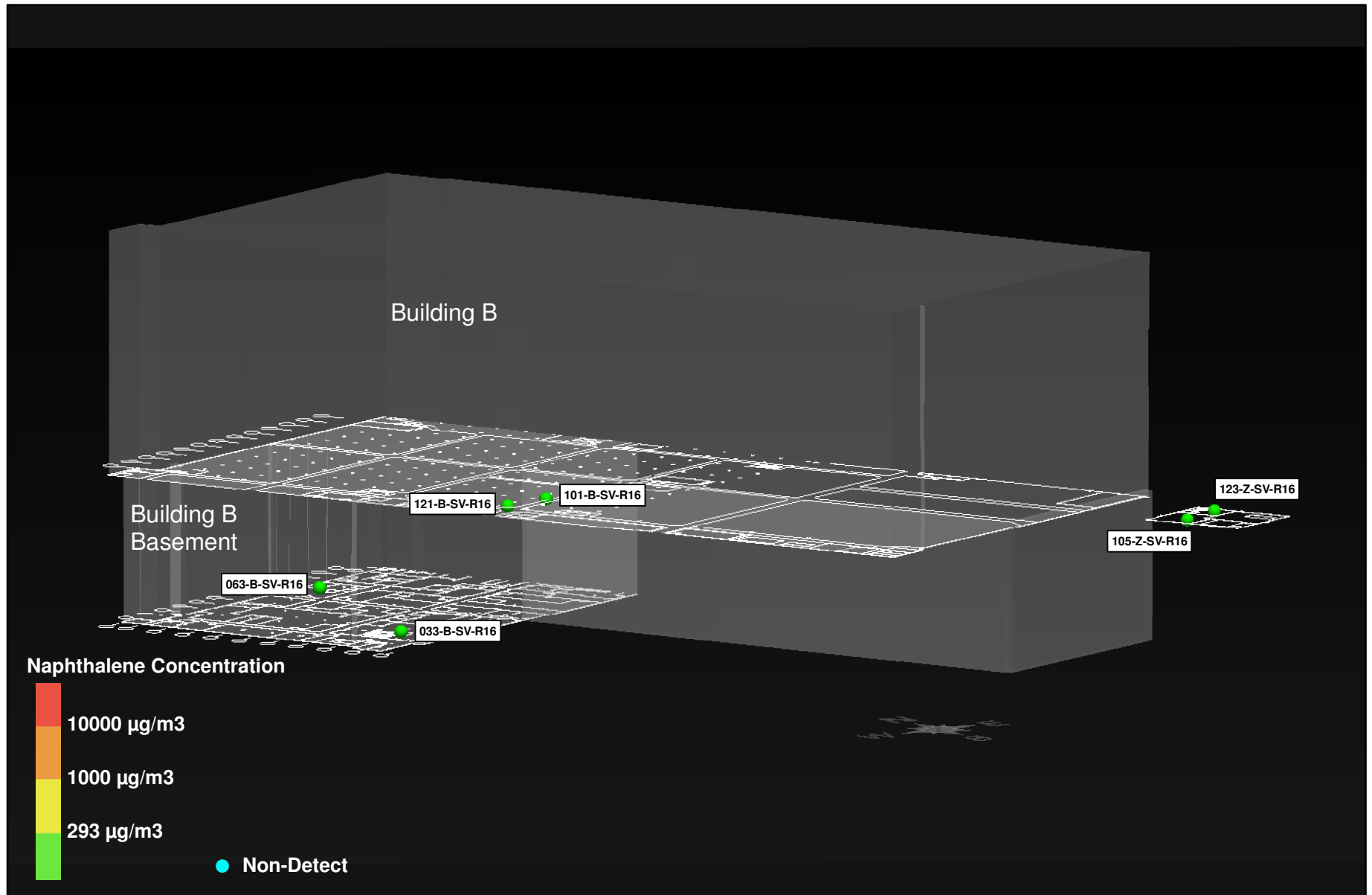


Figure F-21
Naphthalene Results for Indoor Air Monitoring Locations
for Building C, Round 16, February 2014

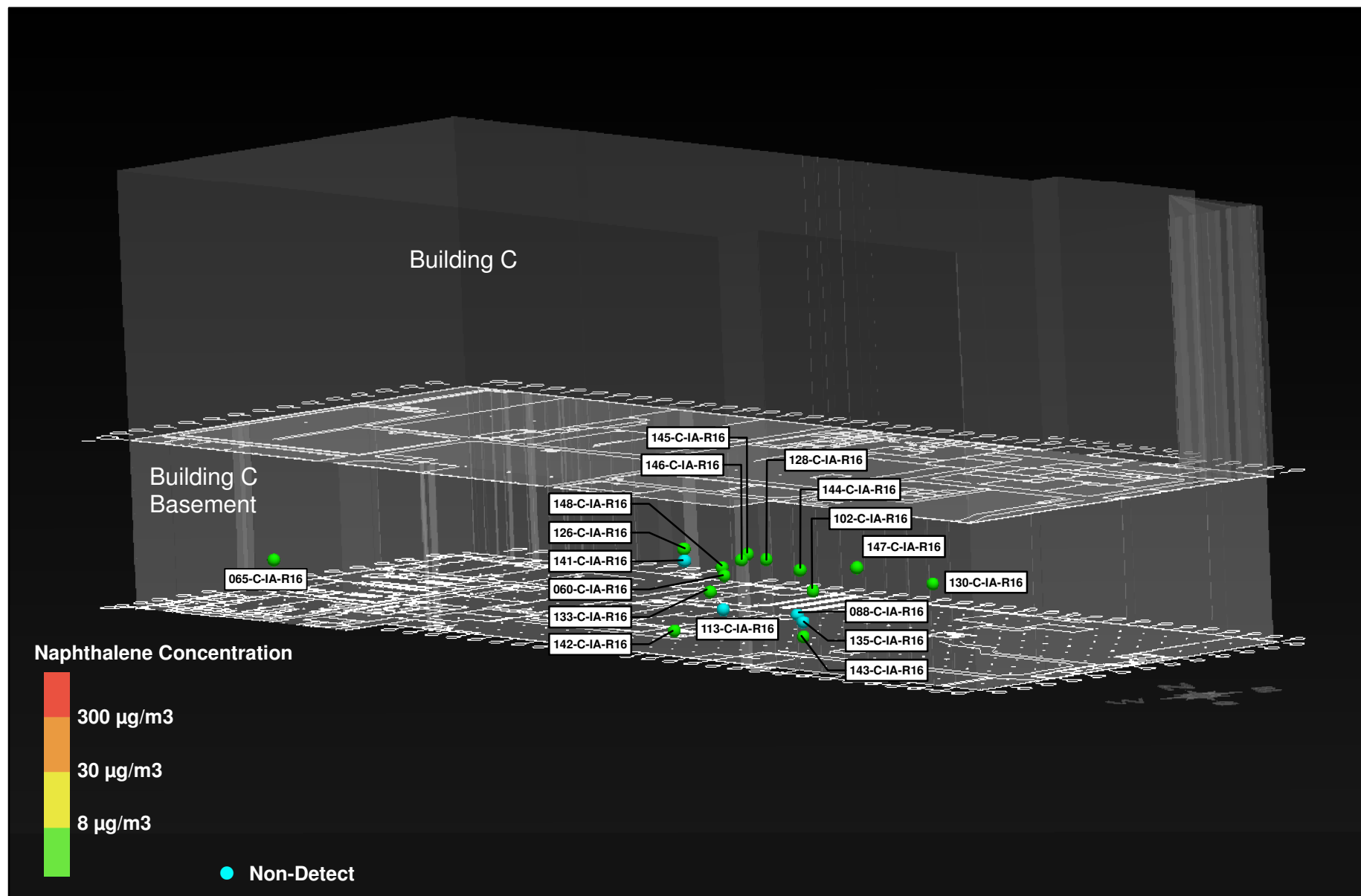
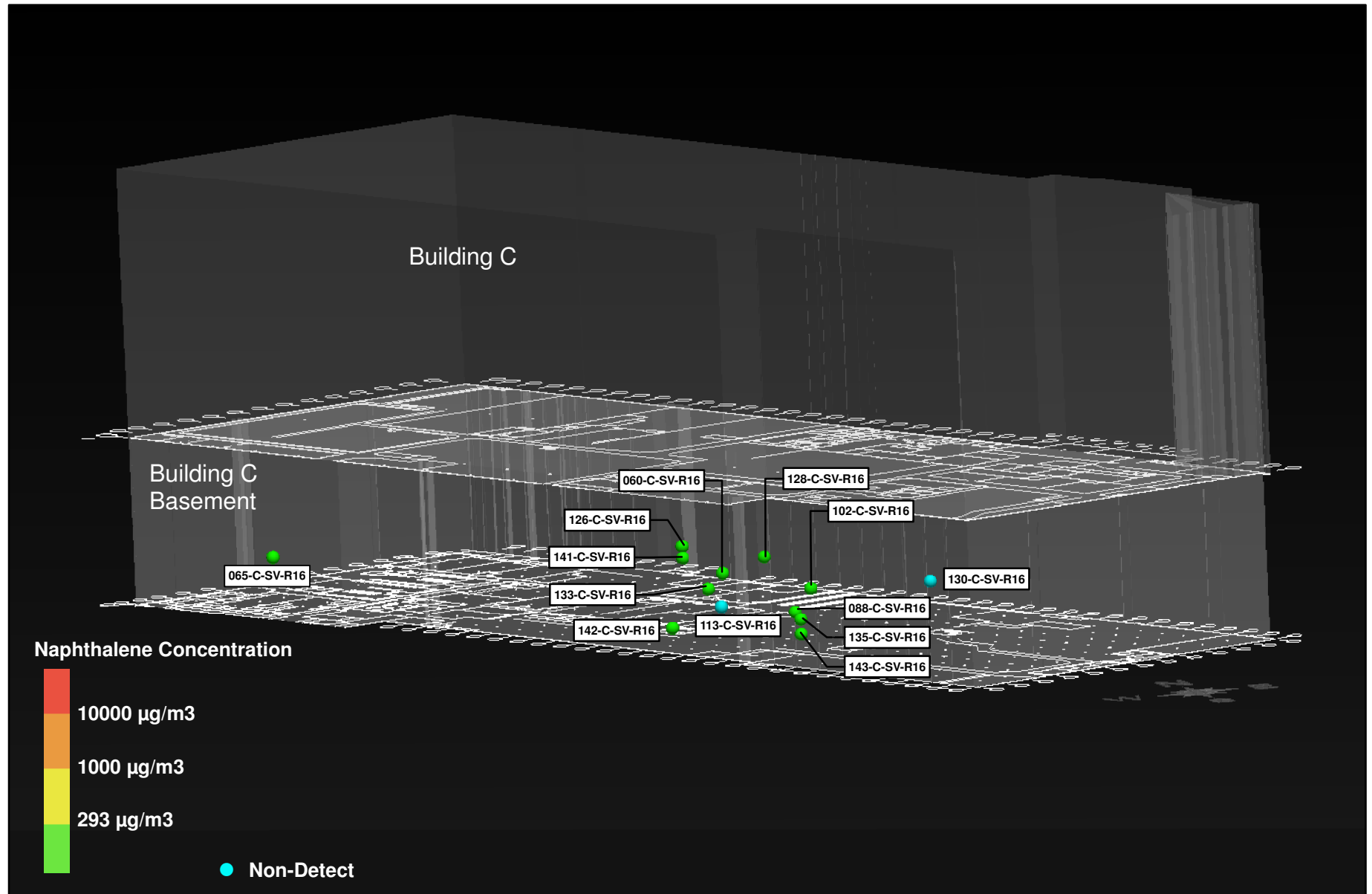


Figure F-22
Naphthalene Results for Sub-Slab Vapor Monitoring Locations
for Building C, Round 16, February 2014



**APPENDIX G—SSD-SYSTEM
REMEDIAL ACTION PROGRESS REPORT #20**

**Remedial Action Progress Report #20
October 1, 2013 through March 31, 2014
Sub-Slab Depressurization Systems
Buildings A and C
Lockheed Martin Middle River Complex
2323 Eastern Boulevard
Middle River, Maryland**

Prepared for:

Lockheed Martin Corporation

Prepared by:

Tetra Tech, Inc.

April 29, 2014, Revised July 14, 2014



Michael Martin, P.G.
Regional Manager



Peter Rich, P.E.
Project Manager

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
ACRONYMS	iv
1.0 INTRODUCTION	1-1
1.1 SITE LOCATION AND BACKGROUND INFORMATION.....	1-1
1.2 DESCRIPTION OF SSD SYSTEMS	1-1
1.2.1 Building A System.....	1-1
1.2.2 Building C System	1-2
2.0 SITE ACTIVITIES.....	2-1
2.1 BIWEEKLY MONITORING	2-1
2.1.1 General System Monitoring.....	2-1
2.1.2 Vacuum Influence Monitoring.....	2-3
2.1.3 Adjustments in Extraction Laterals and Wells.....	2-5
2.2 MONTHLY VAPOR SAMPLING.....	2-5
2.3 DIFFERENTIAL PRESSURE MONITORING.....	2-7
2.4 QUARTERLY SYSTEM CHECKS.....	2-8
2.4 SYSTEM MAINTENANCE	2-10
2.5 GAC AND PPZ CHANGE-OUTS	2-11
2.6 SYSTEM SHUTDOWNS.....	2-11
2.6.1 Operator-Controlled Shutdowns	2-11
2.6.2 Alarmed and Other Shutdowns.....	2-11
2.6.3 System Uptime.....	2-12
2.7 REMEDIATION SUMMARY	2-12
2.7.1 Building A System.....	2-12

2.7.2	Building C System	2-13
3.0	CONCLUSIONS AND RECOMMENDATIONS	3-1
3.1	SYSTEM PERFORMANCE	3-1
3.2	CONTINUED MONITORING	3-2
3.3	FUTURE PLANS	3-2
4.0	REFERENCES	4-1

APPENDICES

APPENDIX A — SYSTEM FIELD DATA SHEETS

APPENDIX B — QUARTERLY SYSTEM CHECKS FORMS

APPENDIX C — 24-HOUR VACUUM MONITORING DATA GRAPHS

APPENDIX D — ANALYTICAL REPORTS

LIST OF FIGURES

Figure 1:	SSD System Locations
Figure 2:	Building A SSD System Layout
Figure 3:	Building A SSD System Process and Instrumentation Diagram
Figure 4:	Building C SSD System Layout
Figure 5:	Building C SSD System Process and Instrumentation Diagram
Figure 6:	Induced Vacuum – Building A SSD System
Figure 7:	Induced Vacuum – Building C SSD System – South Basement Area
Figure 8:	Induced Vacuum – Building C SSD System – Mid-Basement Area
Figure 9:	Influence of SSD Extraction Laterals – Building A Plating Shop & Basement
Figure 10:	Influence of SSD Extraction Wells – Building C – South Basement Area
Figure 11:	Influence of SSD Extraction Wells – Building C Mid-Basement Area
Figure 12:	Building A SSD System – Influent VOC Concentrations
Figure 13:	Building C SSD System – Influent VOC Concentrations

LIST OF TABLES

Table 1:	Building A Influent Laboratory Data Summary
Table 2:	Building A Mid-GAC Laboratory Data Summary
Table 3:	Building A Effluent Laboratory Data Summary
Table 4:	Building C Influent Laboratory Data Summary
Table 5:	Building C Mid-GAC Laboratory Data Summary
Table 6:	Building C Effluent Laboratory Data Summary

This page intentionally left blank.

ACRONYMS

µg/m ³	micrograms per cubic meter
GAC	granular activated-carbon
lbs/day	pounds per day
lbs/month	pounds per month
LCD	liquid crystal display
mA	milliamp
MDE	Maryland Department of the Environment
MRAS	Middle River Aircraft Systems
OM&M	operation, maintenance, and monitoring
%	percent
PPZ	potassium permanganate zeolite
SCFM	standard cubic feet per minute
SSD	sub-slab depressurization
Tetra Tech	Tetra Tech, Inc.
TO-15	Toxic Organic Method -15
USEPA	United States Environmental Protection Agency
VMP	vapor monitoring point
VOC	volatile organic compounds
WC	water column

This page intentionally left blank.

Section 1

Introduction

1.1 SITE LOCATION AND BACKGROUND INFORMATION

This report documents the monitoring activities completed from October 1, 2013 to March 31, 2014 [23rd and 24th quarters of operation] for the sub-slab depressurization systems operating in the Building A plating shop and basement and the Building C basement of the Middle River Aircraft Systems facilities located at Lockheed Martin Corporation's Middle River Complex in Middle River, Maryland. The locations of these systems are shown in Figure 1. The purpose of these remedial systems is to control and remove volatile organic compounds in sub-slab vapor, thus preventing their migration into indoor air. The systems are operated in accordance with the operation, maintenance, and monitoring manuals for the Building A and Building C systems, respectively (Tetra Tech, Inc., 2012, 2013).

1.2 DESCRIPTION OF SSD SYSTEMS

1.2.1 Building A System

The sub-slab depressurization system in the Building A plating shop and basement consists of four horizontal soil-vapor-extraction laterals, designated North, South, Basement North, and Basement South (Figure 2). These laterals serve as conduits for drawing air from directly beneath the building slab to prevent vapor intrusion into indoor air. Sub-slab vapors are pulled through the extraction laterals using a single 10 horsepower regenerative blower mounted on a skid; a moisture separator, filters, and vacuum, pressure, and temperature gauges are also mounted on the skid (referred to as "blower skid"). Following extraction, the vapors enter the moisture separator where entrained condensate droplets are removed to reduce potential fouling of vapor lines and saturation of vapor-phase carbon. The extracted vapors are then filtered to remove volatiles using two 400-pound granular activated carbon units in-series before discharge to the atmosphere via an exhaust stack that extends above the roof of the building (Figure 3).

1.2.2 Building C System

The sub-slab depressurization system in the Building C basement consists of two vertical soil vapor extraction wells (SSD-21-C and SSD-23-C) in the south basement area and nine vertical soil vapor extraction wells (SSD-26-C, SSD-27-C, SSD-28-C, SSD-29-C, SSD-30-C, SSD-31-C, SSD-32-C, SSD-33-C, and SSD-34-C) in the mid-basement area (Figure 4). These wells are connected to the blower skid and serve as conduits for drawing air from directly beneath the building slab to prevent vapor intrusion into indoor air. The vapors are pulled through the extraction wells using a single 7.5 horsepower regenerative blower mounted on a blower skid. Following extraction, the vapors enter a moisture separator (MS-1) where entrained condensate droplets are removed to reduce fouling in the vapor lines and saturation of the vapor-phase carbon. The extracted vapors are then pushed through a heat exchanger to cool the air temperature, and another moisture separator (MS-2) to remove any remaining entrained condensate droplets before entering the granular activated carbon units. The vapors are treated using two 400-pound granular activated carbon units and one 600-pound potassium permanganate zeolite unit (to remove residual vinyl chloride) in-series before being discharged to the atmosphere via an exhaust stack that extends above the roof of the building (Figure 5).

The Building C system is also equipped with one drain for each granular activated carbon and potassium permanganate zeolite unit, five pipe sumps (PS-1 [near SSD-25-C and column N26], PS-2 [near SSD-30-C and column N26], PS-3 [near SSD-27-C and column O20], PS-4 [near SSD-32-C and column R19], and PS-5 [near SSD-29-C and column V12]), and one exhaust stack sump. The sumps are installed at low points along the header pipe to allow drainage of condensation in the pipe.

This page intentionally left blank.

Section 2

Site Activities

2.1 BIWEEKLY MONITORING

Biweekly site visits were conducted to monitor the performance of the sub-slab depressurization (SSD) systems and to make necessary adjustments to optimize remediation effectiveness. Visits were conducted during the 23rd quarter of operation (2013) on:

- October 10, 2013
- October 23, 2013 (Building C) and October 24, 2013 (Building A)
- November 7, 2013
- November 22, 2013
- December 5, 2013
- December 18, 2013

Visits were also conducted during the 24th quarter of operation (2014) on:

- January 3, 2014
- January 13, 2014
- January 30, 2014
- February 14, 2014
- February 27, 2014
- March 12, 2014 (Building C) and March 13, 2014 (Building A)
- March 28, 2014

Each biweekly site visit was conducted in accordance with the latest operation, maintenance, and monitoring (OM&M) manuals (Tetra Tech, Inc. [Tetra Tech], 2012, 2013), and included general system monitoring, vacuum influence monitoring, and any necessary adjustment to extraction wells. Biweekly system check forms are in Appendix A.

2.1.1 General System Monitoring

Vacuum, temperature, and pressure gauge readings on the blower skid were checked, vacuum and velocity at each extraction lateral/well was measured, the condition of system components were checked, and moisture separators/sumps were emptied as necessary. The specific tasks performed follow:

-
1. Recording:
 - a. vacuum post-knockout tank (moisture separator) (Building A only)
 - b. vacuum pre-air filter
 - c. vacuum post-air filter
 - d. pressure post-blower
 - e. temperature post-blower
 - f. temperature post-heat exchanger (Building C only)
 - g. system flow
 - h. time counter display (Building C only)
 - i. vacuum from each extraction lateral/well
 - j. velocity from each extraction lateral/well
 - k. vacuum from each vapor monitoring point (VMP)
 2. Checking the following for damage, leaks, and/or signs of heat stress:
 - a. system components
 - b. granular activated carbon (GAC) units
 - c. potassium permanganate zeolite (PPZ) unit (Building C only)
 - d. GAC and PPZ flex hoses and fittings
 3. Checking the following for water/condensate, and draining as necessary:
 - a. moisture separators
 - b. pipe sumps (Building C only)
 - c. exhaust stack sump (Building C only)
 - d. GAC and PPZ drains (Building C only)
 4. Confirming that zip ties on the GAC units and PPZ (Building C only) unit cam locks are present and secure
 5. Confirming that the ambient air valve is closed
 6. Noting any adjustments to extraction laterals/wells
 7. Turning systems off and checking that flow, pressure, and vacuum gauges fall to zero; checking that temperature gauges fall

During the October 1, 2013 through March 31, 2014 reporting period, the Building A moisture separator was drained on the following days:

-
- October 24, 2013 – 1.25 gallons
 - December 2, 2013 – 17.5 gallons
 - January 13, 2014 – 32.0 gallons
 - February 25, 2014 – 26.5 gallons

Approximately 32 gallons were drained from MS-1 in Building C on December 7, 2013. MS-2 and pipe sumps PS-1 through PS-5 were not drained during the reporting period because no condensate accumulated.

The exhaust stack sump in Building C was drained on the following days during the reporting period:

- | | |
|------------------------------------|-----------------------------------|
| • October 23, 2013 – 0.25 gallon | • January 30, 2014 – 0.5 gallon |
| • November 22, 2013 – 1.75 gallons | • February 14, 2014 – 0.25 gallon |
| • December 5, 2013 – 0.5 gallon | • February 27, 2014 – 1.0 gallon |
| • December 18, 2013 – 0.5 gallon | • March 12, 2014 – 0.25 gallon |
| • January 3, 2014 – 0.16 gallon | • March 28, 2014 – 0.5 gallon |
| • January 13, 2014 – 0.5 gallon | |

2.1.2 Vacuum Influence Monitoring

The objective for both buildings' SSD systems is to maintain a vacuum influence (differential versus indoor air) of at least 0.01 inches water column (WC) in the target areas. Vacuum influence monitoring at permanent sub-slab VMPs was conducted using a dual port manometer (Fieldpiece Instruments, Inc. model SDMN5) during each biweekly site visit to determine the area of system influence and to identify short-circuiting or other problems, which would be indicated by a significant drop in vacuum in one or more of the permanent VMPs.

Seven of eight VMPs (SSD-1-A, SSD-11-A, SSD-13-A, SSD-2-A, SSD-16-A, 015-A, and SSD-3-A) in the Building A plating shop, and three out of five VMPs (SSD-20-A, SSD-21-A, and SSD-22-A) in the Building A basement (Figure 2) consistently exceeded the vacuum

influence objective with vacuums ranging from 0.04 to 1.25 inches WC and 0.10 to 0.83 inches WC, respectively. The remaining VMP in the Building A plating shop (SSD-12-A) showed readings alternating between pressure and vacuum during the February 27, 2014 biweekly system check. The remaining two VMPs in the Building A basement (018-A and SSD-19-A) showed vacuum influences ranging from 0.00 to 0.08 inches WC and from 0.00 to 0.01 inches WC, respectively. No short-circuiting was identified at the Building A SSD system during the reporting period. Note that VMP 018-A is considered unreliable because of periodic water infiltration; as such, it is not included in the figure (Figure 6) showing induced vacuum in Building A over time.

Four VMPs (001-C, SSD-24-C, SSD-3-C, and SSD-4-C) in the south basement area, and five VMPs (135-C, 113-C, 133-C, 060-C, and 127-C) in the mid-basement area of Building C, consistently exceeded the vacuum influence objective with vacuums ranging from 0.02 to 3.24 inches WC and 0.04 to 23.80 inches WC, respectively. The remaining ten VMPs, three (SSD-2-C, SSD-22-C, and SSD-25-C) in the south basement area and seven (088-C, 087-C, 134-C, 111-C, 141-C, 050-C, and 126-C) in the mid-basement area, had vacuums ranging between 0.00 to 0.10 inches WC and -0.81 (a pressure reading indicating higher pressure in the sub-slab than in indoor air) to 0.01 inches WC, respectively. Because readings at VMPs 087-C and 134-C consistently show no vacuum influence, they were removed from the biweekly system checks beginning January 1, 2014. No-short-circuiting was identified at the Building C SSD system during the reporting period. Figures 7 and 8 show induced vacuum in the south- and mid-basement areas of Building C over time.

The induced vacuum measurements indicate the systems are performing as designed. Extraction laterals in the Building A plating shop induce a vacuum influence over an approximate 5,600-square foot area, encompassing all VMPs that showed elevated volatile organic compound (VOC) concentrations before system startup. The extraction laterals in the Building A basement induce a vacuum influence over an approximate 2,400-square foot area, and encompasses three of four VMPs installed to measure the system induced vacuum in the basement (Figure 9). The extraction wells in the Building C south basement and the extraction wells in the mid-basement areas of Building C induce vacuum influence over approximate 3,900-square feet, and estimated 37,500 square feet (the monitoring network is not adequate to estimate the area of influence),

respectively. Five of eight VMPs within the Building C mid-basement area show vacuum influence (Figures 10 and 11); additional monitoring points will be needed to determine an accurate area of influence. Recommended locations for these locations have been provided previously via email (Tetra Tech, 2014).

2.1.3 Adjustments in Extraction Laterals and Wells

No adjustments were made to the extraction laterals in the Building A plating shop and basement during the October 1, 2013 to March 31, 2014 reporting period. In Building C, the following adjustments were made:

- On November 7, 2013, SSD-27-C (near column P19A) and SSD-32-C (near column R19) in the mid-basement area were adjusted to 15 percent (%) and 30% open, respectively, to reduce elevated flow rates at these two wells.
- On December 7, 2013, SSD-21-C (in the south basement area) was closed because the basement flooded. SSD-27-C (in the mid-basement area) was temporarily adjusted to 100% open to keep the system vacuum at its normal operating level (see Section 2.6.2.).
- On December 18, 2013, SSD-21-C and SSD-27-C were returned to their normal operating positions.
- On December 23, 2013, SSD-27-C and SSD-32-C were opened to 100% to increase air flow after a high temperature post-heat exchanger alarm, resulting in a lower post-heat exchanger temperature (see Section 2.6.2.).
- On January 3, 2014, SSD-27-C and SSD-32-C were returned to their normal operating positions.

2.2 MONTHLY VAPOR SAMPLING

Monthly grab vapor samples were collected from each SSD system at the influent, mid-GAC, and effluent locations of the treatment units on October 10, November 7, and December 5 in 2013 and January 13, February 14, and March 12 in 2014. The Building A effluent sample collected on December 5, 2013 was re-collected on December 18, 2013 because the silicon tubing on the sampling port came loose during sample collection.

Samples were collected directly from the appropriate sample ports by connecting a clean one-liter Summa® canister under vacuum, to silicon tubing at each sample port and opening the canister valve for approximately one minute. A moisture filter was added to the sampling

apparatus starting in December 2013; a moisture filter was attached to the end of the silicon tubing using a piece of Teflon tubing before attaching the Summa® canister to the sampling port. Samples were labeled A-INFLUENT, A-MID-GAC, A-EFFLUENT, C-INFLUENT, C-MID-GAC, and C-EFFLUENT, and were shipped to an accredited laboratory¹ for VOC analysis by United States Environmental Protection Agency (USEPA) Toxic Organic Method 15 (TO-15). In October and November 2013, the samples were shipped to TestAmerica in Knoxville, Tennessee. The December 2013 through March 2014 samples were shipped to Pace Analytical Services, Inc. (Pace Analytical) in Minneapolis, Minnesota (new project laboratory).

Laboratory results are summarized in Tables 1 through 6, and laboratory reports are in Appendix D. Two compounds (chlorodifluoromethane and 1,2,3-trimethylbenzene) were added to the analyte list when the project laboratory was switched from TestAmerica to Pace Analytical in December 2013. These two compounds were detected in the December 2013 Building A effluent sample at concentrations of 856 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and 12 $\mu\text{g}/\text{m}^3$, respectively, but as tentatively identified compounds due to temporary laboratory limitations. In January, February, and March 2014, chlorodifluoromethane was detected in all samples, in concentrations ranging from 1.7 $\mu\text{g}/\text{m}^3$ to 13.3 $\mu\text{g}/\text{m}^3$. 1,2,3-Trimethylbenzene was detected in Building A effluent (1.4 $\mu\text{g}/\text{m}^3$) and Building C influent (5.5 $\mu\text{g}/\text{m}^3$) samples in February 2014, but was detected in all Building C samples (0.94-5.9 $\mu\text{g}/\text{m}^3$) in March 2014.

Several other compounds not previously detected when TestAmerica was the project Laboratory were detected and reported in several samples in Pace Analytical results. More specifically, the following were detected:

- naphthalene was detected at the influent, mid-GAC, and effluent of both systems
- trans-1,2-dichloroethene was detected at the influent, mid-GAC, and effluent of both systems
- dichlorodifluoromethane was detected at the influent, mid-GAC, and effluent of the Building C system

¹ National Environmental Laboratory Accreditation Program (NELAP) and United States Department of Defense (DoD) Environmental Laboratory Accreditation Program (DoD ELAP)

-
- 1,2-dichloroethane was detected at the influent of the Building A system and at the effluent of the Building C system
 - 1,2,3-trimethylbenzene was detected at the mid-GAC of the Building C system
 - 1,1-dichloroethane, methyl-tert-butyl ether, 1,2,4-trichlorobenzene, and 1,1,2-trichloroethane were detected in the effluent of the Building C system

During the reporting period, total influent VOC concentrations for both SSD systems remained relatively consistent (with the exception of the January 2014 result for Building A) with concentrations ranging from 1,539 $\mu\text{g}/\text{m}^3$ to 3,802 $\mu\text{g}/\text{m}^3$ at Building A and from 183 $\mu\text{g}/\text{m}^3$ to 437 $\mu\text{g}/\text{m}^3$ at Building C. The January 2014 lab result for Building A showed an abnormally high total influent VOC concentration (11,567 $\mu\text{g}/\text{m}^3$) due to a high toluene concentration (9,820 $\mu\text{g}/\text{m}^3$). This toluene level appears to be a one-time occurrence, as a concentration this high has not been detected during any other sampling period. Furthermore, no construction was occurring near the Building A system during this time. Excluding the outlier (January 2014) result, average influent VOC concentrations at the Building A system were approximately 4% lower than detected during the previous quarter (October 1, 2013 to December 31, 2013), and 27% lower than reported in the previous semi-annual reporting period (April 1, 2013 to September 30, 2013). Average influent VOC concentrations at the Building C system were approximately 12.8% lower than the previous quarter, and 59% lower than reported in the previous semi-annual reporting period.

2.3 DIFFERENTIAL PRESSURE MONITORING

Twenty-four (24)-hour differential pressure-monitoring was conducted quarterly at the Building A plating shop and basement, from November 2013 and March 2014. Differential pressure-monitoring at Building C was conducted monthly through November 2013 (October and November 2013) then quarterly (March 2014) at both the south- and mid-basement areas. The purpose of the monitoring was to quantify differential pressure changes over daily cycles. During each monitoring event, up to three VMPs were selected for monitoring in each of the three areas. If more than three VMPs had vacuum readings within the target range, the VMPs selected for monitoring were alternated during quarterly monitoring events. Differential pressure was measured using Dwyer MS-121 Magnesense[®] differential pressure transmitters with low range 4-20 milliamp (mA) outputs and liquid crystal displays (LCDs) with a vacuum range of 0.0

to 0.5-inch WC (accuracy to 0.005-inch WC). The data was recorded on Dwyer DW-USB programmable data-loggers set to record at five-minute intervals. After 24 continuous hours of data collection, the equipment was retrieved and the data downloaded. Results were graphed for analysis; graphs are in Appendix C.

At Building A, SSD-1-A, SSD-21-A, and SSD-22-A were monitored in November 2013 and SSD-11-A, SSD-12-A, and SSD-13-A were monitored in March 2014. Differential pressure data from SSD-12-A (March 2014) showed pressure readings (approximately -0.016 inches WC) for the first five hours of monitoring followed by vacuum readings of approximately 0.15 inches WC for the remaining 19 hours of monitoring. The cause for this fluctuation is unknown, and past data do not reveal any major fluctuations. The data from SSD-11-A also showed an increase in vacuum after five hours of monitoring. SSD-12-C will likely be monitored during the next 24-hour monitoring event to determine if fluctuations reoccur. The differential pressure data collected at the other VMPs showed fluctuations of less than 0.09 inches WC over their 24-hour monitoring periods.

In the south basement area of Building C, 001-C, SSD-2-C, and SSD-24-C were monitored in October and November 2013 and 001-C, SSD-3-C, and SSD-24-C were monitored in March 2014. Collected data showed no significant fluctuations over the 24-hour monitoring periods.

In the mid-basement area of Building C, only one VMP (135-C) had a vacuum reading within the 0.0-0.5 inches WC range; therefore, it was the only VMP monitored during the reporting period. Data collected showed no significant fluctuations over the 24-hour monitoring periods.

2.4 QUARTERLY SYSTEM CHECKS

Quarterly system checks were completed on December 2, 2013 and March 17, 2014 and included the following tasks:

1. inspecting the condition of the following:
 - a. system components
 - b. system piping
 - c. pre-blower air filter and intake (ambient) air filter; replacing as necessary
 - d. GAC and PPZ units

-
- e. GAC and PPZ units sample ports
 - f. VMP well lids, bolts, and sample tubing
 2. checking that a system shutdown occurs, the control panel alarm light is illuminated, and the auto-dialer is activated upon activation of the following fail-safe switches for the Building A system:
 - a. high water level
 - b. high pressure
 - c. high temperature
 - d. low pressure
 3. checking that a system shutdown occurs, the control panel alarm light is illuminated, and the auto-dialer is activated upon activation of the following fail-safe switches for the Building C system:
 - a. high temperature – post-blower
 - b. high temperature – post-heat exchanger
 - c. high water level – MS-1
 - d. high water level – MS-2
 - e. high pressure
 - f. low vacuum
 - checking vacuum relief valve for proper operation
 - measuring and recording amperage draw on blower
 - checking that auto-dialer is activated when power is turned off
 - checking auto-dialer batteries and replacing as necessary
 - confirming that a fire extinguisher is next to the system
 - cleaning the system and area around the system

The completed quarterly system check forms are in Appendix B. No problems were identified with the Building A system during the December 2013 quarterly system checks. However, while checking alarm and auto-dialer responses during the March 2014 quarterly system checks, the Building A auto-dialer initially would not call out when the system was manually turned off. When hand pressure was applied to one of the relays, the auto-dialer activated, but continued to call out even after alarm acknowledgement. When hand pressure was applied a second time, the auto-dialer acknowledged the alarm and returned to normal operating condition. This temporary malfunction could be indicative of a relay going bad, and will be periodically checked during bi-

weekly system checks. No other problems were identified during the quarterly system checks, and the Building A system is running within normal operating parameters.

During the December 2013 quarterly system checks at the Building C system, the field team observed damage at one of the bollards surrounding the system equipment after being hit by a forklift operated by a Middle River Aircraft Systems (MRAS) employee. MRAS maintenance staff fixed the bollard in early January 2014. The field team also noted that VMP 133-C was no longer flush with the floor. This VMP will be repaired or replaced during the planned VMP additions in Building C. No other problems were identified during the December 2013 quarterly system checks, and no problems were identified during the March 2014 quarterly system checks. The Building C system is running within normal operating parameters.

2.5 SYSTEM MAINTENANCE

No non-routine maintenance was completed for the Building A system during the reporting period. The following non-routine items were completed for the Building C system during the reporting period:

- December 2, 2013 – rewired vacuum switch around the time delay so that the system triggers a low vacuum alarm when the blower shuts down (issue discovered November 19, 2013)
- December 18, 2013 – dog-ears on SSD-24-C and SSD-25-C were retapped (issue discovered November 22, 2013)
- January 30, 2014 – placed electrical tape over hole in mid-GAC flex hose (issue discovered January 30, 2014)
- March 12, 2014 – wrapped electrical tape around the influent end of the flex hose for system influent, mid-GAC, post-GAC, and system effluent to create a better seal (issue discovered March 12, 2014)
- March 17, 2014 – replaced mid-GAC flex hose that was temporarily fixed on January 30, 2014
- March 17, 2014 – added double band clamps to the influent end of flex hose for system influent, mid-GAC, post-GAC, and system effluent (replaces temporary fix on March 12, 2014)
- March 28, 2014 – fixed kinks in tubing at VMPs 001-C, SSD-2-C, SSD-3-C, and SSD-4-C

2.6 GAC AND PPZ CHANGE-OUTS

A GAC change-out occurred at Building A on October 24, 2013 and at Building C on March 6, 2014. Change-outs were conducted by removing the lead GAC unit (the spent unit) from the system, moving the lag GAC unit into the lead GAC position, and adding a new GAC unit to the lag GAC position. The Building C PPZ unit was not changed out during the reporting period.

2.7 SYSTEM SHUTDOWNS

2.7.1 Operator-Controlled Shutdowns

Both the Building A and Building C systems were briefly turned off during each biweekly system check to: (1) confirm that flow, pressure, and vacuum gauges fall to zero thereby indicating proper operation, and (2) check and drain (as necessary) condensate accumulation in the moisture separators and sumps. Both systems were also briefly turned off during quarterly system checks to test proper operation of the fail-safe alarms. In addition, the Building A system was turned off on October 24, 2013 for approximately one hour to conduct a GAC change-out (the Building C GAC change-out occurred on March 6, 2014, occurred while the system was down for an alarm). Finally, the Building A system was turned off on February 23, 2014 for approximately 22 hours and the Building C system was turned off on February 24, 2014 for approximately 21 hours for semi-annual sub-slab vapor sampling.

2.7.2 Alarmed and Other Shutdowns

There were no alarmed shutdowns at the Building A system during the reporting period. Building C system alarmed shutdowns during the reporting period were as follows:

- October 28, 2013 – high pressure alarm: The system was down for approximately five hours; upon response to the alarm, no issues were found and the system was restarted.
- October 30, 2013 – high pressure alarm: The system was down for approximately two hours; upon response to the alarm, no issues were found and the system was restarted.
- November 19, 2013 – motor starter tripped (no alarm): The system was down for an unknown amount of time. To prevent this type of incident from occurring in the future, on December 5, 2013, the low vacuum alarm was rewired around the motor starter time delay so the system triggers a low vacuum alarm when the blower is turned off.

-
- December 6, 2013 – high liquid level alarm at MS-1: The system was down for approximately 15 hours; upon response to the alarm, SSD-21-C was found to be pulling water that had traveled into the sub-slab after an MRAS employee left the water running in a machine. Approximately 32 gallons were drained from the moisture separator and the system was restarted. To prevent additional water from entering the system, SSD-21-C was closed and SSD-27-C was opened to 100 % to keep the system vacuum at normal operation level. SSD-21-C was reopened and SSD-27-C was reset to its initial operating position on December 18, 2013.
 - December 23, 2013 – post heat exchanger high temperature alarms: The system was down for approximately seven hours; upon response to the alarm, no clear reason for the increased temperature was identified. As a temporary solution, SSD-27-C and SSD-32-C were opened to 100 % to increase system flow and to decrease the temperature. On January 3, 2014, S&S Technologies (SSD system installation subcontractor) determined that the air flow vent on the heat exchanger was clogged with dirt/dust, preventing proper air flow across the exchanger. The dirt/dust was removed, and SSD-27-C and SSD-32-C were returned to their normal operating positions. To prevent this incident from occurring again, the additional task of cleaning the air flow vent on the heat exchanger has been added to quarterly system checks.
 - March 5, 2014 – high pressure alarm: The system was down for approximately 17 hours; upon response to the alarm, no clear reason for the high pressure was identified. A planned GAC change-out was conducted based on the vapor sample results and the system was restarted.

2.7.3 System Uptime

During the October 1, 2013 to March 31, 2014 reporting period, the Building A SSD system was off for approximately 23 hours total, and the Building C system was off for approximately 66 hours; this is equivalent to a greater than 98% uptime for both systems. The downtime associated with the tripped motor starter in the Building C system (November 2013) is not included in the downtime hours because the system was down for an unknown amount of time. In addition, the uptime calculation includes the brief periods of time the systems were turned off for biweekly and quarterly system checks.

2.8 REMEDIATION SUMMARY

2.8.1 Building A System

Continuous operation of the SSD system in the Building A plating shop began on March 31, 2008, while continuous operation of the SSD system expansion in the Building A basement began on October 22, 2010. Extraction points were placed based upon pilot test results and were

set to maximize vacuum influence at a total flow of approximately 140 standard cubic feet per minute (SCFM). In the plating shop, flow from the north lateral has been kept slightly higher than that from the south lateral due to the former's greater length. In the basement, flow from the south lateral had been kept slightly higher than that of the north lateral, again due to its greater length, but was adjusted to 100% open on March 29, 2012 to maximize flow.

Since system start-up on March 31, 2008, total influent VOCs have decreased from 94,310 $\mu\text{g}/\text{m}^3$ to 3,802 $\mu\text{g}/\text{m}^3$, which is a 96 % reduction in influent concentrations. The two main chemicals of concern, 1,1,1-trichloroethane and trichloroethene, have typically each accounted for 30-55 % of total influent VOCs. Individual VOC percentages compared to the sum of all measured VOCs have remained relatively constant[DLM1]. No changes in influent concentrations were apparent after the addition of the basement extraction laterals in 2010. VOCs trends for the Building A system are shown in Tables 1 through 3 and on Figure 12.

During this reporting period, VOC mass removal rates for the Building A system ranged from 0.021-0.166 pounds per day (lbs/day), based on influent concentrations. The total VOC mass removed was approximately 11.13 pounds; total removal since system start-up in March 2008 is approximately 108.46 pounds. VOC mass removal rates are far lower than the levels requiring Maryland Department of Environment (MDE) permitting [20 lbs/day VOCs, 20 pounds per year vinyl chloride].

2.8.2 Building C System

Continuous operation of the SSD system in the Building C south basement area began on March 31, 2008, while continuous operation of the SSD system expansion in the mid-basement area of Building C began on May 16, 2013. Based on pilot test results, extraction points were set at locations that maximize vacuum influence, at a total flow of approximately 170 SCFM. In the south basement area, SSD-23-C was shut off after the expansion to promote higher flow rates from the new mid-basement-area extraction wells. Vacuum influence in the south basement area has been maintained with only SSD-21-C operating, and flow rates and vacuum influence has been increasing at the mid-basement points since expansion startup in May 2013. On November 7, 2013, SSD-27-C and SSD-32-C were closed to approximately 15% and 30%, respectively, to promote higher flow rates at the other extraction wells in the mid-basement area.

From system start-up on March 31, 2008 to April 8, 2013, and before the system expansion, total influent VOCs had decreased from 31,170 $\mu\text{g}/\text{m}^3$ to 117 $\mu\text{g}/\text{m}^3$, which is a 99.6% reduction in influent concentrations. Trichloroethene and cis-1,2-dichloroethene comprised approximately 44-50%, and 29-38% of total VOCs, respectively. Following startup of the Building C system expansion in May 2013, influent VOCs increased to 3,080 $\mu\text{g}/\text{m}^3$, and have since decreased to 321 $\mu\text{g}/\text{m}^3$, which is an 89.6 % reduction in influent concentrations. Trichloroethene and cis-1,2-dichloroethene, now typically account for 68-87% and 0-8.4% of the total influent VOCs, respectively. VOCs trends for the Building C system are shown in Tables 4 through 6 and on Figure 13.

During this reporting period, VOC mass removal rates in Building C ranged from 0.077-0.213 pounds per month (lbs/month). The total VOC mass removed in Building C was approximately 0.843 pounds; total removal since system start-up in March 2008 is 7.75 pounds. The VOC mass removal for Building C is far lower than levels requiring MDE permitting.

This page intentionally left blank.

Section 3

Conclusions and Recommendations

3.1 SYSTEM PERFORMANCE

Induced vacuum levels over time indicate the sub-slab depressurization systems are performing as designed (Figures 6, 7, and 8). The extraction laterals in the Building A plating shop induce a vacuum influence over an approximate 5,600-square foot area, encompassing all vapor monitoring points that showed elevated volatile organic compound concentrations before system startup. The extraction laterals in the Building A basement induce a vacuum influence over an approximate 1,875-square foot area, encompassing three of four vapor monitoring points installed to measure the system induced vacuum in the basement (Figure 9). The Building C south basement area extraction wells induce a vacuum influence over an approximate 4,200-square foot area, while the extraction wells in the mid-basement area induce vacuum influence over an approximate 37,500 square foot area; five of eight vapor monitoring points within the target area show vacuum influence to date (Figures 10 and 11). Additional monitoring points will be needed to accurately determine the area of influence in the mid-basement area of Building C.

The sub-slab depressurization systems have removed volatile organic compound mass and treated emissions with granular activated carbon and potassium permanganate zeolite (in Building C only). During the lifespan of system operation, twenty-three 200-pound and five 400-pound granular activated carbon units have been used for the Building A system. Seventeen 200-pound units and one 400-pound granular activated carbon unit have been used for the Building C system (the 600-pound potassium permanganate zeolite unit has not been changed out since its installation in April 2013.). These counts do not include the two granular activated carbon units currently attached to each system. Approximately 61 pounds of granular activated carbon have been used per pound of volatiles removed by the Building A system, and

approximately 490 pounds of granular activated carbon have been used per pound of volatiles removed in the Building C system. Note that granular activated carbon removal efficiency is reduced as vapor concentrations decrease. Influent volatile organic compound concentrations for both systems have decreased significantly since startup of the systems on March 31, 2008, with fluctuations occurring within the decreasing trend (see Figures 12 and 13).

3.2 CONTINUED MONITORING

The Building A and Building C systems will continue to be operated uninterrupted in the next quarter (25th quarter, April 1 to June 30, 2014) in order to maintain the vapor migration barrier. Operation, maintenance, and monitoring activities will include biweekly monitoring, monthly vapor sampling, quarterly 24-hour vacuum monitoring, quarterly system checks, and system maintenance. Granular activated carbon change-outs will occur when the laboratory result from the sample collected at the mid-point of the granular activated carbon unit reaches 50 percent of the influent reading, or as determined based on change-out history and laboratory results trends. Potassium permanganate zeolite change-outs are not anticipated for the next quarter. The next remedial action progress report will be completed in July 2014.

3.3 FUTURE PLANS

Additional vapor monitoring points in the Building C mid-basement area have been proposed and may be installed during the next quarter (25th quarter, April 1 to June 30, 2014) of operation. The proposed locations have been provided previously in an email from Tetra Tech Inc. to CDM (Tetra Tech, 2014). The installation of the proposed vapor monitoring points will provide additional vacuum data that would be used to better define system influence in the mid-basement area.

This page intentionally left blank.

Section 4

References

1. Tetra Tech, Inc. (Tetra Tech), 2012. *Operation And Maintenance Manual, Building A Sub Slab Depressurization System, Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland*. January.
2. Tetra Tech, Inc. (Tetra Tech), 2013. *Operation and Maintenance Manual: Sub Slab Depressurization System—Building C, Lockheed Martin Middle River Complex, 2323 Eastern Boulevard, Middle River, Maryland*. July.
3. Tetra Tech, Inc. (Tetra Tech), 2014. Email communication between M. Martin (Tetra Tech) and C. Silver (CDM) re: proposed monitoring locations for the Building C sub-slab depressurization system. March 31, 2014

TABLES

TABLE 1
Building A Influent (µg/m³)
LABORATORY DATA SUMMARY

SSD System O&M, Middle River Complex, Middle River, Maryland
Samples analyzed by EPA Method TO-15

Date	Flow (scfm)	Benzene	Chlorodifluoromethane	Chloroform	cis-1,2-Dichloroethene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethane	Ethylbenzene	Methylene Chloride	Naphthalene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	1,1,1-Trichloroethene	Trichloroethene	Trichlorofluoromethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	m-Xylene & p-Xylene	o-Xylene	Total VOCs	Mass (lbs/day)	Mass (lbs removed in period)
3/31/2008	NA	ND	N/A	ND	8,300	ND	2,100	ND	7,900	300	ND	ND	ND	330	ND	30,000	44,000	ND	ND	ND	ND	1,100	280	94,310	1.190	3.570
4/2/2008	140	ND	N/A	ND	3,800	ND	660	ND	4,500	ND	ND	ND	ND	ND	ND	16,000	34,000	ND	ND	ND	ND	ND	ND	58,960	0.740	1.480
4/4/2008	140	ND	N/A	ND	2,300	ND	460	ND	3,300	ND	ND	ND	ND	ND	ND	13,000	30,000	ND	ND	ND	ND	ND	ND	49,060	0.620	4.340
4/11/2008	140	ND	N/A	ND	1,100	ND	280	ND	1,500	ND	ND	ND	ND	120	ND	9,100	14,000	ND	ND	ND	ND	ND	ND	26,100	0.330	1.980
4/17/2008	112	ND	N/A	ND	2,000	ND	480	ND	2,200	ND	ND	ND	ND	120	ND	11,000	18,000	ND	ND	ND	ND	110	ND	33,910	0.340	2.380
4/24/2008	84	ND	N/A	ND	930	ND	260	ND	1,200	ND	ND	ND	ND	86	ND	6,500	8,600	ND	ND	ND	ND	ND	ND	17,576	0.130	3.510
5/21/2008	84	ND	N/A	ND	1,000	ND	320	ND	950	ND	ND	ND	ND	ND	ND	6,000	5,500	ND	ND	ND	ND	ND	ND	13,770	0.100	3.100
6/19/2008	70	180	N/A	ND	720	ND	180	ND	760	ND	ND	ND	ND	ND	ND	4,800	7,100	ND	ND	ND	ND	ND	ND	13,740	0.090	2.700
7/18/2008	84	ND	N/A	ND	350	ND	110	ND	430	ND	ND	ND	ND	ND	ND	3,200	3,700	ND	ND	ND	ND	ND	ND	7,790	0.060	1.860
8/12/2008	56	ND	N/A	ND	470	ND	150	ND	400	ND	ND	ND	ND	28	ND	2,900	3,400	ND	ND	ND	ND	ND	ND	7,348	0.040	1.240
9/11/2008	80	ND	N/A	ND	380	ND	130	ND	430	ND	17	ND	70	52	ND	1,900	2,700	32	ND	ND	ND	ND	ND	5,711	0.040	2.440
11/18/2008	84	ND	N/A	ND	1,300	ND	300	ND	1,100	ND	ND	ND	ND	72	ND	6,500	7,200	ND	ND	ND	ND	ND	ND	16,472	0.105	3.142
12/18/2008	84	ND	N/A	ND	420	ND	120	ND	380	ND	ND	ND	ND	ND	ND	2,300	4,100	ND	ND	ND	ND	53	ND	7,373	0.056	1.724
1/22/2009	84	ND	N/A	ND	380	ND	110	ND	380	ND	ND	ND	ND	ND	ND	2,100	2,100	ND	ND	ND	ND	ND	ND	5,070	0.038	1.185
2/20/2009	84	ND	N/A	ND	270	ND	78	ND	260	ND	ND	ND	ND	24	ND	1,600	1,600	ND	ND	ND	ND	ND	ND	3,832	0.029	0.809
3/18/2009	28	ND	N/A	ND	620	ND	470	ND	150	ND	ND	ND	ND	ND	ND	3,800	3,700	ND	ND	ND	ND	ND	ND	8,740	0.063	1.946
4/17/2009	56	ND	N/A	ND	360	ND	100	ND	220	ND	ND	ND	ND	ND	ND	1,900	2,400	ND	ND	ND	ND	ND	ND	4,980	0.056	1.677
5/20/2009	NA	ND	N/A	ND	200	ND	62	ND	140	ND	ND	ND	ND	32	ND	1,700	1,500	ND	ND	ND	ND	ND	ND	3,634	0.041	1.264
6/23/2009	134	ND	N/A	ND	280	ND	77	ND	200	ND	ND	ND	ND	19	ND	1,700	1,800	ND	ND	ND	ND	ND	ND	4,076	0.049	1.471
7/23/2009	129	ND	N/A	ND	250	ND	68	ND	180	ND	27	ND	13	ND	ND	1,400	1,700	14	ND	ND	ND	ND	ND	3,652	0.044	1.352
8/28/2009	NA	ND	N/A	ND	280	ND	79	ND	200	ND	ND	ND	ND	42	ND	1,900	1,900	ND	ND	ND	ND	ND	ND	4,401	0.051	1.568
9/28/2009	125	ND	N/A	ND	150	ND	40	ND	110	ND	ND	ND	ND	13	ND	870	1,000	ND	ND	ND	ND	ND	ND	2,183	0.025	0.735
10/27/2009	NA	ND	N/A	ND	230	ND	64	ND	210	ND	ND	ND	ND	20	ND	1,500	1,400	ND	ND	ND	ND	9.7	ND	3,434	0.026	0.803
11/24/2009	130	ND	N/A	ND	180	ND	43	ND	180	ND	ND	ND	ND	14	ND	1,200	1,100	ND	ND	ND	ND	ND	ND	2,717	0.032	0.960
12/23/2009	132	ND	N/A	ND	190	ND	48	ND	180	ND	ND	ND	ND	39	ND	1,100	1,300	ND	ND	ND	ND	ND	ND	2,857	0.035	1.074
1/19/2010	130	ND	N/A	ND	240	ND	67	ND	180	ND	ND	ND	ND	16	ND	1,500	1,600	ND	ND	ND	ND	ND	ND	3,603	0.042	1.304
2/17/2010	130	ND	N/A	ND	140	ND	35	ND	120	ND	ND	ND	ND	24	ND	760	930	ND	ND	ND	ND	ND	ND	2,009	0.023	0.657
3/17/2010	120	ND	N/A	ND	250	ND	62	ND	190	ND	ND	ND	ND	21	ND	1,500	1,900	ND	ND	ND	ND	ND	ND	3,923	0.042	1.302
4/16/2010	120	ND	N/A	ND	160	ND	41	ND	160	ND	ND	ND	ND	ND	ND	1,100	1,000	ND	ND	ND	ND	ND	ND	2,461	0.027	0.796
5/13/2010	119	ND	N/A	ND	170	ND	42	ND	170	19	ND	ND	ND	95	ND	960	1,100	ND	18	ND	ND	75	23	2,672	0.029	0.886
6/18/2010	110	ND	N/A	ND	96	ND	24	ND	110	12	ND	ND	ND	15	ND	630	600	12	130	28	ND	50	26	1,733	0.017	0.514
7/19/2010	110	ND	N/A	ND	220	ND	52	ND	180	ND	ND	ND	ND	ND	ND	1,500	1,500	ND	24	ND	ND	ND	ND	3,476	0.034	1.066
8/19/2010	110	ND	N/A	ND	200	ND	45	ND	170	ND	ND	ND	ND	12	ND	1,200	1,100	16	ND	ND	ND	ND	ND	2,743	0.027	0.841
9/17/2010	108	ND	N/A	ND	140	ND	35	ND	150	ND	ND	ND	ND	29	ND	860	1,100	20	ND	ND	ND	ND	ND	2,334	0.023	0.680
10/12/2010 ^a	100	ND	N/A	ND	170	ND	40	ND	140	ND	ND	ND	ND	940	ND	1,100	1,400	20	ND	ND	ND	89	33	3,932	0.035	1.060
11/2/2010	138	ND	N/A	ND	150	ND	34	ND	100	ND	ND	ND	ND	71	ND	920	1,200	53	ND	ND	ND	14	ND	2,542	0.032	0.946
12/1/2010	138	ND	N/A	ND	120	ND	28	ND	110	42	ND	ND	ND	54	ND	790	970	13	ND	ND	ND	170	31	2,328	0.029	0.866
1/5/2011	133	ND	N/A	ND	150	ND	34	ND	130	14	ND	ND	ND	13	ND	860	1,200	ND	ND	ND	ND	47	10	2,458	0.029	0.882
2/7/2011	130	ND	N/A	ND	130	ND	32	ND	160	ND	ND	ND	ND	23	ND	910	900	ND	ND	ND	ND	29	ND	2,184	0.026	0.766
3/3/2011	130	ND	N/A	ND	390	ND	98	ND	350	19	ND	ND	ND	23	ND	2,800	2,500	ND	ND	ND	ND	61	ND	6,241	0.073	2.188
4/14/2011	125	ND	N/A	ND	150	ND	36	ND	160	ND	30	ND	ND	10	ND	900	1,100	ND	ND	ND	ND	ND	ND	2,386	0.027	0.804
5/6/2011	130	ND	N/A	ND	150	ND	39	ND	150	ND	ND	ND	ND	ND	ND	880	890	ND	ND	ND	ND	ND	ND	2,109	0.025	0.764
6/9/2011	150	ND	N/A	ND	240	ND	59	ND	190	ND	ND	ND	ND	35	ND	1,600	1,600	20	ND	ND	ND	ND	ND	3,744	0.050	1.515
7/11/2011	128	ND	N/A	ND	200	ND	51	ND	170	ND	40	ND	ND	81	ND	1,300	1,300	ND	ND	ND	ND	26	ND	3,168	0.036	1.094
8/3/2011	160	ND	N/A	ND	200	ND	44	ND	160	ND	ND	ND	ND	29	ND	1,200	1,400	ND	ND	ND	ND	ND	ND	3,033	0.044	1.309
9/15/2011	160	12	N/A	ND	130	ND	29	ND	130	ND	ND	ND	ND	11	ND	750	990	12	ND	ND	ND	ND	ND	2,064	0.030	0.891
10/18/2011	160	8.3	N/A	ND	120	ND	28	ND	93	ND	ND	ND	ND	51	ND	640	780	ND	ND	ND	ND	ND	ND	1,720	0.025	0.767
11/8/2011	165	10	N/A	ND	140	ND	34	ND	110	ND	ND	ND	ND	9.2	ND	730	930	ND	ND	ND	ND	ND	ND	1,963	0.029	0.874
12/6/2011	160	7.3	N/A	ND	130	ND	29	ND	110	ND	ND	ND	ND	46	ND	600	800	ND	ND	ND	ND	ND	ND	1,722	0.025	0.768
1/3/2012	165	ND	N/A	ND	130	ND	30	ND	140	ND	ND	ND	ND	16	ND	590	840	ND	ND	ND	ND	ND	ND	1,746	0.026	0.803
2/16/2012	160	ND	N/A	ND	140	ND	31	ND	110	ND	ND	ND	ND	ND	ND	760	980	ND	ND	ND	ND	ND	ND	2,021	0.029	0.843
3/15/2012	160	ND	N/A	ND	160	ND	36	ND	130	ND	ND	ND	ND	14	ND	880	1,100	ND	ND	ND	ND	ND	ND	2,320	0.033	1.034
4/16/2012	158	ND	N/A	ND	170	ND	34	ND	140	ND	ND	ND	ND	ND	ND	880	1,300	ND	ND	ND	ND	20	ND	2,544	0.036	1.084
5/9/2012	159	ND	N/A	ND	290	ND	56	ND	200	ND	ND	ND	ND	32	ND	1,700	2,300	ND	ND	ND	ND	ND	ND	4,578	0.065	2.029
6/4/2012	159	ND	N/A	ND	320	ND	66	ND	200	ND	ND	ND	ND	ND	ND	1,700	2,100	ND	ND	ND	ND	ND	ND	4,386	0.063	1.881
7/5/2012	162	ND	N/A	ND	250	ND	50	ND	180	ND	ND	ND	ND	16	ND	1,300	1,300	ND	ND	ND	ND	ND	ND	3,096	0.045	1.398
8/15/2012	164	ND	N/A	ND	150	ND	30	ND	130	ND	ND	ND	ND	22	ND	730	1,000	17	ND	ND	ND	ND	ND	2,079	0.031	0.950
9/12/2012	165	ND	N/A	ND	110	ND	23	ND	120	ND	ND	ND	ND	170	ND	560	720	ND	ND	ND	ND	11	ND	1,714	0.025	0.763
10/18/2012	160	ND	N/A	ND	190	ND	36	ND	180	ND																

TABLE 2

Building A Mid-GAC (µg/m³)

LABORATORY DATA SUMMARY

SSD System O&M, Middle River Complex, Middle River, Maryland

Samples analyzed by EPA Method TO-15

Date	Benzene	Chlorodifluoromethane	Chloroform	cis-1,2-Dichloroethene	Dichlorodifluoromethane	1,1-Dichloroethane	1,1-Dichloroethene	Ethylbenzene	Methylene Chloride	Naphthalene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	m-Xylene & p-Xylene	o-Xylene	Total VOCs (µg/m ³)	Mass (lbs/day)
4/2/2008	6.9	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7	0.000
4/24/2008	ND	N/A	ND	810	ND	240	2,200	ND	ND	ND	ND	ND	2,100	ND	ND	ND	ND	ND	ND	ND	ND	5,350	0.040
5/21/2008	ND	N/A	ND	280	ND	100	740	ND	ND	ND	ND	ND	410	11	ND	ND	ND	ND	ND	ND	ND	1,541	0.010
6/19/2008	110	N/A	ND	2,300	ND	830	2,200	ND	53	ND	ND	ND	1,200	ND	ND	ND	ND	ND	ND	ND	ND	6,693	0.040
7/18/2008	ND	N/A	ND	60	ND	27	270	ND	ND	ND	ND	ND	100	ND	ND	ND	ND	ND	ND	ND	ND	457	0.003
8/12/2008	ND	N/A	15	60	ND	130	400	ND	ND	ND	ND	ND	1,500	30	16	ND	ND	ND	ND	ND	ND	2,151	0.010
9/11/2008	ND	N/A	15	ND	ND	170	520	ND	ND	ND	ND	ND	890	53	30	ND	ND	ND	ND	ND	ND	1,678	0.010
11/18/2008	ND	N/A	ND	ND	ND	60	97	ND	ND	ND	ND	ND	150	180	ND	ND	ND	ND	ND	ND	ND	487	0.003
12/18/2008	ND	N/A	ND	98	ND	38	330	ND	ND	ND	ND	ND	51	18	ND	ND	ND	ND	ND	ND	ND	535	0.004
1/22/2009	ND	N/A	ND	42	ND	19	490	ND	ND	ND	ND	ND	25	12	11	ND	ND	ND	ND	ND	ND	599	0.005
2/20/2009	ND	N/A	ND	220	ND	91	310	ND	ND	ND	ND	ND	380	68	ND	ND	ND	ND	ND	ND	ND	1,069	0.008
3/18/2009	ND	N/A	ND	210	ND	69	280	ND	ND	ND	ND	ND	1,900	190	ND	ND	ND	ND	ND	ND	ND	2,649	0.007
4/17/2009	ND	N/A	ND	ND	ND	ND	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140	0.002
5/20/2009	ND	N/A	ND	110	ND	42	140	ND	ND	ND	ND	ND	200	ND	ND	ND	ND	ND	ND	ND	ND	492	0.006
6/23/2009	ND	N/A	ND	66	ND	130	320	ND	ND	ND	ND	ND	82	ND	18	ND	ND	ND	ND	ND	ND	616	0.007
7/23/2009	ND	N/A	ND	250	ND	88	210	ND	ND	ND	ND	ND	890	ND	12	ND	ND	ND	ND	ND	ND	1,450	0.017
8/28/2009	ND	N/A	ND	330	ND	130	290	ND	ND	ND	ND	ND	1,100	ND	14	ND	ND	ND	ND	ND	ND	1,864	0.021
9/28/2009	ND	N/A	ND	130	ND	38	110	ND	ND	ND	ND	ND	580	ND	ND	ND	ND	ND	ND	ND	ND	858	0.010
10/27/2009	ND	N/A	ND	170	ND	94	260	ND	ND	ND	ND	ND	180	35	ND	ND	ND	ND	ND	ND	ND	739	0.009
11/24/2009	ND	N/A	ND	250	ND	84	210	ND	ND	ND	ND	ND	710	ND	ND	ND	ND	ND	ND	ND	ND	1,254	0.015
12/23/2009	ND	N/A	ND	28	ND	30	180	ND	ND	ND	ND	ND	19	29	ND	ND	ND	ND	ND	ND	ND	286	0.003
1/19/2010	ND	N/A	ND	190	ND	100	260	ND	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	ND	ND	566	0.007
2/17/2010	ND	N/A	ND	ND	ND	100	110	ND	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	ND	ND	226	0.003
3/17/2010	ND	N/A	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	0.000
4/16/2010	ND	N/A	ND	260	ND	89	200	ND	ND	ND	ND	ND	600	14	ND	ND	ND	ND	ND	ND	ND	1,163	0.013
5/13/2010	13	N/A	ND	260	ND	61	180	15	ND	ND	ND	67	1,300	ND	13	12	ND	ND	ND	55	16	1,921	0.021
6/18/2010	ND	N/A	ND	20	ND	ND	19	ND	ND	ND	ND	ND	18	ND	ND	76	16	ND	25	14	149	0.002	
7/19/2010	ND	N/A	ND	74	ND	24	89	ND	ND	ND	ND	ND	87	ND	ND	11	ND	ND	ND	ND	ND	285	0.003
8/19/2010	ND	N/A	ND	210	ND	55	210	ND	ND	ND	ND	ND	720	ND	13	ND	ND	ND	ND	ND	ND	1,208	0.012
9/17/2010	ND	N/A	ND	330	ND	110	310	ND	ND	ND	ND	ND	430	ND	24	ND	ND	ND	ND	ND	ND	1,204	0.01191
10/12/2010	ND	N/A	ND	400	ND	81	170	ND	ND	ND	ND	32	1,000	49	17	ND	ND	ND	ND	ND	ND	1,749	0.0173
11/2/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	0.00
12/1/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	ND	ND	ND	ND	ND	ND	ND	14	0.00014
1/5/2011	ND	N/A	ND	ND	ND	24	ND	ND	ND	ND	ND	ND	20	11	ND	ND	ND	ND	ND	ND	ND	55	0.00054
2/7/2011	ND	N/A	ND	13	ND	9	95	ND	ND	ND	ND	ND	53	12	20	ND	ND	ND	ND	ND	ND	202	0.00199
3/3/2011	ND	N/A	ND	15	ND	8	120	ND	ND	ND	ND	66	ND	44	16	13	ND	ND	ND	18	ND	282	0.00279
4/14/2011	ND	N/A	ND	110	ND	40	310	ND	25	ND	ND	ND	48	ND	13	ND	ND	ND	ND	ND	ND	546	0.0054
5/6/2011	ND	N/A	ND	150	ND	51	240	ND	ND	ND	ND	ND	70	34	ND	ND	ND	ND	ND	ND	ND	545	0.00539
6/9/2011	14	N/A	23	760	ND	190	340	ND	ND	ND	ND	26	ND	440	51	20	ND	ND	ND	ND	ND	1,864	0.01843
7/11/2011	11	N/A	ND	320	ND	92	220	ND	21	ND	ND	67	ND	320	16	ND	ND	ND	ND	29	10	1,067	0.01055
8/3/2011	ND	N/A	ND	320	ND	60	170	ND	ND	ND	ND	ND	110	ND	ND	ND	ND	ND	ND	ND	ND	660	0.00653
9/15/2011	ND	N/A	ND	170	ND	35	140	ND	ND	ND	ND	ND	200	ND	ND	ND	ND	ND	ND	ND	ND	545	0.00539
10/18/2011	ND	N/A	ND	110	ND	27	80	ND	ND	ND	ND	22	ND	200	ND	ND	ND	ND	ND	ND	ND	439	0.00434
11/8/2011	ND	N/A	ND	130	ND	33	110	ND	ND	ND	ND	ND	330	ND	ND	ND	ND	ND	ND	ND	ND	603	0.00596
12/6/2011	ND	N/A	ND	140	ND	36	140	ND	ND	ND	ND	ND	310	ND	ND	ND	ND	ND	ND	ND	ND	626	0.00619
1/3/2012	ND	N/A	ND	71	ND	19	82	ND	ND	ND	ND	ND	200	ND	ND	ND	ND	ND	ND	ND	ND	372	0.00368
2/16/2012	ND	N/A	ND	120	ND	26	130	ND	ND	ND	ND	ND	430	11	ND	ND	ND	ND	ND	ND	ND	717	0.00709
3/15/2012	ND	N/A	ND	190	ND	37	210	ND	ND	ND	ND	ND	480	38	ND	ND	ND	ND	ND	ND	ND	955	0.00944
4/16/2012	ND	N/A	ND	260	ND	48	200	ND	ND	ND	ND	ND	640	34	ND	ND	ND	ND	ND	ND	ND	1,182	0.01169
5/9/2012	ND	N/A	ND	140	ND	26	140	ND	ND	ND	ND	ND	76	14	ND	ND	ND	ND	ND	ND	ND	396	0.00392
6/4/2012	ND	N/A	ND	170	ND	35	170	ND	ND	ND	ND	ND	120	63	ND	ND	ND	ND	ND	ND	ND	558	0.00552
7/5/2012	ND	N/A	ND	320	ND	74	260	ND	19	ND	ND	ND	210	26	12	ND	ND	ND	ND	ND	ND	921	0.00911
8/15/2012	ND	N/A	ND	240	ND	40	130	ND	ND	ND	ND	10	ND	420	20	13	ND	ND	ND	ND	ND	873	0.00863
9/12/2012	ND	N/A	ND	180	ND	43	140	ND	ND	ND	ND	14	ND	34	13	13	ND	ND	ND	ND	ND	437	0.00432
10/18/2012	ND	N/A	ND	160	ND	29	95	ND	ND	ND	ND	ND	25	28	ND	ND	ND	ND	ND	ND	ND	337	0.00333
11/13/2012	ND	N/A	ND	89	ND	16	94	ND	ND	ND	ND	ND	20	21	ND	ND	ND	ND	ND	ND	ND	240	0.00237
12/6/2012	ND	N/A	ND	86	ND	14	92	ND	ND	ND	ND	ND	26	20	ND	ND	ND	ND	ND	ND	ND	238	0.00235
1/4/2013	ND	N/A	ND	97	ND	21	130	ND	ND	ND	ND	ND	88	15	ND	ND	ND	ND	ND	ND	ND	351	0.00347
2/6/2013	ND	N/A	ND	120	ND	32	120	ND	ND	ND	ND	ND	180	19	ND	ND	ND	ND	ND	ND	ND	471	0.00466
3/7/2013	ND	N/A	ND	180	ND	46	150	ND	ND	ND	ND	ND	150	37	ND	ND	ND	ND	ND	ND	ND	563	0.00557
4/8/2013	ND	N/A	ND	66	ND	15	46	ND	ND	ND	ND	ND	43	92	ND	ND	ND	ND	ND	ND	ND	262	0.00259
5/10/2013	ND	N/A	ND	380	ND	73	210	ND	ND	ND	ND	ND	170	31	16	ND	ND	ND	ND	ND	ND	880	0.0087
6/5/2013	ND	N/A	ND	210	ND	33	160	ND	ND	ND	23	ND	460	15	ND	ND	ND	ND	ND	ND	ND	901	0.00891
7/3/2013	21	N/A	ND	330	ND	78	200	ND	ND	ND	ND	ND	38	42	ND	ND	ND	ND	ND	ND	ND	709	0.00701
8/14/2013	50	N/A	ND	390	ND	59	120	ND	20	ND	ND	7.3	ND	63	66	11	ND	ND	ND	ND	ND	786	0.00778
9/9/2013	17	N/A	ND	180	ND	23	110	ND	ND	ND	ND	ND	50	21	ND	ND	ND	ND	ND	ND	ND	401	0.00397
10/10/2013	29	N/A	ND	190	ND	33	120	ND	ND	ND	ND	9.9	ND	170	32	ND	ND	ND	ND	ND	ND	584	0.00577
11/7/2013	38	N/A	ND	260	ND	48	95	ND	ND	ND	ND	ND	38	39	ND	ND	ND	ND	ND	ND	ND	518	0.00512
12/5/2013	31.8	ND	ND	107	2.9	18.8	51.6	ND	6.0	5.9	ND	4.7	ND	34.1	43.5	ND	3.2	ND	ND	ND	ND		

TABLE 3
Building A Effluent (µg/m³)

LABORATORY DATA SUMMARY

SSD System O&M, Middle River Complex, Middle River, Maryland

Samples analyzed by EPA Method TO-15

Date	Benzene	cis-1,2-Dichloroethene	Chlorodifluoromethane	Dichlorodifluoromethane	1,1-Dichloroethane	1,1-Dichloroethene	Ethylbenzene	Methylene Chloride	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	m-Xylene & p-Xylene	o-Xylene	Total VOCs (µg/m ³)	Mass (lbs/day)
3/31/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/2/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/4/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	110	ND	ND	110	0.001
4/11/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/17/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/24/2008	ND	30	N/A	ND	13	470	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	483	0.004
5/21/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
6/19/2008	76	67	N/A	ND	65	2,200	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	2,408	0.015
8/1/2008	ND	14	N/A	ND	15	300	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	315	0.005
8/12/2008	ND	55	N/A	ND	42	310	ND	19	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	371	0.005
9/11/2008	ND	ND	N/A	ND	ND	46	ND	18	ND	ND	ND	11	ND	ND	N/A	ND	ND	ND	ND	ND	75	0.001
11/18/2008	ND	ND	N/A	ND	ND	ND	ND	61	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	61	0.000
12/18/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
1/22/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
2/20/2009	ND	10	N/A	ND	ND	110	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	120	0.000
3/18/2009	ND	ND	N/A	ND	ND	14	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	14	0.000
4/17/2009	ND	64	N/A	ND	20	53	ND	ND	ND	ND	ND	26	ND	ND	N/A	ND	ND	ND	ND	ND	163	0.001
5/20/2009	ND	9.9	N/A	ND	ND	46	ND	ND	ND	ND	ND	38	ND	ND	N/A	ND	ND	ND	ND	ND	63	0.000
6/23/2009	ND	11.0	N/A	ND	ND	ND	ND	ND	ND	ND	ND	44	ND	ND	N/A	ND	ND	ND	ND	ND	55	0.000
7/23/2009	ND	ND	N/A	ND	21	190	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	211	0.002
8/28/2009	ND	52	N/A	ND	29	46	ND	ND	ND	ND	7.7	250	ND	ND	N/A	ND	ND	ND	ND	ND	385	0.003
9/28/2009	ND	27	N/A	ND	19	100	ND	ND	ND	ND	ND	93	ND	ND	N/A	ND	ND	ND	ND	ND	239	0.002
10/27/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	40	24	ND	ND	N/A	ND	ND	ND	ND	ND	64	0.001
11/24/2009	ND	ND	N/A	ND	ND	53	ND	ND	ND	ND	ND	21	ND	ND	N/A	ND	ND	ND	ND	ND	74	0.001
12/23/2009	ND	21	N/A	ND	10	11	ND	ND	ND	ND	8.8	190	16	ND	N/A	ND	ND	ND	ND	ND	257	0.003
1/19/2010	ND	27	N/A	ND	10	18	ND	ND	ND	ND	ND	200	ND	ND	N/A	ND	ND	ND	ND	ND	255	0.003
2/17/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
3/17/2010	ND	11	N/A	ND	ND	20	ND	ND	ND	ND	ND	17	11	ND	N/A	ND	ND	ND	ND	ND	59	0.001
4/16/2010	ND	12	N/A	ND	9.4	330	ND	ND	ND	ND	ND	27	31	ND	N/A	ND	ND	ND	ND	ND	409	0.004
5/13/2010	7.2	250	N/A	ND	57.0	160	19	ND	ND	ND	58	1,100	24	12	N/A	33	ND	ND	77	24	1,720	0.019
6/18/2010	ND	ND	N/A	ND	ND	90	ND	ND	ND	ND	ND	ND	ND	ND	N/A	62	13	ND	16	9.3	165	0.002
7/19/2010	ND	8.7	N/A	ND	ND	100	ND	ND	ND	ND	ND	40	16	ND	N/A	ND	ND	ND	ND	ND	165	0.002
8/19/2010	ND	90	N/A	ND	47	270	ND	ND	ND	ND	ND	41	ND	15	N/A	ND	ND	ND	ND	ND	463	0.005
9/17/2010	ND	88	N/A	ND	39	260	ND	ND	ND	ND	ND	120	ND	ND	N/A	ND	ND	ND	ND	ND	507	0.01
10/12/2010	ND	81	N/A	ND	10	58	ND	ND	ND	ND	16	360	30	17	N/A	ND	ND	ND	ND	ND	572	0.01
11/2/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
12/1/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	14.0	ND	ND	N/A	ND	ND	ND	ND	ND	14	0.000
1/5/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
2/7/2011	ND	ND	N/A	ND	ND	24	ND	ND	ND	ND	ND	14	21	N/A	ND	ND	ND	ND	ND	ND	59	0.000
3/3/2011	120	ND	N/A	ND	ND	25	ND	ND	ND	ND	58	ND	ND	19	N/A	ND	ND	ND	23	ND	222	0.002
4/14/2011	ND	ND	N/A	ND	ND	110	ND	23	ND	ND	55	ND	ND	ND	N/A	ND	ND	ND	11	ND	188	0.002
5/6/2011	ND	8.8	N/A	ND	ND	170	ND	ND	ND	ND	ND	21	19	ND	N/A	ND	ND	ND	ND	ND	219	0.002
6/9/2011	ND	59.0	N/A	ND	91	580	ND	ND	ND	ND	30	34	ND	19	N/A	ND	ND	ND	ND	ND	813	0.008
7/11/2011	ND	ND	N/A	ND	ND	ND	13	21	ND	ND	100	26	ND	ND	N/A	ND	ND	ND	43	17	160	0.002
8/3/2011	ND	ND	N/A	ND	ND	19	ND	ND	ND	ND	11	20	ND	ND	N/A	ND	ND	ND	ND	ND	50	0.001
9/15/2011	ND	100	N/A	ND	41	150	ND	ND	ND	ND	ND	12	ND	ND	N/A	ND	ND	ND	ND	ND	303	0.003
10/18/2011	ND	130	N/A	ND	35	77	ND	ND	ND	ND	25	ND	ND	ND	N/A	ND	ND	ND	ND	ND	267	0.003
11/8/2011	ND	150	N/A	ND	39	95	ND	ND	ND	ND	ND	15	ND	ND	N/A	ND	ND	ND	ND	ND	299	0.003
12/6/2011	ND	150	N/A	ND	37	110	ND	ND	ND	ND	ND	16	ND	ND	N/A	ND	ND	ND	ND	ND	313	0.003
1/3/2012	ND	56	N/A	ND	15	67	ND	ND	ND	ND	ND	20	11	ND	N/A	ND	ND	ND	ND	ND	169	0.002
2/16/2012	ND	85	N/A	ND	24	100	ND	ND	ND	ND	ND	52	ND	ND	N/A	ND	ND	ND	ND	ND	261	0.003
3/15/2012	ND	82	N/A	ND	19	100	ND	ND	ND	ND	ND	45	ND	ND	N/A	ND	ND	ND	ND	ND	246	0.002
4/16/2012	ND	180	N/A	ND	44	240	ND	ND	ND	ND	ND	140	12	ND	N/A	ND	ND	ND	ND	ND	616	0.006
5/9/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
6/4/2012	ND	ND	N/A	ND	ND	12	9.6	ND	ND	ND	9.1	ND	18	ND	N/A	ND	ND	ND	42	12	49	0.001
7/5/2012	ND	ND	N/A	ND	ND	87	ND	ND	ND	ND	26	ND	ND	ND	N/A	ND	ND	ND	ND	ND	113	0.001
8/15/2012	ND	130	N/A	ND	38	210	ND	ND	ND	ND	8.7	ND	ND	ND	N/A	ND	ND	ND	ND	ND	387	0.004
9/12/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	13	ND	ND	ND	N/A	ND	ND	ND	ND	ND	13	0.000
10/18/2012	ND	ND	N/A	ND	ND	9.8	ND	ND	ND	ND	ND	13	ND	ND	N/A	ND	ND	ND	ND	ND	23	0.000
11/13/2012	ND	ND	N/A	ND	ND	48	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	48	0.001
12/6/2012	ND	8.8	N/A	ND	ND	63	ND	ND	ND	ND	ND	13	ND	ND	N/A	ND	ND	ND	ND	ND	85	0.001
1/4/2013	ND	33	N/A	ND	12	100	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	145	0.001
2/6/2013	ND	77	N/A	ND	28	150	ND	ND	ND	ND	ND	11	ND	ND	N/A	ND	ND	ND	ND	ND	266	0.003
3/7/2013	ND	130	N/A	ND	40	140	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	310	0.003
4/8/2013	ND	56	N/A	ND	16	55	ND	ND	ND	ND	ND	42	ND	ND	N/A	ND	ND	ND	ND	ND	169	0.002
5/10/2013	ND	180	N/A	ND	38	190	ND	ND	ND	ND	ND	12	16	ND	N/A	ND	ND	ND	ND	ND	436	0.004
6/5/2013	ND	86	N/A	ND	21	110	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	217	0.002
7/3/2013	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
8/14/2013	ND	8.2	N/A	ND	ND	52	ND	17	ND	ND	ND	16	ND	N/A	ND	ND	ND	ND	ND	ND	93	0.001
9/9/2013	ND	15	N/A	ND	ND	180	ND	ND	ND	ND	ND	ND	12	N/A	ND	ND	ND	ND	ND	ND	207	0.002
10/10/2013	ND	270	N/A	ND	66	190	ND	ND	ND	ND	11	ND	13	15	N/A	ND	ND	ND	ND	ND	565	0.006
11/7/2013	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0	0.000
12/5/2013	0.97	1.9	856	ND	3.0	14.8	ND	105	ND	1.6	3.0	ND	1.8	ND	12	ND	ND	ND	ND	ND	1000	0.010
1/13/2014	1.7	6.4	12.5	2.3	5.9	31.3	1.9	1.8	5.7	ND	22.2	ND	ND	ND	1.4	4.0	ND	ND	5.8	2.2	97	0.001
2/14/2014	0.65	42.6	1.																			

TABLE 4
Building C Influent (µg/m³)
LABORATORY DATA SUMMARY

SSD System O&M, Middle River Complex, Middle River, Maryland
Samples analyzed by EPA Method TO-15

Date	Flow (scfm)	Benzene	Chlorodifluoromethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	Dichlorodifluoromethane	1,1-Dichloroethene	1,1-Dichloroethane	Ethylbenzene	Methylene Chloride	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-trifluoroethane	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	m-Xylene & p-Xylene	o-Xylene	Total VOCs (µg/m ³)	Mass (lbs/day)	Mass (lbs removed in period)
3/31/2008	55	ND	N/A	ND	25,000	ND	ND	ND	320	ND	ND	ND	ND	ND	550	ND	N/A	990	740	2,100	1,100	370	29,700	0.1500	0.450	
4/2/2008	57	ND	N/A	ND	2,700	ND	ND	ND	ND	ND	ND	ND	ND	ND	84	ND	N/A	63	56	320	65	ND	3,223	0.0200	0.040	
4/4/2008	60	ND	N/A	ND	6,600	ND	ND	32	44	ND	ND	ND	ND	ND	440	ND	N/A	180	170	690	180	68	8,156	0.0500	0.350	
4/11/2008	65	ND	N/A	ND	4,100	ND	ND	ND	ND	ND	ND	ND	ND	ND	600	ND	N/A	73	61	370	48	ND	5,204	0.0300	0.180	
4/17/2008	60	ND	N/A	ND	2,900	ND	ND	ND	ND	ND	ND	ND	ND	ND	670	ND	N/A	69	55	190	34	ND	3,884	0.0200	0.140	
4/24/2008	63	ND	N/A	ND	2,600	ND	ND	ND	ND	ND	28	ND	ND	ND	750	ND	N/A	85	70	130	32	17	3,663	0.0200	0.540	
5/21/2008	60	ND	N/A	ND	1,600	ND	ND	ND	ND	ND	17	ND	ND	ND	650	ND	N/A	65	51	41	15	ND	2,424	0.0100	0.310	
6/19/2008	60	7.4	N/A	ND	300	ND	ND	ND	ND	ND	ND	ND	ND	110	ND	ND	N/A	23	19	8	9	ND	467	0.0030	0.090	
7/18/2008	54	ND	N/A	ND	1,300	ND	ND	ND	ND	ND	14	ND	ND	ND	440	ND	N/A	45	36	35	ND	ND	1,870	0.0090	0.279	
8/13/2008	60	ND	N/A	16	410	ND	ND	ND	ND	ND	ND	ND	ND	ND	58	ND	N/A	ND	13	ND	ND	ND	497	0.0030	0.093	
9/11/2008	60	ND	N/A	ND	730	ND	ND	ND	ND	18	ND	ND	ND	13	130	ND	N/A	ND	ND	20	ND	ND	911	0.0050	0.305	
11/12/2008	62	ND	N/A	ND	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	110	ND	N/A	ND	17	ND	ND	ND	517	0.0029	0.086	
12/18/2008	66	ND	N/A	ND	420	ND	ND	ND	ND	ND	ND	ND	ND	ND	150	ND	N/A	ND	22	ND	ND	ND	592	0.0035	0.105	
1/22/2009	67	ND	N/A	ND	810	ND	ND	ND	ND	ND	170	ND	ND	ND	580	ND	N/A	37	29	38	17	14	1,664	0.0102	0.306	
2/21/2009	65	ND	N/A	ND	630	ND	ND	ND	ND	ND	140	ND	ND	ND	270	ND	N/A	39	34	25	16	12	1,138	0.0068	0.204	
3/18/2009	66	ND	N/A	ND	460	ND	ND	ND	ND	ND	160	ND	ND	ND	350	ND	N/A	62	51	16	14	13	1,099	0.0067	0.200	
4/17/2009	66	ND	N/A	ND	200	ND	ND	ND	ND	ND	46	ND	ND	ND	86	ND	N/A	19	16	6.1	ND	ND	373	0.0022	0.066	
5/20/2009	64	ND	N/A	ND	210	ND	ND	ND	ND	ND	24	ND	ND	ND	79	ND	N/A	14	14	5.7	ND	ND	347	0.0020	0.060	
6/23/2009	56	ND	N/A	ND	190	ND	ND	ND	ND	ND	ND	ND	ND	ND	58	ND	N/A	ND	ND	ND	ND	ND	248	0.0012	0.037	
7/23/2009	60	ND	N/A	ND	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	55	ND	N/A	ND	ND	ND	ND	ND	205	0.0011	0.033	
8/28/2009	NA	ND	N/A	ND	720	ND	ND	ND	ND	17	ND	ND	ND	ND	160	ND	N/A	ND	ND	13	ND	ND	910	0.0049	0.147	
9/28/2009	NA	ND	N/A	ND	39	ND	ND	ND	ND	110	ND	ND	ND	ND	16	ND	N/A	ND	ND	ND	ND	ND	165	0.0009	0.027	
10/27/2009	60	ND	N/A	ND	200	ND	ND	ND	ND	ND	64	ND	ND	ND	64	ND	N/A	ND	ND	ND	ND	ND	264	0.0014	0.043	
11/24/2009	60	ND	N/A	ND	190	ND	ND	ND	ND	ND	ND	ND	ND	ND	75	ND	N/A	ND	ND	ND	ND	ND	265	0.0000	0.000	
12/23/2009	65	ND	N/A	ND	96	ND	ND	ND	ND	ND	26	ND	ND	ND	45	ND	N/A	ND	ND	ND	8.7	ND	167	0.0010	0.029	
1/19/2010	65	ND	N/A	ND	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	57	ND	N/A	ND	ND	ND	ND	ND	197	0.0012	0.035	
2/17/2010	68	ND	N/A	ND	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	37	ND	N/A	ND	ND	ND	ND	ND	137	0.0008	0.025	
3/17/2010	65	ND	N/A	ND	87	ND	ND	ND	ND	ND	ND	ND	ND	ND	33	ND	N/A	ND	ND	ND	ND	ND	120	0.0007	0.021	
4/16/2010	65	ND	N/A	ND	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	39	ND	N/A	ND	ND	ND	ND	ND	149	0.0009	0.026	
5/13/2010	68	58	N/A	ND	65	ND	ND	38	ND	ND	220	ND	ND	ND	22	ND	N/A	25	ND	ND	140	39	428	0.0026	0.078	
6/18/2010	66	ND	N/A	ND	72	ND	ND	ND	ND	ND	ND	ND	ND	ND	25	ND	N/A	83	17	ND	30	17	197	0.0012	0.035	
7/19/2010	60	ND	N/A	ND	68	ND	ND	ND	ND	ND	ND	ND	ND	ND	34	ND	N/A	ND	ND	ND	ND	ND	102	0.0006	0.017	
8/19/2010	61	ND	N/A	ND	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	31	ND	N/A	ND	ND	ND	ND	ND	131	0.0007	0.022	
9/17/2010	63	ND	N/A	ND	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	33	ND	N/A	ND	ND	ND	ND	ND	103	0.0006	0.018	
10/12/2010	60	10	N/A	ND	160	ND	ND	11	ND	ND	130	110.0	70	ND	ND	N/A	ND	ND	ND	23	ND	491	0.0026	0.079		
11/2/2010	65	ND	N/A	ND	65	ND	ND	ND	ND	ND	ND	ND	ND	ND	35	ND	N/A	ND	ND	ND	ND	ND	100	0.0006	0.018	
12/1/2010	65	ND	N/A	ND	120	ND	ND	ND	ND	19	ND	ND	ND	ND	89	ND	N/A	ND	ND	ND	ND	ND	228	0.0013	0.040	
1/5/2011	68	ND	N/A	ND	160	ND	ND	ND	ND	94	7.7	ND	250	ND	ND	N/A	ND	ND	9	ND	ND	520	0.0032	0.095		
2/7/2011	70	ND	N/A	ND	180	ND	ND	ND	ND	120	ND	ND	270	ND	ND	N/A	ND	ND	ND	ND	ND	570	0.0036	0.108		
3/3/2011	69	ND	N/A	ND	170	ND	ND	ND	ND	ND	110	34	ND	180	ND	N/A	ND	ND	ND	ND	ND	ND	494	0.0031	0.092	
4/14/2011	65	ND	N/A	ND	130	ND	ND	ND	ND	ND	37	10	ND	90	ND	N/A	ND	ND	ND	ND	ND	ND	267	0.0016	0.047	
5/6/2011	70	8	N/A	ND	100	ND	ND	16	ND	19	ND	ND	82	ND	N/A	ND	ND	ND	9	ND	ND	225	0.0014	0.044		
6/9/2011	55	26	N/A	ND	97	ND	ND	ND	ND	ND	14	ND	63	ND	N/A	ND	ND	ND	ND	ND	ND	200	0.0010	0.030		
7/11/2011	51	20	N/A	ND	74	ND	ND	ND	37	ND	62	ND	26	ND	N/A	ND	ND	ND	21	ND	ND	219	0.0010	0.030		
8/3/2011	50	14	N/A	ND	76	ND	ND	ND	ND	ND	ND	ND	34	ND	N/A	ND	ND	ND	ND	ND	ND	124	0.0006	0.017		
9/15/2011	48	10	N/A	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	32	0.0001	0.004		
10/25/2011	55	ND	N/A	ND	38	ND	ND	ND	27	ND	20	ND	ND	ND	ND	N/A	ND	ND	11	ND	ND	85	0.0004	0.013		
11/8/2011	55	12	N/A	ND	45	ND	ND	ND	ND	ND	ND	ND	16	ND	N/A	ND	ND	ND	ND	ND	ND	73	0.0004	0.011		
12/6/2011	55	ND	N/A	ND	62	ND	ND	ND	ND	ND	ND	ND	21	ND	N/A	ND	ND	ND	ND	ND	ND	83	0.0004	0.013		
1/3/2012	50	ND	N/A	ND	55	ND	ND	ND	ND	ND	ND	ND	21	ND	N/A	ND	ND	ND	ND	ND	ND	76	0.0003	0.011		
2/16/2012	54	ND	N/A	ND	76	ND	ND	ND	ND	ND	ND	ND	43	ND	N/A	ND	ND	ND	ND	ND	ND	119	0.0006	0.017		
3/15/2012	55	ND	N/A	ND	93	ND	ND	ND	ND	16	ND	ND	58	ND	N/A	ND	ND	ND	ND	ND	ND	167	0.0008	0.026		
4/16/2012	54	ND	N/A	ND	64	ND	ND	ND	ND	16	ND	ND	56	ND	N/A	ND	ND	ND	ND	ND	ND	136	0.0007	0.020		
5/9/2012	51	ND	N/A	ND	72	ND	ND	ND	ND	20	9.8	ND	65	ND	N/A	ND	ND	ND	ND	ND	ND	167	0.0008	0.024		
6/4/2012	52	ND	N/A	ND	71	ND	ND	ND	ND	17	ND	ND	50	ND	N/A	ND	ND	ND	ND	ND	ND	138	0.0006	0.003		
8/16/2012	49	ND	N/A	ND	39	ND	ND	ND	ND	ND	ND	ND	19	ND	N/A	ND	ND	ND	ND	ND	ND	58	0.0003	0.008		
9/12/2012	30	ND	N/A	ND	41	ND	ND	ND	ND	ND	23	ND	22	ND	N/A	ND	ND	ND	ND	ND	ND	86	0.0002	0.007		
10/18/2012	65	ND	N/A	ND	95	ND	ND	ND	ND	ND	ND	ND	45	ND	N/A	ND	ND	ND	ND	ND	ND	140	0.0008	0.025		
11/13/2012 ^a	61	ND	N/A	ND	18	ND	ND	ND	ND	ND	ND	ND	270	ND	N/A	ND	ND	ND	31	16	ND	288	0.0016	0.047		
12/6/2012	62	ND	N/A	ND	70	ND	ND	ND	ND	ND	22	ND	91	ND	N/A	ND	ND	5.3	ND	ND	ND	188	0.0010	0.033		
1/4/2013	56	ND	N/A	ND	66	ND	ND	ND	ND	ND	42	ND	110	ND	N/A	ND	ND	ND	ND	ND	ND	218	0.0011	0.034		
2/6/2013	60	ND	N/A	ND	49	ND	ND	ND	ND	29	ND	ND	91	ND	N/A	ND	ND	ND	ND	ND	ND	169	0.0009	0.026		
3/7/2013	57	ND	N/A	ND	60	ND	ND	ND	ND	ND	45	ND	100	ND	N/A	ND	ND	ND	ND	ND	ND	205	0.0011	0.033		
4/8/2013	57	ND	N/A	ND	44	ND	ND	ND	ND	ND	21	ND	52	ND	N/A	ND	ND	ND	ND	ND	ND	117	0.0006	0.018		
5/10/2013 ^b	112	ND	N/A	ND	120	ND	ND	ND	ND	ND	ND	ND	2,900	ND	N/A	ND	ND	ND	80	ND						

TABLE 5
Building C Mid-GAC (µg/m³)
LABORATORY DATA SUMMARY

SSD System O&M, Middle River Complex, Middle River, Maryland
Samples analyzed by EPA Method TO-15

Date	Benzene	Chlorodifluoromethane	Dichlorodifluoromethane	cis-1,2-Dichloroethene	1,1-Dichloroethene	1,1-Dichloroethane	Ethylbenzene	Methylene Chloride	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-trifluoroethane	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	m-Xylene & p-Xylene	o-Xylene	Total VOCs (µg/m ³)	Mass (lbs/day)
4/2/2008	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	720	ND	ND	ND	720	0.004
4/24/2008	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	230	ND	ND	ND	230	0.001
5/21/2008	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50	ND	ND	ND	50	0.000
6/19/2008	28	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51	ND	ND	ND	79	0.000
7/18/2008	ND	N/A	ND	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	ND	ND	ND	190	0.001
8/13/2008	ND	N/A	ND	750	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	ND	ND	ND	765	0.004
9/11/2008	ND	N/A	ND	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	ND	ND	ND	23	0.000
11/12/2008	ND	N/A	ND	160	ND	ND	ND	50	ND	ND	ND	ND	ND	ND	ND	ND	17	ND	ND	ND	227	0.001
12/18/2008	ND	N/A	ND	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25	ND	ND	ND	205	0.001
1/22/2009	ND	N/A	ND	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	35	ND	ND	ND	48	0.000
2/20/2009	ND	N/A	ND	14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	ND	ND	ND	29	0.000
3/18/2009	ND	N/A	ND	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	ND	ND	ND	119	0.001
4/17/2009	ND	N/A	ND	340	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.1	ND	ND	ND	347	0.002
5/20/2009	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
6/23/2009	ND	N/A	ND	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.2	ND	ND	ND	75	0.000
7/23/2009	ND	N/A	ND	360	ND	ND	ND	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	381	0.002
8/28/2009	ND	N/A	ND	ND	ND	ND	ND	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	0.000
9/28/2009	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
10/27/2009	ND	N/A	ND	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13	0.000
11/24/2009	ND	N/A	ND	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	23	0.000
12/23/2009	ND	N/A	ND	23	ND	ND	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	0.000
1/19/2010	ND	N/A	ND	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21	0.000
2/17/2010	ND	N/A	ND	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	23	0.000
3/17/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
4/16/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
5/13/2010	15	N/A	ND	9.6	ND	ND	9.8	ND	ND	ND	51	ND	ND	ND	ND	ND	ND	36	10	85	0.001	
6/18/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	79	16	26	15	95	0.001	
7/19/2010	11	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	0.000
8/19/2010	ND	N/A	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	0.000
9/17/2010	35	N/A	ND	26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	61	0.000
10/12/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	12	24	ND	ND	ND	ND	ND	ND	ND	ND	36	0.000
11/2/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	12	0.000
12/1/2010	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
1/5/2011	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9	ND	ND	ND	9	0.000
2/7/2011	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
3/3/2011	ND	N/A	ND	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	0.000
4/4/2011	ND	N/A	ND	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	180	0.000
5/6/2011	ND	N/A	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	0.000
6/9/2011	32	N/A	ND	17	ND	ND	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	62	0.000
7/11/2011	29	N/A	ND	160	ND	ND	ND	28	ND	ND	74	ND	ND	ND	ND	ND	ND	24	8.9	291	0.000	
8/3/2011	25	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25	0.000
9/15/2011	22	N/A	ND	12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	34	0.000
10/25/2011	16	N/A	ND	19	ND	ND	ND	24	ND	ND	20	ND	ND	ND	ND	ND	ND	13	ND	79	0.000	
11/8/2011	16	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16	0.000
12/6/2011	8.4	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.4	0.000
1/3/2012	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
2/16/2012	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
3/15/2012	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
4/16/2012	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
5/9/2012	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
6/4/2012	ND	N/A	ND	ND	ND	ND	8.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.7	0.000
8/15/2012	ND	N/A	ND	28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	28.0	0.000
9/12/2012	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.0	0.000
10/18/2012	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
11/13/2012*	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
12/6/2012	ND	N/A	ND	9.3	ND	ND	ND	ND	ND	ND	ND	57	ND	ND	ND	ND	ND	ND	ND	ND	66.3	0.001
1/4/2013	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	21	ND	ND	ND	ND	ND	ND	ND	ND	21.0	0.000
2/6/2013	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	24	ND	ND	ND	ND	ND	ND	ND	ND	24.0	0.000
3/7/2013	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	19.0	0.000
4/8/2013	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	19.0	0.000
5/10/2013	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	87	ND	ND	ND	ND	ND	ND	ND	ND	87.0	0.001
6/5/2013	ND	N/A	ND	28	ND	ND	ND	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	47.0	0.000
7/3/2013	ND	N/A	ND	34	ND	ND	ND	21	ND	ND	ND	14	ND	ND	ND	ND	ND	ND	ND	ND	69.0	0.001
8/14/2013	9.9	N/A	ND	17	ND	ND	ND	17	ND	ND	ND	12	ND	ND	ND	ND	ND	ND	ND	ND	55.9	0.001
9/9/2013	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.000
10/10/2013	11	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.0	0.000
11/7/2013	11	N/A	ND	9.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	31.3	0.000
12/5/2013	10.9	N/A	8.6	7.4	ND	ND	ND	6.4	ND	ND	2.5	ND	10.7	ND	ND	ND	ND	ND	ND	ND	46.5	0.000
1/13/2014	8.3	4.2	2.2	11.0	ND	ND	1.7	2.4	4.8	ND	21.3	3.0	124	ND	ND	2.7	ND	ND	5.8	2.4	185.6	0.002
2/14/2014	5.8	6.1	2.0	5.7	ND	ND	ND	2.5	ND	ND	ND	256	ND	ND	ND	ND	ND	ND	ND	ND	278.1	0.003
3/12/2014	13.5	3.7	2.4	10.5	ND	ND	3.7	ND	ND	18.2	12.5	ND	5.6	ND	5.9	15.3	4.4	ND	17.1	7.6	95.7	0.001

ND - non-detect (below detection limit)

N/A - not applicable (samples not analyzed for compound)

Sampling not conducted in July 2012 due to shutdown test.

*November 2012 sample collected while four new extraction wells installed in October 2012 were operating (November 5-26, 2012). Wells temporarily closed until May 16, 2013.

Samples analyzed from 4/2/08 to 11/7/13 were analyzed by Test America

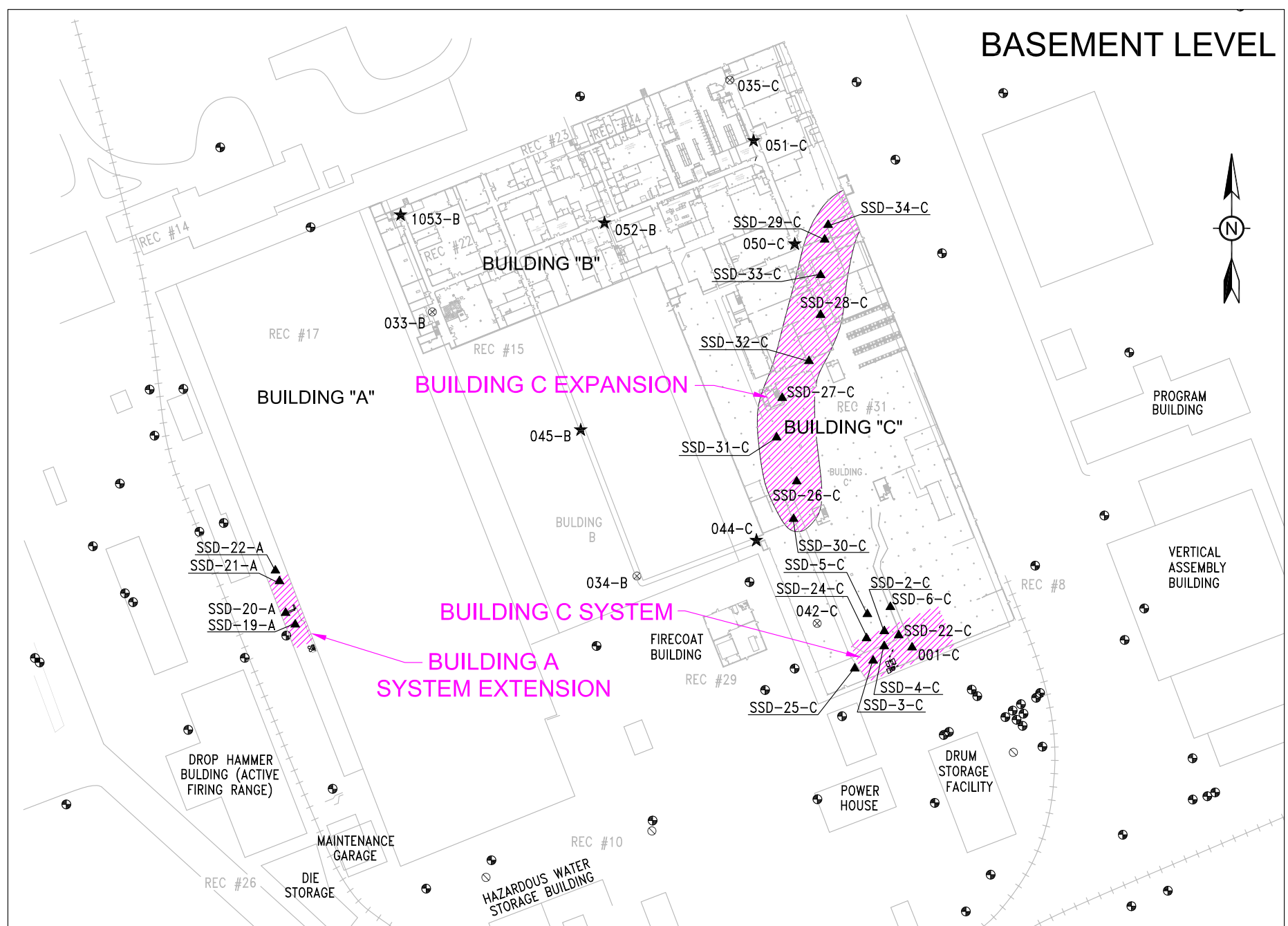
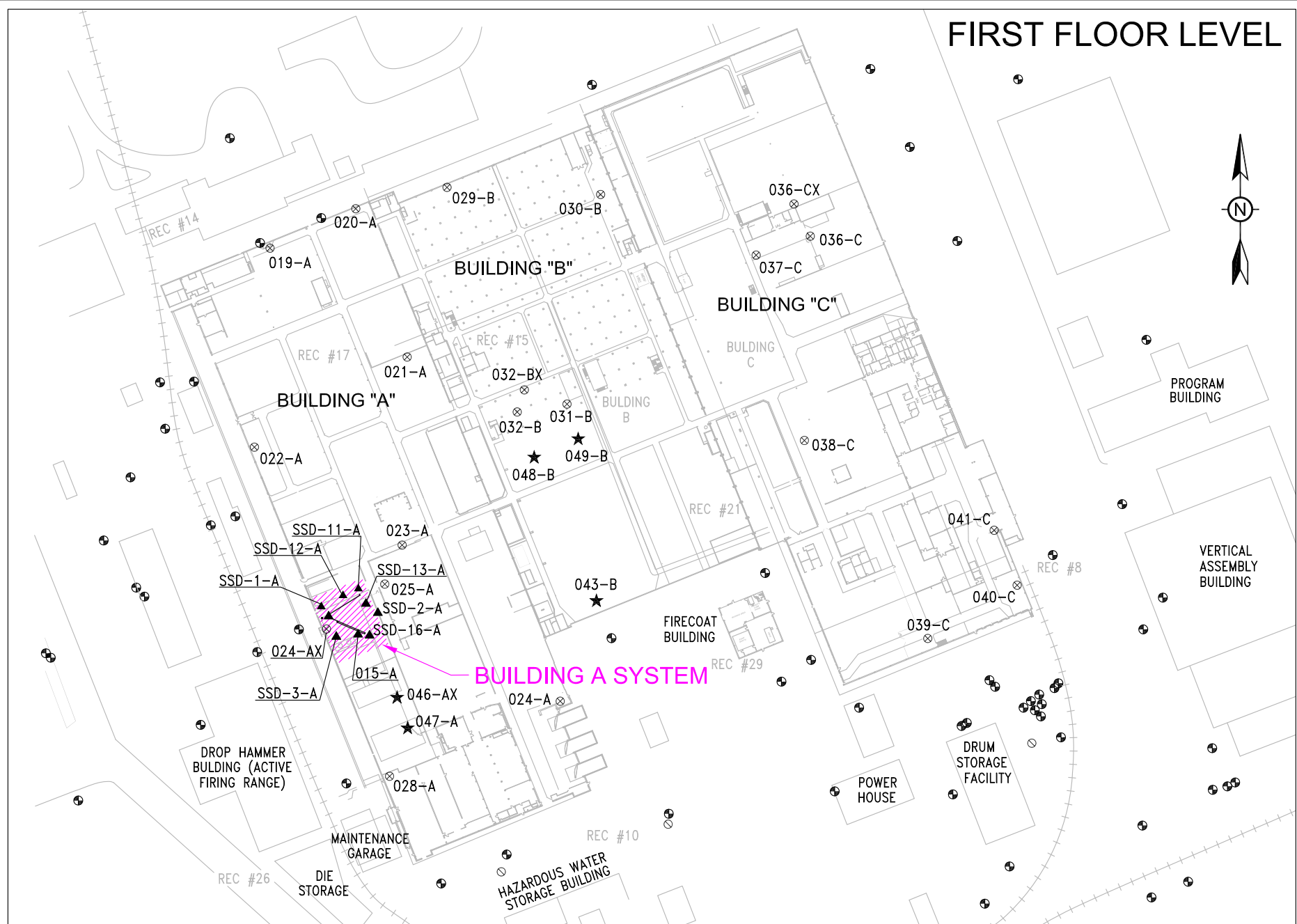
Samples analyzed from 12/5/13 to present were analyzed by Pace Analytical

TABLE 6
Building C Effluent (µg/m³)

LABORATORY DATA SUMMARY
SSD System O&M, Middle River Complex, Middle River, Maryland
Samples analyzed by EPA Method TO-15

Date	Benzene	Carbon tetrachloride	Chlorodifluoromethane	Chloroform	Dichlorodifluoromethane	cis-1,2-Dichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethane	Ethylbenzene	Methylbenzene	Methylene chloride	Methyltert-butyl ether	Naphthalene	Tetrahydroethene	Toluene	trans-1,2-Dichloroethene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	1,2,3,7-Tetramethylbenzene	1,2,4,7-Tetramethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	m-Xylene & p-Xylene	o-Xylene	Total VOCs (µg/m ³)	Mass (lbs/day)
3/31/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/2/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	170	0.002
4/4/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	360	0.004
4/17/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25	N/A	ND	ND	ND	ND	ND	550	0.006
4/17/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	100	0.001
4/24/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	260	0.003
5/23/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	52	0.001
6/19/2008	51	ND	N/A	ND	ND	ND	ND	ND	ND	ND	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	54	0.002
7/18/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	29	0.000
8/13/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	16	0.000
9/11/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	63	ND	ND	ND	28	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	6.1	0.001
11/12/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	16	0.001
12/18/2008	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	31	0.001
2/4/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	29	0.000
2/20/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	6.8	0.000
3/18/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	26	0.000
4/17/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	8.9	0.000
5/20/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
6/23/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	5.5	0.000
7/23/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	29	0.000
8/28/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
9/28/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
10/27/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
11/24/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
12/23/2009	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	14	0.000
1/19/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
2/17/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
3/17/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/16/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
5/13/2010	36	ND	N/A	ND	ND	ND	ND	ND	ND	24	31	ND	ND	ND	140	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	89	0.002
6/18/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	68	16	ND	ND	ND	25	0.001
7/19/2010	10	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	10	0.000
8/19/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
9/17/2010	13	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	13	0.000
10/12/2010	ND	ND	N/A	ND	ND	21	ND	ND	ND	ND	ND	ND	ND	ND	42	ND	ND	ND	ND	ND	ND	25	N/A	ND	ND	ND	ND	198	0.002
11/2/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
12/1/2010	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	24	0.000
1/5/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	12	0.000
2/7/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	5	0.000
3/3/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/14/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	13	0.000
5/6/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	N/A	ND	ND	ND	ND	26	0.000
6/9/2011	8.4	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.9	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	17	0.000
7/11/2011	9.5	ND	N/A	ND	ND	ND	ND	ND	ND	ND	75	ND	ND	ND	61	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	21	0.001
8/3/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	21	0.000
9/15/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
10/25/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	23	ND	ND	ND	21	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	11	0.000
11/8/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
12/6/2011	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
1/3/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
2/16/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
3/15/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
4/16/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
5/9/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
6/4/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	8.4	0.000
8/15/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
9/12/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	22	0.000
10/18/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
11/13/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	0.000
12/6/2012	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	ND	ND	ND	ND	ND	0.0	

FIGURES



LEEND

- GROUNDWATER MONITORING WELL SSD SUBSLAB DEPRESSURIZATION
 ▲ SUBSLAB VAPOR MONITORING WELL
 ★ TARGET OF OPPORTUNITY
 ⊗ INDOOR AIR SAMPLE
 ○ ABANDONED WELL BORING
 ▨ GENERAL AREA OF SSD SYSTEM
- 0 200 400
 SCALE IN FEET

TITLE:

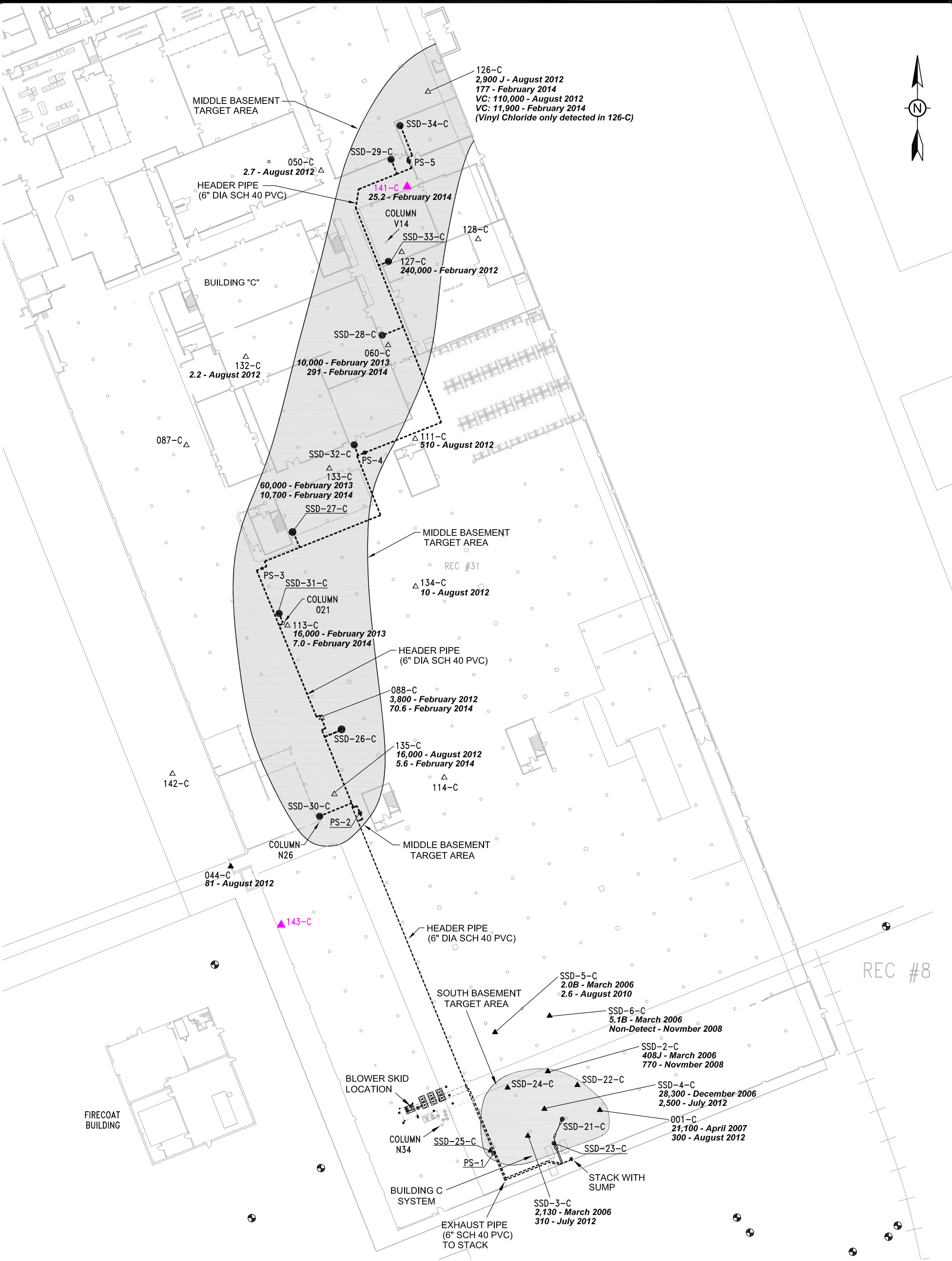
SSD SYSTEM LOCATIONS

LOCATION:

Middle River, Maryland



APPROVED	PR	FIGURE 1
DRAFTED	CP	
PROJECT#	117-0507533	
DATE	12-24-13	



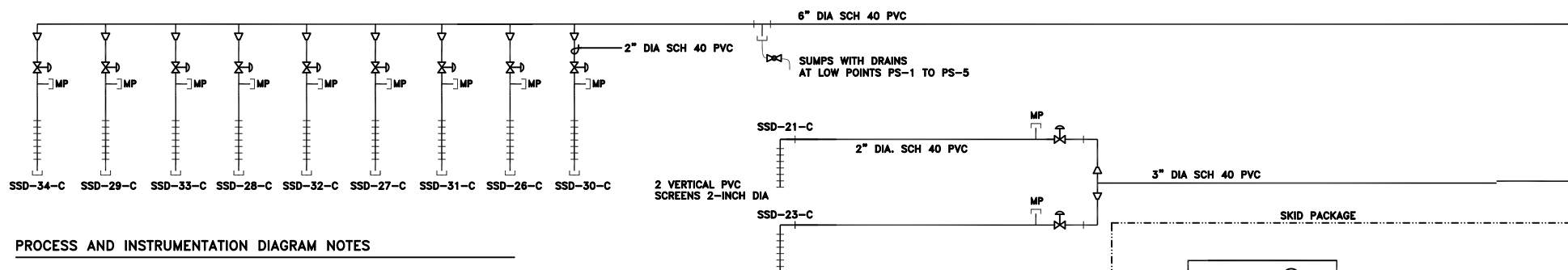
LEGEND

- GROUNDWATER MONITORING WELL
- ▲ SUBSLAB VAPOR MONITORING POINT
- △ MONITORING POINT INSTALLED JANUARY 2010
- ▲ MONITORING POINT INSTALLED FEBRUARY 2013
- SUBSLAB VAPOR EXTRACTION WELLS
- SUMP

- 2,100 HIGHEST TCE CONCENTRATION ($\mu\text{g}/\text{m}^3$)
- PRE-SSDS AND MOST RECENT TCE CONCENTRATION POST-SSDS OPERATION
- HEADER PIPE (2", 3" OR 6" DIA. SCH 40)
- SSD SUBSLAB DEPRESSURIZATION
- 2,900 J ESTIMATED TCE CONCENTRATION
- B DETECTED IN LAB BLANK



TITLE: BUILDING C SSD SYSTEM LAYOUT			
LOCATION: Middle River, Maryland			
	APPROVED	PR	FIGURE 4
	DRAFTED	CP	
	PROJECT#	117-0507599	
	DATE	4-21-14	



PROCESS AND INSTRUMENTATION DIAGRAM NOTES

- VI VACUUM INDICATOR - 0-160" H₂O
- MP MEASURING POINT 1/4" MALE CONNECTOR WITH PLUG THREAD WITH TEFLON TAPE. FITTING MAY BE REMOVED FOR ANEMOMETER AND VACUUM READINGS PROVIDE 20" SOLID PIPE BOTH SIDES.
- ▽ REDUCER
- o— BALL VALVE - NORMALLY OPEN
- x— BALL VALVE - NORMALLY CLOSED
- ⊗ DIAPHRAGM VALVE (LOCKABLE)
- ∇ CHECK VALVE
- FI FLOW INDICATOR (DIRECT 70-350 SCFM READING, ROTRON FM30C350Q)
- F INLET AIR FILTER
- HE HEAT EXCHANGER (XCHANGER AA-250)
- MS MOISTURE SEPARATOR WITH 30 GALLON CAPACITY, SIGHT TUBE, REMOVABLE TOP, DRAIN VALVE
- LS LEVEL SWITCH
- VRV VACUUM RELIEF VALVE, 85" H₂O SETTING
- SP SAMPLE PORT 1/4" DIAMETER
- BL ROTRON DR858, 7.5 HP MOTOR, 220 SCFM @ 55" H₂O
- PI PRESSURE INDICATOR 0-160" H₂O
- TS1 TEMPERATURE SWITCH, 215° F SETTING
- TS2 TEMPERATURE SWITCH, 140° F SETTING
- GAC GRANULAR ACTIVATED CARBON VAPOR TREATMENT (SIEMENS VENT-SCRUB® VSC400, VOCARB® 48C) OPERATED IN UPFLOW MODE
- PPZ POTASSIUM PERMANGANATE ZEOLITE MEDIA (SIEMENS VENT-SCRUB® VSC400, KMN2000) OPERATED IN UPFLOW MODE
- TI TEMPERATURE INDICATOR 0-250° F
- PS PRESSURE SWITCH (HIGH)
- VS VACUUM SWITCH (LOW)
- V-MS1 PROCESS VALVE LABELS
- HOA PANEL MOUNTED HAND/OFF/AUTO SWITCH
- ◇ INTERLOCK BLOWER SHUTDOWN
- LOCALLY MOUNTED INSTRUMENT
- ⊗ PANEL ALARM LIGHT
- H HIGH
- L LOW
- ⊞ MOTOR
- ⊞ TAP PLUG

NOTE:

NOVEMBER 26, 2012 TO MAY 16, 2013, PPZ VESSEL OFF LINE AND SSD-26-C TO SSD-29-C TEMPORARILY CLOSED.

BUILDING C SSD SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM

LOCATION: Middle River, Maryland

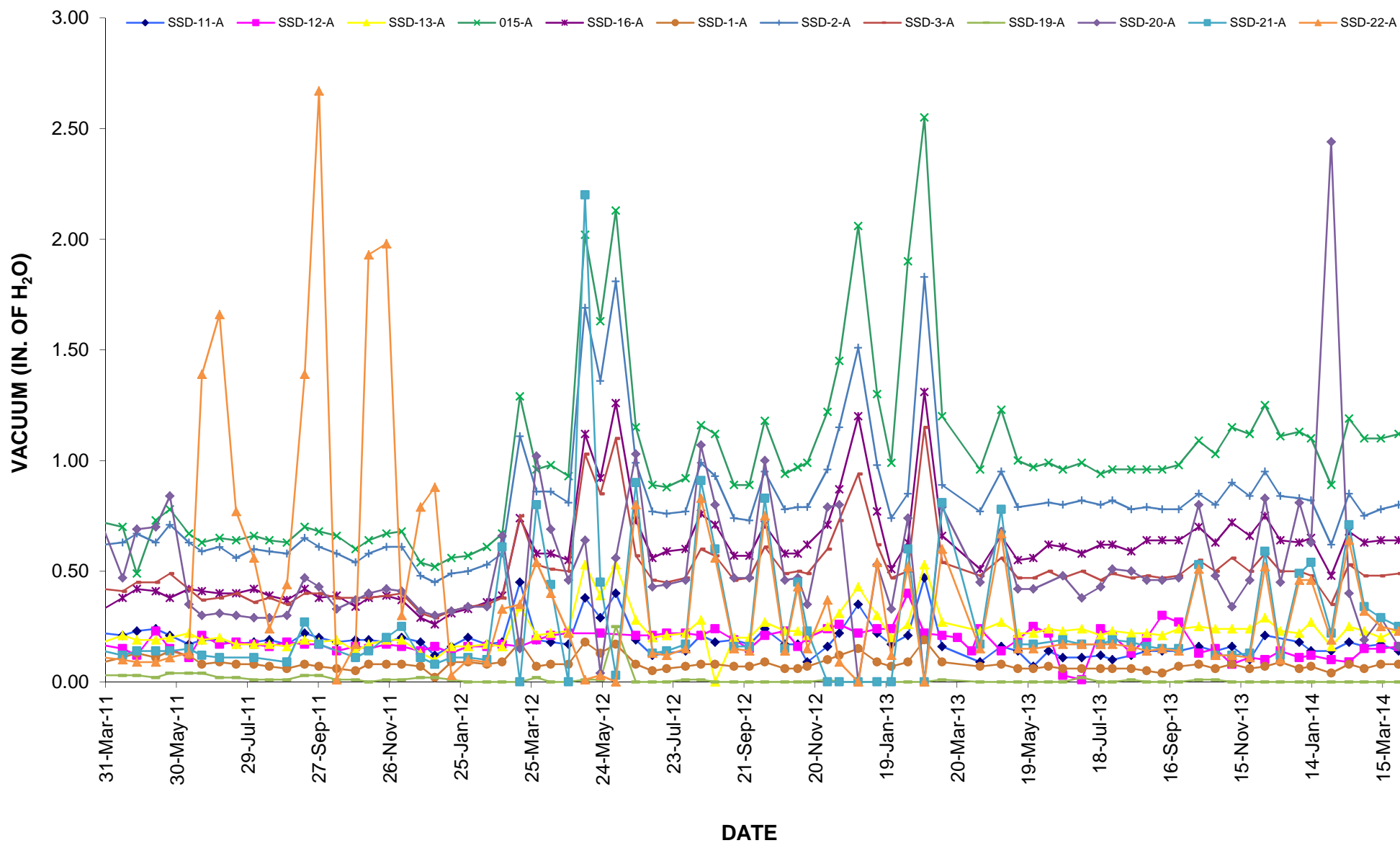


TETRA TECH

APPROVED	PR	FIGURE
DRAFTED	CP	
PROJECT#	117-0507533	
DATE	6-26-13	

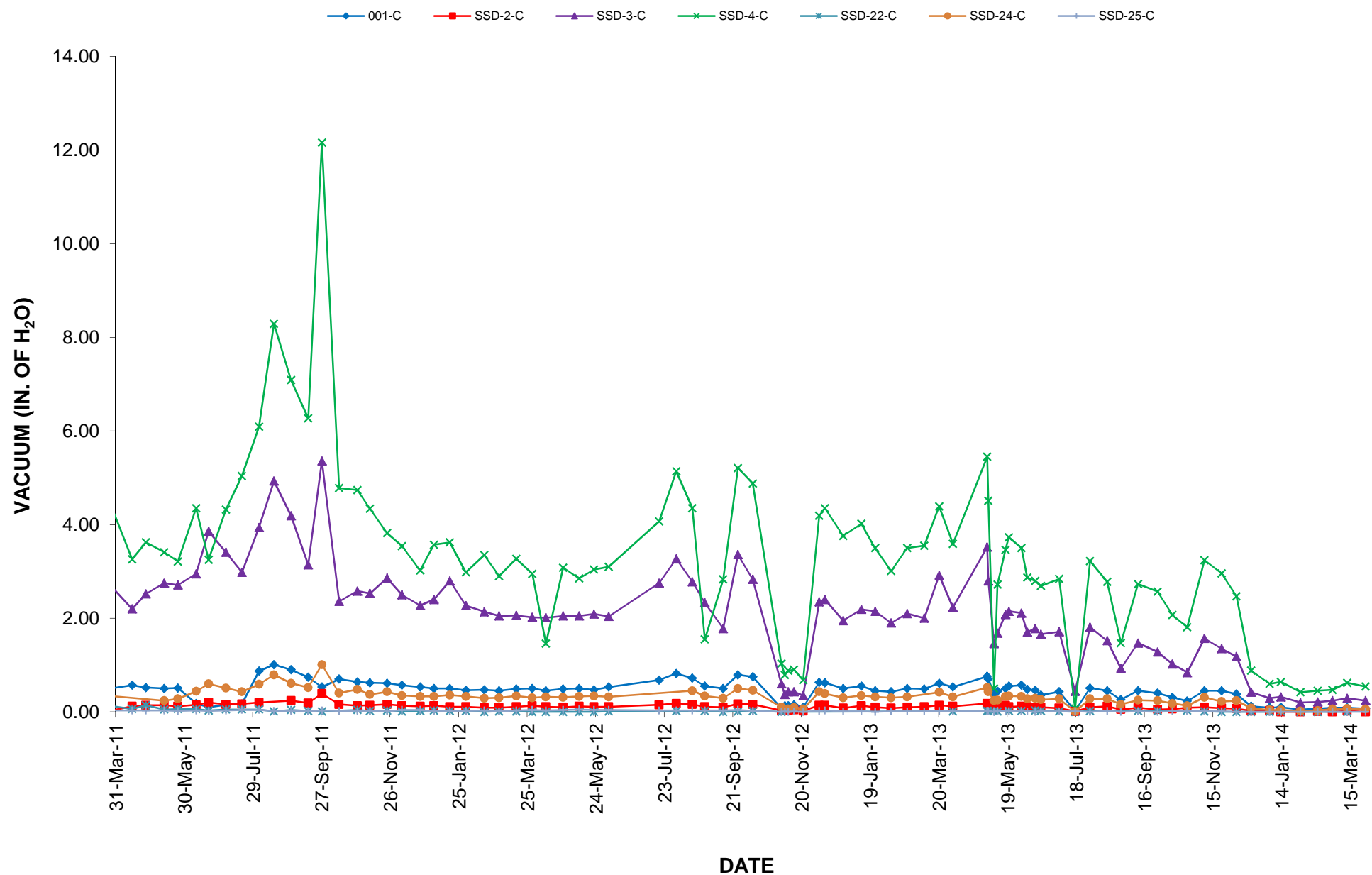
5

FIGURE 6
INDUCED VACUUM
BUILDING A SSD SYSTEM



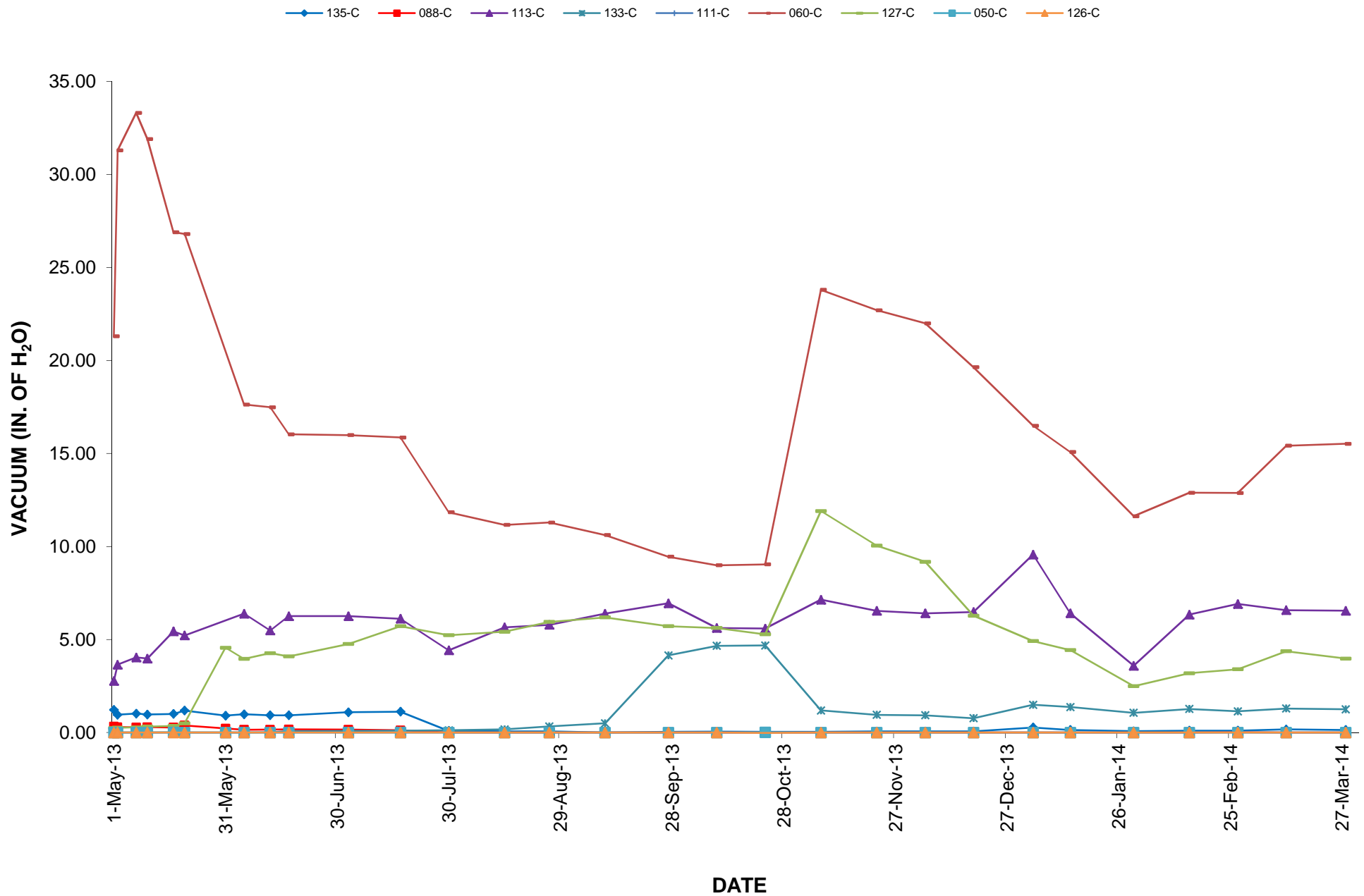
All vacuum readings are instantaneous readings collected during the bi-weekly system checks.
 Only the past three years of vacuum data are depicted above.

FIGURE 7
INDUCED VACUUM
BUILDING C SSD SYSTEM - SOUTH-BASEMENT AREA



All vacuum readings are instantaneous readings collected during the bi-weekly system checks.
Only the past three years of vacuum data are depicted above.








FIGURE 8
INDUCED VACUUM
BUILDING C SSD SYSTEM - MID-BASEMENT AREA

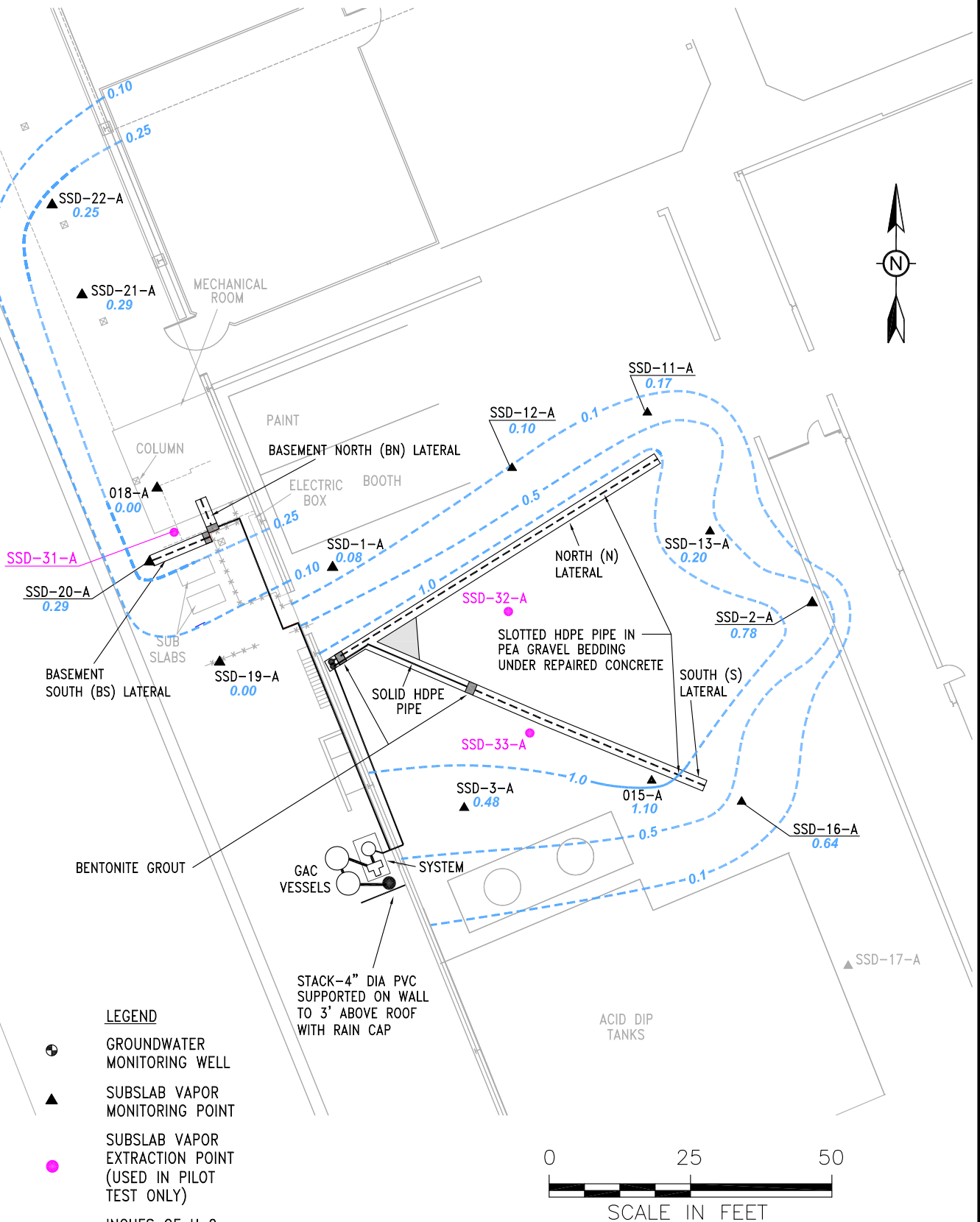


All vacuum readings are instantaneous readings collected during the bi-weekly system checks.

Sub-slab vapor monitoring points routinely monitored beginning May 1, 2013 following second-phase system expansion in the middle basement area of Building C.

P:\ACAD\0507-599-MR\0507599007A.DWG

- LEGEND**
-  GROUNDWATER MONITORING WELL
 -  SUBSLAB VAPOR MONITORING POINT
 -  SUBSLAB VAPOR EXTRACTION POINT (USED IN PILOT TEST ONLY)
 -  0.48 INCHES OF H₂O INDUCED VACUUM MEASURED ON 3/13/14
 -  EQUAL VACUUM INFLUENCE
 -  INFERRED EQUAL VACUUM INFLUENCE
 -  VAPOR EXTRACTION TRENCH



TITLE:

INFLUENCE OF SSD LATERALS BUILDING A PLATING SHOP & BASEMENT

LOCATION:

Middle River, Maryland

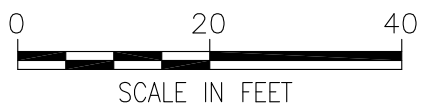
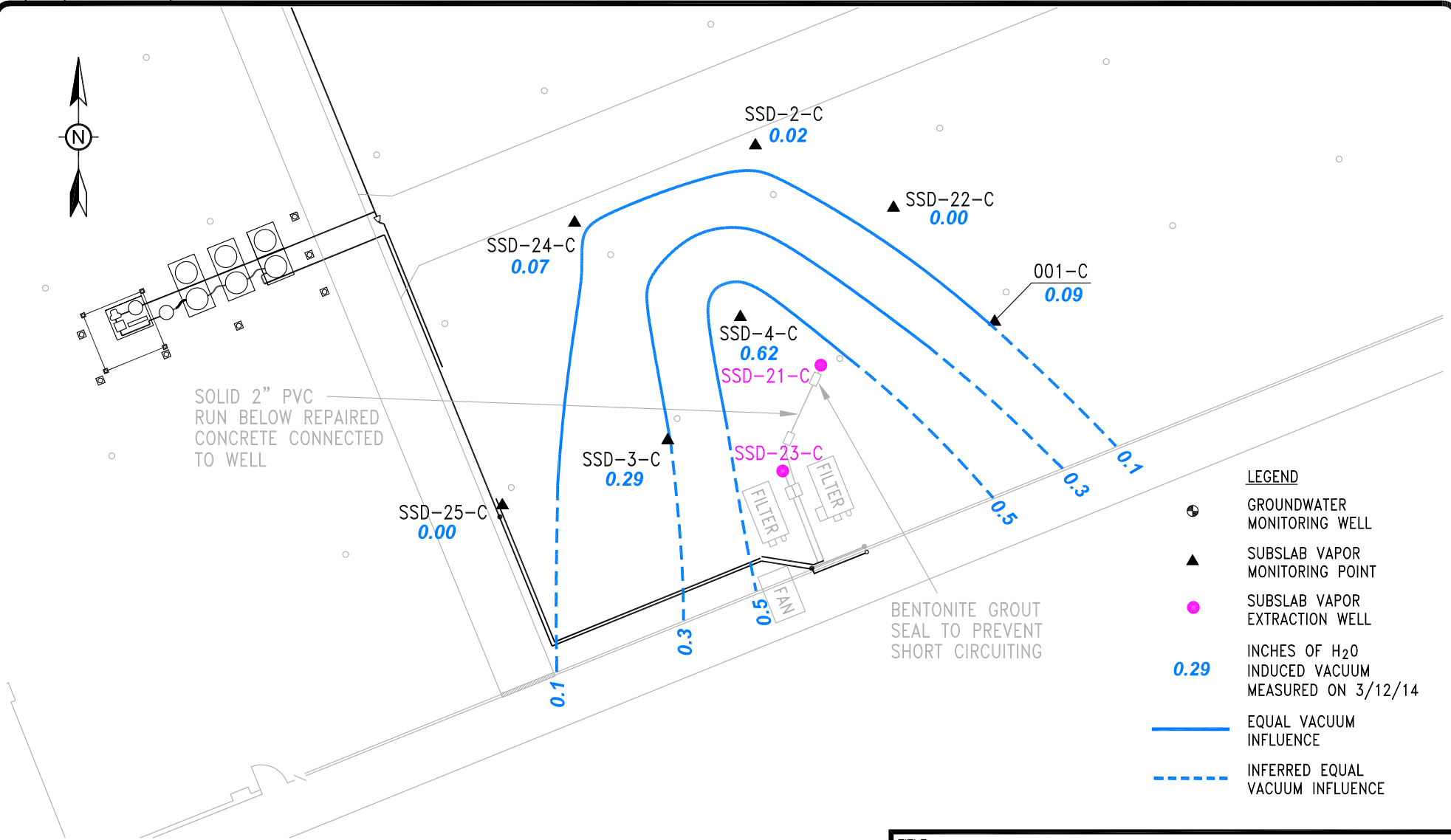



TETRA TECH

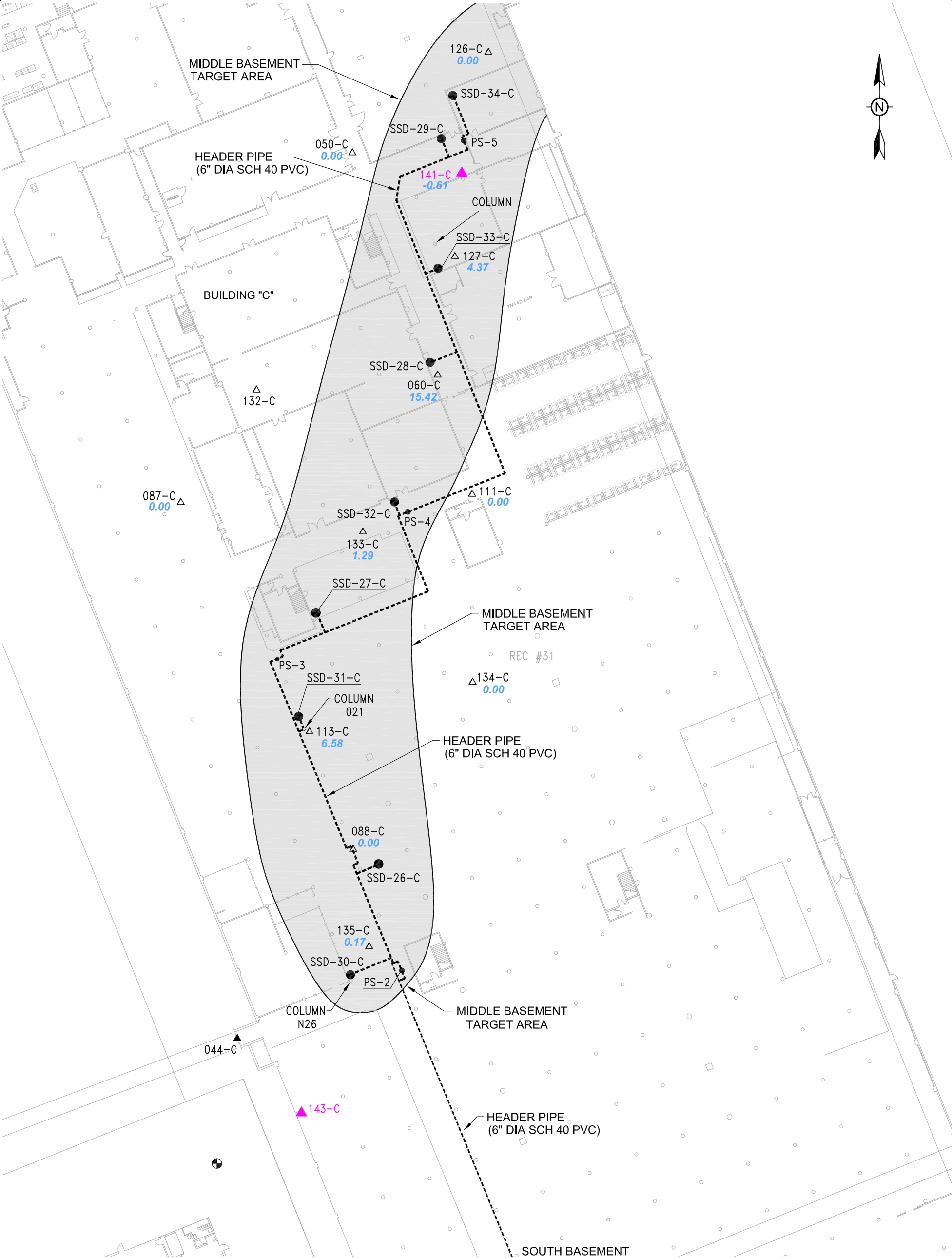
APPROVED	PR
DRAFTED	CP
PROJECT#	117-0507533
DATE	4-28-14

FIGURE

9



TITLE: INFLUENCE OF SSD EXTRACTION WELLS BUILDING C - SOUTH BASEMENT AREA			
LOCATION: Middle River, Maryland			
 TETRA TECH	APPROVED	PR	FIGURE 10
	DRAFTED	CP	
	PROJECT#	117-0507599	
	DATE	4-21-14	



LEGEND

- GROUNDWATER MONITORING WELL
- ▲ SUBSLAB VAPOR MONITORING POINT
- Δ SUBSLAB VAPOR MONITORING POINT INSTALLED JANUARY 2010
- ▲ SUBSLAB VAPOR MONITORING POINT INSTALLED FEBRUARY 2013
- SUBSLAB VAPOR EXTRACTION WELLS
- SUMP

- HEADER PIPE (2", 3" OR 6" DIA. SCH 40)
- SSD SUBSLAB DEPRESSURIZATION
- 6.58 INCHES OF H₂O INDUCED VACUUM MEASURED ON 3/12/14




TITLE: INFLUENCE OF SSD EXTRACTION WELLS BUILDING C MID-BASEMENT AREA			
LOCATION: Middle River, Maryland			
 TETRA TECH	APPROVED	PR	FIGURE 11
	DRAFTED	CP	
	PROJECT#	117-0507533	
	DATE	4-28-14	

FIGURE 12
BUILDING A SSD SYSTEM
INFLUENT VOC CONCENTRATIONS

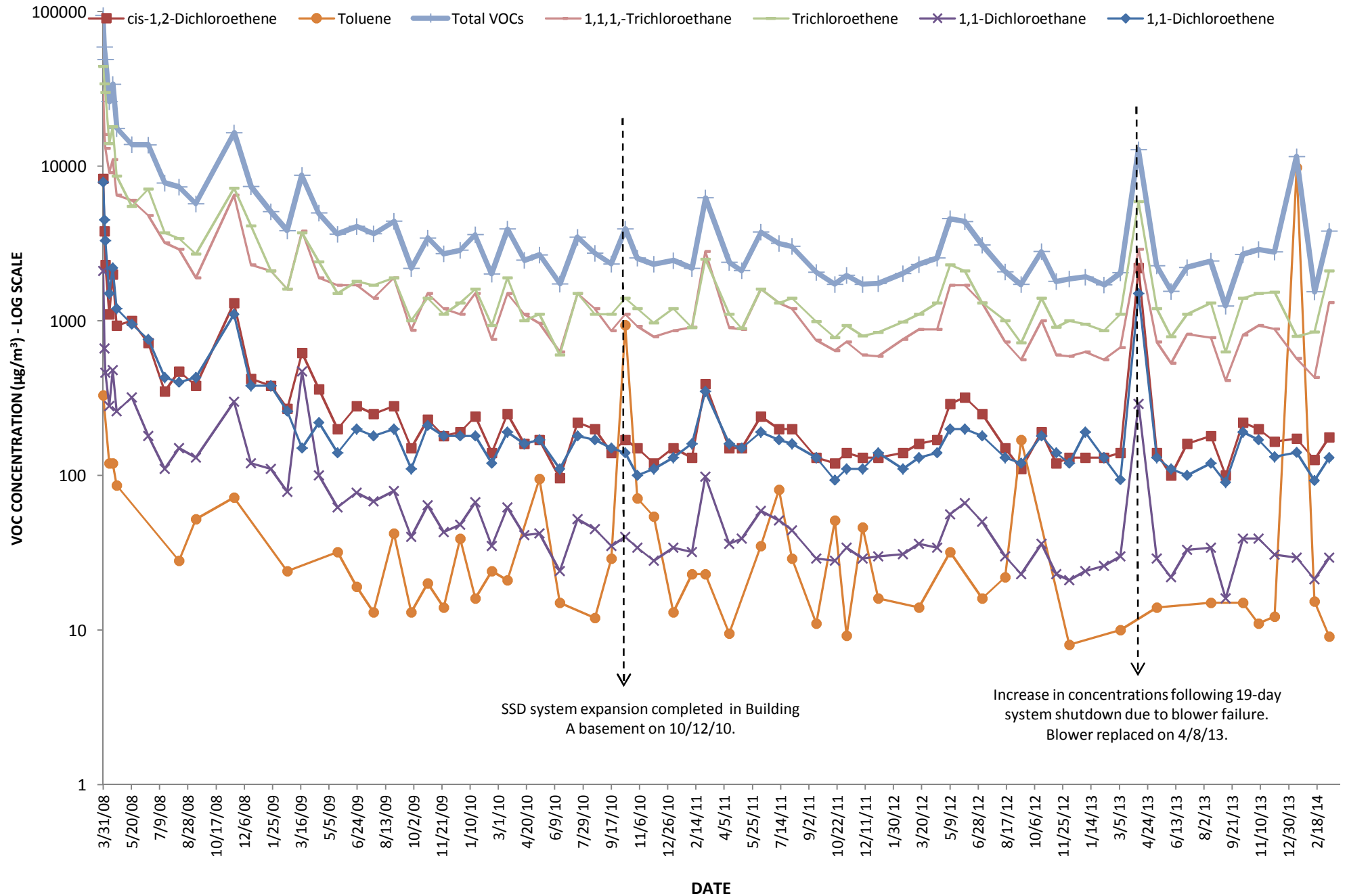
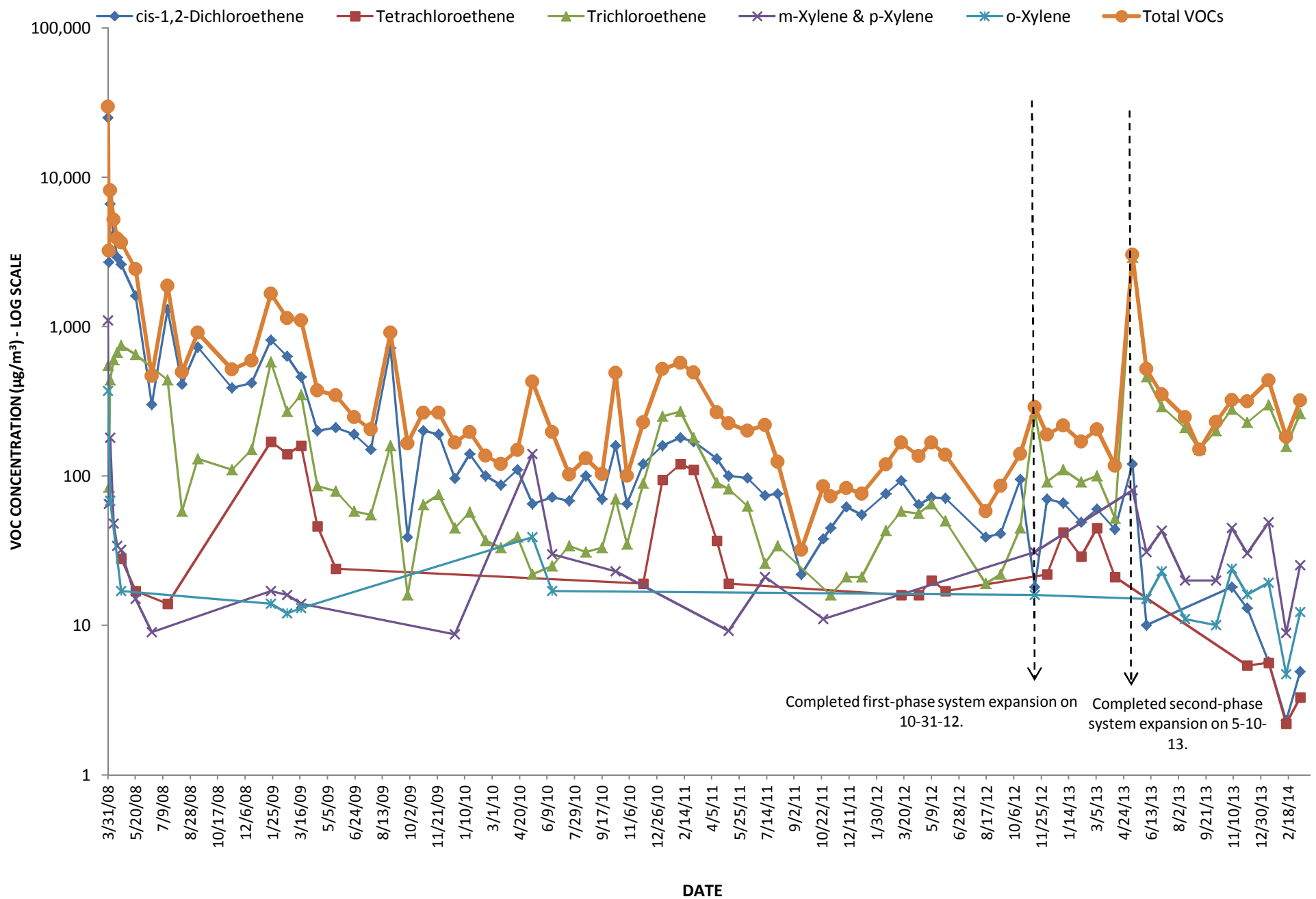


FIGURE 13
BUILDING C SSD SYSTEM
INFLUENT VOC CONCENTRATIONS



APPENDIX A—SYSTEM FIELD DATA SHEETS

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 10/10/13 Time: _____ Personnel: DLM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>N/A</u>	<u>2.0</u>	<u>11</u>	<u>16</u>	<u>5</u>	<u>0</u>	<u>112</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>N/A</u>	<u>0.44</u>	<u>611</u>	<u>53.3</u>	
South Leg - Ground Floor	<u>↓</u>	<u>1.26</u>	<u>420</u>	<u>36.7</u>	
North Leg - Basement	<u>↓</u>	<u>1.28</u>	<u>52</u>	<u>4.5</u>	
South Leg - Basement	<u>↓</u>	<u>1.24</u>	<u>934</u>	<u>81.5</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>N/A</u>	<u>0.08</u>
SSD-12-A	<u>↓</u>	<u>0.12</u>
SSD-11-A	<u>↓</u>	<u>0.16</u>
SSD-13-A	<u>↓</u>	<u>0.25</u>
SSD-2-A	<u>↓</u>	<u>0.85</u>
SSD-16-A	<u>↓</u>	<u>0.70</u>
015-A	<u>↓</u>	<u>1.09</u>
SSD-3-A	<u>↓</u>	<u>0.55</u>
SSD-19-A	<u>↓</u>	<u>0.01</u>
018-A	<u>↓</u>	<u>0.02</u>
SSD-20-A	<u>↓</u>	<u>0.80</u>
SSD-21-A	<u>↓</u>	<u>0.53</u>
SSD-22-A	<u>↓</u>	<u>0.51</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>1445</u>	<u>L-A7073</u>
A-MID GAC	<u>1446</u>	<u>09639</u>
A-EFFLUENT	<u>1447</u>	<u>L-5178</u>

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: _____

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 1
SPENT 0

FIELD REP. SIGNATURE: Dawn J. Morris

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 10/24/13 Time: 0940 Personnel: Dustin Cates Room Temp: 50°F

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>0940</u>	<u>1.8</u>	<u>11</u>	<u>16.5</u>	<u>5.5</u>	<u>0</u>	<u>100</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>0945</u>	<u>-0.42</u>	<u>555</u>	<u>48.45</u>	
South Leg - Ground Floor	<u>0950</u>	<u>-1.19</u>	<u>360</u>	<u>31.43</u>	
North Leg - Basement	<u>1045</u>	<u>-1.00</u>	<u>2</u>	<u>0.17</u>	
South Leg - Basement	<u>1040</u>	<u>-0.96</u>	<u>960</u>	<u>83.81</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A		<u>-0.06</u>
SSD-12-A		<u>-0.10</u>
SSD-11-A		<u>-0.14</u>
SSD-13-A		<u>-0.24</u>
SSD-2-A		<u>-0.80</u>
SSD-16-A		<u>-0.63</u>
015-A		<u>-1.03</u>
SSD-3-A		<u>-0.50</u>
SSD-19-A		<u>-0.01</u>
018-A		<u>-0.07</u>
SSD-20-A		<u>-0.48</u>
SSD-21-A		<u>-0.12</u>
SSD-22-A		<u>-0.12</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT		
A-MID GAC		
A-EFFLUENT		

ADDITIONAL COMMENTS:

System shut down - 1055

Start System - 1155

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: 1.25 gal

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE: Dustin Cates

Time: 1200

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 11/7/13 Time: 1000 Personnel: DLM Room Temp: 72

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
1004	3	11	16	5	0	107	160

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	1016	0.46	619	54.0	
South Leg - Ground Floor	1015	1.30	404	35.3	
North Leg - Basement	1029	0.90	220	0.3	
South Leg - Basement	1028	0.86	970	84.7	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	1017	0.08
SSD-12-A	1019	0.11
SSD-11-A	1020	0.16
SSD-13-A	1022	0.24
SSD-2-A	1023	0.90
SSD-16-A	1024	0.72
015-A	1025	1.15
SSD-3-A	1026	0.56
SSD-19-A	1033	0.00
018-A	1039	0.08
SSD-20-A	1041	0.34
SSD-21-A	1034	0.12
SSD-22-A	1036	0.12

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	1006	09591
A-MID GAC	1007	09579
A-EFFLUENT	1008	10759

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: _____

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES 250 NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

ADDITIONAL COMMENTS:

FIELD REP. SIGNATURE: Dan J. Martin

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 11/22/13 Time: 1314 Personnel: DM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>1328</u>	<u>2.0</u>	<u>11</u>	<u>17</u>	<u>6</u>	<u>0</u>	<u>105</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>1324</u>	<u>0.44</u>	<u>578</u>	<u>50.5</u>	
South Leg - Ground Floor	<u>1327</u>	<u>1.25</u>	<u>400</u>	<u>34.9</u>	
North Leg - Basement	<u>1345</u>	<u>0.98</u>	<u>51</u>	<u>4.5</u>	
South Leg - Basement	<u>1347</u>	<u>0.91</u>	<u>1006</u>	<u>87.8</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>1334</u>	<u>0.06</u>
SSD-12-A	<u>1334</u>	<u>0.14</u>
SSD-11-A	<u>1336</u>	<u>0.10</u>
SSD-13-A	<u>1337</u>	<u>0.24</u>
SSD-2-A	<u>1338</u>	<u>0.84</u>
SSD-16-A	<u>1339</u>	<u>0.66</u>
015-A	<u>1341</u>	<u>1.12</u>
SSD-3-A	<u>1342</u>	<u>0.50</u>
SSD-19-A	<u>1349</u>	<u>0.00</u>
018-A	<u>1353</u>	<u>0.05</u> ← variable
SSD-20-A	<u>1355</u>	<u>0.46</u>
SSD-21-A	<u>1350</u>	<u>0.13</u>
SSD-22-A	<u>1351</u>	<u>0.11</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>N/A</u>	<u>N/A</u>
A-MID GAC	<u>↓</u>	<u>↓</u>
A-EFFLUENT	<u>↓</u>	<u>↓</u>

ADDITIONAL COMMENTS:

- Was the blower running upon arrival?
☒ YES ☐ NO
- Were there any alarm conditions upon arrival?
☐ YES ☒ NO
Comment: _____
- Was the blower ambient air valve open?
☐ YES ☒ NO
- Was there water in the knockout tank?
☐ YES ☒ NO Volume: _____
- Was the vacuum/flow on either leg adjusted?
☐ YES ☒ NO
Comment: _____
- Are there any leaks or damage to system hoses?
☐ YES ☒ NO
- Is there any damage to system components?
☐ YES ☒ NO
- Are all locks and zip-ties secure?
☒ YES ☐ NO
- Do these fall to zero when system is turned off?
Flow Gauge ☒ YES ☒ NO ~25
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO
- Was there a GAC change out?
☐ YES ☒ NO
- How many unused GAC units are at this location?
NEW 0
SPENT 1

FIELD REP. SIGNATURE: _____

Time: 1430

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 12/5/13 Time: 1420 Personnel: DLM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>1421</u>	<u>2.75</u>	<u>11</u>	<u>16</u>	<u>5</u>	<u>0</u>	<u>105</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>1447</u>	<u>0.51</u>	<u>690</u>	<u>60.2</u>	
South Leg - Ground Floor	<u>1448</u>	<u>1.44</u>	<u>437</u>	<u>38.2</u>	
North Leg - Basement	<u>1507</u>	<u>1.25</u>	<u>31</u>	<u>2.7</u>	
South Leg - Basement	<u>1508</u>	<u>1.20</u>	<u>952</u>	<u>83.1</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>1450</u>	<u>0.07</u>
SSD-12-A	<u>1451</u>	<u>0.14</u>
SSD-11-A	<u>1455</u>	<u>0.21</u>
SSD-13-A	<u>1456</u>	<u>0.29</u>
SSD-2-A	<u>1458</u>	<u>0.95</u>
SSD-16-A	<u>1459</u>	<u>0.75</u>
015-A	<u>1500</u>	<u>1.25</u>
SSD-3-A	<u>1502</u>	<u>0.58</u>
SSD-19-A	<u>1510</u>	<u>0.00</u>
018-A	<u>1516</u>	<u>0.00</u>
SSD-20-A	<u>1517</u>	<u>0.83</u>
SSD-21-A	<u>1512</u>	<u>0.59</u>
SSD-22-A	<u>1513</u>	<u>0.52</u>

very low vac.

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>1426</u>	<u>2551</u>
A-MID GAC	<u>1428</u>	<u>2574</u>
A-EFFLUENT	<u>1430</u>	<u>2528</u>

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: _____

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES ~50 NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE: _____

Time: _____

[Signature]

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 12/18/13 Time: _____ Personnel: DLM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
	<u>2.25</u>	<u>11</u>	<u>17</u>	<u>6</u>	<u>0</u>	<u>94</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>N/A</u>	<u>0.45</u>	<u>604</u>	<u>52.5</u>	
South Leg - Ground Floor	<u>↓</u>	<u>1.27</u>	<u>406</u>	<u>35.4</u>	
North Leg - Basement	<u>↓</u>	<u>0.98</u>	<u>35</u>	<u>3.1</u>	
South Leg - Basement	<u>↓</u>	<u>0.92</u>	<u>1006</u>	<u>87.8</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>N/A</u>	<u>0.09</u>
SSD-12-A	<u>↓</u>	<u>0.11</u>
SSD-11-A	<u>↓</u>	<u>N/A*</u>
SSD-13-A	<u>↓</u>	<u>0.23</u>
SSD-2-A	<u>↓</u>	<u>0.84</u>
SSD-16-A	<u>↓</u>	<u>0.64</u>
015-A	<u>↓</u>	<u>1.11</u>
SSD-3-A	<u>↓</u>	<u>0.50</u>
SSD-19-A	<u>↓</u>	<u>0.00</u>
018-A	<u>↓</u>	<u>0.04</u>
SSD-20-A	<u>↓</u>	<u>0.45</u>
SSD-21-A	<u>↓</u>	<u>0.12</u>
SSD-22-A	<u>↓</u>	<u>0.10</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>N/A</u>	<u>N/A</u>
A-MID GAC	<u>↓</u>	<u>↓</u>
A-EFFLUENT	<u>↓</u>	<u>↓</u>

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: _____

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE Daniel J. Monahan

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 1/3/14 Time: _____ Personnel: DLM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>N/A</u>	<u>2.35</u>	<u>12</u>	<u>8</u>		<u>0</u>	<u>84</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>N/A</u>	<u>0.46</u>	<u>637</u>	<u>55.6</u>	
South Leg - Ground Floor	<u>↓</u>	<u>1.32</u>	<u>368</u>	<u>32.1</u>	
North Leg - Basement	<u>↓</u>	<u>1.30</u>	<u>15</u>	<u>1.3</u>	
South Leg - Basement	<u>↓</u>	<u>1.22</u>	<u>1057</u>	<u>92.3</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>N/A</u>	<u>0.06</u>
SSD-12-A	<u>↓</u>	<u>0.09</u>
SSD-11-A	<u>↓</u>	<u>0.18</u>
SSD-13-A	<u>↓</u>	<u>0.22</u>
SSD-2-A	<u>↓</u>	<u>0.83</u>
SSD-16-A	<u>↓</u>	<u>0.63</u>
015-A	<u>↓</u>	<u>1.13</u>
SSD-3-A	<u>↓</u>	<u>0.50</u>
SSD-19-A	<u>↓</u>	<u>0.00</u>
018-A	<u>↓</u>	<u>0.00</u>
SSD-20-A	<u>↓</u>	<u>0.81</u>
SSD-21-A	<u>↓</u>	<u>0.49</u>
SSD-22-A	<u>↓</u>	<u>0.46</u>

Need to fix tubing

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>N/A</u>	<u>N/A</u>
A-MID GAC	<u>↓</u>	<u>↓</u>
A-EFFLUENT	<u>↓</u>	<u>↓</u>

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: _____

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE: Daniel J. [Signature]

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 1/13/14 Time: _____ Personnel: DLM / Jm Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>11:55</u>	<u>2.25</u>	<u>11.00</u>	<u>16.00</u>	<u>5.00</u>	<u>0.00</u>	<u>98</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>1201</u>	<u>0.48</u>	<u>637</u>	<u>55.6</u>	
South Leg - Ground Floor	<u>1202</u>	<u>1.22</u>	<u>388</u>	<u>33.9</u>	
North Leg - Basement	<u>1221</u>	<u>1.31</u>	<u>90</u>	<u>7.9</u>	
South Leg - Basement	<u>1221</u>	<u>1.25</u>	<u>1004</u>	<u>87.6</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>1205</u>	<u>0.07</u>
SSD-12-A	<u>1207</u>	<u>0.12</u>
SSD-11-A	<u>1209</u>	<u>0.14</u>
SSD-13-A	<u>1211</u>	<u>0.27</u>
SSD-2-A	<u>1213</u>	<u>0.82</u>
SSD-16-A	<u>1215</u>	<u>0.65</u>
015-A	<u>1217</u>	<u>1.10</u>
SSD-3-A	<u>1219</u>	<u>0.48</u>
SSD-19-A	<u>1225</u>	<u>0.00</u>
018-A	<u>1234</u>	<u>0.00</u>
SSD-20-A	<u>1229</u>	<u>0.63</u>
SSD-21-A	<u>1230</u>	<u>0.54</u>
SSD-22-A	<u>1232</u>	<u>0.46</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>1149</u>	<u>1427</u>
A-MID GAC	<u>1144</u>	<u>1441</u>
A-EFFLUENT	<u>1147</u>	<u>1378</u>

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: ~32 gal

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE:

David S. Morris

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 1/30/14 Time: 1106 Personnel: DLM/SPP Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>1106</u>	<u>2.25</u>	<u>1</u>	<u>1.6</u>	<u>5</u>	<u>0</u>	<u>86</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>1115</u>	<u>0.44</u>	<u>654</u>	<u>57.1</u>	
South Leg - Ground Floor	<u>1118</u>	<u>1.04</u>	<u>370</u>	<u>32.3</u>	
North Leg - Basement	<u>1143</u>	<u>1.09</u>	<u>55</u>	<u>4.8</u>	
South Leg - Basement	<u>1147</u>	<u>1.05</u>	<u>1088</u>	<u>95.0</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>1121</u>	<u>0.04</u>
SSD-12-A	<u>1123</u>	<u>0.08</u>
SSD-11-A	<u>1125</u>	<u>0.14</u>
SSD-13-A	<u>1128</u>	<u>0.16</u>
SSD-2-A	<u>1131</u>	<u>0.62</u>
SSD-16-A	<u>1134</u>	<u>0.48</u>
015-A	<u>1136</u>	<u>0.89</u>
SSD-3-A	<u>1140</u>	<u>0.35</u>
SSD-19-A	<u>1149</u>	<u>0.00</u>
018-A	<u>1150</u>	<u>Not Accessible (locked door)</u>
SSD-20-A	<u>1200</u>	<u>0.21</u>
SSD-21-A	<u>1155</u>	<u>0.22</u>
SSD-22-A	<u>1156</u>	<u>0.19</u>

variable

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>N/A</u>	<u>N/A</u>
A-MID GAC	<u>↓</u>	<u>↓</u>
A-EFFLUENT	<u>↓</u>	<u>↓</u>

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: not drained

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE: Dawn I. Morin

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 2/14/14 Time: _____ Personnel: DLm Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>N/A</u>	<u>2.25</u>	<u>11</u>	<u>17</u>	<u>6</u>	<u>0</u>	<u>98</u>	<u>153</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>N/A</u>	<u>0.47</u>	<u>633</u>	<u>55.3</u>	
South Leg - Ground Floor	<u>↓</u>	<u>1.33</u>	<u>387</u>	<u>33.8</u>	
North Leg - Basement	<u>↓</u>	<u>1.40</u>	<u>106</u>	<u>9.3</u>	
South Leg - Basement	<u>↓</u>	<u>1.34</u>	<u>981</u>	<u>85.6</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>N/A</u>	<u>0.08</u>
SSD-12-A	<u>↓</u>	<u>0.14</u>
SSD-11-A	<u>↓</u>	<u>0.18</u>
SSD-13-A	<u>↓</u>	<u>0.25</u>
SSD-2-A	<u>↓</u>	<u>0.85</u>
SSD-16-A	<u>↓</u>	<u>0.68</u>
015-A	<u>↓</u>	<u>1.19</u>
SSD-3-A	<u>↓</u>	<u>0.53</u>
SSD-19-A	<u>↓</u>	<u>0.00</u>
018-A	<u>↓</u>	<u>0.00</u>
SSD-20-A	<u>↓</u>	<u>0.40</u>
SSD-21-A	<u>↓</u>	<u>0.71</u>
SSD-22-A	<u>↓</u>	<u>0.64</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>1625</u>	<u>2508</u>
A-MID GAC	<u>1627</u>	<u>2557</u>
A-EFFLUENT	<u>1629</u>	<u>2454</u>

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: Not Drained (~15 gal)

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE: [Signature]

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 2/27/14 Time: 1200 Personnel: DLM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
1202	2.0	11	17	6	0	90	160

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	1206	0.44	603	52.6	
South Leg - Ground Floor	1208	1.26	380	33.2	
North Leg - Basement	1224	1.19	21	1.8	
South Leg - Basement	1226	1.13	1088	95.0	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	1209	0.06
SSD-12-A	N/A	N/A*
SSD-11-A	1213	0.16
SSD-13-A	1216	0.23
SSD-2-A	1218	0.75
SSD-16-A	1219	0.63
015-A	1221	1.10
SSD-3-A	1222	0.48
SSD-19-A	1229	0.00
018-A	1235	0.00
SSD-20-A	1238	0.19
SSD-21-A	1230	0.34
SSD-22-A	1232	0.32

H₂O

variable; H₂O

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	N/A	N/A
A-MID GAC	↓	↓
A-EFFLUENT	↓	↓

ADDITIONAL COMMENTS:

* Couldn't get reading. Kept bouncing between positive and negative values and zero.

1. Was the blower running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Was the blower ambient air valve open?

YES NO

4. Was there water in the knockout tank?

YES NO Volume: Drained 206.5 gallons on 2/25

5. Was the vacuum/flow on either leg adjusted?

YES NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES NO

7. Is there any damage to system components?

YES NO

8. Are all locks and zip-ties secure?

YES NO

9. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

10. Was there a GAC change out?

YES NO

11. How many unused GAC units are at this location?

NEW 0
SPENT 1

FIELD REP. SIGNATURE: Daniel J. [Signature]

Time: _____

SSD SYSTEM CHECK - BUILDING A

LMC Middle River Complex, Middle River, Maryland

Date: 3/13/14 Time: _____ Personnel: DLM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
	<u>2.25</u>	<u>11</u>	<u>17</u>	<u>6</u>	<u>0</u>	<u>86</u>	<u>160</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	<u>1145</u>	<u>0.45</u>	<u>545</u>	<u>47.6</u>	
South Leg - Ground Floor	<u>1146</u>	<u>1.30</u>	<u>370</u>	<u>32.3</u>	
North Leg - Basement	<u>1157</u>	<u>1.19</u>	<u>84</u>	<u>7.3</u>	
South Leg - Basement	<u>1159</u>	<u>1.12</u>	<u>1065</u>	<u>93.0</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>1147</u>	<u>0.08</u>
SSD-12-A	<u>1148</u>	<u>0.10</u>
SSD-11-A	<u>1149</u>	<u>0.17</u>
SSD-13-A	<u>1149</u>	<u>0.20</u>
SSD-2-A	<u>1150</u>	<u>0.78</u>
SSD-16-A	<u>1151</u>	<u>0.64</u>
015-A	<u>1152</u>	<u>1.10</u>
SSD-3-A	<u>1154</u>	<u>0.48</u>
SSD-19-A	<u>1201</u>	<u>0.00</u>
018-A	<u>1207</u>	<u>0.00</u>
SSD-20-A	<u>1211</u>	<u>0.29</u>
SSD-21-A	<u>1203</u>	<u>0.29</u>
SSD-22-A	<u>1204</u>	<u>0.25</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>1256</u>	<u>2460</u>
A-MID GAC	<u>1257</u>	<u>2474</u>
A-EFFLUENT	<u>1258</u>	<u>2587</u>

Collected on 3/12/14

ADDITIONAL COMMENTS:

1. Was the blower running upon arrival?

YES

NO

2. Were there any alarm conditions upon arrival?

YES

NO

Comment: _____

3. Was the blower ambient air valve open?

YES

NO

4. Was there water in the knockout tank?

YES

NO

Volume: _____

5. Was the vacuum/flow on either leg adjusted?

YES

NO

Comment: _____

6. Are there any leaks or damage to system hoses?

YES

NO

7. Is there any damage to system components?

YES

NO

8. Are all locks and zip-ties secure?

YES

NO

9. Do these fall to zero when system is turned off?

Flow Gauge

YES

NO

Pressure Gauges

YES

NO

Vacuum Gauges

YES

NO

10. Was there a GAC change out?

YES

NO

11. How many unused GAC units are at this location?

NEW

0

SPENT

1FIELD REP. SIGNATURE: Dana J. Martin

Time: _____

SSD SYSTEM CHECK - BUILDING A
LMC Middle River Complex, Middle River, Maryland

Date: 3/28/14 Time: 1130 Personnel: DLM Room Temp: _____

GENERAL SYSTEM MONITORING

Time	Vacuum post-KO (in. H ₂ O)	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Pressure post-Blower (in. H ₂ O)	Temp (°F)	Flow (scfm)
<u>1140</u>	<u>2.0</u>	<u>11</u>	<u>17</u>	<u>6</u>	<u>0</u>	<u>99</u>	<u>155</u>

* Replace filter if >25 in. H₂O

LEG VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Comments
North Leg - Ground Floor	1148 <u>1148</u>	10.46 <u>10.46</u>	395 <u>646</u>	<u>56.4</u>	
South Leg - Ground Floor	<u>1145</u>	<u>1.25</u>	<u>395</u>	<u>34.5</u>	
North Leg - Basement	<u>1208</u>	<u>1.14</u>	<u>2</u>	<u>0.2</u>	
South Leg - Basement	<u>1209</u>	<u>1.09</u>	<u>1015</u>	<u>88.6</u>	

** Flow = Velocity x 0.0873

VACUUM MONITORING

Well	Time	Vacuum (in. H ₂ O)
SSD-1-A	<u>1152</u>	<u>0.08</u>
SSD-12-A	<u>1153</u>	<u>0.11</u>
SSD-11-A	<u>1155</u>	<u>0.14</u>
SSD-13-A	<u>1156</u>	<u>0.24</u>
SSD-2-A	<u>1158</u>	<u>0.80</u>
SSD-16-A	<u>1200</u>	<u>0.64</u>
015-A	<u>1201</u>	<u>1.12</u>
SSD-3-A	<u>1204</u>	<u>0.49</u>
SSD-19-A	<u>1211</u>	<u>0.00</u>
018-A	<u>N/A</u>	<u>N/A</u>
SSD-20-A	1221 <u>1221</u>	<u>0.16</u> ; H ₂ O
SSD-21-A	<u>1214</u>	<u>0.25</u>
SSD-22-A	<u>1216</u>	<u>0.23</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID
A-INFLUENT	<u>N/A</u>	<u>N/A</u>
A-MID GAC	<u>↓</u>	<u>↓</u>
A-EFFLUENT	<u>↓</u>	<u>↓</u>

ADDITIONAL COMMENTS:

- Was the blower running upon arrival?
☒ YES ☐ NO
- Were there any alarm conditions upon arrival?
YES ☒ NO
Comment: _____
- Was the blower ambient air valve open?
YES ☒ NO
- Was there water in the knockout tank?
YES ☒ NO Volume: _____
- Was the vacuum/flow on either leg adjusted?
YES ☒ NO
Comment: _____
- Are there any leaks or damage to system hoses?
YES ☒ NO
- Is there any damage to system components?
YES ☒ NO
- Are all locks and zip-ties secure?
☒ YES ☐ NO
- Do these fall to zero when system is turned off?
Flow Gauge ☒ YES ☐ NO
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO
- Was there a GAC change out?
YES ☒ NO
- How many unused GAC units are at this location?
NEW 0
SPENT 1

FIELD REP. SIGNATURE: Dana J. Manico

Time: 1230

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 10/10/13

Time: _____

Personnel: DLM

1. Was the system running upon arrival?

☒ YES ☐ NO

2. Were there any alarm conditions upon arrival?

☐ YES ☒ NO

Comment: _____

3. Is the blower ambient air valve open?

☐ YES ☒ NO

4. Are there any leaks or damage to system hoses?

☐ YES ☒ NO

5. Is there any damage to system components?

☐ YES ☒ NO

6. Are all locks and zip-ties secure?

☒ YES ☐ NO

7. Was there a GAC change out?

☐ YES ☒ NO

8. Was there a KMnO₄ change out?

☐ YES ☒ NO

9. How many GAC units are at this location?

NEW 2 SPENT 0

10. How many KMnO₄ units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 3 PART FULL 1 FULL 0

12. Are water drums in good condition and labeled?

☒ YES ☐ NO

Comment: _____

13. Do these fall to zero when system is turned off?

Flow Gauge	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Pressure Gauges	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Vacuum Gauges	<input checked="" type="radio"/> YES	<input type="radio"/> NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
<u>N/A</u>	<u>27</u>	<u>34</u>	<u>7</u>	<u>190</u>	<u>45</u>	<u>166</u>	<u>62</u>

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 3446.2

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	<u>N/A</u>	<u>14.63</u>	<u>1205</u>	<u>26.3</u>		
SSD-23-C			<u>CLOSED</u>			
SSD-30-C		<u>23.3</u>	<u>50</u>	<u>1.1</u>		* } Lower than usual
SSD-26-C		<u>22.7</u>	<u>233</u>	<u>5.1</u>		
SSD-31-C		<u>22.6</u>	<u>298</u>	<u>6.5</u>		
SSD-27-C		<u>12.15</u>	<u>>max</u>	<u>N/A</u>		
SSD-32-C		<u>15.09</u>	<u>3502</u>	<u>76.3</u>		
SSD-28-C		<u>21.6</u>	<u>571</u>	<u>12.4</u>		
SSD-33-C		<u>20</u>	<u>1609</u>	<u>35.1</u>		
SSD-29-C		<u>21.7</u>	<u>153</u>	<u>3.3</u>		
SSD-34-C	<u>✓</u>	<u>21.7</u>	<u>236</u>	<u>5.1</u>		

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	N/A	0.31		087-C	N/A	0.0	
SSD-22-C		N/A	Heavy Equip	133-C		4.66	
SSD-2-C		0.06		134-C		0.00	
SSD-24-C		0.18		111-C		0.00	
SSD-25-C		0.01		060-C		8.99	
SSD-3-C		1.02		127-C		5.62	
SSD-4-C		2.07		141-C		-0.60	
135-C		0.05		050-C		0.00	
088-C		0.00		126-C		0.00	
113-C		5.62					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES NO	YES NO	N/A	YES NO
MS-2	YES NO	YES NO	↓	YES NO
Pipe Sumps				
PS-1	YES NO	YES NO	N/A	YES NO
PS-2	YES NO	YES NO	↓	YES NO
PS-3	YES NO	YES NO	↓	YES NO
PS-4	YES NO	YES NO	↓	YES NO
PS-5	YES NO	YES NO	↓	YES NO
System Sumps				
Exhaust Stack Sump	YES NO	YES NO	N/A	YES NO
GAC and PPZ Drains				
Lead GAC	YES NO	YES NO	N/A	YES NO
Lag GAC	YES NO	YES NO	↓	YES NO
PPZ	YES NO	YES NO	↓	YES NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	1101	10796	
C-MID GAC	1123	10795	
C-EFFLUENT	1123	L-A7117	

ADDITIONAL COMMENTS:

INF-25 (Sign out INF-MASTER)

FIELD REP. SIGNATURE: Daniel F. Martin

Time: _____

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 10/23/13

Time: 1000

Personnel: Dustin Cates

1. Was the system running upon arrival?

YES NO

2. Were there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Is the blower ambient air valve open?

YES NO

4. Are there any leaks or damage to system hoses?

YES NO

5. Is there any damage to system components?

YES NO

6. Are all locks and zip-ties secure?

YES NO

7. Was there a GAC change out?

YES NO

8. Was there a KMnO_4 change out?

YES NO

9. How many GAC units are at this location?

NEW 2 SPENT 0

10. How many KMnO_4 units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 2 PART FULL 1 FULL _____

12. Are water drums in good condition and labeled?

YES NO

Comment: _____

13. Do these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
<u>1010</u>	<u>23</u>	<u>33</u>	<u>10</u>	<u>185</u>	<u>46</u>	<u>164</u>	<u>62</u>

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 3756.4

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C		<u>-13.67</u>	<u>1148</u>	<u>25.03</u>		
SSD-23-C		<u>-4.2</u>	<u>10</u>	<u>0.22</u>		
SSD-30-C		<u>-22.1</u>	<u>70</u>	<u>1.53</u>		
SSD-26-C		<u>-21.7</u>	<u>270</u>	<u>5.89</u>		
SSD-31-C		<u>-21.4</u>	<u>284</u>	<u>6.19</u>		
SSD-27-C		<u>-11.12</u>	<u>Max</u>	<u>NA</u>		
SSD-32-C		<u>-14.29</u>	<u>3420</u>	<u>74.56</u>		
SSD-28-C		<u>-20.4</u>	<u>664</u>	<u>14.48</u>		
SSD-33-C		<u>-19.5</u>	<u>1635</u>	<u>35.64</u>		
SSD-29-C		<u>-20.7</u>	<u>107</u>	<u>2.33</u>		
SSD-34-C		<u>-20.8</u>	<u>7</u>	<u>0.15</u>		

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C		-0.23	24hr test L4	087-C		0.00	
SSD-22-C		-0.03		133-C		-4.68	well gap not sealed
SSD-2-C		-0.09	24hr test L5	134-C		0.01	
SSD-24-C		-0.13	24hr test L6	111-C		0.0	
SSD-25-C		-0.02		060-C		-9.04	
SSD-3-C		-0.84		127-C		-5.28	
SSD-4-C		-1.81		141-C		0.81	
135-C		-0.04	24hr test L6 10/29/13 1355	050-C		-0.01	
088-C		0.0		126-C		0.02	
113-C		-5.59					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
MS-2	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
Pipe Sumps				
PS-1	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
PS-2	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
PS-3	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
PS-4	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
PS-5	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
System Sumps				
Exhaust Stack Sump	<u>YES</u> NO	<u>YES</u> NO	0.25 gal	<u>YES</u> NO
GAC and PPZ Drains				
Lead GAC	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
Lag GAC	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO
PPZ	YES <u>NO</u>	YES <u>NO</u>	NA	<u>YES</u> NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT			
C-MID GAC			
C-EFFLUENT			

ADDITIONAL COMMENTS:

1227 Turn off system 1250 Turn system on. 24hr testing started @
- 1348, 1340, + 1410 ~
L-5 L-6 L-4

FIELD REP. SIGNATURE: _____

Time: 1500

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 11/7/13

Time: 0800

Personnel: DLM

1. Was the system running upon arrival?

☒ YES

☐ NO

2. Were there any alarm conditions upon arrival?

☐ YES

☒ NO

Comment: _____

3. Is the blower ambient air valve open?

☐ YES

☒ NO

4. Are there any leaks or damage to system hoses?

☐ YES

☒ NO

5. Is there any damage to system components?

☐ YES

☒ NO

6. Are all locks and zip-ties secure?

☒ YES

☐ NO

7. Was there a GAC change out?

☐ YES

☒ NO

8. Was there a KMnO₄ change out?

☐ YES

☒ NO

9. How many GAC units are at this location?

NEW 2

SPENT 0

10. How many KMnO₄ units are at this location?

NEW 1

SPENT 0

11. How many water drums are on-site?

EMPTY 2

PART FULL 1

FULL 0

12. Are water drums in good condition and labeled?

☒ YES

☐ NO

Comment: _____

13. Do these fall to zero when system is turned off?

Flow Gauge

☒ YES

☐ NO

Pressure Gauges

☒ YES

☐ NO

Vacuum Gauges

☒ YES

☐ NO

GENERAL SYSTEM MONITORING

Press = 30 Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
0930 = 58 0814	53	56	3	160	34	180	62

* Replace filter if >25 in. H₂O

Pre Well Adj: 26

Vacuum Relief @ 90

14. How many hours are displayed on the time counter? 41076

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	0907	27.8	1959	42.7		
SSD-23-C			CLOSED			
SSD-30-C	0902	53.0	60	1.3		H ₂ O
SSD-26-C	0900	49.1	H ₂ O	N/A		
SSD-31-C	0854	52.6	H ₂ O	N/A		
SSD-27-C	0830	1.09	1163	25.4	~45% Open	
SSD-32-C	0820	2.42	1177	25.7	~35% Open	
SSD-28-C	0836	50.5	990	21.6		
SSD-33-C	0838	45.7	5979	64.9		
SSD-29-C	0842	49.8	H ₂ O	N/A		
SSD-34-C	0844	50.9	38	0.7		H ₂ O

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	0908	0.45		087-C			
SSD-22-C	0910	0.01		133-C	0830	1.19	
SSD-2-C	0917	0.10		134-G			
SSD-24-C	0923	0.31		111-C	0832	0.00	
SSD-25-C	0924	0.01		060-C	0835	23.8	
SSD-3-C	0921	1.57		127-C	0840	11.91	
SSD-4-C	0919	3.24		141-C	0845	-0.58	
135-C	0902	0.04		050-C	0847	0.00	
088-C	0859	0.00		126-C	0849	0.00	
113-C	0856	7.14					

SSD-3 0913 0.01

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>		YES <input checked="" type="radio"/> NO <input type="radio"/>
MS-2	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>		YES <input checked="" type="radio"/> NO <input type="radio"/>
Pipe Sumps				
PS-1	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>		YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-2	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>		YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-3	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>		YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-4	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>		YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-5	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>		YES <input checked="" type="radio"/> NO <input type="radio"/>
System Sumps				
Exhaust Stack Sump	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES <input checked="" type="radio"/> NO <input type="radio"/>	Few ounces	YES <input checked="" type="radio"/> NO <input type="radio"/>
GAC and PPZ Drains				
Lead GAC	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES NO		YES <input checked="" type="radio"/> NO <input type="radio"/>
Lag GAC	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES NO		YES <input checked="" type="radio"/> NO <input type="radio"/>
PPZ	YES <input checked="" type="radio"/> NO <input type="radio"/>	YES NO		YES <input checked="" type="radio"/> NO <input type="radio"/>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	0933	09583	2 collected After Well Adjustments
C-MID GAC	0934	10756	
C-EFFLUENT	0935	10782	

ADDITIONAL COMMENTS:

FIELD REP. SIGNATURE:

David L. Morris

Time:

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 11/22/13

Time: 1110

Personnel: DLm

1. Was the system running upon arrival?

☒ YES ☐ NO

2. Where there any alarm conditions upon arrival?

☐ YES ☒ NO

Comment: _____

3. Is the blower ambient air valve open?

☐ YES ☒ NO

4. Are there any leaks or damage to system hoses?

☐ YES ☒ NO

5. Is there any damage to system components?

☐ YES ☒ NO

6. Are all locks and zip-ties secure?

☒ YES ☐ NO

7. Was there a GAC change out?

☐ YES ☒ NO

8. Was there a KMnO₄ change out?

☐ YES ☒ NO

9. How many GAC units are at this location?

NEW 2 SPENT 0

10. How many KMnO₄ units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 2 PART FULL 1 FULL 0

12. Are water drums in good condition and labeled?

☒ YES ☐ NO

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge ☒ YES ☐ NO
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
<u>1114</u>	<u>56</u>	<u>59</u>	<u>3</u>	<u>154</u>	<u>32</u>	<u>190</u>	<u>62</u>

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 4198.4

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	<u>1120</u>	<u>25.1</u>	<u>2294</u>	<u>50.0</u>	<u>None</u>	
SSD-23-C			<u>CLOSED</u>			
SSD-30-C	<u>1124</u>	<u>31.7</u>	<u>1462</u>	<u>31.9</u>	<u>None</u>	<u>H₂O</u>
SSD-26-C	<u>1125</u>	<u>48.6</u>	<u>N/A</u>	<u>N/A</u>	<u>None</u>	<u>H₂O; variable vac.</u>
SSD-31-C	<u>1127</u>	<u>47.3</u>	<u>N/A</u>	<u>N/A</u>	<u>None</u>	<u>H₂O; variable vac.</u>
SSD-27-C	<u>1131</u>	<u>21.16</u>	<u>1021</u>	<u>22.3</u>	<u>None</u>	
SSD-32-C	<u>1133</u>	<u>2.35</u>	<u>1031</u>	<u>22.5</u>	<u>None</u>	
SSD-28-C	<u>1136</u>	<u>49.8</u>	<u>1812</u>	<u>39.5</u>	<u>None</u>	
SSD-33-C	<u>1138</u>	<u>44.3</u>	<u>3115</u>	<u>67.9</u>	<u>None</u>	
SSD-29-C	<u>1140</u>	<u>49.2</u>	<u>N/A</u>	<u>N/A</u>	<u>None</u>	<u>H₂O; variable vac.</u>
SSD-34-C	<u>1142</u>	<u>50.5</u>	<u>917</u>	<u>20.0</u>	<u>None</u>	<u>H₂O</u>

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	1222	0.45		087-C	—	—	Not Measured
SSD-22-C	1219	0.00		133-C	1200	0.95	
SSD-2-C	1218	0.08		134-C	—	—	Not Measured
SSD-24-C	1216	0.22		111-C	1158	0.00	
SSD-25-C	1233	0.01		060-C	1154	22.7	
SSD-3-C	1227	1.35		127-C	1152	10.05	
SSD-4-C	1225	2.96		141-C	1144	-0.64	
135-C	1208	0.06		050-C	1146	0.00	
088-C	1206	0.00		126-C	1149	0.00	
113-C	1204	6.54	Variable Vac				

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <input checked="" type="radio"/> NO	YES NO	N/A	YES <input checked="" type="radio"/> NO
MS-2	YES <input checked="" type="radio"/> NO	YES NO	↓	YES <input checked="" type="radio"/> NO
Pipe Sumps				
PS-1	YES <input checked="" type="radio"/> NO	YES NO	N/A	YES <input checked="" type="radio"/> NO
PS-2	YES <input checked="" type="radio"/> NO	YES NO	↓	YES <input checked="" type="radio"/> NO
PS-3	YES <input checked="" type="radio"/> NO	YES NO	↓	YES <input checked="" type="radio"/> NO
PS-4	YES <input checked="" type="radio"/> NO	YES NO	↓	YES <input checked="" type="radio"/> NO
PS-5	YES <input checked="" type="radio"/> NO	YES NO	↓	YES <input checked="" type="radio"/> NO
System Sumps				
Exhaust Stack Sump	<input checked="" type="radio"/> YES NO	<input checked="" type="radio"/> YES NO	1.75gal	<input checked="" type="radio"/> YES NO
GAC and PPZ Drains				
Lead GAC	YES <input checked="" type="radio"/> NO	YES NO	N/A	YES <input checked="" type="radio"/> NO
Lag GAC	YES <input checked="" type="radio"/> NO	YES NO	↓	YES <input checked="" type="radio"/> NO
PPZ	YES <input checked="" type="radio"/> NO	YES NO	↓	YES <input checked="" type="radio"/> NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	N/A	N/A	
C-MID GAC	↓	↓	
C-EFFLUENT	↓	↓	

ADDITIONAL COMMENTS:

SSD-24-C needs retapped.

FIELD REP. SIGNATURE:

David J. Manica

Time: 1307

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 12/5/13

Time: 1200

Personnel: DLM

1. Was the system running upon arrival?

☒ YES ☐ NO

2. Where there any alarm conditions upon arrival?

YES ☐ NO ☒

Comment: _____

3. Is the blower ambient air valve open?

YES ☐ NO ☒

4. Are there any leaks or damage to system hoses?

YES ☐ NO ☒

5. Is there any damage to system components?

YES ☐ NO ☒

6. Are all locks and zip-ties secure?

☒ YES ☐ NO

7. Was there a GAC change out?

YES ☐ NO ☒

8. Was there a KMnO₄ change out?

YES ☐ NO ☒

9. How many GAC units are at this location?

NEW 2 SPENT ☐

10. How many KMnO₄ units are at this location?

NEW 1 SPENT ☐

11. How many water drums are on-site?

EMPTY 2 PART FULL 1 FULL

12. Are water drums in good condition and labeled?

☒ YES ☐ NO

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge ☒ YES ☐ NO
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
<u>1200</u>	<u>53</u>	<u>56</u>	<u>3</u>	<u>154</u>	<u>34</u>	<u>186</u>	<u>64</u>

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 4508.6

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	<u>1214</u>	<u>28.8</u>	<u>2000</u>	<u>43.6</u>	<u>None</u>	
SSD-23-C			<u>CLOSED</u>			
SSD-30-C	<u>1217</u>	<u>49.0</u>	<u>1301</u>	<u>28.4</u>	<u>None</u>	<u>H₂O</u>
SSD-26-C	<u>1219</u>	<u>47.0</u>	<u>N/A</u>	<u>N/A</u>	<u>None</u>	<u>H₂O; Variable Vac.</u>
SSD-31-C	<u>1220</u>	<u>47.5</u>	<u>N/A</u>	<u>N/A</u>	<u>None</u>	<u>H₂O?</u>
SSD-27-C	<u>1224</u>	<u>1.03</u>	<u>935</u>	<u>20.4</u>	<u>None</u>	
SSD-32-C	<u>1226</u>	<u>2.19</u>	<u>1031</u>	<u>22.5</u>	<u>None</u>	
SSD-28-C	<u>1227</u>	<u>46.9</u>	<u>1200</u>	<u>26.2</u>	<u>None</u>	
SSD-33-C	<u>1229</u>	<u>40.8</u>	<u>3074</u>	<u>67.0</u>	<u>None</u>	
SSD-29-C	<u>1231</u>	<u>47.5</u>	<u>N/A</u>	<u>N/A</u>	<u>None</u>	<u>H₂O; variable vac.</u>
SSD-34-C	<u>1233</u>	<u>48.1</u>	<u>1310</u>	<u>28.6</u>	<u>None</u>	<u>H₂O</u>

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	1316	0.38		087-C	N/A	N/A	No Longer Monitor
SSD-22-C	1313	0.00		133-C	1255	0.93	Sinking
SSD-2-C	1311	0.07		134-C	N/A	N/A	No Longer Monitor
SSD-24-C	1309	0.24		111-C	1253	0.00	
SSD-25-C	1323	0.00		060-C	1251	22.0	
SSD-3-C	1320	1.18		127-C	1246	9.18	
SSD-4-C	1318	2.47		141-C	1235	0.55	
135-C	1304	0.06		050-C	1237	0.0	Remove?
088-C	1302	0.00		126-C	1240	0.0	
113-C	1300	6.41	Variable vac				

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	N/A	YES <input checked="" type="radio"/> NO <input type="radio"/>
MS-2	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	↓	YES <input checked="" type="radio"/> NO <input type="radio"/>
Pipe Sumps				
PS-1	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	N/A	YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-2	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	↓	YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-3	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	↓	YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-4	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	↓	YES <input checked="" type="radio"/> NO <input type="radio"/>
PS-5	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	↓	YES <input checked="" type="radio"/> NO <input type="radio"/>
System Sumps				
Exhaust Stack Sump	YES <input checked="" type="radio"/> NO	YES <input checked="" type="radio"/> NO	1/2 gal	YES <input checked="" type="radio"/> NO
GAC and PPZ Drains				
Lead GAC	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	N/A	YES <input checked="" type="radio"/> NO <input type="radio"/>
Lag GAC	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	↓	YES <input checked="" type="radio"/> NO <input type="radio"/>
PPZ	YES <input checked="" type="radio"/> NO	YES <input type="radio"/> NO <input type="radio"/>	↓	YES <input checked="" type="radio"/> NO <input type="radio"/>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	1206	2529	
C-MID GAC	1207	2550	
C-EFFLUENT	1208	2558	

ADDITIONAL COMMENTS:

FIELD REP. SIGNATURE: David J. Morris

Time: _____

6 3/4 Turns.

SSD SYSTEM CHECK - BUILDING C

LMC Middle River Complex, Middle River, Maryland

Date: 12/18/13

Time: _____

Personnel: DLM

1. Was the system running upon arrival?

YES

NO

2. Where there any alarm conditions upon arrival?

YES

NO

Comment: _____

3. Is the blower ambient air valve open?

YES

NO

4. Are there any leaks or damage to system hoses?

YES

NO

5. Is there any damage to system components?

YES

NO

6. Are all locks and zip-ties secure?

YES

NO

7. Was there a GAC change out?

YES

NO8. Was there a KMnO_4 change out?

YES

NO

9. How many GAC units are at this location?

NEW 3SPENT 010. How many KMnO_4 units are at this location?NEW 1SPENT 0

11. How many water drums are on-site?

EMPTY 1PART FULL 1FULL 1

12. Are water drums in good condition and labeled?

YES

NO

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge

YES

NO

Pressure Gauges

YES

NO

Vacuum Gauges

YES

NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H_2O)	Vacuum post-Filter (in. H_2O)	Diff Pressure of Filter* (in. H_2O)	Flow (scfm)	Pressure post-Blower (in. H_2O)	Temp post-Blower ($^{\circ}\text{F}$)	Temp post-HE ($^{\circ}\text{F}$)
	48	52	4	160	36	180	63

* Replace filter if >25 in. H_2O 14. How many hours are displayed on the time counter? 48068

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H_2O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	1215	15.43	N/A	N/A	open ~ 25%	H_2O ; Variable vac
SSD-23-C			CLOSED			
SSD-30-C	1220	43.8	932	20.3	None	H_2O
SSD-26-C		43.3	N/A	N/A	None	H_2O ; variable vac
SSD-31-C		38.9	NA	N/A	None	H_2O ; Variable vac
SSD-27-C	1224	43.8 1.48	1330	29.0	closed 74% open	
SSD-32-C		2.04	981	21.4	None	
SSD-28-C		41.3	1412	30.8	None	
SSD-33-C		36.2	2291	49.9	None	
SSD-29-C		42.1	N/A	N/A	None	H_2O ; variable vac
SSD-34-C		42.8	1326	28.9		H_2O ; variable vel

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	N/A	0.12		087-C	N/A	N/A	
SSD-22-C		0.00		133-C		0.77	
SSD-2-C		0.02		134-C		N/A	
SSD-24-C		0.08		111-C		0.00	
SSD-25-C		0.00		060-C		9.64	
SSD-3-C		0.42		127-C		6.28	
SSD-4-C		0.88		141-C		-0.55	
135-C		0.06		050-C		6.00	
088-C		0.00		126-C	✓	0.00	
113-C	✓	6.48	Variable vac				

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <input checked="" type="radio"/> NO	YES NO	N/A	<input checked="" type="radio"/> YES NO
MS-2	YES <input checked="" type="radio"/> NO	YES NO	✓	<input checked="" type="radio"/> YES NO
Pipe Sumps				
PS-1	YES <input checked="" type="radio"/> NO	YES NO	N/A	<input checked="" type="radio"/> YES NO
PS-2	YES <input checked="" type="radio"/> NO	YES NO	↓	<input checked="" type="radio"/> YES NO
PS-3	YES <input checked="" type="radio"/> NO	YES NO	↓	<input checked="" type="radio"/> YES NO
PS-4	YES <input checked="" type="radio"/> NO	YES NO	↓	<input checked="" type="radio"/> YES NO
PS-5	YES <input checked="" type="radio"/> NO	YES NO	✓	<input checked="" type="radio"/> YES NO
System Sumps				
Exhaust Stack Sump	<input checked="" type="radio"/> YES NO	<input checked="" type="radio"/> YES NO	~1/2 gal	<input checked="" type="radio"/> YES NO
GAC and PPZ Drains				
Lead GAC	YES <input checked="" type="radio"/> NO	YES NO	N/A	<input checked="" type="radio"/> YES NO
Lag GAC	YES <input checked="" type="radio"/> NO	YES NO	↓	<input checked="" type="radio"/> YES NO
PPZ	YES <input checked="" type="radio"/> NO	YES NO	✓	<input checked="" type="radio"/> YES NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	N/A	N/A	
C-MID GAC	↓	↓	
C-EFFLUENT	✓	✓	

ADDITIONAL COMMENTS:

Bellard in front of PPZ drum removed and being fixed

FIELD REP. SIGNATURE: Dawn L. Morris

Time: _____

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 1/3/14

Time: 1120

Personnel: DLM

1. Was the system running upon arrival?

☒ YES ☐ NO

2. Where there any alarm conditions upon arrival?

YES ☐ NO ☒

Comment: _____

3. Is the blower ambient air valve open?

YES ☐ NO ☒

4. Are there any leaks or damage to system hoses?

YES ☐ NO ☒

5. Is there any damage to system components?

YES ☐ NO ☒

6. Are all locks and zip-ties secure?

☒ YES ☐ NO

7. Was there a GAC change out?

YES ☐ NO ☒

8. Was there a KMnO₄ change out?

YES ☐ NO ☒

9. How many GAC units are at this location?

NEW 2 SPENT 0

10. How many KMnO₄ units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 1 PART FULL 1 FULL 1

12. Are water drums in good condition and labeled?

YES ☐ NO ☐

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge ☒ YES ☐ NO
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
N/A	21	30	9	196	51		

* Replace filter if >25 in. H₂O

After Well Adj. 40 47 7 42 152 83

14. How many hours are displayed on the time counter? 5183.1

**Pre-Adjustment Measurements*

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	N/A	3.10	625	13.6		
SSD-23-C			CLOSED			
SSD-30-C		18.29	767	16.72		
SSD-26-C		18.06	556	12.1		
SSD-31-C		17.18	971	21.2		
SSD-27-C		9.14	3647	79.5		Vel = 1274 327.9
SSD-32-C		10.97	3243	70.7		Flow = 1280 326.8
SSD-28-C		16.43	876	19.1		
SSD-33-C		14.78	1806	39.4		
SSD-29-C		16.92	435	9.48		
SSD-34-C		16.81	617	13.5		

** Flow = Velocity x 0.0218

140
24
164

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	N/A	0.09		113-C	N/A	9.57	
SSD-22-C		0.00		133-C		1.49	
SSD-2-C		0.03		111-C		0.00	
SSD-24-C		0.04		060-C		16.49	
SSD-25-C		0.00		127-C		4.92	
SSD-3-C		0.29		141-C		-0.51	
SSD-4-C		0.60		050-C		0.00	
135-C		0.27		126-C		0.00	
088-C	↓	0.00			↓		

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?		Water Drained?		Volume Drained	Valves Closed?	
Moisture Separators							
MS-1	YES	NO	YES	NO		YES	NO
MS-2	YES	NO	YES	NO		YES	NO
Pipe Sumps							
PS-1	YES	NO	YES	NO		YES	NO
PS-2	YES	NO	YES	NO		YES	NO
PS-3	YES	NO	YES	NO		YES	NO
PS-4	YES	NO	YES	NO		YES	NO
PS-5	YES	NO	YES	NO		YES	NO
System Sumps							
Exhaust Stack Sump	YES	NO	YES	NO	2002	YES	NO
GAC and PPZ Drains							
Lead GAC	YES	NO	YES	NO		YES	NO
Lag GAC	YES	NO	YES	NO		YES	NO
PPZ	YES	NO	YES	NO		YES	NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	N/A	N/A	
C-MID GAC	↓	↓	
C-EFFLUENT	↓	↓	

ADDITIONAL COMMENTS:

VMP vacuum measurements collected after adjustments to SSD-27-C and SSD-32-C

FIELD REP. SIGNATURE: _____

Time: _____

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 1/13/14

Time: _____

Personnel: DLM/JM

1. Was the system running upon arrival?

YES ☒ NO ☐

2. Were there any alarm conditions upon arrival?

YES ☐ NO ☒

Comment: _____

3. Is the blower ambient air valve open?

YES ☐ NO ☒

4. Are there any leaks or damage to system hoses?

YES ☐ NO ☒

5. Is there any damage to system components?

YES ☐ NO ☒

6. Are all locks and zip-ties secure?

YES ☒ NO ☐

7. Was there a GAC change out?

YES ☐ NO ☒

8. Was there a KMnO₄ change out?

YES ☐ NO ☒

9. How many GAC units are at this location?

NEW 2 SPENT ☐

10. How many KMnO₄ units are at this location?

NEW 1 SPENT ☐

11. How many water drums are on-site?

EMPTY 1 PART FULL 1 FULL 1

12. Are water drums in good condition and labeled?

YES ☒ NO ☐

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge ☒ YES ☐ NO
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
9:16	36	43	7	175	49	160	82

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 5420.2

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	9:26	5.11	943	20.6	N/A	
SSD-23-C	Closed					
SSD-30-C	0929	33.9	1111	24.2	N/A	
SSD-26-C	0933	33.8	715	15.6	N/A	H ₂ O; Varying Velocity
SSD-31-C	0936	31.5	2115	46.1	N/A	
SSD-27-C	0941	1.13	1113	24.3	N/A	
SSD-32-C	0943	3.16	1545	33.7	N/A	
SSD-28-C	0945	31.5	1411	30.8	N/A	
SSD-33-C	0948	27.4	2926	63.8	N/A	
SSD-29-C	0950	32.8	1158	25.24	N/A	H ₂ O
SSD-34-C	0953	32.9	1109	24.2	N/A	H ₂ O

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	1035	0.10		113-C	1021	6.41	varying vac
SSD-22-C	1032	0.00		133-C	1015	1.37	
SSD-2-C	1029	0.00		111-C	1013	0.00	
SSD-24-C	1028	0.04		060-C	1009	15.08	
SSD-25-C	1042	0.00		127-C	1006	4.43	
SSD-3-C	1039	0.32		141-C	0956	-0.58	
SSD-4-C	1037	0.64		050-C	1000	0.00	
135-C	1024	0.14		126-C	1004	0.00	
088-C	1023	0.00					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> <u>NO</u>
MS-2	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> <u>NO</u>
Pipe Sumps				
PS-1	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> <u>NO</u>
PS-2	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> <u>NO</u>
PS-3	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> <u>NO</u>
PS-4	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> <u>NO</u>
PS-5	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> <u>NO</u>
System Sumps				
Exhaust Stack Sump	<u>YES</u> <u>NO</u>	<u>YES</u> <u>NO</u>	1/2 gal	<u>YES</u> <u>NO</u>
GAC and PPZ Drains				
Lead GAC	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> <u>NO</u>
Lag GAC	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> <u>NO</u>
PPZ	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> <u>NO</u>

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	1324	1401	
C-MID GAC	1326	1367	
C-EFFLUENT	1329	1373	

ADDITIONAL COMMENTS:

Bollard is back in place

FIELD REP. SIGNATURE: _____

[Signature]

Time: _____

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 1/30/14

Time: 0910

Personnel: DLM/SP

1. Was the system running upon arrival?

☒ YES ☐ NO

2. Where there any alarm conditions upon arrival?

☐ YES ☒ NO

Comment: _____

3. Is the blower ambient air valve open?

☐ YES ☒ NO

4. Are there any leaks or damage to system hoses?

☒ YES ☐ NO *Hole in mid-GAC flex hose*

5. Is there any damage to system components?

☐ YES ☒ NO

6. Are all locks and zip-ties secure?

☒ YES ☐ NO

7. Was there a GAC change out?

☐ YES ☒ NO

8. Was there a KMnO₄ change out?

☐ YES ☒ NO

9. How many GAC units are at this location?

NEW 2 SPENT 0

10. How many KMnO₄ units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 1 PART FULL 1 FULL 1

12. Are water drums in good condition and labeled?

☒ YES ☐ NO

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge	YES	NO
Pressure Gauges	YES	NO
Vacuum Gauges	YES	NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
0913	30	37	7	178	58	158	76

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 0582.7

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	0928	3.84	812	17.7	None	
SSD-23-C						closed
SSD-30-C	0934	27.9	821	17.9		
SSD-26-C	0935	27.3	580	12.6		H ₂ O; vac. vel.
SSD-31-C	0937	25.2	1999	43.6		
SSD-27-C	0944	0.96	954	20.8		
SSD-32-C	0945	2.78	1312	28.6		
SSD-28-C	0947	24.9	1629	35.5		
SSD-33-C	0949	20.9	3040	66.3		
SSD-29-C	0952	26.8	490	10.7		H ₂ O
SSD-34-C	0954	26.8	811	17.7		

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C

LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	1029	0.05		113-C	1018	3.81	vac.
SSD-22-C	1028	0		133-C	1014	1.00	
SSD-2-C	1026	0	taking reading	111-C	1011	0	
SSD-24-C	1024	0.02		060-C	1008	11.63	
SSD-25-C	1035	0		127-C	1005	2.49	
SSD-3-C	1032	0.20		141-C	0958	-0.66	pos. pressure
SSD-4-C	1030	0.42		050-C	0959	0	
135-C	1022	0.07		126-C	1002	0	
088-C	1020	0					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES NO	YES NO	1/4	YES NO
MS-2	YES NO	YES NO	1/4	YES NO
Pipe Sumps				
PS-1	YES NO	YES NO	1/4	YES NO
PS-2	YES NO	YES NO	1/4	YES NO
PS-3	YES NO	YES NO	1/4	YES NO
PS-4	YES NO	YES NO	1/4	YES NO
PS-5	YES NO	YES NO	1/4	YES NO
System Sumps				
Exhaust Stack Sump	YES NO	YES NO	0.5 gal	YES NO
GAC and PPZ Drains				
Lead GAC	YES NO	YES NO	1/4	YES NO
Lag GAC	YES NO	YES NO	1/4	YES NO
PPZ	YES NO	YES NO	drops	YES NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	N/A	N/A	
C-MID GAC	↓	↓	
C-EFFLUENT	↓	↓	

ADDITIONAL COMMENTS:

patched w/ electrical tape.
Need Earplugs; hole plugged in mid-GAC flex hose

FIELD REP. SIGNATURE:

[Signature]

Time:

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 5/14/14

Time: _____

Personnel: DLM

1. Was the system running upon arrival?

YES

NO

2. Were there any alarm conditions upon arrival?

YES

NO

Comment: _____

3. Is the blower ambient air valve open?

YES

NO

4. Are there any leaks or damage to system hoses?

YES

NO

5. Is there any damage to system components?

YES

NO

6. Are all locks and zip-ties secure?

YES

NO

7. Was there a GAC change out?

YES

NO

8. Was there a KMnO₄ change out?

YES

NO

9. How many GAC units are at this location?

NEW 2

SPENT 0

10. How many KMnO₄ units are at this location?

NEW 1

SPENT 0

11. How many water drums are on-site?

EMPTY 1

PART FULL 1

FULL 1

12. Are water drums in good condition and labeled?

YES

NO

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge

YES

NO

Pressure Gauges

YES

NO

Vacuum Gauges

YES

NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
	<u>32</u>	<u>38</u>	<u>6</u>	<u>168</u>	<u>59</u>	<u>171</u>	<u>86</u>

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 6192.2

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	<u>N/A</u>	<u>4.23</u>	<u>785</u>	<u>17.1</u>		
SSD-23-C			<u>CLOSED</u>			
SSD-30-C		<u>28.9</u>	<u>395</u>	<u>8.6</u>		
SSD-26-C		<u>28.9</u>	<u>246</u>	<u>5.4</u>		<u>160</u>
SSD-31-C		<u>27.3</u>	<u>1679</u>	<u>36.6</u>		
SSD-27-C		<u>1.17</u>	<u>1077</u>	<u>23.5</u>		
SSD-32-C		<u>3.09</u>	<u>1348</u>	<u>29.4</u>		
SSD-28-C		<u>26.3</u>	<u>1521</u>	<u>33.2</u>		
SSD-33-C		<u>22.0</u>	<u>2867</u>	<u>62.5</u>		
SSD-29-C		<u>27.6</u>	<u>177</u>	<u>3.9</u>		
SSD-34-C	<u>↓</u>	<u>27.7</u>	<u>49</u>	<u>1.1</u>		

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	N/A	0.07		113-C	N/A	6.34	
SSD-22-C	↓	0.00		133-C	↓	1.27	
SSD-2-C	↓	0.01		111-C	↓	0.00	
SSD-24-C	↓	0.03		060-C	↓	12.89	
SSD-25-C	↓	0.00		127-C	↓	3.19	
SSD-3-C	↓	0.21		141-C	↓	-0.53	
SSD-4-C	↓	0.45		050-C	↓	0.00	
135-C	↓	0.10		126-C	↓	0.00	
088-C	↓	0.0					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES NO	YES NO	N/A	YES NO
MS-2	YES NO	YES NO	↓	YES NO
Pipe Sumps				
PS-1	YES NO	YES NO	N/A	YES NO
PS-2	YES NO	YES NO	↓	YES NO
PS-3	YES NO	YES NO	↓	YES NO
PS-4	YES NO	YES NO	↓	YES NO
PS-5	YES NO	YES NO	↓	YES NO
System Sumps				
Exhaust Stack Sump	YES NO	YES NO	1/4 gal	YES NO
GAC and PPZ Drains				
Lead GAC	YES NO	YES NO	N/A	YES NO
Lag GAC	YES NO	YES NO	↓	YES NO
PPZ	YES NO	YES NO	↓	YES NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	1550	2571	
C-MID GAC	1552	2255	
C-EFFLUENT	1554	2459	

ADDITIONAL COMMENTS:

FIELD REP. SIGNATURE: *Daniel J. Martin*

Time: _____

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 2/27/14

Time: 1004

Personnel: DLM

1. Was the system running upon arrival?

YES NO

2. Where there any alarm conditions upon arrival?

YES NO

Comment: _____

3. Is the blower ambient air valve open?

YES NO

4. Are there any leaks or damage to system hoses?

YES NO

5. Is there any damage to system components?

YES NO

6. Are all locks and zip-ties secure?

YES NO

7. Was there a GAC change out?

YES NO

8. Was there a KMnO₄ change out?

YES NO

9. How many GAC units are at this location?

NEW 2 SPENT 0

10. How many KMnO₄ units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 0 PART FULL 1 FULL 2

12. Are water drums in good condition and labeled?

YES NO

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge YES NO
Pressure Gauges YES NO
Vacuum Gauges YES NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
<u>1010</u>	<u>33</u>	<u>38</u>	<u>5</u>	<u>154</u>	<u>59</u>	<u>172</u>	<u>84</u>

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 6466.0

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	<u>1016</u>	<u>4.40</u>	<u>753</u>	<u>16.4</u>	<u>None</u>	
SSD-23-C			<u>CLOSED</u>			
SSD-30-C	<u>1020</u>	<u>20.3</u>	<u>406</u>	<u>8.9</u>	<u>None</u>	<u>H₂O</u>
SSD-26-C	<u>1023</u>	<u>29.6</u>	<u>317</u>	<u>6.9</u>	<u>None</u>	<u>H₂O</u>
SSD-31-C	<u>1024</u>	<u>28.9</u>	<u>1440</u>	<u>31.4</u>	<u>None</u>	
SSD-27-C	<u>1027</u>	<u>1.19</u>	<u>1098</u>	<u>23.9</u>	<u>None</u>	
SSD-32-C	<u>1029</u>	<u>2.93</u>	<u>1361</u>	<u>29.7</u>	<u>None</u>	
SSD-28-C	<u>1031</u>	<u>28.0</u>	<u>1409</u>	<u>30.7</u>	<u>None</u>	
SSD-33-C	<u>1032</u>	<u>23.6</u>	<u>3018</u>	<u>65.8</u>	<u>None</u>	
SSD-29-C	<u>1034</u>	<u>29.4</u>	<u>446</u>	<u>9.7</u>	<u>None</u>	<u>H₂O</u>
SSD-34-C	<u>1037</u>	<u>29.4</u>	<u>636</u>	<u>13.9</u>	<u>None</u>	<u>H₂O</u>

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	1114	0.09		113-C	1058	6.91	
SSD-22-C	N/A	N/A	Not Accessible	113-C	1052	1.14	
SSD-2-C	1110	0.00		111-C	1055	0.0	
SSD-24-C	1106	0.06		060-C	1050	12.88	
SSD-25-C	1117	0.00		127-C	1047	3.40	
SSD-3-C	1116	0.24		141-C	1039	+0.56	
SSD-4-C	1108	0.47		050-C	1041	0.0	
135-C	1102	0.10		126-C	1043	0.0	
088-C	1100	0.01					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <u>NO</u>	YES NO	N/A	<u>YES</u> NO
MS-2	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
Pipe Sumps				
PS-1	YES <u>NO</u>	YES NO	N/A	<u>YES</u> NO
PS-2	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
PS-3	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
PS-4	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
PS-5	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
System Sumps				
Exhaust Stack Sump	<u>YES</u> NO	<u>YES</u> NO	1 gal	<u>YES</u> NO
GAC and PPZ Drains				
Lead GAC	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> NO
Lag GAC	<u>YES</u> NO	<u>YES</u> NO	< 102	<u>YES</u> NO
PPZ	<u>YES</u> NO	<u>YES</u> NO	< 102	<u>YES</u> NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	N/A	N/A	
C-MID GAC	↓	↓	
C-EFFLUENT	↓	↓	

ADDITIONAL COMMENTS:

FIELD REP. SIGNATURE: Dan F. Munn

Time: _____

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 3/12/14

Time: 1350

Personnel: DLM

1. Was the system running upon arrival?

☒ YES ☐ NO

2. Were there any alarm conditions upon arrival?

YES ☐ NO ☒

Comment: _____

3. Is the blower ambient air valve open?

YES ☐ NO ☒

4. Are there any leaks or damage to system hoses?

YES ☐ NO ☒

5. Is there any damage to system components?

YES ☐ NO ☒

6. Are all locks and zip-ties secure?

☒ YES ☐ NO

7. Was there a GAC change out?

☒ YES ☐ NO 3/6/14

8. Was there a KMnO₄ change out?

YES ☐ NO ☒

9. How many GAC units are at this location?

NEW 1 SPENT 1

10. How many KMnO₄ units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 0 PART FULL 1 FULL 2

12. Are water drums in good condition and labeled?

☒ YES ☐ NO

Comment: _____

13. Do these fall to zero when system is turned off?

Flow Gauge ☒ YES ☐ NO
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
1354	38	44	6	175	38	158	86

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 6763.6

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	1359	5.42	847	18.5	None	
SSD-23-C			CLOSED			
SSD-30-C	1403	34.9	N/A	N/A	None	H ₂ O
SSD-26-C	1404	34.9	N/A	N/A	None	H ₂ O
SSD-31-C	1406	33.6	1506	32.8	None	
SSD-27-C	1409	1.33	1183	25.8	None	
SSD-32-C	1410	3.34	1496	32.6	None	
SSD-28-C	1412	32.3	1573	34.3	None	
SSD-33-C	1414	27.2	3388	73.9	None	
SSD-29-C	1416	34.1	1061	23.1	None	H ₂ O
SSD-34-C	1418	34.2	1247	27.2	None	H ₂ O

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
★ 001-C	1450	0.09		113-C	1437	6.58	variable
SSD-22-C	1448	0.00		133-C	1434	1.29	
SSD-2-C	1446	0.02		111-C	1432	0.00	
★ SSD-24-C	1443	0.07		060-C	1430	15.42	
SSD-25-C	1453	0.00		127-C	1427	4.37	
★ SSD-3-C	1451	0.29		141-C	1420	-0.61	
SSD-4-C	1444	0.62		050-C	1422	0.00	
★ 135-C	1440	0.17		126-C	1424	0.00	
088-C	1439	0.00					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <u>NO</u>	YES NO	N/A	<u>YES</u> NO
MS-2	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
Pipe Sumps				
PS-1	YES <u>NO</u>	YES NO	N/A	<u>YES</u> NO
PS-2	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
PS-3	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
PS-4	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
PS-5	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
System Sumps				
Exhaust Stack Sump	<u>YES</u> NO	<u>YES</u> NO	1/4 gal	<u>YES</u> NO
GAC and PPZ Drains				
Lead GAC	YES <u>NO</u>	YES NO	N/A	<u>YES</u> NO
Lag GAC	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO
PPZ	YES <u>NO</u>	YES NO	↓	<u>YES</u> NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	1330	2511	
C-MID GAC	1331	2406	
C-EFFLUENT	1332	2206	

ADDITIONAL COMMENTS:

FIELD REP. SIGNATURE: Dan J. Morris

Time: 1515

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

Date: 3/28/14

Time: 0940

Personnel: DLM

1. Was the system running upon arrival?

☒ YES ☐ NO

2. Where there any alarm conditions upon arrival?

YES ☐ NO ☒

Comment: _____

3. Is the blower ambient air valve open?

YES ☐ NO ☒

4. Are there any leaks or damage to system hoses?

YES ☐ NO ☒

5. Is there any damage to system components?

YES ☐ NO ☒

6. Are all locks and zip-ties secure?

☒ YES ☐ NO

7. Was there a GAC change out?

YES ☐ NO ☒

8. Was there a KMnO₄ change out?

YES ☐ NO ☒

9. How many GAC units are at this location?

NEW 1 SPENT 1

10. How many KMnO₄ units are at this location?

NEW 1 SPENT 0

11. How many water drums are on-site?

EMPTY 0 PART FULL 1 FULL 2

12. Are water drums in good condition and labeled?

☒ YES ☐ NO

Comment: _____

13. Do the these fall to zero when system is turned off?

Flow Gauge ☒ YES ☐ NO
Pressure Gauges ☒ YES ☐ NO
Vacuum Gauges ☒ YES ☐ NO

GENERAL SYSTEM MONITORING

Time	Vacuum pre-Filter (in. H ₂ O)	Vacuum post-Filter (in. H ₂ O)	Diff Pressure of Filter* (in. H ₂ O)	Flow (scfm)	Pressure post-Blower (in. H ₂ O)	Temp post-Blower (°F)	Temp post-HE (°F)
0944	38	35	3	182	42	156	84

* Replace filter if >25 in. H₂O

14. How many hours are displayed on the time counter? 7141.3

EXTRACTION WELL VACUUM AND VELOCITY MONITORING

Location	Time	Vacuum (in. H ₂ O)	Velocity (ft/min)	Flow** (scfm)	Vacuum/Flow Adjustment	Comments
SSD-21-C	0951	5.32	831	18.1	None	
SSD-23-C			CLOSED			
SSD-30-C	0956	35.1	1150	25.07	None	Variable vel.; H ₂ O
SSD-26-C	0959	34.8	N/A	N/A	None	H ₂ O
SSD-31-C	1001	32.6	2831	61.7	None	H ₂ O
SSD-27-C	1004	1.34	1188	25.9	None	
SSD-32-C	1006	3.20	1511	32.9	None	
SSD-28-C	1007	31.9	1647	35.9	None	
SSD-33-C	1009	26.5	3401	74.1	None	
SSD-29-C	1011	33.9	956	20.8	None	H ₂ O
SSD-34-C	1013	34.0	361	7.9	None	H ₂ O

** Flow = Velocity x 0.0218

SSD SYSTEM CHECK - BUILDING C
LMC Middle River Complex, Middle River, Maryland

VMP VACUUM MONITORING

VMP	Time	Vacuum (in. H ₂ O)	Comments	VMP	Time	Vacuum (in. H ₂ O)	Comments
001-C	1047	0.07		113-C	1033	6.55	
SSD-22-C	N/A	N/A	Not Access.	133-C	1030	1.25	
SSD-2-C	1045	0.00		111-C	1027	0.00	
SSD-24-C	1040	0.06		060-C	1025	15.52	
SSD-25-C	1050	0.00		127-C	1022	3.98	
SSD-3-C	1048	0.24		141-C	1016	-0.61	
SSD-4-C	1043	0.54		050-C	1017	0.00	
135-C	1036	0.14		126-C	1018	0.00	
088-C	1035	0.00					

MOISTURE SEPARATOR, SUMP, AND DRAIN MONITORING

Location	Contains Water?	Water Drained?	Volume Drained	Valves Closed?
Moisture Separators				
MS-1	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> NO
MS-2	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> NO
Pipe Sumps				
PS-1	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> NO
PS-2	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> NO
PS-3	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> NO
PS-4	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> NO
PS-5	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> NO
System Sumps				
Exhaust Stack Sump	<u>YES</u> NO	<u>YES</u> NO	1/2 gal	<u>YES</u> NO
GAC and PPZ Drains				
Lead GAC	YES <u>NO</u>	YES <u>NO</u>	N/A	<u>YES</u> NO
Lag GAC	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> NO
PPZ	YES <u>NO</u>	YES <u>NO</u>	↓	<u>YES</u> NO

MONTHLY VAPOR SAMPLING

Location	Time	Canister ID	Comments
C-INFLUENT	N/A	N/A	
C-MID GAC	↓	↓	
C-EFFLUENT	↓	↓	

ADDITIONAL COMMENTS:

FIELD REP. SIGNATURE: *[Signature]*

Time: 1115

APPENDIX B—QUARTERLY SYSTEM CHECKS FORMS

SSD SYSTEM QUARTERLY SYSTEM CHECK - BUILDING A
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Date: 12/2/13 Time: _____ Quarter: 4 Personnel: DLM/MS

GENERAL SYSTEM

Checked System Components? ☒ YES NO Comments: _____

Checked System Pipes for Leaks? ☒ YES NO Comments: _____

Visually Inspected Air Filter? ☒ YES NO Need Replaced? YES ☒ NO
(replace filter when AP = 2-3 in. Hg)

Visually Inspected Intake Air Filter? ☒ YES NO Need Replaced? YES ☒ NO
(replace filter when AP = 2-3 in. Hg)

Checked Vacuum Relief Valve? ☒ YES NO Comments: _____

Measured and Recorded Amperage Draw on Blower? Yellow = 4.92 Orange = 5.63 Brown = 4.92

Are all components returned to system operating position? ☒ YES NO

Cleaned System and Area Around System? ☒ YES NO Comments: _____

Checked that Fire Extinguisher is Near System? ☒ YES NO

SYSTEM ALARM SWITCHES AND AUTO-DIALER

Checked Water Level Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 1 Alarm? ☒ YES NO

Checked Pressure Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 2 Alarm? ☒ YES NO

Checked Temperature Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 3 Alarm? ☒ YES NO

Checked Low Pressure Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 4 Alarm? ☒ YES NO

Do the Auto-Dialer Batteries Need Replaced? YES ☒ NO

CARBON UNITS

Checked GAC Units for Corrosion and Leaks? ☒ YES NO Comments: _____

Checked Condition of Sample Ports? ☒ YES NO Comments: _____

Number of used GAC Units On-site: 1 Contain Non-Haz Waste Labels? ☒ YES NO

Number of Unused GAC Units On-site: 0

VACUUM MONITORING POINTS

Checked Condition of Well Lids and Bolts? ☒ YES NO Comments: _____

Checked Condition of Tubing and Seal? ☒ YES NO Comments: _____

ADDITIONAL COMMENTS

17.5 gal drained from moisture separator

Personnel's Signature: Daniel J. Mariani Date: 12/2/13

SSD SYSTEM QUARTERLY SYSTEM CHECK - BUILDING A
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Date: 3/17/14 Time: 1441 Quarter: 1 Personnel: DLM/MS

GENERAL SYSTEM

Checked System Components? ☒ YES NO Comments: _____

Checked System Pipes for Leaks? ☒ YES NO Comments: _____

Visually Inspected Air Filter? ☒ YES NO Need Replaced? YES ☒ NO
(replace filter when AP = 2-3 in. Hg)

Visually Inspected Intake Air Filter? ☒ YES NO Need Replaced? YES ☒ NO
(replace filter when AP = 2-3 in. Hg)

Checked Vacuum Relief Valve? ☒ YES NO Comments: _____

Measured and Recorded Amperage Draw on Blower? Yellow = 5.10 Orange = 5.55 Brown = 5.40

Are all components returned to system operating position? ☒ YES NO

Cleaned System and Area Around System? ☒ YES ☒ NO Comments: _____

Checked that Fire Extinguisher is Near System? ☒ YES NO

SYSTEM ALARM SWITCHES AND AUTO-DIALER

Checked Water Level Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 1 Alarm? ☒ YES NO

Checked Pressure Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 2 Alarm? ☒ YES NO

Checked Temperature Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 3 Alarm? ☒ YES NO

Checked Low Pressure Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 4 Alarm? ☒ YES NO

Do the Auto-Dialer Batteries Need Replaced? YES ☒ NO Replaced as part of troubleshooting

CARBON UNITS

Checked GAC Units for Corrosion and Leaks? ☒ YES NO Comments: _____

Checked Condition of Sample Ports? ☒ YES NO Comments: _____

Number of used GAC Units On-site: 1 Contain Non-Haz Waste Labels? ☒ YES NO

Number of Unused GAC Units On-site: 0

VACUUM MONITORING POINTS

Checked Condition of Well Lids and Bolts? ☒ YES NO Comments: _____

Checked Condition of Tubing and Seal? ☒ YES NO Comments: _____

ADDITIONAL COMMENTS

Could not get autodialer to call out upon turning system off then had trouble getting it to stop calling out. Possible that relay is going bad.

Personnel's Signature: Dawn J. Minnie Date: 3/17/14

SSD SYSTEM QUARTERLY SYSTEM CHECK - BUILDING C
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Date: 12/2/13 Time: _____ Quarter: 4 Personnel: DLM & MS

GENERAL SYSTEM

Checked System Components? ☒ YES NO Comments: _____

Checked System Pipes for Leaks? ☒ YES NO Comments: _____

Visually Inspected Air Filter? ☒ YES NO Need Replaced? YES ☒ NO
(replace filter when AP = 2-3 in. Hg)

Visually Inspected Intake Air Filter? ☒ YES NO Need Replaced? YES ☒ NO

Checked Vacuum Relief Valve? ☒ YES NO Comments: _____

Measured and Recorded Amperage Draw on Blower? Orange = 12.42 Yellow = 12.49 Black = 11.78

Are all components returned to system operating position? ☒ YES NO

Cleaned System and Area Around System? ☒ YES NO Comments: _____

Checked that Fire Extinguisher Near System? ☒ YES NO

SYSTEM ALARM SWITCHES AND AUTO-DIALER

Checked Post-Blower Temp. Switch ☒ YES NO Did Auto-Dialer Indicate Zone 1 Alarm? ☒ YES NO

Checked Post-Hex Temp. Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 2 Alarm? ☒ YES NO

Checked MS-1 Water Level Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 3 Alarm? ☒ YES NO

Checked MS-2 Water Level Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 4 Alarm? ☒ YES NO

Checked High Pressure Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 5 Alarm? ☒ YES NO

Checked Low Vacuum Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 6 Alarm? ☒ YES NO

Do the Auto-Dialer Batteries Need Replaced? YES ☒ NO

CARBON UNITS

Checked GAC Units for Corrosion and Leaks? ☒ YES NO Comments: _____

Checked Condition of Sample Ports? ☒ YES NO Comments: _____

Number of used GAC/PPZ Units On-site: 0 / 0 Contain Non-Haz Waste Labels? ~~YES~~ ~~NO~~ N/A

Number of Unused GAC/PPZ Units On-site: 2 / 1

VACUUM MONITORING POINTS

Checked Condition of Well Lids and Bolts? ☒ YES NO Comments: 135-C sinking; SSD-24-C needs retapped.

Checked Condition of Tubing and Seal? ☒ YES NO Comments: _____

ADDITIONAL COMMENTS

Ballard in front of PPZ unit was hit by forklift - Needs replaced/repaired

Personnel's Signature: Dawn L. Morris

Date: 12/2/13

SSD SYSTEM QUARTERLY SYSTEM CHECK - BUILDING C
LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Date: 3/17/14 Time: 1152 Quarter: 1 Personnel: Dum/ms

GENERAL SYSTEM

Checked System Components? ☒ YES NO Comments: _____

Checked System Pipes for Leaks? ☒ YES NO Comments: _____

Visually Inspected Air Filter? ☒ YES NO Need Replaced? YES ☒ NO
(replace filter when AP = 2-3 in. Hg)

Visually Inspected Intake Air Filter? ☒ YES NO Need Replaced? YES ☒ NO

Checked Vacuum Relief Valve? ☒ YES NO Comments: _____

Measured and Recorded Amperage Draw on Blower? Yellow = 11.43 Orange = 9.04 Brown = 13.02

Are all components returned to system operating position? ☒ YES NO

Cleaned System and Area Around System? ☒ YES NO Comments: _____

Checked that Fire Extinguisher Near System? ☒ YES NO

SYSTEM ALARM SWITCHES AND AUTO-DIALER

Checked Post-Blower Temp. Switch ☒ YES NO Did Auto-Dialer Indicate Zone 1 Alarm? ☒ YES ☒ NO

Checked Post-Hex Temp. Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 2 Alarm? ☒ YES ☒ NO

Checked MS-1 Water Level Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 3 Alarm? ☒ YES NO

Checked MS-2 Water Level Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 4 Alarm? ☒ YES NO

Checked High Pressure Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 5 Alarm? ☒ YES NO

Checked Low Vacuum Switch? ☒ YES NO Did Auto-Dialer Indicate Zone 6 Alarm? ☒ YES NO

Do the Auto-Dialer Batteries Need Replaced? YES ☒ NO

CARBON UNITS

Checked GAC Units for Corrosion and Leaks? ☒ YES NO Comments: _____

Checked Condition of Sample Ports? ☒ YES NO Comments: _____

Number of used GAC/PPZ Units On-site: 1 / 0 Contain Non-Haz Waste Labels? ☒ YES NO

Number of Unused GAC/PPZ Units On-site: 1 / 1

VACUUM MONITORING POINTS

Checked Condition of Well Lids and Bolts? ☒ YES NO Comments: _____

Checked Condition of Tubing and Seal? ☒ YES NO Comments: _____

ADDITIONAL COMMENTS

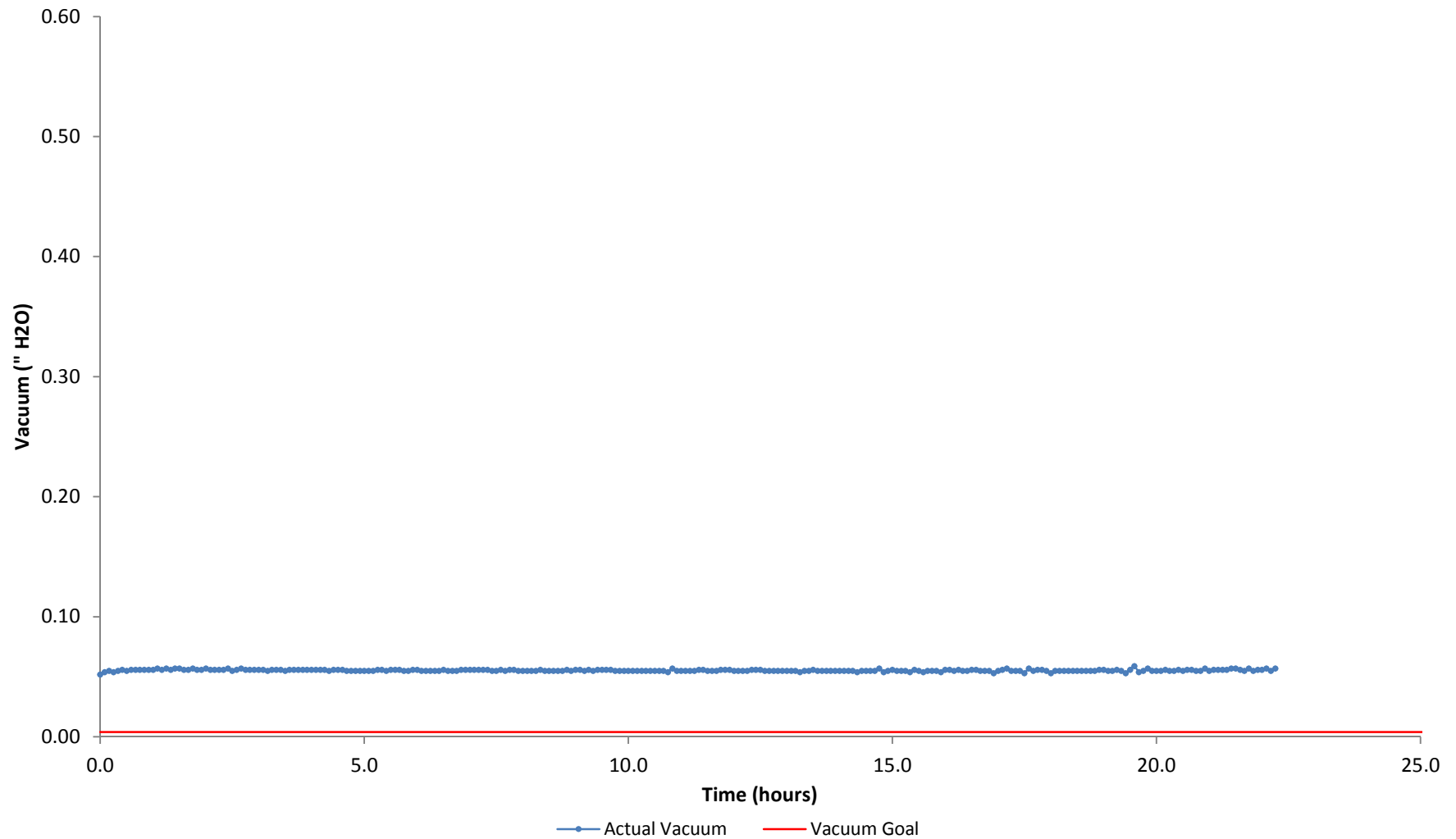
Changed influent flex hose which had a hole. Double banded influent ends of all flex hoses which were slightly leaking.

Personnel's Signature: Dum & Muniz

Date: 3/17/14

APPENDIX C—24-HOUR VACUUM MONITORING DATA GRAPHS

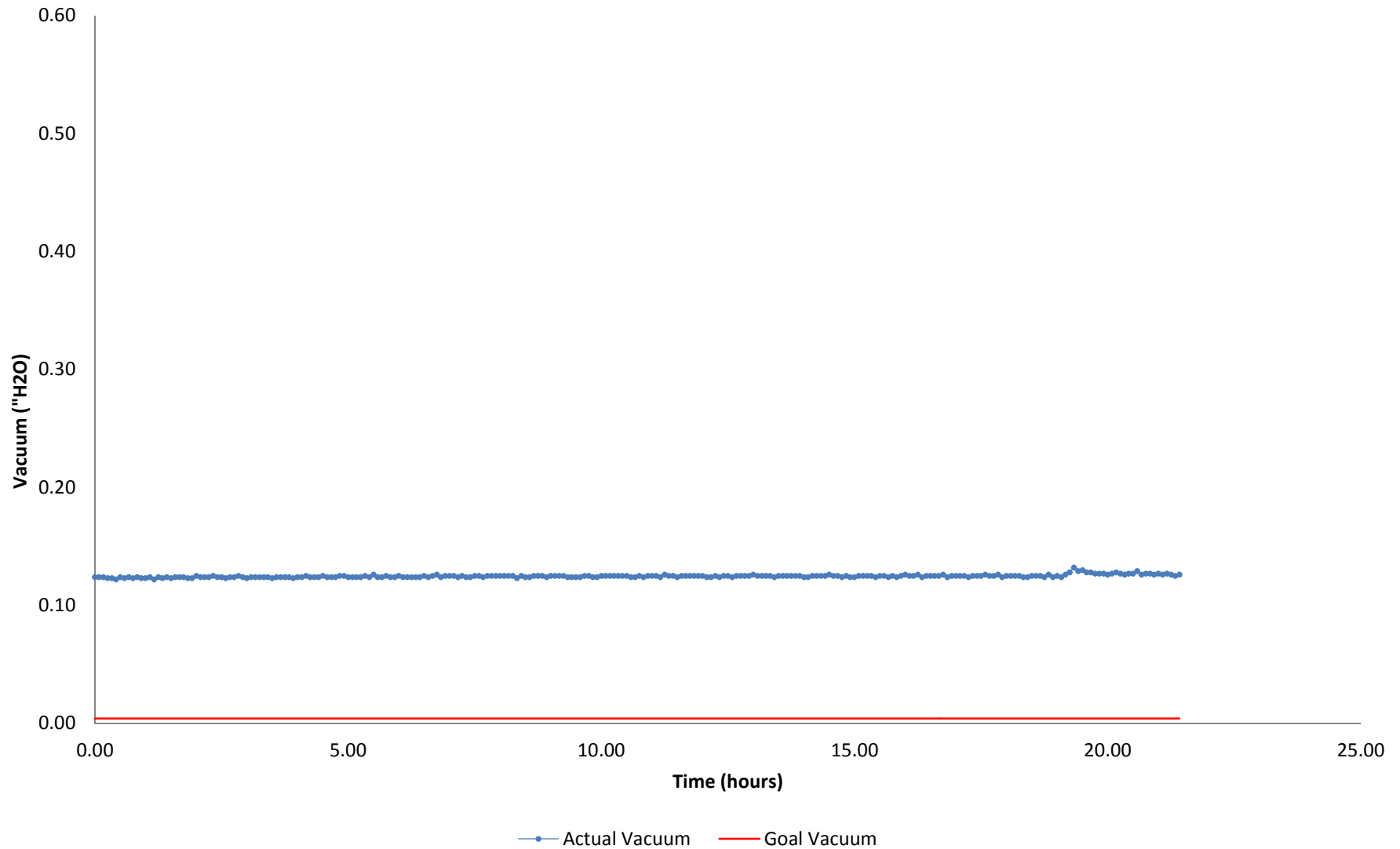
24-HOUR VACUUM MONITORING DATA FOR SSD-1-A SUB-SLAB DEPRESSURIZATION SYSTEM - BUILDING A NOVEMBER 2013



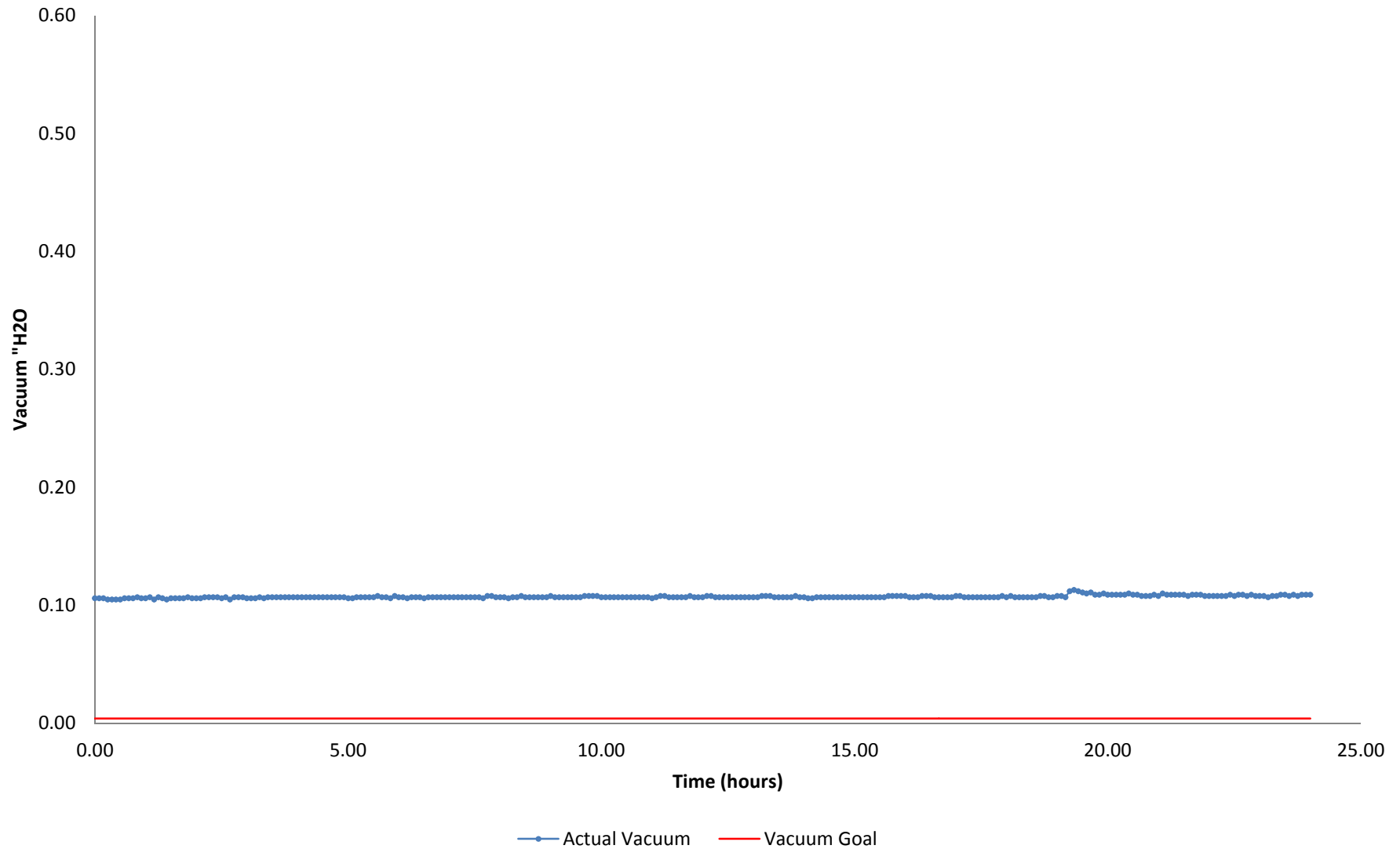
24-HOUR VACUUM MONITORING DATA FOR SSD-21-A

SUB-SLAB DEPRESSURIZATION SYSTEM - BUILDING A

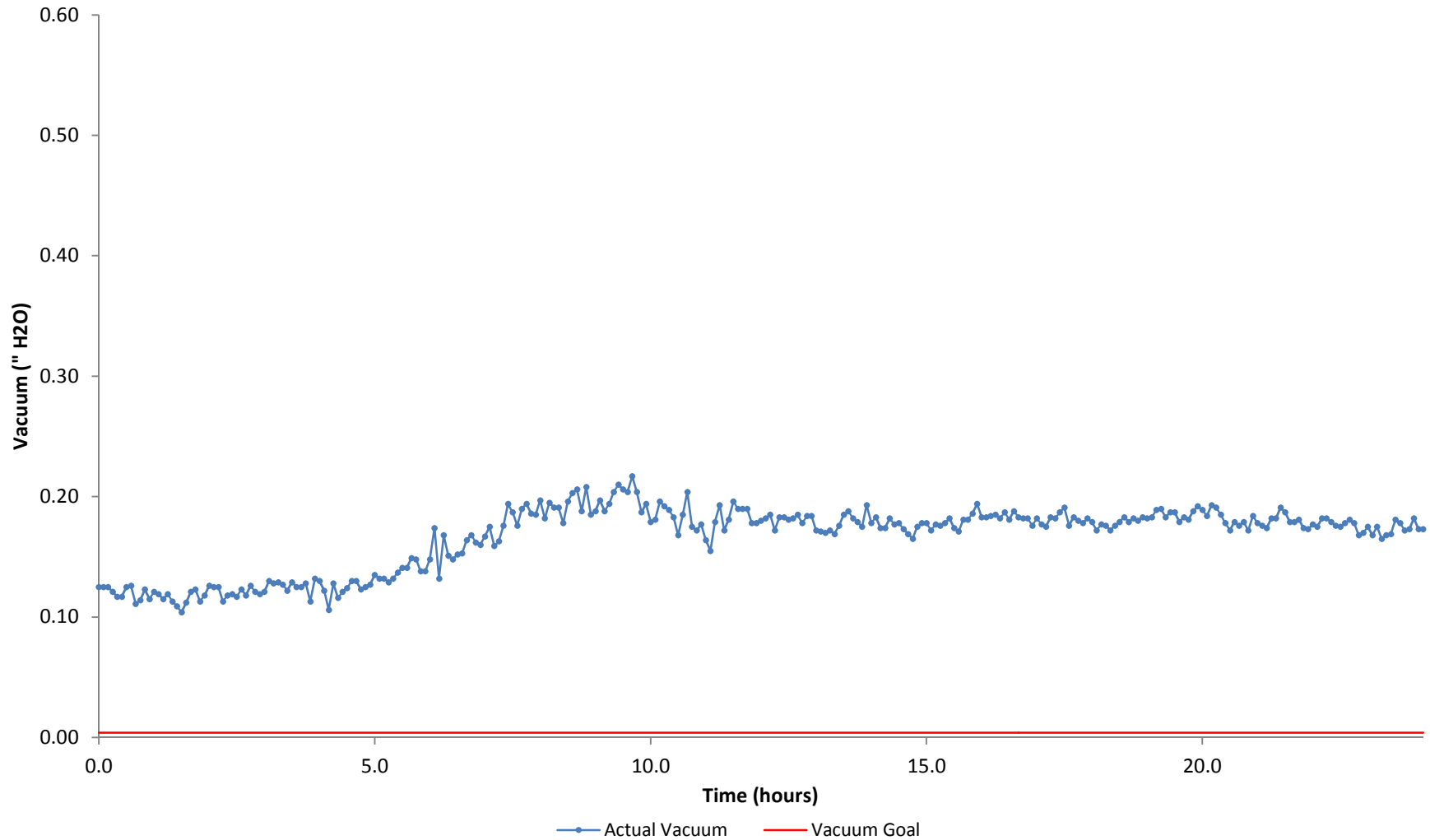
NOVEMBER 2013



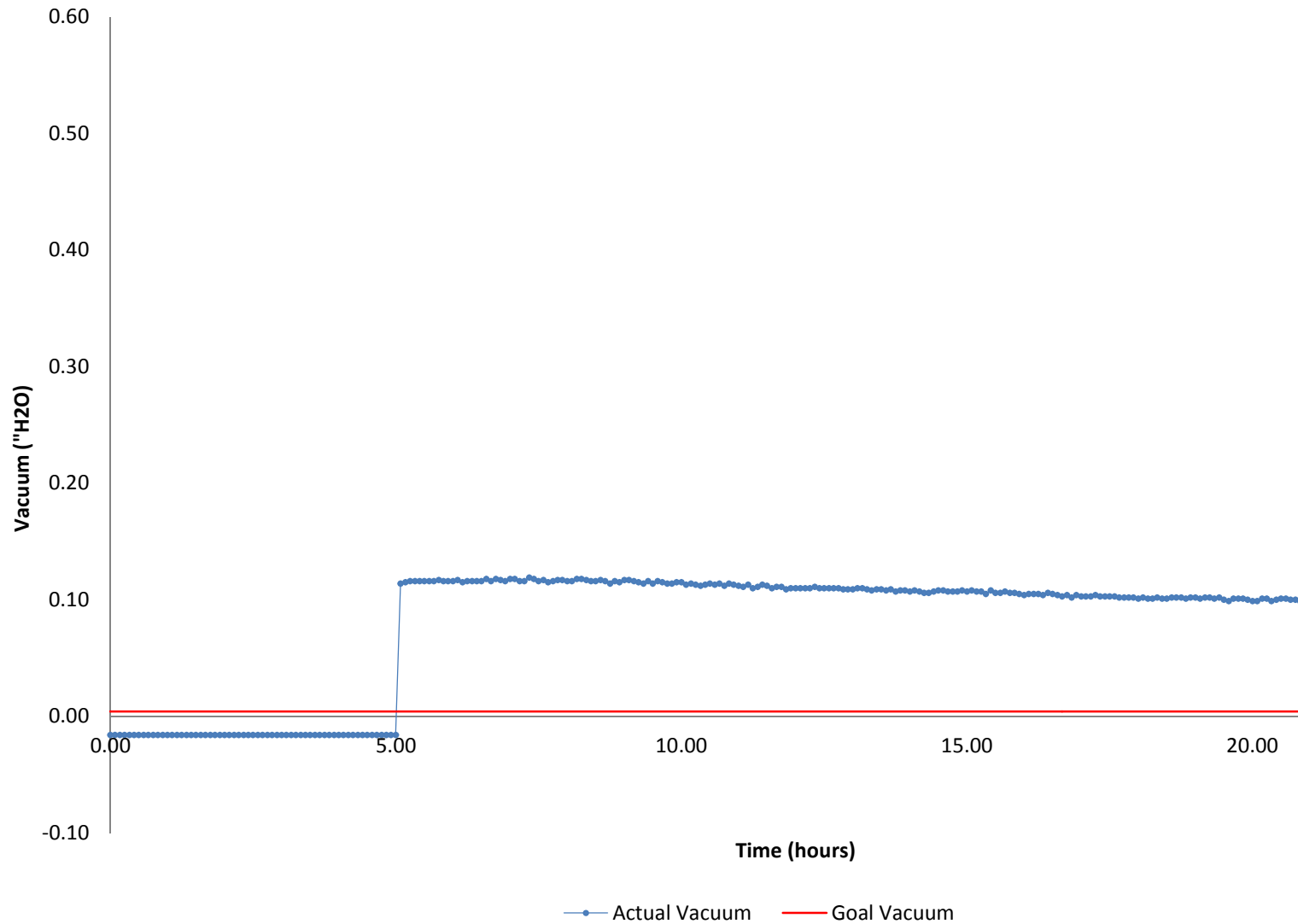
24-HOUR VACUUM MONITORING DATA FOR SSD-22-A
SUB-SLAB DEPRESSURIZATION SYSTEM - BUILDING A
NOVEMBER 2013



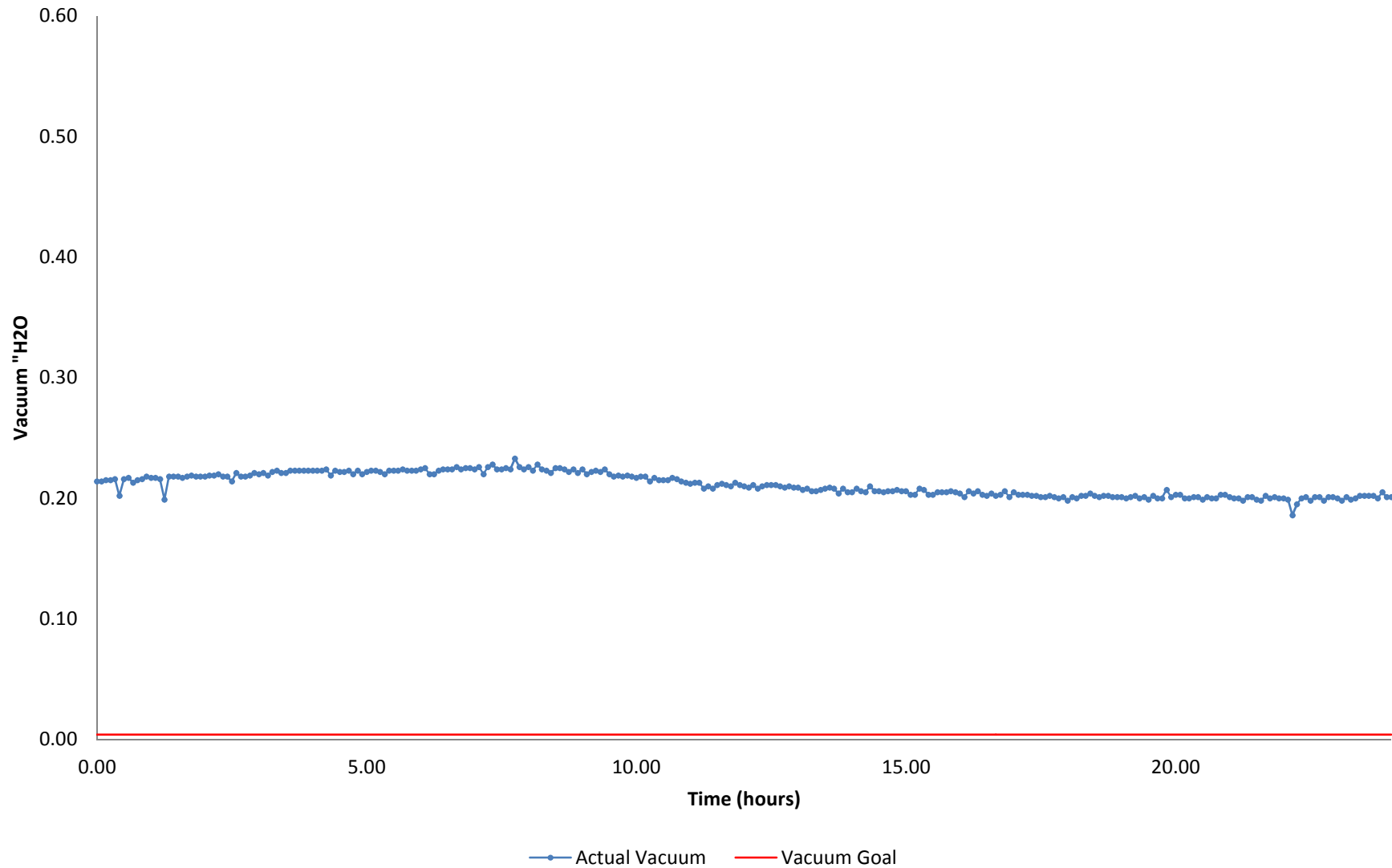
24-HOUR VACUUM MONITORING DATA FOR SSD-11-A SUB-SLAB DEPRESSURIZATION SYSTEM - BUILDING A MARCH 2014



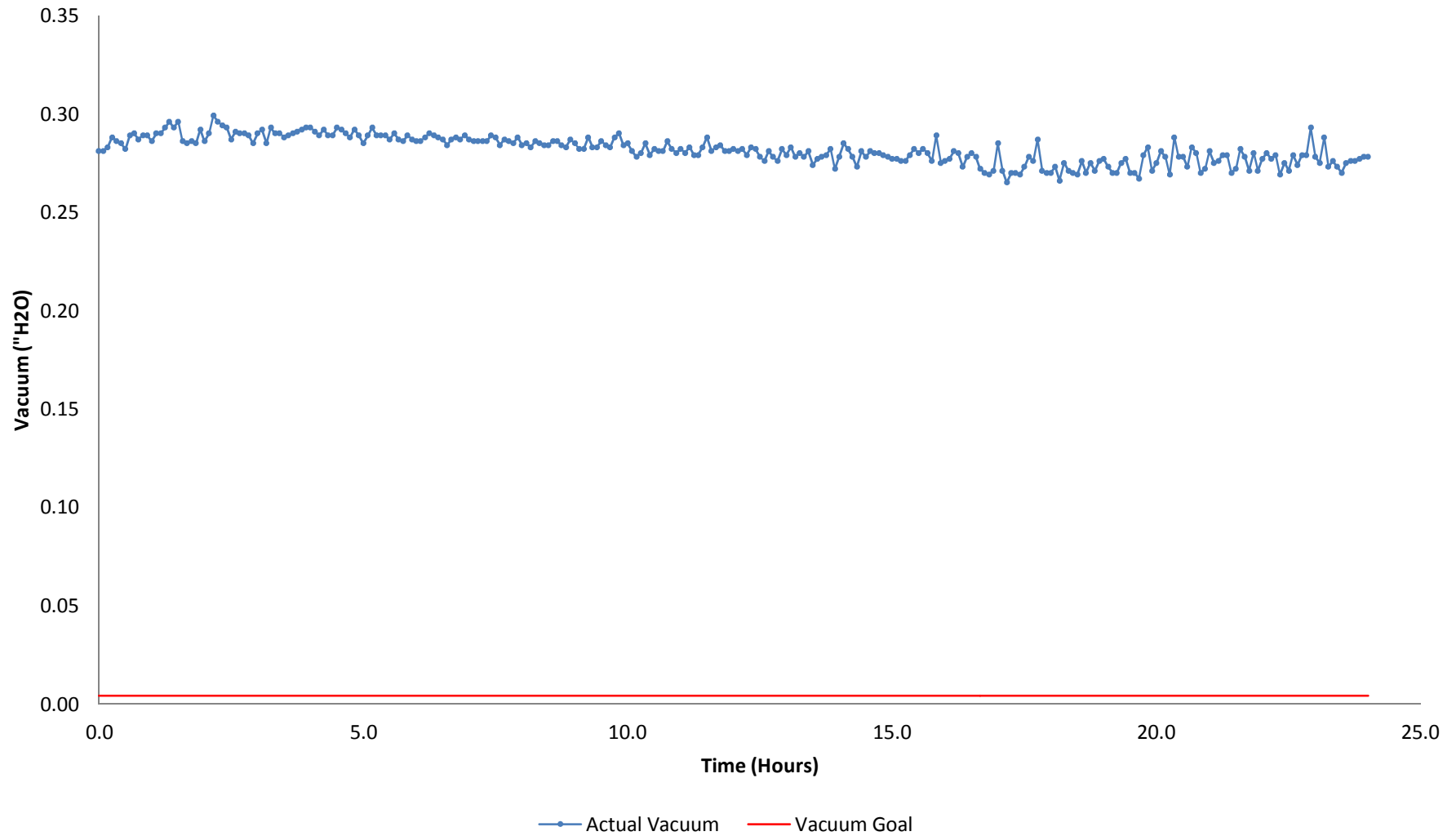
24-HOUR VACUUM MONITORING DATA FOR SSD-12-A SUB-SLAB DEPRESSURIZATION SYSTEM - BUILDING A MARCH 2014



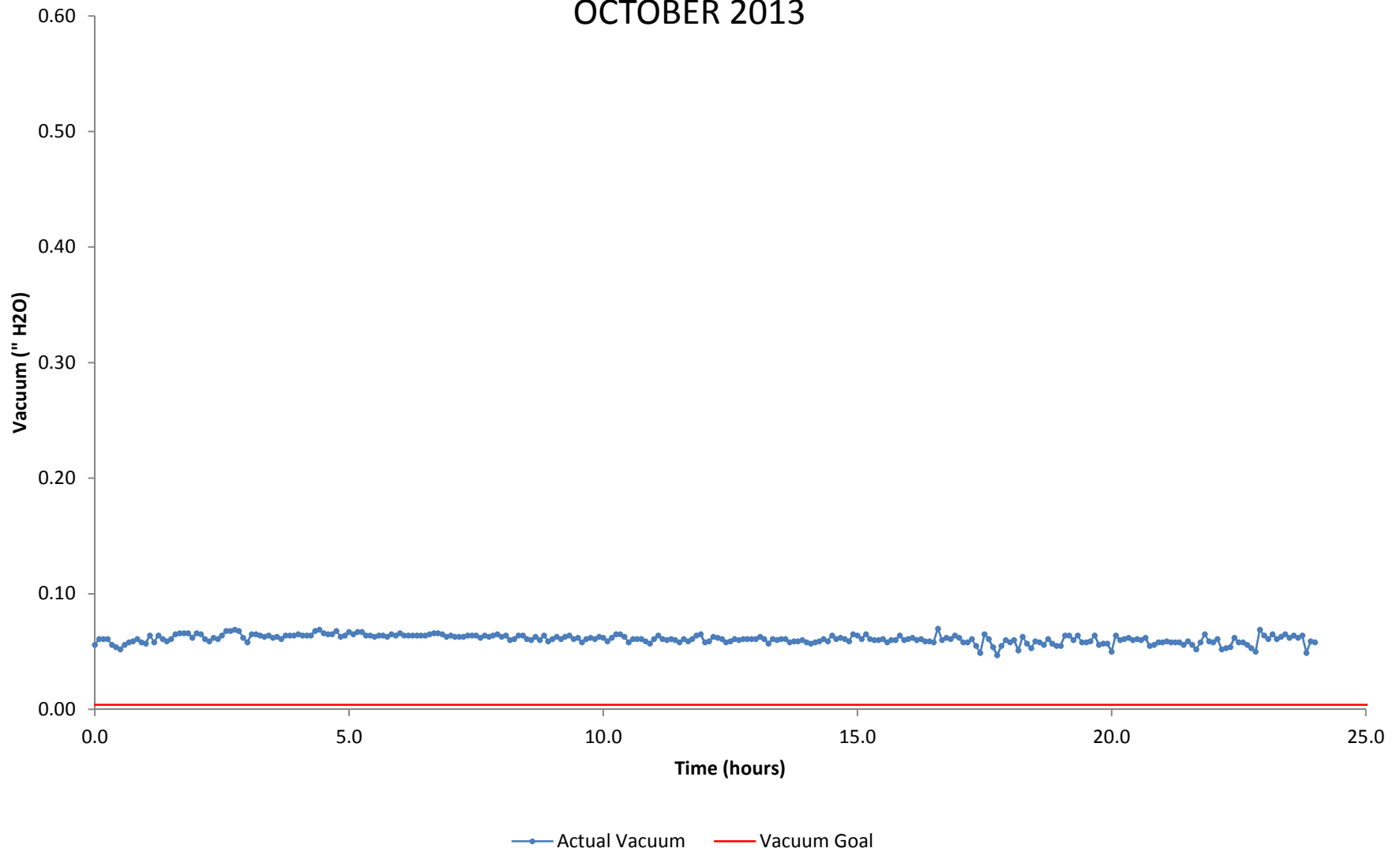
24-HOUR VACUUM MONITORING DATA FOR SSD-13-A SUB-SLAB DEPRESSURIZATION SYSTEM - BUILDING A MARCH 2014



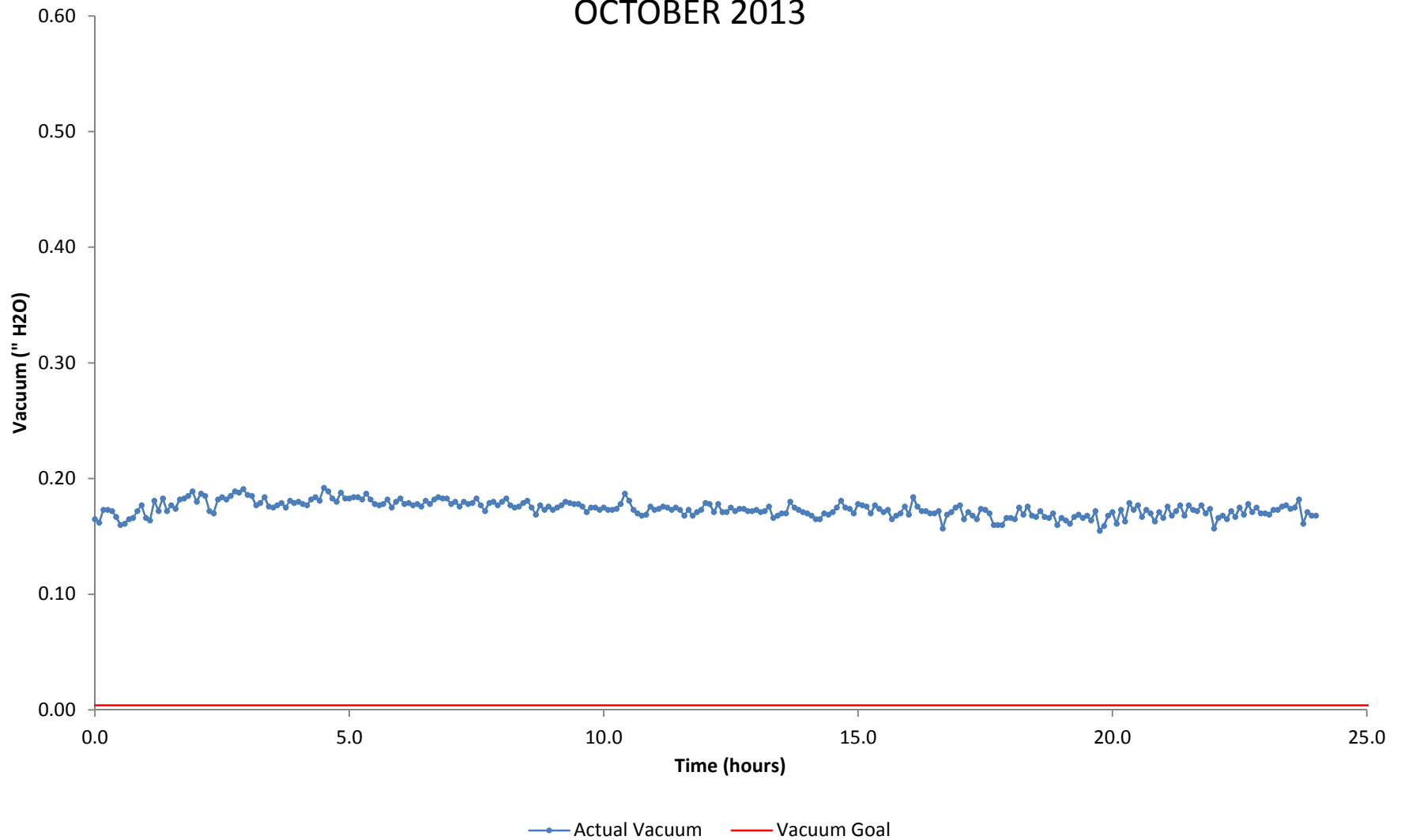
24-HOUR VACUUM MONITORING DATA FOR 001-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
OCTOBER 2013



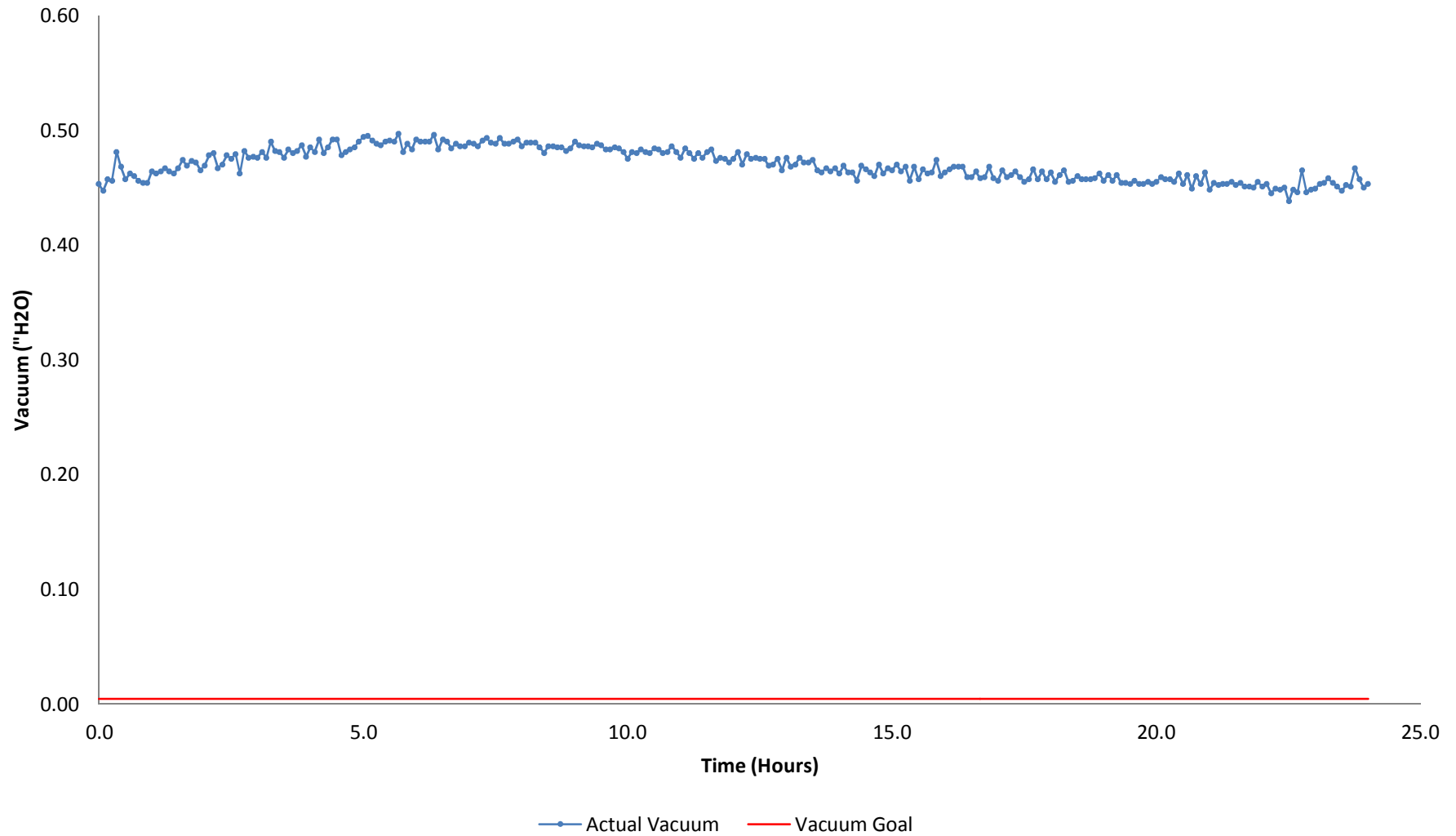
24-HOUR VACUUM MONITORING DATA FOR SSD-2-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
OCTOBER 2013



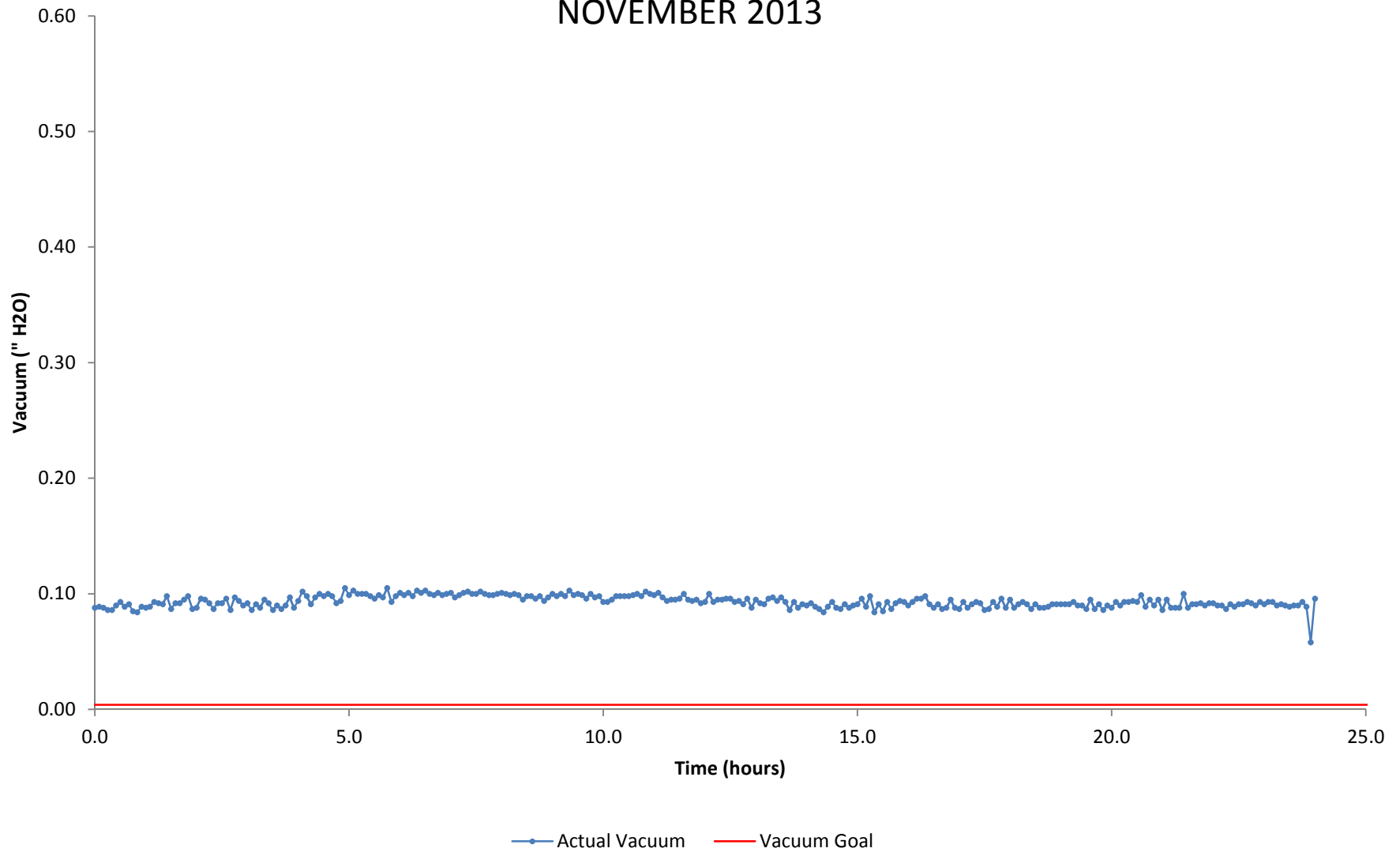
24-HOUR VACUUM MONITORING DATA FOR SSD-24-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
OCTOBER 2013



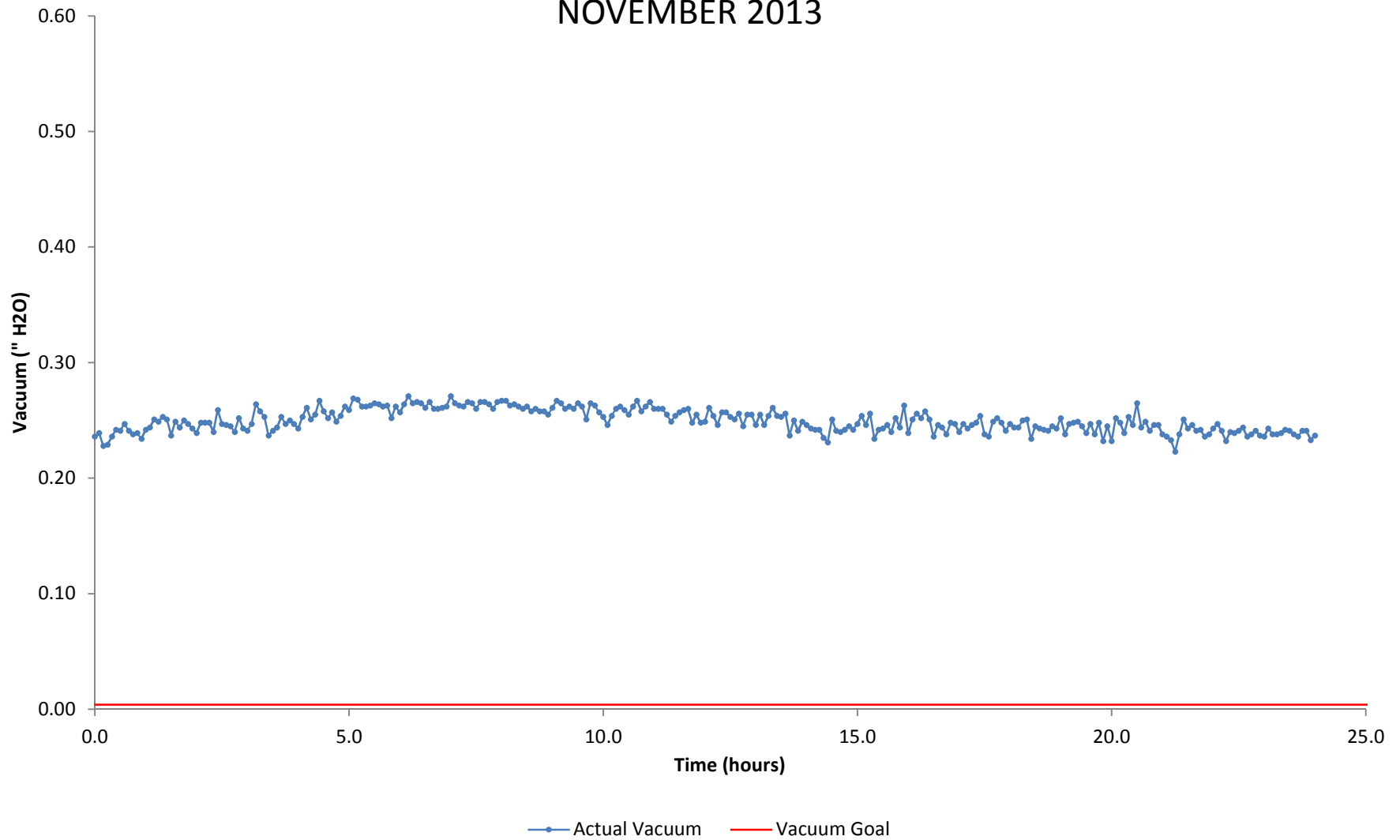
24-HOUR VACUUM MONITORING DATA FOR 001-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
NOVEMBER 2013



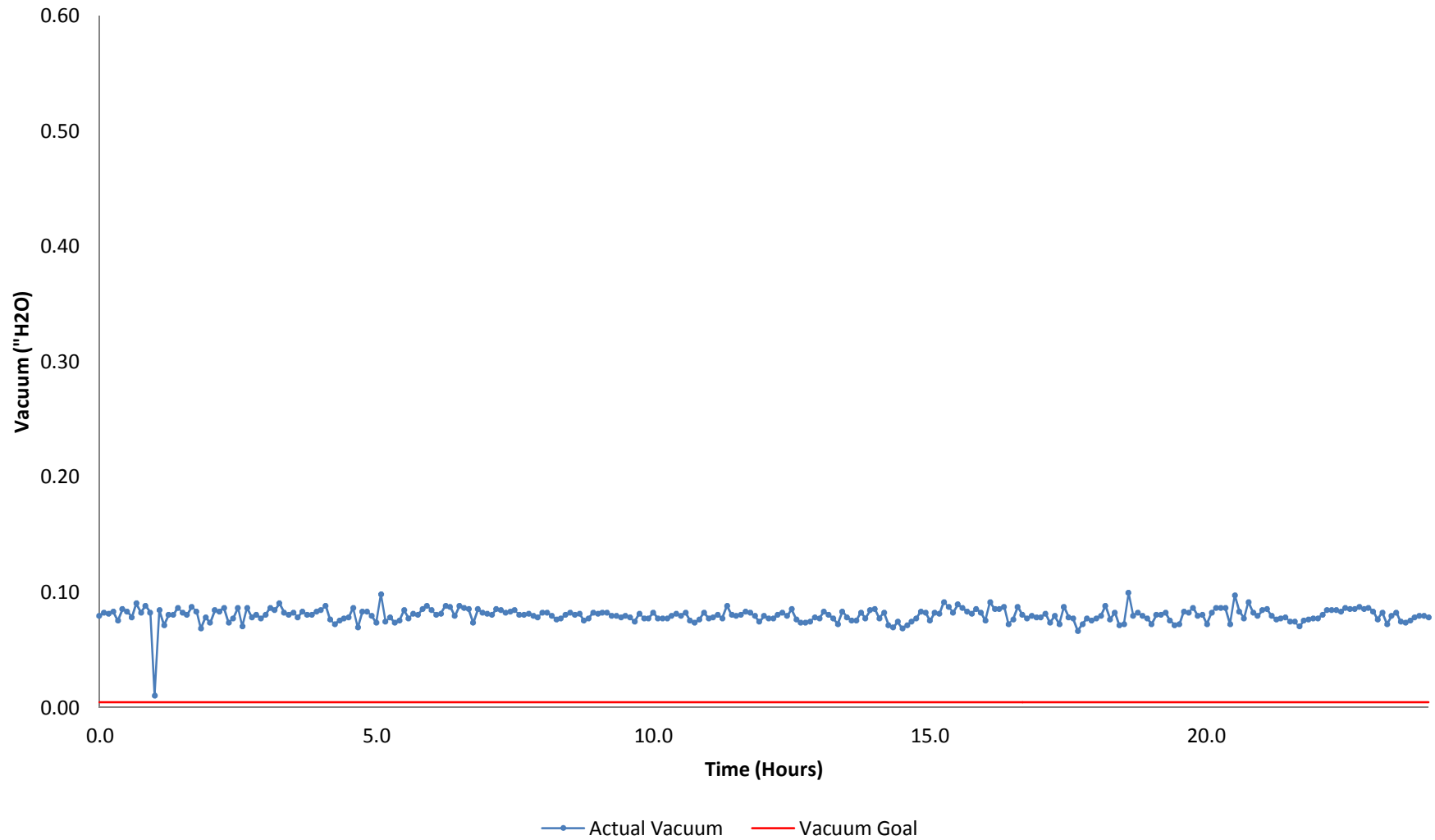
24-HOUR VACUUM MONITORING DATA FOR SSD-2-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
NOVEMBER 2013



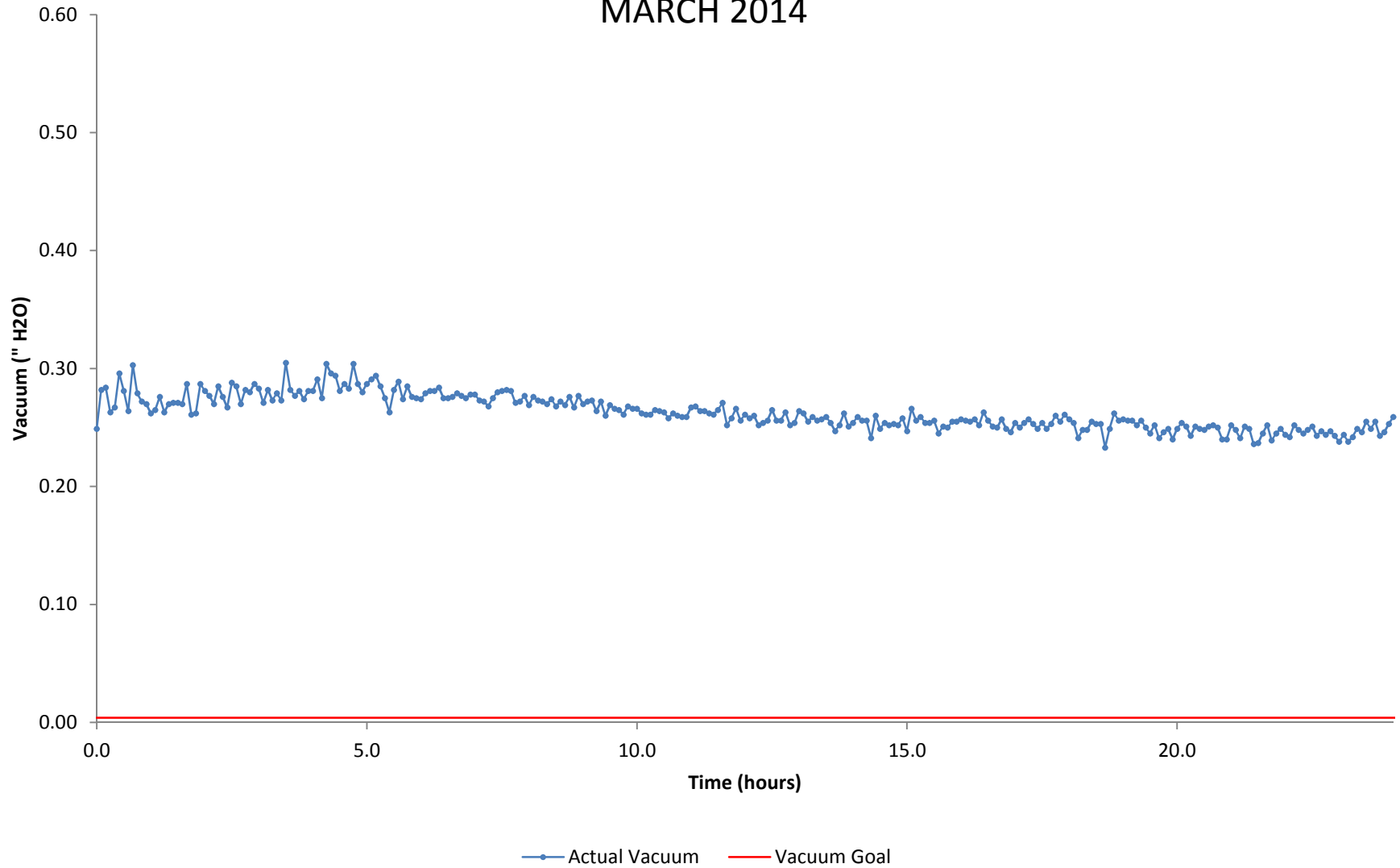
24-HOUR VACUUM MONITORING DATA FOR SSD-24-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
NOVEMBER 2013



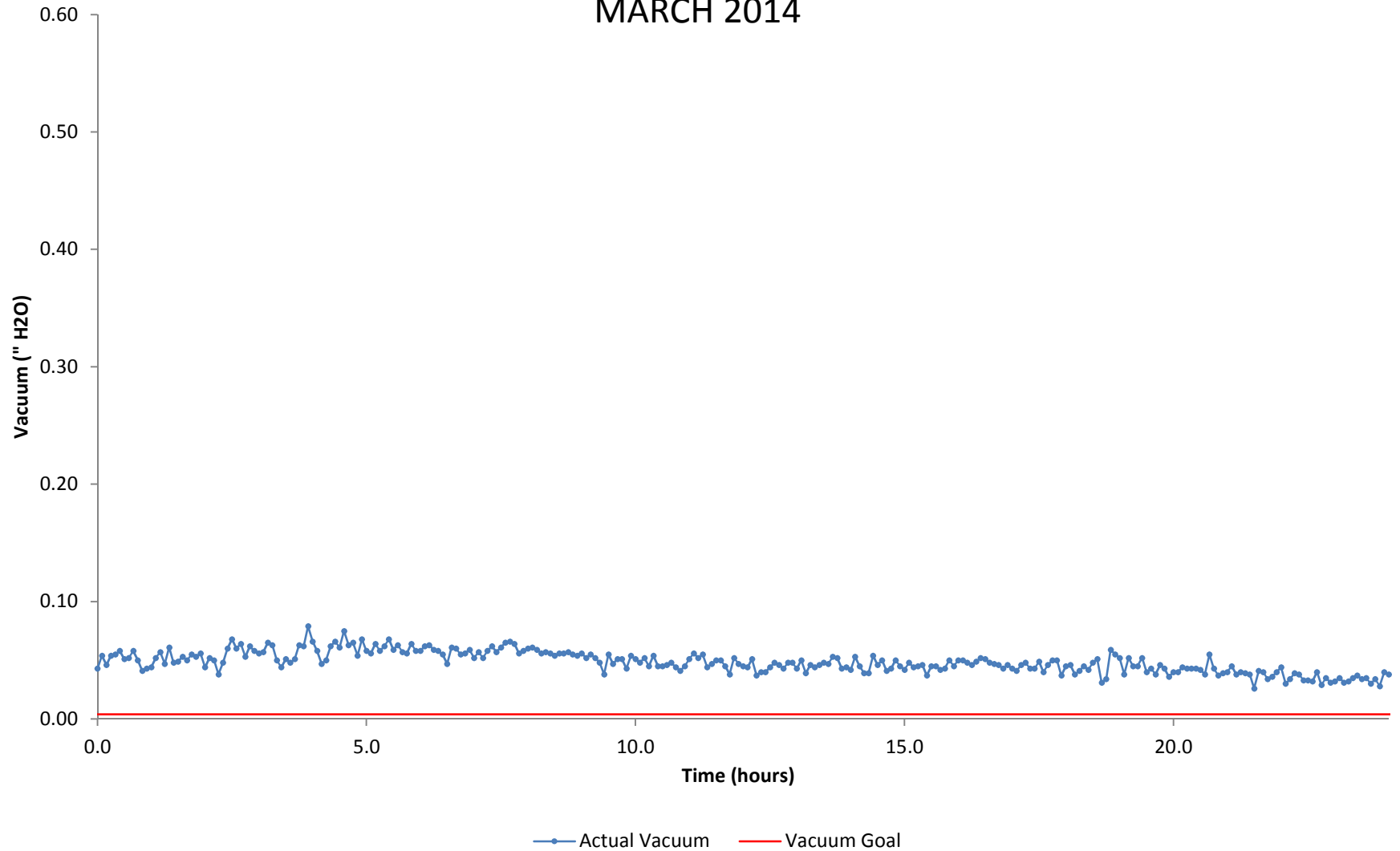
24-HOUR VACUUM MONITORING DATA FOR 001-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
MARCH 2014



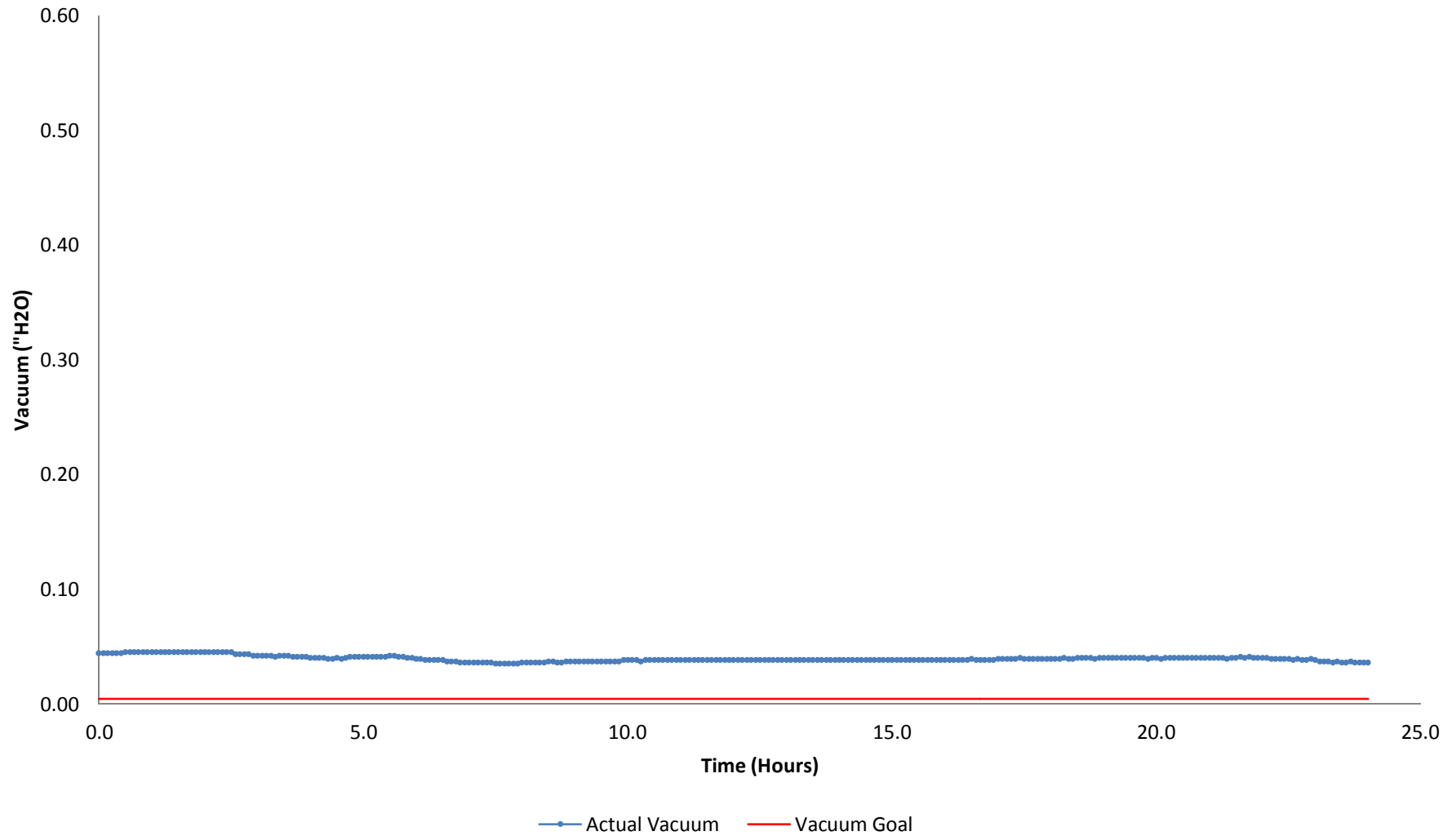
24-HOUR VACUUM MONITORING DATA FOR SSD-3-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
MARCH 2014



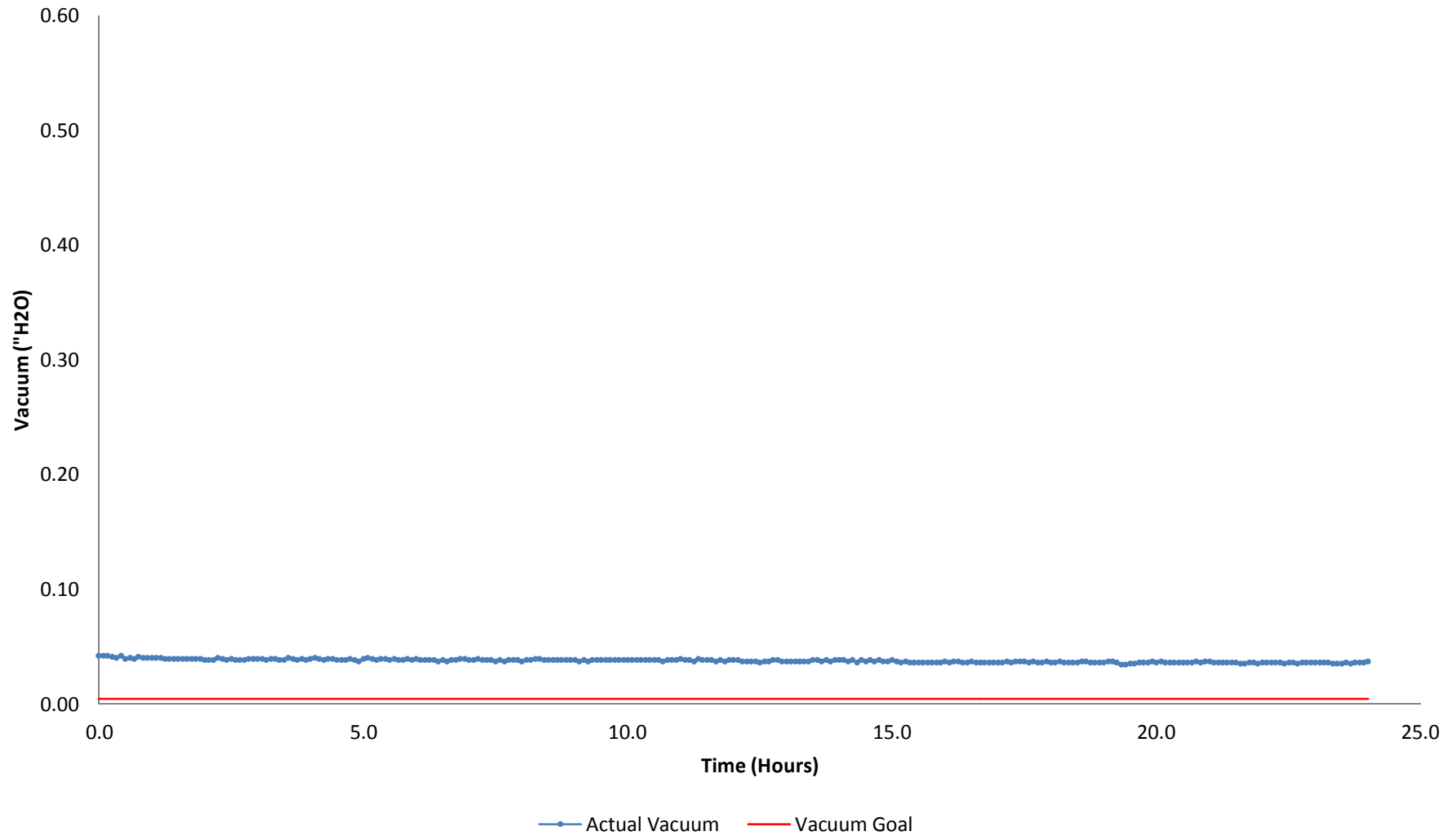
24-HOUR VACUUM MONITORING DATA FOR SSD-24-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - SOUTH BASEMENT AREA
MARCH 2014



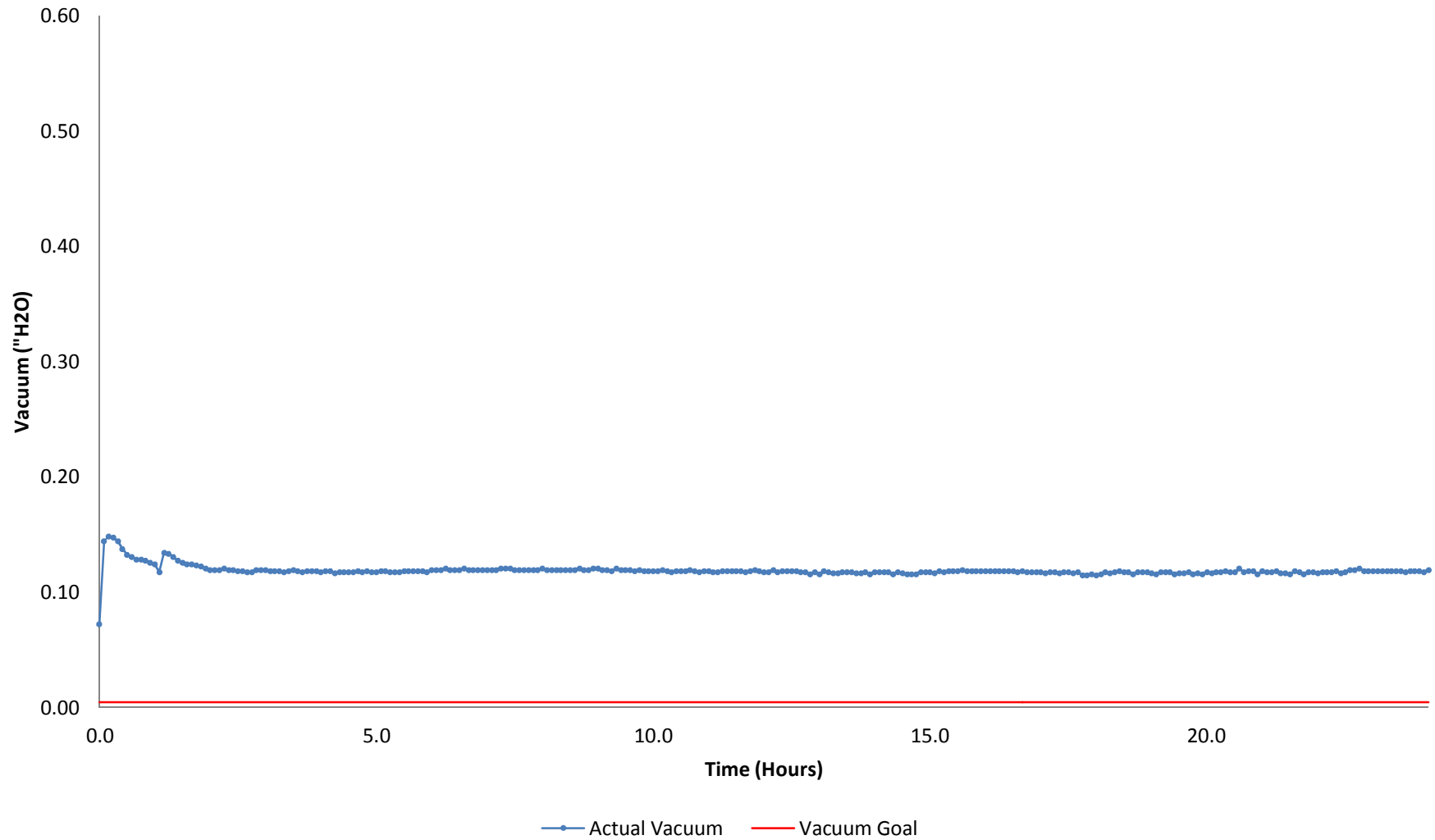
24-HOUR VACUUM MONITORING DATA FOR 135-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - MID-BASEMENT AREA
OCTOBER 2013



24-HOUR VACUUM MONITORING DATA FOR 135-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - MID-BASEMENT AREA
NOVEMBER 2013



24-HOUR VACUUM MONITORING DATA FOR 135-C
SUB-SLAB DEPRESSURIZATION SYSTEM
BUILDING C - MID-BASEMENT AREA
MARCH 2014



APPENDIX D—ANALYTICAL REPORTS

APPENDIX D—ANALYTICAL REPORTS



Tetra Tech

INTERNAL CORRESPONDENCE

TO: P. RICH **DATE:** APRIL 15, 2014
FROM: A. COGNETTI **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
LOCKHEED MARTIN CORPORATION (LMC) – MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 140-278-1

SAMPLES: 6/Air/VOC

A-EFFLUENT
C-EFFLUENT

A-INFLUENT
C-INFLUENT

A-MID GAC
C-MID GAC

Overview

The sample set for LMC – Middle River, SDG 140-278-1 consisted of six (6) air samples. All samples were analyzed for volatile organic compounds (VOC). No field duplicate pair is included in this SDG.

The samples were collected by Geo Trans on October 10, 2013 and analyzed by Test America Laboratories, Inc. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

- The initial calibration relative standard deviations (%RSDs) for carbon tetrachloride and hexachlorobutadiene were greater than the 30% quality control limit on September 25, 2013 on instrument MG. The nondetected carbon tetrachloride and hexachlorobutadiene results were qualified as estimated (UJ).
- The continuing calibration percent differences (%Ds) for chloromethane and 1,2-dichloro-1,1,2,2-tetrafluoroethane were greater than the 30% quality control limit on October 15, 2013 @ 14:30 on instrument MG. The nondetected chloromethane and 1,2-dichloro-1,1,2,2-tetrafluoroethane were qualified as estimated (UJ) in the affected samples.

Notes

The chain of custody indicated that no gauges were provided with the summa canisters. This means that the canister pressure before and after sampling could not be evaluated. No validation action was taken.

Nondetected results were reported to the reporting limit.

The number of analytes reported by Test America is 39.

TO: P. Rich
FROM: A. Cognetti
SDG: 140-278-1
DATE: April 15, 2014

PAGE 2

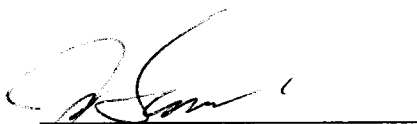
Executive Summary

Laboratory Performance: The initial calibration %RSDs for carbon tetrachloride and hexachlorobutadiene exceeded quality control limits. The continuing calibration %Ds for chloromethane and 1,2-dichloro-1,1,2,2-tetrafluoroethane exceeded quality control limits.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to USEPA National Functional Guidelines for Organic Data Validation (June 2008) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cognetti
Chemist/Data Validator


Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

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

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03265 SDG: 140-278-1 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	A-EFFLUENT			A-INFLUENT			A-MID GAC			C-EFFLUENT		
	LAB_ID	140-278-3			140-278-1			140-278-2			140-278-6		
	SAMP_DATE	10/10/2013			10/10/2013			10/10/2013			10/10/2013		
	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	11 U			810			170			11 U			
1,1,2,2-TETRACHLOROETHANE	14 U			14 U			14 U			14 U			
1,1,2-TRICHLOROETHANE	11 U			11 U			11 U			11 U			
1,1,2-TRICHLOROTRIFLUOROETHANE	15 U			15 U			15 U			15 U			
1,1-DICHLOROETHANE	66			39			33			8.1 U			
1,1-DICHLOROETHENE	190			190			120			7.9 U			
1,2,4-TRICHLOROBENZENE	74 U			74 U			74 U			74 U			
1,2,4-TRIMETHYLBENZENE	9.8 U			9.8 U			9.8 U			9.8 U			
1,2-DIBROMOETHANE	15 U			15 U			15 U			15 U			
1,2-DICHLOROBENZENE	12 U			12 U			12 U			12 U			
1,2-DICHLOROETHANE	8.1 U			8.1 U			8.1 U			8.1 U			
1,2-DICHLOROPROPANE	9.2 U			9.2 U			9.2 U			9.2 U			
1,2-DICHLOROTETRAFLUROETHANE	14 UJ	C		14 UJ	C		14 UJ	C		14 UJ	C		
1,3,5-TRIMETHYLBENZENE	9.8 U			9.8 U			9.8 U			9.8 U			
1,3-DICHLOROBENZENE	12 U			12 U			12 U			12 U			
1,4-DICHLOROBENZENE	12 U			12 U			12 U			12 U			
BENZENE	6.4 U			6.4 U			29			11			
BENZYL CHLORIDE	21 U			21 U			21 U			21 U			
BROMOMETHANE	7.8 U			7.8 U			7.8 U			7.8 U			
CARBON TETRACHLORIDE	13 UJ	C		13 UJ	C		13 UJ	C		13 UJ	C		
CHLOROBENZENE	9.2 U			9.2 U			9.2 U			9.2 U			
CHLOROETHANE	5.3 U			5.3 U			5.3 U			5.3 U			
CHLOROFORM	9.8 UJ	C		9.8 UJ	C		9.8 UJ	C		9.8 UJ	C		
CHLOROMETHANE	10 U			10 U			10 U			10 U			
CIS-1,2-DICHLOROETHENE	270			220			190			7.9 U			
CIS-1,3-DICHLOROPROPENE	9.1 U			9.1 U			9.1 U			9.1 U			
DICHLORODIFLUOROMETHANE	9.9 U			9.9 U			9.9 U			9.9 U			
ETHYLBENZENE	8.7 U			8.7 U			8.7 U			8.7 U			
HEXACHLOROBUTADIENE	110 UJ	C		110 UJ	C		110 UJ	C		110 UJ	C		
M+P-XYLENES	8.7 U			8.7 U			8.7 U			8.7 U			
METHYLENE CHLORIDE	17 U			17 U			17 U			17 U			
O-XYLENE	8.7 U			8.7 U			8.7 U			8.7 U			
STYRENE	8.5 U			8.5 U			8.5 U			8.5 U			
TETRACHLOROETHENE	14 U			14 U			14 U			14 U			
TOLUENE	11			15			9.9			7.5 U			

PROJ_NO: 03265 SDG: 140-278-1 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	C-INFLUENT	C-MID GAC
	LAB_ID	140-278-4	140-278-5
	SAMP_DATE	10/10/2013	10/10/2013
	QC_TYPE	NM	NM
	UNITS	UG/M3	UG/M3
	PCT_SOLIDS		
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	11 U		11 U
1,1,2,2-TETRACHLOROETHANE	14 U		14 U
1,1,2-TRICHLOROETHANE	11 U		11 U
1,1,2-TRICHLOROTRIFLUOROETHANE	16		15 U
1,1-DICHLOROETHANE	8.1 U		8.1 U
1,1-DICHLOROETHENE	7.9 U		7.9 U
1,2,4-TRICHLOROBENZENE	74 U		74 U
1,2,4-TRIMETHYLBENZENE	9.8 U		9.8 U
1,2-DIBROMOETHANE	15 U		15 U
1,2-DICHLOROBENZENE	12 U		12 U
1,2-DICHLOROETHANE	8.1 U		8.1 U
1,2-DICHLOROPROPANE	9.2 U		9.2 U
1,2-DICHLOROTETRAFLUOROETHANE	14 UJ	C	14 U
1,3,5-TRIMETHYLBENZENE	9.8 U		9.8 U
1,3-DICHLOROBENZENE	12 U		12 U
1,4-DICHLOROBENZENE	12 U		12 U
BENZENE	14		11
BENZYL CHLORIDE	21 U		21 U
BROMOMETHANE	7.8 U		7.8 U
CARBON TETRACHLORIDE	13 UJ	C	13 UJ C
CHLOROBENZENE	9.2 U		9.2 U
CHLOROETHANE	5.3 U		5.3 U
CHLOROFORM	9.8 UJ	C	9.8 U
CHLOROMETHANE	10 U		10 U
CIS-1,2-DICHLOROETHENE	7.9 U		7.9 U
CIS-1,3-DICHLOROPROPENE	9.1 U		9.1 U
DICHLORODIFLUOROMETHANE	9.9 U		9.9 U
ETHYLBENZENE	8.7 U		8.7 U
HEXACHLOROBUTADIENE	110 UJ	C	110 UJ C
M+P-XYLENES	20		8.7 U
METHYLENE CHLORIDE	17 U		17 U
O-XYLENE	10		8.7 U
STYRENE	8.5 U		8.5 U
TETRACHLOROETHENE	14 U		14 U
TOLUENE	7.5 U		7.5 U

PROJ_NO: 03265 SDG: 140-278-1 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	A-EFFLUENT	A-INFLUENT	A-MID GAC	C-EFFLUENT	
	LAB_ID	140-278-3	140-278-1	140-278-2	140-278-6	
	SAMP_DATE	10/10/2013	10/10/2013	10/10/2013	10/10/2013	
	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
TRANS-1,3-DICHLOROPROPENE		9.1 U			9.1 U	9.1 U
TRICHLOROETHENE		13			32	11 U
TRICHLOROFLUOROMETHANE		15			11 U	11 U
VINYL CHLORIDE		5.1 U			5.1 U	5.1 U

PROJ_NO: 03265 SDG: 140-278-1 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	C-INFLUENT	C-MID GAC
	LAB_ID	140-278-4	140-278-5
	SAMP_DATE	10/10/2013	10/10/2013
	QC_TYPE	NM	NM
	UNITS	UG/M3	UG/M3
	PCT_SOLIDS		
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
TRANS-1,3-DICHLOROPROPENE	9.1 U		9.1 U
TRICHLOROETHENE	200		11 U
TRICHLOROFLUOROMETHANE	11 U		11 U
VINYL CHLORIDE	5.1 U		5.1 U

Appendix B

Results as Reported by the Laboratory

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: A-EFFLUENT Lab Sample ID: 140-278-3
 Matrix: Air Lab File ID: GI15P103.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 14:47
 Sample wt/vol: 20(mL) Date Analyzed: 10/15/2013 20:25
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32(mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	66		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	190		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	270		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	15		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	11		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	13		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: A-EFFLUENT Lab Sample ID: 140-278-3
 Matrix: Air Lab File ID: GI15P103.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 14:47
 Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 20:25
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	99		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1

SDG No.: _____

Client Sample ID: A-INFLUENT Lab Sample ID: 140-278-1

Matrix: Air Lab File ID: GI15P101.D

Analysis Method: TO-15 Date Collected: 10/10/2013 14:45

Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 18:46

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	39		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	190		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	220		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	16		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	15		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	810		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	1400		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: A-INFLUENT Lab Sample ID: 140-278-1
 Matrix: Air Lab File ID: GI15P101.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 14:45
 Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 18:46
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	101		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: A-MID GAC Lab Sample ID: 140-278-2
 Matrix: Air Lab File ID: GI15P102.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 14:46
 Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 19:36
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	29		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	33		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	120		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	190		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	9.9		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	170		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	32		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: A-MID GAC Lab Sample ID: 140-278-2
 Matrix: Air Lab File ID: GI15P102.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 14:46
 Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 19:36
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	98		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1

SDG No.: _____

Client Sample ID: C-EFFLUENT Lab Sample ID: 140-278-6

Matrix: Air Lab File ID: GI15P106.D

Analysis Method: TO-15 Date Collected: 10/10/2013 11:23

Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 22:53

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	11		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	ND		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	ND		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	ND		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: C-EFFLUENT Lab Sample ID: 140-278-6
 Matrix: Air Lab File ID: GI15P106.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 11:23
 Sample wt/vol: 20(mL) Date Analyzed: 10/15/2013 22:53
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	99		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1

SDG No.: _____

Client Sample ID: C-INFLUENT Lab Sample ID: 140-278-4

Matrix: Air Lab File ID: GI15P104.D

Analysis Method: TO-15 Date Collected: 10/10/2013 11:21

Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 21:15

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	14		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	ND		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	ND		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	200		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	16		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: C-INFLUENT Lab Sample ID: 140-278-4
 Matrix: Air Lab File ID: GI15P104.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 11:21
 Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 21:15
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	10		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	20		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	98		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: C-MID GAC Lab Sample ID: 140-278-5
 Matrix: Air Lab File ID: GJ16P109.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 11:22
 Sample wt/vol: 20(mL) Date Analyzed: 10/17/2013 00:25
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 301 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	11		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	ND		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	ND		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	ND		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: C-MID GAC Lab Sample ID: 140-278-5
 Matrix: Air Lab File ID: GJ16P109.D
 Analysis Method: TO-15 Date Collected: 10/10/2013 11:22
 Sample wt/vol: 20 (mL) Date Analyzed: 10/17/2013 00:25
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 301 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	100		60-140

Appendix C

Support Documentation

Job Narrative
140-278-1

Comments

No additional comments.

Receipt

The samples were received on 10/14/2013 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

Air - GC/MS VOA

Method(s) TO-15: EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

★ Although the tune is flagged outside control for mass 176 at 94.29% in batch 299, the mass met the requirement for TO-15 analysis, which has a limit of 93-101%.

Method(s) TO-15: The continuing calibration verification (CCV) associated with batch 299 exhibited % difference of > 30% for the following analyte(s): Chloromethane and 1,2-dichlorotetrafluoroethane; however the results were within the LCS acceptance limits. The EPA method requires that all target analytes in the continuing calibration verification standard be within 30% difference from the initial calibration. According to the laboratory standard operating procedure, the continuing calibration is acceptable if it meets the laboratory control sample acceptance criteria.

No other analytical or quality issues were noted.

5815 Middlebrook Pike
Knoxville, TN 37921

Canister Samples Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

10/21/2013

TestAmerica Knoxville - Air Canister Initial Pressure Check

[illegible]

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 140-278-1

Login Number: 278

List Source: TestAmerica Knoxville

List Number: 1

Creator: Dameron, Bryan K

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	N/A	CHECKED IN LAB
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Method Summary

Client: Tetra Tech GEO
Project/Site: Middle River LMC

TestAmerica Job ID: 140-278-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Lab File ID: GBFBI25.D BFB Injection Date: 09/25/2013
 Instrument ID: MG BFB Injection Time: 09:57
 Analysis Batch No.: 249

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	17.0
75	30.0 - 60.0 % of mass 95	52.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.7
173	Less than 2.0 % of mass 174	0.6 (0.5)1
174	50.0 - 120.00 % of mass 95	104.1
175	5.0 - 9.0 % of mass 174	7.3 (7.1)1
176	95.0 - 101.0 % of mass 174	100.7 (96.7)1
177	5.0 - 9.0 % of mass 176	6.6 (6.5)2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 140-249/2	GICI251.D	09/25/2013	10:26
	IC 140-249/3	GICI252.D	09/25/2013	11:15
	IC 140-249/4	GICI253.D	09/25/2013	12:04
	IC 140-249/5	GICI254.D	09/25/2013	12:53
	IC 140-249/6	GICI255.D	09/25/2013	13:42
	ICIS 140-249/7	GICI256.D	09/25/2013	14:34
	IC 140-249/8	GICI257.D	09/25/2013	15:23
	IC 140-249/10	GICI259.D	09/25/2013	17:02
	ICV 140-249/13	GICVI25.D	09/25/2013	18:43
	IC 140-249/17	GICI258R.D	09/26/2013	08:28

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

Analy Batch No.: 249

SDG No.:

Instrument ID: MG

GC Column: RTX-5 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 09/25/2013 10:26

Calibration End Date: 09/26/2013 08:28

Calibration ID: 78

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 140-249/2	GICI251.D
Level 2	IC 140-249/3	GICI252.D
Level 3	IC 140-249/4	GICI253.D
Level 4	IC 140-249/5	GICI254.D
Level 5	IC 140-249/6	GICI255.D
Level 6	ICIS 140-249/7	GICI256.D
Level 7	IC 140-249/8	GICI257.D
Level 8	IC 140-249/17	GICI258R.D
Level 9	IC 140-249/10	GICI259.D

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
Chlorodifluoromethane	0.4721 0.3063	0.4249 0.3438	0.3348 0.3494	0.3546 0.2782	0.3305	Ave			0.3550				17.0		30.0			
Propene	++++ 0.5076	0.9669 0.5280	0.5628 0.7265	0.6728 0.4385	0.4993	Ave			0.6128				28.0		30.0			
Dichlorodifluoromethane	4.4455 3.4729	4.2347 3.6374	3.1117 3.8023	3.8364 2.9610	3.4821	Ave			3.6649				13.0		30.0			
Chloromethane	++++ 0.1515	++++ 0.1658	0.1949 0.1884	0.2733 0.1410	0.1812	Ave			0.1852				23.0		30.0			
1,2-Dichloro-1,1,2,2-tetrafluoroethane	3.4380 2.0869	3.0026 2.0757	2.5182 2.1605	2.6601 1.7049	2.2268	Ave			2.4304				22.0		30.0			
Acetaldehyde	0.2052 1.0511	0.1518 0.8540	0.2537 0.7593	0.3360 0.8034	0.2042	Ave			0.2083				33.0		40.0			
Vinyl chloride	0.6486 1.0881	0.7025 1.1193	0.7096 0.8567	0.6202 0.9898	0.6808	Ave			0.7588				17.0		30.0			
Butane	0.7408 0.8876	0.7900 0.6140	0.8166 0.5732	0.6951 0.5475	0.8168	Ave			0.8792				17.0		30.0			
1,3-Butadiene	0.4099 1.4534	0.4612 1.2256	0.4642 1.1003	0.4113 1.0298	0.4672	Ave			0.5373				28.0		30.0			
Bromomethane	0.8497 0.6278	0.9194 0.5578	0.8663 0.4853	0.7814 0.4175	0.9511	Ave			1.0197				21.0		30.0			
Chloroethane	0.3609 ++++	0.3781 0.2407	0.3619 0.1583	0.3173 0.1519	0.3868	Ave			0.4326				24.0		30.0			
Ethanol	0.1351 1.4609	0.1316 1.3849	0.1211 1.1352	0.1041 1.1578	0.1326	Ave			0.1469				28.0		40.0			
Vinyl bromide	0.9820 1.4609	1.0330 1.3849	0.9960 1.1352	0.8372 1.1578	1.0480	Ave			1.1150				18.0		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

Analy Batch No.: 249

SDG No.:

Instrument ID: MG

GC Column: RTX-5 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 09/25/2013 10:26

Calibration End Date: 09/26/2013 08:28

Calibration ID: 78

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
2-Methylbutane	1.1113 0.5729	0.7482 0.6017	0.7870 0.6477	0.6765 0.4992	0.6203 0.4992	Ave		0.6961					26.0		30.0		
Trichlorofluoromethane	4.7085 3.6911	4.3312 3.9261	4.0974 3.7176	4.2835 3.1532	4.0423 3.1532	Ave		3.9945					11.0		30.0		
Acrolein	++++ 0.1729	++++ 0.1761	0.1626 0.1871	0.1645 0.1602	0.1499 0.1602	Ave		0.1676					7.2		30.0		
Acetonitrile	++++ 0.1553	++++ 0.1608	0.1933 0.1953	0.1499 0.1456	0.1427 0.1456	Ave		0.1633					13.0		30.0		
Acetone	++++ 0.5203	++++ 0.3056	++++ 0.3769	++++ 0.2358	0.4456 0.2358	Ave		0.3768					30.0		30.0		
Pentane	0.1308 0.1601	0.1739 0.1709	0.1703 0.1797	0.1889 0.1412	0.1793 0.1412	Ave		0.1661					11.0		30.0		
Isopropyl alcohol	1.0608 0.6829	0.8645 0.6908	0.7644 0.7524	0.7808 0.5643	0.6701 0.5643	Ave		0.7590					19.0		30.0		
Ethyl ether	0.5911 0.4472	0.5077 0.4690	0.4012 0.5249	0.4306 0.3959	0.3980 0.3959	Ave		0.4629					15.0		30.0		
1,1-Dichloroethene	1.0433 0.8524	0.8876 0.9142	0.9077 0.9266	0.9089 0.7692	0.9039 0.7692	Ave		0.9015					8.0		30.0		
Acrylonitrile	0.3404 0.3266	0.3568 0.3454	0.2790 0.3745	0.2815 0.2975	0.2978 0.2975	Ave		0.3222					11.0		30.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3304 1.9676	2.1045 2.0426	2.1296 1.9939	2.0892 1.6498	2.0661 1.6498	Ave		2.0415					8.8		30.0		
tert-Butyl alcohol	++++ 1.0329	++++ 1.0820	1.1267 1.1567	1.2506 0.8945	1.0096 0.8945	Ave		1.0790					11.0		30.0		
Methylene Chloride	++++ 0.6943	++++ 0.7071	0.8877 0.7164	0.7631 0.5895	0.7535 0.5895	Ave		0.7302					12.0		30.0		
3-Chloropropene	0.8079 0.5679	0.6954 0.5557	0.7127 0.6340	0.6500 0.4216	0.6092 0.4216	Ave		0.6283					17.0		30.0		
Carbon disulfide	2.7793 2.2869	2.4123 2.4978	2.4922 2.5509	2.6875 2.0978	2.4947 2.0978	Ave		2.4777					8.2		30.0		
2-Methylpentane	1.6654 1.1989	1.3365 1.2310	1.3712 1.2863	1.3413 0.9885	1.2745 0.9885	Ave		1.2993					14.0		40.0		
trans-1,2-Dichloroethene	1.2226 1.0131	1.1381 1.0630	1.1024 1.0531	1.0752 0.8715	1.0620 0.8715	Ave		1.0668					8.9		30.0		
Methyl tert-butyl ether	1.9536 2.1285	2.0732 2.3378	1.7063 2.2448	1.5972 2.0269	1.6514 2.0269	Ave		1.9689					13.0		30.0		
1,1-Dichloroethane	1.5303 1.2771	1.3855 1.3554	1.4354 1.3855	1.4007 1.1574	1.3441 1.1574	Ave		1.3635					7.6		30.0		
Vinyl acetate	1.0101 1.1838	1.0709 1.2840	0.7992 1.3318	0.7472 1.1301	0.8919 1.1301	Ave		1.0499					20.0		30.0		

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

Analy Batch No.: 249

SDG No.:

Instrument ID: MG

GC Column: RTX-5 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 09/25/2013 10:26

Calibration End Date: 09/26/2013 08:28

Calibration ID: 78

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2							
Hexane	0.8718 0.4908	0.7611 0.5089	0.5261 0.4404	0.5398 0.4404	0.5228 Ave		Ave		0.5767				25.0		30.0		
C6 Range	1.8730 1.0244	1.7503 1.0461	1.2614 1.0461	1.1562 0.8512	1.0951 Ave		Ave		1.2338				28.0		30.0		
2-Butanone (MEK)	0.3324 0.2893	0.4378 0.3113	0.2501 0.2911	0.2687 0.2823	0.2545 Ave		Ave		0.3019				19.0		30.0		
cis-1,2-Dichloroethene	0.9326 0.9127	0.8950 0.9875	0.9298 0.9795	0.9691 0.8599	0.9569 Ave		Ave		0.9359				4.5		30.0		
Ethyl acetate	0.9510 0.8926	1.0720 1.0764	0.8283 0.9683	0.6866 0.9601	0.7330 Ave		Ave		0.9076				15.0		30.0		
Chloroform	2.3826 2.0081	2.2608 2.1180	2.2547 2.0357	2.2303 1.7959	2.0686 Ave		Ave		2.1283				8.2		30.0		
Tetrahydrofuran	0.5113 0.4770	0.4911 0.5307	0.3701 0.5243	0.3565 0.4595	0.3738 Ave		Ave		0.4549				15.0		30.0		
1,1,1-Trichloroethane	2.9158 2.6031	2.8274 2.7648	2.8000 2.5533	2.7918 2.3212	2.6943 Ave		Ave		2.6968				6.7		30.0		
1,2-Dichloroethane	0.3491 0.3037	0.3543 0.3225	0.3333 0.3020	0.3451 0.2679	0.3073 Ave		Ave		0.3206				8.7		30.0		
Cyclohexane	0.0902 0.6033	0.0822 0.5907	0.1006 0.5145	0.0916 0.5614	0.0901 Ave		Ave		0.0882				8.7		30.0		
Benzene	0.5093 0.3609	0.5429 0.3687	0.5176 0.8156	0.4389 0.5728	0.5138 Ave		Ave		0.5325				9.3		30.0		
Carbon tetrachloride	0.4892 0.0343	0.3468 0.0448	0.4945 0.0326	0.2476 0.0325	0.5042 Ave		Ave		0.4667				35.0 *		30.0		
1-Butanol	0.0305 0.1061	0.0314 0.1034	0.0326 0.1187	0.0245 0.1245	0.0279 Ave		Ave		0.0323				17.0		30.0		
2,3-Dimethylpentane	0.1111 0.3605	0.1215 0.3544	0.1166 0.3602	0.0972 0.3840	0.1170 Ave		Ave		0.1129				8.1		40.0		
Thiophene	0.3532 0.7294	0.3831 0.7181	0.3687 0.7654	0.3157 0.7754	0.3604 Ave		Ave		0.3600				5.6		40.0		
2,2,4-Trimethylpentane	0.6996 0.1701	0.7377 0.1722	0.7170 0.1988	0.5916 0.2016	0.7092 Ave		Ave		0.7159				7.4		30.0		
Heptane	0.1913 0.1678	0.2028 0.1747	0.1955 0.1593	0.1648 0.1715	0.1904 Ave		Ave		0.1875				7.8		30.0		
1,2-Dichloropropane	0.1591 0.4536	0.1670 0.4120	0.1609 0.5069	0.1354 0.5021	0.1482 Ave		Ave		0.1604				7.7		30.0		
Trichloroethene	0.4201 0.3219	0.4460 0.3149	0.4038 0.3396	0.3557 0.3217	0.4411 Ave		Ave		0.4379				11.0		30.0		
Dibromomethane	0.2909 0.3219	0.3081 0.3149	0.2866 0.3396	0.2533 0.3217	0.2981 Ave		Ave		0.3039				8.3		30.0		

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

Analy Batch No.: 249

SDG No.:

Instrument ID: MG

GC Column: RTX-5 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 09/25/2013 10:26

Calibration End Date: 09/26/2013 08:28

Calibration ID: 78

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
Bromodichloromethane	0.5404 0.5419	0.5330 0.5667	0.5903 0.5291	0.5801 0.4609	0.5354 0.0672	Ave			0.5420				6.9		30.0			
1,4-Dioxane	0.0575 0.0673	0.0671 0.0760	0.0733 0.0686	0.0663 0.0599	0.0672	Ave			0.0670				8.5		30.0			
Methyl methacrylate	0.1302 0.1445	0.1387 0.1781	0.1229 0.1517	0.1046 0.1521	0.1112	Ave			0.1371				17.0		30.0			
Methylcyclohexane	0.3361 0.3820	0.3512 0.4096	0.4129 0.3855	0.4088 0.3319	0.3893	Ave			0.3786				8.3		40.0			
4-Methyl-2-pentanone (MTBK)	0.1781 0.2074	0.2046 0.2305	0.2384 0.2156	0.2135 0.1799	0.1950	Ave			0.2070				9.9		30.0			
cis-1,3-Dichloropropene	0.2584 0.3316	0.3059 0.3558	0.3247 0.3360	0.3427 0.2935	0.3124	Ave			0.3179				9.3		30.0			
trans-1,3-Dichloropropene	0.3176 0.3743	0.3389 0.3968	0.3561 0.3938	0.3791 0.3646	0.3519	Ave			0.3637				7.1		30.0			
Toluene Range	1.8508 1.7445	1.7949 1.8753	1.7513 1.7207	1.7723 1.5468	1.5906	Ave			1.7386				6.3		30.0			
Toluene	0.7879 0.7633	0.8140 0.8141	0.7371 0.7795	0.8011 0.7265	0.7100	Ave			0.7704				5.0		30.0			
1,1,2-Trichloroethane	0.2178 0.2118	0.2276 0.2202	0.2226 0.2132	0.2241 0.1957	0.1979	Ave			0.2146				5.2		30.0			
2-Methylthiophene	0.6380 0.7418	0.6958 0.7953	0.7137 0.7595	0.7696 0.7108	0.7053	Ave			0.7255				6.5		40.0			
3-Methylthiophene	0.6232 0.7642	0.7076 0.8107	0.7095 0.7754	0.7931 0.7232	0.7215	Ave			0.7365				7.7		40.0			
2-Hexanone	0.0818 0.1258	0.1014 0.1371	0.1256 0.1380	0.1183 0.1186	0.1195	Ave			0.1185				15.0		30.0			
Octane	0.2083 0.2745	0.2386 0.2838	0.2856 0.2772	0.2911 0.2461	0.2735	Ave			0.2643				10.0		30.0			
C8 Range	1.6046 1.7937	1.7885 1.8421	2.0411 1.7140	2.0192 1.4466	1.7389	Ave			1.7765				10.0		30.0			
Dibromochloromethane	0.5354 0.7005	0.5639 0.7210	0.6583 0.7109	0.7101 0.6349	0.6780	Ave			0.6570				10.0		30.0			
1,2-Dibromoethane (EDB)	0.4468 0.4910	0.4745 0.5303	0.4902 0.5072	0.5167 0.4805	0.4745	Ave			0.4902				5.1		30.0			
Tetrachloroethene	0.4536 0.4286	0.4314 0.4425	0.4901 0.4138	0.4808 0.3827	0.4352	Ave			0.4399				7.4		30.0			
2,3-Dimethylheptane	0.5468 0.4286	0.5259 0.4350	0.4983 0.4162	0.5152 0.3629	0.4424	Ave			0.4635				13.0		40.0			
Chlorobenzene	0.7703 0.7708	0.7625 0.8109	0.8001 0.7730	0.8250 0.7181	0.7352	Ave			0.7740				4.4		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-278-1 Analy Batch No.: 249
SDG No.: _____

Instrument ID: MG GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 09/25/2013 10:26 Calibration End Date: 09/26/2013 08:28 Calibration ID: 78

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
Ethylbenzene	0.8486 1.0120	0.9212 1.0826	0.8489 1.0119	0.9557 0.9632	0.8853 0.8191	Ave		0.9477					8.4		30.0			
2-Ethylthiophene	0.6670 0.9113	0.7721 0.9708	0.7721 0.9046	0.8696 0.8556	0.8191 0.7587	Ave		0.8380					11.0		40.0			
m-Xylene & p-Xylene	0.6543 0.8188	0.7765 0.8597	0.7158 0.7853	0.7604 0.7360	0.7212 0.3547	Ave		0.7587					8.0		30.0			
Nonane	0.2819 0.3697	0.3251 0.3813	0.3355 0.3626	0.4034 0.3256	0.3547 0.5448	Ave		0.3489					10.0		30.0			
Styrene	0.4051 0.6374	0.4674 0.6942	0.4816 0.6484	0.5346 0.6012	0.5448 0.6012	Ave		0.5572					17.0		30.0			
Bromoform	0.3817 0.6724	0.3997 0.6701	0.4737 0.6195	0.6050 0.4793	0.6060 0.7344	Ave		0.5453					21.0		30.0			
o-Xylene	0.6942 0.8578	0.8135 0.8913	0.7482 0.8390	0.7982 0.8043	0.7344 0.4306	Ave		0.7979					7.9		30.0			
1,1,2,2-Tetrachloroethane	0.4171 0.4915	0.4846 0.5303	0.4660 0.4905	0.4689 0.4645	0.4306 0.1804	Ave		0.4716					7.2		30.0			
1,2,3-Trichloropropane	0.1998 0.2202	0.2297 0.2399	0.2230 0.2163	0.1944 0.2139	0.1804 0.2131	Ave		0.2131					8.7		30.0			
Isopropylbenzene	1.0511 1.3290	1.2071 1.4215	1.1446 1.2986	1.1569 1.2342	1.1200 1.2342	Ave		1.2181					9.5		30.0			
Propylbenzene	0.2849 0.3957	0.3495 0.4406	0.3300 0.4022	0.3348 0.3878	0.3239 0.3585	Ave		0.3610					13.0		30.0			
2-Chlorotoluene	0.3200 0.3919	0.3612 0.4169	0.3663 0.3867	0.4006 0.3632	0.3585 1.0633	Ave		0.3739					7.6		30.0			
4-Ethyltoluene	0.9419 1.3291	1.1748 1.4384	1.1105 1.2930	1.0921 1.2415	1.0633 0.5169	Ave		1.1872					13.0		30.0			
1,3,5-Trimethylbenzene	0.4646 0.6616	0.5987 0.7206	0.5652 0.6504	0.5253 0.6222	0.5169 0.4262	Ave		0.5917					14.0		30.0			
Alpha Methyl Styrene	0.3030 0.5392	0.3872 0.6210	0.4227 0.5607	0.4088 0.5413	0.4262 0.4228	Ave		0.4678					22.0		30.0			
Decane	0.3359 0.4529	0.4241 0.4659	0.4291 0.4101	0.4980 0.3817	0.4228 0.9989	Ave		0.4245					11.0		30.0			
tert-Butylbenzene	0.9280 1.2695	1.2314 1.3736	1.1181 1.2015	1.0833 1.1195	0.9989 0.8574	Ave		1.1471					12.0		30.0			
1,2,4-Trimethylbenzene	0.7998 1.0767	1.0237 1.1644	0.9329 1.0174	0.9329 0.9596	0.8574 1.2091	Ave		0.9821					11.0		30.0			
sec-Butylbenzene	1.0592 1.4974	1.4684 1.6286	1.3300 1.4386	1.3078 1.3519	1.2091 0.8188	Ave		1.3657					12.0		30.0			
1,3-Dichlorobenzene	0.7440 0.8675	0.8739 0.9552	0.9544 0.8682	0.9707 0.7939	0.8188 0.7939	Ave		0.8719					9.0		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-278-1 Analy Batch No.: 249

SDG No.: _____

Instrument ID: MG GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/25/2013 10:26 Calibration End Date: 09/26/2013 08:28 Calibration ID: 78

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9		B	M1	M2								
Benzyl chloride	0.4840	0.6593	0.7837	0.7143	0.6524	Ave	0.7284				17.0		30.0			
	0.7820	0.9098	0.7995	0.7702												
1,4-Dichlorobenzene	0.6879	0.8303	0.9574	0.9298	0.7963	Ave	0.8409				11.0		30.0			
	0.8398	0.9394	0.8345	0.7530												
4-Isopropyltoluene	0.9321	1.2877	1.2529	1.1703	1.0947	Ave	1.2567				14.0		30.0			
	1.3597	1.5580	1.3379	1.3168												
1,2,3-Trimethylbenzene	0.6617	0.9137	0.8646	0.7804	0.7027	Ave	0.8365				12.0		40.0			
	0.8920	0.9830	0.8673	0.8631												
Butylcyclohexane	0.6019	0.7689	0.7862	0.8716	0.7285	Ave	0.7353				11.0		40.0			
	0.7465	0.7736	0.6982	0.6424												
Indane	0.8021	1.0056	0.9890	0.9384	0.8627	Ave	0.9531				9.8		40.0			
	1.0165	1.1101	0.9705	0.8829												
1,2-Dichlorobenzene	0.7235	0.8521	0.8889	0.8727	0.7472	Ave	0.7997				9.8		30.0			
	0.8025	0.8796	0.7606	0.6698												
Butylbenzene	0.7035	1.0089	1.0687	0.9540	0.8178	Ave	0.9436				13.0		30.0			
	0.9633	1.1122	0.9343	0.9294												
Indene	0.6075	0.8940	0.9610	0.8575	0.7894	Ave	0.8874				15.0		40.0			
	0.9575	1.0794	0.9432	0.8973												
Undecane	0.2795	0.5104	0.5183	0.4730	0.4107	Ave	0.4497				17.0		30.0			
	0.4832	0.5176	0.4393	0.4152												
1,2-Dimethyl-4-Ethylbenzene	0.7648	1.3338	1.3171	1.1784	1.0150	Ave	1.1778				17.0		40.0			
	1.1618	1.4174	1.1685	1.2433												
1,2,4,5-Tetramethylbenzene	0.7713	1.3780	1.3729	1.2307	1.0335	Ave	1.1812				17.0		40.0			
	1.1024	1.3953	1.1193	1.2274												
1,2,3,5-Tetramethylbenzene	0.4733	0.8970	0.8433	0.7702	0.6447	Ave	0.7414				18.0		40.0			
	0.6843	0.8605	0.6991	0.8004												
1,2,3,4-Tetramethylbenzene	0.6884	1.1719	1.1184	0.9803	0.8268	Ave	0.9372				17.0		40.0			
	0.7844	1.0505	0.8441	0.9702												
Dodecane	+++++	0.4450	0.5963	0.5171	0.3780	Ave	0.4301				30.0		30.0			
	0.2154	0.4287	+++++	+++++												
1,2,4-Trichlorobenzene	0.6276	0.7173	0.7480	0.6107	0.4270	Ave	0.5569				30.0		30.0			
	0.2880	0.4796	+++++	+++++												
Naphthalene	+++++	+++++	1.0333	0.8541	0.6121	Ave	0.6808				30.0		30.0			
	0.4412	0.7095	0.5016	0.6138												
Benzo(b)thiophene	0.6043	0.7602	0.8254	0.6755	0.4880	Ave	0.5604				31.0		40.0			
	0.3243	0.5408	0.3584	0.4669												
Hexachlorobutadiene	+++++	0.5208	0.3736	0.3450	0.2504	Ave	0.2939				<u>39.0</u> *		30.0			
	0.1990	0.2651	0.1948	0.2025												
1,2,3-Trichlorobenzene	0.3076	0.4162	0.4203	0.3342	0.2335	Ave	0.2730				39.0 *		30.0			
	0.1278	0.2576	0.1395	0.2201												

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-278-1 Analy Batch No.: 249

SDG No.: _____

Instrument ID: MG GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/25/2013 10:26 Calibration End Date: 09/26/2013 08:28 Calibration ID: 78

ANALYTE	RRF					COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	B	M1	M2								
2-Methylnaphthalene	0.0761 0.0448	0.0942 0.0560	0.1012 0.0461	0.1371 +++++	0.0788		0.0793				40.0 40.0		40.0			
1-Methylnaphthalene	0.0722 0.0368	0.0863 0.0431	0.0850 +++++	0.1132 +++++	0.0637		0.0715				37.0 37.0		40.0			
4-Bromofluorobenzene (Surr)	0.6969 0.6991	0.7114 0.7010	0.6731 0.6950	0.6734 0.6872	0.7088		0.6940				2.0		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Lab File ID: GBFBJ15.D BFB Injection Date: 10/15/2013
 Instrument ID: MG BFB Injection Time: 14:02
 Analysis Batch No.: 299

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	16.3
75	30.0 - 60.0 % of mass 95	48.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.9
173	Less than 2.0 % of mass 174	0.6 (0.6)1
174	50.0 - 120.00 % of mass 95	96.0
175	5.0 - 9.0 % of mass 174	6.6 (6.9)1
176	95.0 - 101.0 % of mass 174	90.5 → (94.3)1
177	5.0 - 9.0 % of mass 176	6.0 (6.6)2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 140-299/2	GCCVJ15.D	10/15/2013	14:30
	MB 140-299/3	GBLKI15.D	10/15/2013	16:52
A-INFLUENT	140-278-1	GI15P101.D	10/15/2013	18:46
A-MID GAC	140-278-2	GI15P102.D	10/15/2013	19:36
A-EFFLUENT	140-278-3	GI15P103.D	10/15/2013	20:25
C-INFLUENT	140-278-4	GI15P104.D	10/15/2013	21:15
C-EFFLUENT	140-278-6	GI15P106.D	10/15/2013	22:53

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

SDG No.: _____

Lab Sample ID: CCVIS 140-299/2

Calibration Date: 10/15/2013 14:30

Instrument ID: MG

Calib Start Date: 09/25/2013 10:26

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 09/26/2013 08:28

Lab File ID: GCCVJ15.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Chlorodifluoromethane	Ave	0.3550	0.3258		1.84	2.00	-8.2	30.0
Propene	Ave	0.6128	0.7101		2.32	2.00	15.9	30.0
Dichlorodifluoromethane	Ave	3.665	3.523		1.92	2.00	-3.9	30.0
Chloromethane	Ave	0.1852	0.1275		1.38	2.00	-31.1*	30.0
1,2-Dichloro-1,1,2,2-tetrafluoroethane	Ave	2.430	1.671		1.37	2.00	-31.3*	30.0
Acetaldehyde	Ave	0.2083	0.1342		6.44	10.0	-35.6	50.0
Vinyl chloride	Ave	0.7588	0.5606		1.48	2.00	-26.1	30.0
1,3-Butadiene	Ave	0.5373	0.3792		1.41	2.00	-29.4	30.0
Butane	Ave	0.8792	0.6644		1.51	2.00	-24.4	30.0
Bromomethane	Ave	1.020	0.7761		1.52	2.00	-23.9	30.0
Chloroethane	Ave	0.4326	0.3103		1.43	2.00	-28.3	30.0
Ethanol	Ave	0.1469	0.1016		6.92	10.0	-30.8	50.0
Vinyl bromide	Ave	1.115	0.8067		1.45	2.00	-27.6	30.0
2-Methylbutane	Ave	0.6961	0.5392		1.55	2.00	-22.5	30.0
Trichlorofluoromethane	Ave	3.995	3.552		1.78	2.00	-11.1	30.0
Acrolein	Ave	0.1676	0.2129		2.54	2.00	27.0	30.0
Acetonitrile	Ave	0.1633	0.2138		2.62	2.00	30.9*	30.0
Acetone	Ave	0.3768	0.4310		2.29	2.00	14.4	30.0
Pentane	Ave	0.1661	0.1917		2.31	2.00	15.4	30.0
Isopropyl alcohol	Ave	0.7590	0.7327		1.93	2.00	-3.5	30.0
Ethyl ether	Ave	0.4629	0.6550		2.83	2.00	41.5*	30.0
1,1-Dichloroethene	Ave	0.9015	0.9038		2.01	2.00	0.3	30.0
Acrylonitrile	Ave	0.3222	0.4296		2.67	2.00	33.4*	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	2.042	1.991		1.95	2.00	-2.5	30.0
tert-Butyl alcohol	Ave	1.079	1.018		1.89	2.00	-5.6	30.0
Methylene Chloride	Ave	0.7302	0.7531		2.06	2.00	3.1	30.0
3-Chloropropene	Ave	0.6283	0.6281		2.00	2.00	-0.0	30.0
Carbon disulfide	Ave	2.478	2.690		2.17	2.00	8.6	30.0
2-Methylpentane	Ave	1.299	1.571		2.42	2.00	20.9	50.0
trans-1,2-Dichloroethene	Ave	1.067	1.078		2.02	2.00	1.0	30.0
Methyl tert-butyl ether	Ave	1.969	2.382		2.42	2.00	21.0	30.0
1,1-Dichloroethane	Ave	1.363	1.512		2.22	2.00	10.9	30.0
Vinyl acetate	Ave	1.050	1.589		3.03	2.00	51.3*	30.0
Hexane	Ave	0.5767	0.6094		2.11	2.00	5.7	30.0
2-Butanone (MEK)	Ave	0.3019	0.3468		2.30	2.00	14.9	30.0
cis-1,2-Dichloroethene	Ave	0.9359	1.011		2.16	2.00	8.0	30.0
Ethyl acetate	Ave	0.9076	1.264		2.79	2.00	39.3*	30.0
Chloroform	Ave	2.128	2.104		1.98	2.00	-1.2	30.0
Tetrahydrofuran	Ave	0.4549	0.6580		2.89	2.00	44.6*	30.0
1,1,1-Trichloroethane	Ave	2.697	2.577		1.91	2.00	-4.4	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

SDG No.: _____

Lab Sample ID: CCVIS 140-299/2

Calibration Date: 10/15/2013 14:30

Instrument ID: MG

Calib Start Date: 09/25/2013 10:26

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 09/26/2013 08:28

Lab File ID: GCCVJ15.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dichloroethane	Ave	0.3206	0.3021		1.88	2.00	-5.8	30.0
Cyclohexane	Ave	0.0882	0.0940		2.13	2.00	6.6	30.0
Benzene	Ave	0.5325	0.5723		2.15	2.00	7.5	30.0
Carbon tetrachloride	Ave	0.4667	0.4369		1.87	2.00	-6.4	30.0
1-Butanol	Ave	0.0323	0.0322		1.99	2.00	-0.4	30.0
2,3-Dimethylpentane	Ave	0.1129	0.1267		2.24	2.00	12.2	50.0
Thiophene	Ave	0.3600	0.3845		2.14	2.00	6.8	50.0
2,2,4-Trimethylpentane	Ave	0.7159	0.8365		2.34	2.00	16.8	30.0
Heptane	Ave	0.1875	0.2123		2.26	2.00	13.2	30.0
1,2-Dichloropropane	Ave	0.1604	0.1839		2.29	2.00	14.7	30.0
Trichloroethene	Ave	0.4379	0.3850		1.76	2.00	-12.1	30.0
Dibromomethane	Ave	0.3039	0.2830		1.86	2.00	-6.9	30.0
Bromodichloromethane	Ave	0.5420	0.5284		1.95	2.00	-2.5	30.0
1,4-Dioxane	Ave	0.0670	0.0623		1.86	2.00	-7.0	30.0
Methyl methacrylate	Ave	0.1371	0.1864		2.72	2.00	35.9*	30.0
Methylcyclohexane	Ave	0.3786	0.4066		2.15	2.00	7.4	50.0
4-Methyl-2-pentanone (MIBK)	Ave	0.2070	0.2130		2.06	2.00	2.9	30.0
cis-1,3-Dichloropropene	Ave	0.3179	0.3530		2.22	2.00	11.0	30.0
trans-1,3-Dichloropropene	Ave	0.3637	0.4135		2.27	2.00	13.7	30.0
Toluene	Ave	0.7704	0.8551		2.22	2.00	11.0	30.0
1,1,2-Trichloroethane	Ave	0.2146	0.2369		2.21	2.00	10.4	30.0
2-Methylthiophene	Ave	0.7255	0.8221		2.27	2.00	13.3	50.0
3-Methylthiophene	Ave	0.7365	0.8390		2.28	2.00	13.9	50.0
2-Hexanone	Ave	0.1185	0.1321		2.23	2.00	11.5	30.0
Octane	Ave	0.2643	0.3069		2.32	2.00	16.1	30.0
Dibromochloromethane	Ave	0.6570	0.6916		2.11	2.00	5.3	30.0
1,2-Dibromoethane (EDB)	Ave	0.4902	0.5087		2.08	2.00	3.8	30.0
Tetrachloroethene	Ave	0.4399	0.4174		1.90	2.00	-5.1	30.0
2,3-Dimethylheptane	Ave	0.4635	0.5448		2.35	2.00	17.5	50.0
Chlorobenzene	Ave	0.7740	0.7933		2.05	2.00	2.5	30.0
Ethylbenzene	Ave	0.9477	1.108		2.34	2.00	16.9	30.0
2-Ethylthiophene	Ave	0.8380	0.9663		2.31	2.00	15.3	50.0
m-Xylene & p-Xylene	Ave	0.7587	0.8875		4.68	4.00	17.0	30.0
Nonane	Ave	0.3489	0.4580		2.63	2.00	31.3*	30.0
Styrene	Ave	0.5572	0.6898		2.48	2.00	23.8	30.0
Bromoform	Ave	0.5453	0.6509		2.39	2.00	19.4	30.0
o-Xylene	Ave	0.7979	0.9390		2.35	2.00	17.7	30.0
1,1,2,2-Tetrachloroethane	Ave	0.4716	0.5624		2.39	2.00	19.3	30.0
1,2,3-Trichloropropane	Ave	0.2131	0.2215		2.08	2.00	4.0	30.0
Isopropylbenzene	Ave	1.218	1.401		2.30	2.00	15.1	30.0
Propylbenzene	Ave	0.3610	0.4232		2.34	2.00	17.2	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

SDG No.: _____

Lab Sample ID: CCVIS 140-299/2

Calibration Date: 10/15/2013 14:30

Instrument ID: MG

Calib Start Date: 09/25/2013 10:26

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 09/26/2013 08:28

Lab File ID: GCCVJ15.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2-Chlorotoluene	Ave	0.3739	0.3996		2.14	2.00	6.9	30.0
4-Ethyltoluene	Ave	1.187	1.410		2.38	2.00	18.8	30.0
1,3,5-Trimethylbenzene	Ave	0.5917	0.7002		2.37	2.00	18.3	30.0
Alpha Methyl Styrene	Ave	0.4678	0.5874		2.51	2.00	25.6	30.0
Decane	Ave	0.4245	0.5656		2.66	2.00	33.2*	30.0
tert-Butylbenzene	Ave	1.147	1.328		2.32	2.00	15.8	30.0
1,2,4-Trimethylbenzene	Ave	0.9821	1.156		2.35	2.00	17.7	30.0
sec-Butylbenzene	Ave	1.366	1.625		2.38	2.00	19.0	30.0
1,3-Dichlorobenzene	Ave	0.8719	0.8673		1.99	2.00	-0.5	30.0
Benzyl chloride	Ave	0.7284	0.8958		2.46	2.00	23.0	30.0
1,4-Dichlorobenzene	Ave	0.8409	0.8527		2.03	2.00	1.4	30.0
4-Isopropyltoluene	Ave	1.257	1.480		2.36	2.00	17.8	30.0
1,2,3-Trimethylbenzene	Ave	0.8365	0.9711		2.32	2.00	16.1	50.0
Butylcyclohexane	Ave	0.7353	0.8648		2.35	2.00	17.6	50.0
Indane	Ave	0.9531	1.095		2.30	2.00	14.9	50.0
1,2-Dichlorobenzene	Ave	0.7997	0.8102		2.03	2.00	1.3	30.0
Butylbenzene	Ave	0.9436	1.135		2.40	2.00	20.2	30.0
Indene	Ave	0.8874	1.061		2.39	2.00	19.6	50.0
Undecane	Ave	0.4497	0.6336		2.82	2.00	40.9*	30.0
1,2-Dimethyl-4-Ethylbenzene	Ave	1.178	1.345		2.28	2.00	14.2	50.0
1,2,4,5-Tetramethylbenzene	Ave	1.181	1.316		2.23	2.00	11.4	50.0
1,2,3,5-Tetramethylbenzene	Ave	0.7414	0.8164		2.20	2.00	10.1	50.0
1,2,3,4-Tetramethylbenzene	Ave	0.9372	1.012		2.16	2.00	8.0	50.0
Dodecane	Ave	0.4301	0.4274		1.99	2.00	-0.6	30.0
1,2,4-Trichlorobenzene	Ave	0.5569	0.4756		1.71	2.00	-14.6	30.0
Naphthalene	Ave	0.6808	0.7295		2.14	2.00	7.2	30.0
Benzo(b) thiophene	Ave	0.5604	0.4987		1.78	2.00	-11.0	50.0
Hexachlorobutadiene	Ave	0.2939	0.2604		1.77	2.00	-11.4	30.0
1,2,3-Trichlorobenzene	Ave	0.2730	0.2091		1.53	2.00	-23.4	30.0
2-Methylnaphthalene	Ave	0.0793	0.0421		6.65	12.5	-46.8	50.0
1-Methylnaphthalene	Ave	0.0715	0.0338		5.91	12.5	-52.7*	50.0
4-Bromofluorobenzene (Surr)	Ave	0.6940	0.6879		3.96	4.00	-0.9	30.0

FORM IV
AIR - GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Lab File ID: GBLKI15.D Lab Sample ID: MB 140-299/3
 Matrix: Air Heated Purge: (Y/N) N
 Instrument ID: MG Date Analyzed: 10/15/2013 16:52
 GC Column: RTX-5 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 140-299/1002	GCCVJ15-LCS .d	10/15/2013 14:30
A-INFLUENT	140-278-1	GI15P101.D	10/15/2013 18:46
A-MID GAC	140-278-2	GI15P102.D	10/15/2013 19:36
A-EFFLUENT	140-278-3	GI15P103.D	10/15/2013 20:25
C-INFLUENT	140-278-4	GI15P104.D	10/15/2013 21:15
C-EFFLUENT	140-278-6	GI15P106.D	10/15/2013 22:53

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 140-299/3

Matrix: Air Lab File ID: GBLKI15.D

Analysis Method: TO-15 Date Collected: _____

Sample wt/vol: 200 (mL) Date Analyzed: 10/15/2013 16:52

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 299 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		0.20	
100-44-7	Benzyl chloride	126.58	ND		0.40	
74-83-9	Bromomethane	94.94	ND		0.20	
56-23-5	Carbon tetrachloride	153.81	ND		0.20	
108-90-7	Chlorobenzene	112.56	ND		0.20	
75-00-3	Chloroethane	64.52	ND		0.20	
67-66-3	Chloroform	119.38	ND		0.20	
74-87-3	Chloromethane	50.49	ND		0.50	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.20	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.20	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.20	
75-71-8	Dichlorodifluoromethane	120.91	ND		0.20	
75-34-3	1,1-Dichloroethane	98.96	ND		0.20	
107-06-2	1,2-Dichloroethane	98.96	ND		0.20	
75-35-4	1,1-Dichloroethene	96.94	ND		0.20	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.20	
78-87-5	1,2-Dichloropropane	112.99	ND		0.20	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.20	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.20	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		0.20	
100-41-4	Ethylbenzene	106.17	ND		0.20	
75-69-4	Trichlorofluoromethane	137.37	ND		0.20	
87-68-3	Hexachlorobutadiene	260.76	ND		1.0	
75-09-2	Methylene Chloride	84.93	ND		0.50	
100-42-5	Styrene	104.15	ND		0.20	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.20	
127-18-4	Tetrachloroethene	165.83	ND		0.20	
108-88-3	Toluene	92.14	ND		0.20	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		1.0	
71-55-6	1,1,1-Trichloroethane	133.41	ND		0.20	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.20	
79-01-6	Trichloroethene	131.39	ND		0.20	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 140-299/3
 Matrix: Air Lab File ID: GBLKI15.D
 Analysis Method: TO-15 Date Collected: _____
 Sample wt/vol: 200 (mL) Date Analyzed: 10/15/2013 16:52
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.20	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.20	
75-01-4	Vinyl chloride	62.50	ND		0.20	
95-47-6	o-Xylene	106.17	ND		0.20	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.20	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		0.20	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	98		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 140-299/3
 Matrix: Air Lab File ID: GBLKI15.D
 Analysis Method: TO-15 Date Collected: _____
 Sample wt/vol: 200 (mL) Date Analyzed: 10/15/2013 16:52
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		0.64	
100-44-7	Benzyl chloride	126.58	ND		2.1	
74-83-9	Bromomethane	94.94	ND		0.78	
56-23-5	Carbon tetrachloride	153.81	ND		1.3	
108-90-7	Chlorobenzene	112.56	ND		0.92	
75-00-3	Chloroethane	64.52	ND		0.53	
67-66-3	Chloroform	119.38	ND		0.98	
74-87-3	Chloromethane	50.49	ND		1.0	
95-50-1	1,2-Dichlorobenzene	147.00	ND		1.2	
541-73-1	1,3-Dichlorobenzene	147.00	ND		1.2	
106-46-7	1,4-Dichlorobenzene	147.00	ND		1.2	
75-71-8	Dichlorodifluoromethane	120.91	ND		0.99	
75-34-3	1,1-Dichloroethane	98.96	ND		0.81	
107-06-2	1,2-Dichloroethane	98.96	ND		0.81	
75-35-4	1,1-Dichloroethene	96.94	ND		0.79	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.79	
78-87-5	1,2-Dichloropropane	112.99	ND		0.92	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.91	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.91	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		1.4	
100-41-4	Ethylbenzene	106.17	ND		0.87	
75-69-4	Trichlorofluoromethane	137.37	ND		1.1	
87-68-3	Hexachlorobutadiene	260.76	ND		1.1	
75-09-2	Methylene Chloride	84.93	ND		1.7	
100-42-5	Styrene	104.15	ND		0.85	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		1.4	
127-18-4	Tetrachloroethene	165.83	ND		1.4	
108-88-3	Toluene	92.14	ND		0.75	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		7.4	
71-55-6	1,1,1-Trichloroethane	133.41	ND		1.1	
79-00-5	1,1,2-Trichloroethane	133.41	ND		1.1	
79-01-6	Trichloroethene	131.39	ND		1.1	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		1.5	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 140-299/3
 Matrix: Air Lab File ID: GBLKI15.D
 Analysis Method: TO-15 Date Collected: _____
 Sample wt/vol: 200 (mL) Date Analyzed: 10/15/2013 16:52
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.98	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.98	
75-01-4	Vinyl chloride	62.50	ND		0.51	
95-47-6	o-Xylene	106.17	ND		0.87	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.87	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		1.5	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	98		60-140

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Lab File ID: GBFBJ16.D BFB Injection Date: 10/16/2013
 Instrument ID: MG BFB Injection Time: 13:05
 Analysis Batch No.: 301

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	15.6
75	30.0 - 60.0 % of mass 95	51.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.7
173	Less than 2.0 % of mass 174	0.7 (0.6)1
174	50.0 - 120.00 % of mass 95	112.4
175	5.0 - 9.0 % of mass 174	7.9 (7.0)1
176	95.0 - 101.0 % of mass 174	107.0 (95.2)1
177	5.0 - 9.0 % of mass 176	7.1 (6.6)2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 140-301/2	GCCVJ16.D	10/16/2013	13:35
	MB 140-301/3	MB200mL.D	10/16/2013	16:03
C-MID GAC	140-278-5	GJ16P109.D	10/17/2013	00:25

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

SDG No.: _____

Lab Sample ID: CCVIS 140-301/2

Calibration Date: 10/16/2013 13:35

Instrument ID: MG

Calib Start Date: 09/25/2013 10:26

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 09/26/2013 08:28

Lab File ID: GCCVJ16.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Chlorodifluoromethane	Ave	0.3550	0.4175		2.35	2.00	17.6	30.0
Propene	Ave	0.6128	0.5040		1.64	2.00	-17.8	30.0
Dichlorodifluoromethane	Ave	3.665	4.432		2.42	2.00	20.9	30.0
1,2-Dichloro-1,1,2,2-tetrafluoroethane	Ave	2.430	2.921		2.40	2.00	20.2	30.0
Chloromethane	Ave	0.1852	0.2229		2.41	2.00	20.4	30.0
Acetaldehyde	Ave	0.2083	0.1675		8.04	10.0	-19.6	50.0
Vinyl chloride	Ave	0.7588	0.9490		2.50	2.00	25.1	30.0
1,3-Butadiene	Ave	0.5373	0.6114		2.28	2.00	13.8	30.0
Butane	Ave	0.8792	1.113		2.53	2.00	26.6	30.0
Bromomethane	Ave	1.020	1.264		2.48	2.00	23.9	30.0
Chloroethane	Ave	0.4326	0.5041		2.33	2.00	16.5	30.0
Ethanol	Ave	0.1469	0.1602		10.9	10.0	9.0	50.0
Vinyl bromide	Ave	1.115	1.303		2.34	2.00	16.8	30.0
2-Methylbutane	Ave	0.6961	0.6936		1.99	2.00	-0.4	30.0
Trichlorofluoromethane	Ave	3.995	4.884		2.45	2.00	22.3	30.0
Acrolein	Ave	0.1676	0.1060		1.26	2.00	-36.8*	30.0
Acetonitrile	Ave	0.1633	0.0994		1.22	2.00	-39.1*	30.0
Acetone	Ave	0.3768	0.2376			2.00	-36.9*	30.0
Pentane	Ave	0.1661	0.1657		1.99	2.00	-0.3	30.0
Isopropyl alcohol	Ave	0.7590	0.6492		1.71	2.00	-14.5	30.0
Ethyl ether	Ave	0.4629	0.3041		1.31	2.00	-34.3*	30.0
1,1-Dichloroethene	Ave	0.9015	0.9448		2.10	2.00	4.8	30.0
Acrylonitrile	Ave	0.3222	0.2070		1.28	2.00	-35.8*	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	2.042	2.134		2.09	2.00	4.5	30.0
tert-Butyl alcohol	Ave	1.079	1.109		2.06	2.00	2.8	30.0
Methylene Chloride	Ave	0.7302	0.6865		1.88	2.00	-6.0	30.0
3-Chloropropene	Ave	0.6283	0.6097		1.94	2.00	-3.0	30.0
Carbon disulfide	Ave	2.478	2.534		2.05	2.00	2.3	30.0
2-Methylpentane	Ave	1.299	1.062		1.64	2.00	-18.2	50.0
trans-1,2-Dichloroethene	Ave	1.067	1.034		1.94	2.00	-3.0	30.0
Methyl tert-butyl ether	Ave	1.969	1.662		1.69	2.00	-15.6	30.0
1,1-Dichloroethane	Ave	1.363	1.229		1.80	2.00	-9.9	30.0
Vinyl acetate	Ave	1.050	0.6704		1.28	2.00	-36.1*	30.0
Hexane	Ave	0.5767	0.4407		1.53	2.00	-23.6	30.0
2-Butanone (MEK)	Ave	0.3019	0.2152		1.43	2.00	-28.7	30.0
cis-1,2-Dichloroethene	Ave	0.9359	0.9302		1.99	2.00	-0.6	30.0
Ethyl acetate	Ave	0.9076	0.6645		1.46	2.00	-26.8	30.0
Chloroform	Ave	2.128	2.144		2.01	2.00	0.7	30.0
Tetrahydrofuran	Ave	0.4549	0.2959		1.30	2.00	-35.0*	30.0
1,1,1-Trichloroethane	Ave	2.697	2.907		2.16	2.00	7.8	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

SDG No.: _____

Lab Sample ID: CCVIS 140-301/2

Calibration Date: 10/16/2013 13:35

Instrument ID: MG

Calib Start Date: 09/25/2013 10:26

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 09/26/2013 08:28

Lab File ID: GCCVJ16.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dichloroethane	Ave	0.3206	0.3243		2.02	2.00	1.2	30.0
Cyclohexane	Ave	0.0882	0.0842		1.91	2.00	-4.6	30.0
Benzene	Ave	0.5325	0.4651		1.75	2.00	-12.7	30.0
Carbon tetrachloride	Ave	0.4667	0.5879		2.52	2.00	26.0	30.0
1-Butanol	Ave	0.0323	0.0300		1.86	2.00	-7.1	30.0
2,3-Dimethylpentane	Ave	0.1129	0.1106		1.96	2.00	-2.0	50.0
Thiophene	Ave	0.3600	0.3518		1.95	2.00	-2.3	50.0
2,2,4-Trimethylpentane	Ave	0.7159	0.6481		1.81	2.00	-9.5	30.0
Heptane	Ave	0.1875	0.1807		1.93	2.00	-3.6	30.0
1,2-Dichloropropane	Ave	0.1604	0.1296		1.62	2.00	-19.2	30.0
Trichloroethene	Ave	0.4379	0.5032		2.30	2.00	14.9	30.0
Dibromomethane	Ave	0.3039	0.3217		2.12	2.00	5.9	30.0
Bromodichloromethane	Ave	0.5420	0.6001		2.21	2.00	10.7	30.0
1,4-Dioxane	Ave	0.0670	0.0674		2.01	2.00	0.6	30.0
Methyl methacrylate	Ave	0.1371	0.1155		1.69	2.00	-15.7	30.0
Methylcyclohexane	Ave	0.3786	0.3840		2.03	2.00	1.4	50.0
4-Methyl-2-pentanone (MIBK)	Ave	0.2070	0.1991		1.92	2.00	-3.8	30.0
cis-1,3-Dichloropropene	Ave	0.3179	0.3065		1.93	2.00	-3.6	30.0
trans-1,3-Dichloropropene	Ave	0.3637	0.3409		1.87	2.00	-6.3	30.0
Toluene	Ave	0.7704	0.6561		1.70	2.00	-14.8	30.0
1,1,2-Trichloroethane	Ave	0.2146	0.1834		1.71	2.00	-14.5	30.0
2-Methylthiophene	Ave	0.7255	0.6868		1.89	2.00	-5.3	50.0
3-Methylthiophene	Ave	0.7365	0.6990		1.90	2.00	-5.1	50.0
2-Hexanone	Ave	0.1185	0.1163		1.96	2.00	-1.8	30.0
Octane	Ave	0.2643	0.2730		2.07	2.00	3.3	30.0
Dibromochloromethane	Ave	0.6570	0.7599		2.31	2.00	15.7	30.0
1,2-Dibromoethane (EDB)	Ave	0.4902	0.4800		1.96	2.00	-2.1	30.0
Tetrachloroethene	Ave	0.4399	0.4825		2.19	2.00	9.7	30.0
2,3-Dimethylheptane	Ave	0.4635	0.3796		1.64	2.00	-18.1	50.0
Chlorobenzene	Ave	0.7740	0.7644		1.98	2.00	-1.2	30.0
Ethylbenzene	Ave	0.9477	0.8006		1.69	2.00	-15.5	30.0
2-Ethylthiophene	Ave	0.8380	0.7928		1.89	2.00	-5.4	50.0
m-Xylene & p-Xylene	Ave	0.7587	0.6619		3.49	4.00	-12.8	30.0
Nonane	Ave	0.3489	0.3110		1.78	2.00	-10.9	30.0
Styrene	Ave	0.5572	0.5230		1.88	2.00	-6.1	30.0
Bromoform	Ave	0.5453	0.7320		2.68	2.00	34.2*	30.0
o-Xylene	Ave	0.7979	0.6856		1.72	2.00	-14.1	30.0
1,1,2,2-Tetrachloroethane	Ave	0.4716	0.4156		1.76	2.00	-11.9	30.0
1,2,3-Trichloropropane	Ave	0.2131	0.2002		1.88	2.00	-6.0	30.0
Isopropylbenzene	Ave	1.218	1.092		1.79	2.00	-10.3	30.0
Propylbenzene	Ave	0.3610	0.3394		1.88	2.00	-6.0	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

SDG No.: _____

Lab Sample ID: CCVIS 140-301/2

Calibration Date: 10/16/2013 13:35

Instrument ID: MG

Calib Start Date: 09/25/2013 10:26

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 09/26/2013 08:28

Lab File ID: GCCVJ16.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2-Chlorotoluene	Ave	0.3739	0.3756		2.01	2.00	0.4	30.0
4-Ethyltoluene	Ave	1.187	1.113		1.87	2.00	-6.3	30.0
1,3,5-Trimethylbenzene	Ave	0.5917	0.5855		1.98	2.00	-1.1	30.0
Alpha Methyl Styrene	Ave	0.4678	0.4895		2.09	2.00	4.6	30.0
Decane	Ave	0.4245	0.3745		1.76	2.00	-11.8	30.0
tert-Butylbenzene	Ave	1.147	1.150		2.00	2.00	0.2	30.0
1,2,4-Trimethylbenzene	Ave	0.9821	0.997		2.03	2.00	1.5	30.0
sec-Butylbenzene	Ave	1.366	1.346		1.97	2.00	-1.4	30.0
1,3-Dichlorobenzene	Ave	0.8719	0.9313		2.14	2.00	6.8	30.0
Benzyl chloride	Ave	0.7284	0.8105		2.23	2.00	11.3	30.0
1,4-Dichlorobenzene	Ave	0.8409	0.9148		2.18	2.00	8.8	30.0
4-Isopropyltoluene	Ave	1.257	1.352		2.15	2.00	7.6	30.0
1,2,3-Trimethylbenzene	Ave	0.8365	0.8600		2.06	2.00	2.8	50.0
Butylcyclohexane	Ave	0.7353	0.7386		2.01	2.00	0.4	50.0
Indane	Ave	0.9531	0.9575		2.01	2.00	0.5	50.0
1,2-Dichlorobenzene	Ave	0.7997	0.8417		2.11	2.00	5.3	30.0
Butylbenzene	Ave	0.9436	0.9615		2.04	2.00	1.9	30.0
Indene	Ave	0.8874	0.9561		2.15	2.00	7.7	50.0
Undecane	Ave	0.4497	0.3925		1.75	2.00	-12.7	30.0
1,2-Dimethyl-4-Ethylbenzene	Ave	1.178	1.337		2.27	2.00	13.5	50.0
1,2,4,5-Tetramethylbenzene	Ave	1.181	1.353		2.29	2.00	14.5	50.0
1,2,3,5-Tetramethylbenzene	Ave	0.7414	0.8469		2.28	2.00	14.2	50.0
1,2,3,4-Tetramethylbenzene	Ave	0.9372	1.086		2.32	2.00	15.9	50.0
Dodecane	Ave	0.4301	0.3514		1.63	2.00	-18.3	30.0
1,2,4-Trichlorobenzene	Ave	0.5569	0.5217		1.87	2.00	-6.3	30.0
Naphthalene	Ave	0.6808	0.8186		2.40	2.00	20.2	30.0
Benzo(b)thiophene	Ave	0.5604	0.6367		2.27	2.00	13.6	50.0
Hexachlorobutadiene	Ave	0.2939	0.2931		1.99	2.00	-0.3	30.0
1,2,3-Trichlorobenzene	Ave	0.2730	0.2813		2.06	2.00	3.1	30.0
2-Methylnaphthalene	Ave	0.0793	0.0796		12.5	12.5	0.4	50.0
1-Methylnaphthalene	Ave	0.0715	0.0632		11.1	12.5	-11.6	50.0
4-Bromofluorobenzene (Surr)	Ave	0.6940	0.7269		4.19	4.00	4.7	30.0

FORM IV
AIR - GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
SDG No.: _____
Lab File ID: MB200mL.D Lab Sample ID: MB 140-301/3
Matrix: Air Heated Purge: (Y/N) N
Instrument ID: MG Date Analyzed: 10/16/2013 16:03
GC Column: RTX-5 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 140-301/1002	GCCVJ16-LCS .d	10/16/2013 13:35
C-MID GAC	140-278-5	GJ16P109.D	10/17/2013 00:25

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 140-301/3

Matrix: Air Lab File ID: MB200mL.D

Analysis Method: TO-15 Date Collected: _____

Sample wt/vol: 200 (mL) Date Analyzed: 10/16/2013 16:03

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 301 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		0.20	
100-44-7	Benzyl chloride	126.58	ND		0.40	
74-83-9	Bromomethane	94.94	ND		0.20	
56-23-5	Carbon tetrachloride	153.81	ND		0.20	
108-90-7	Chlorobenzene	112.56	ND		0.20	
75-00-3	Chloroethane	64.52	ND		0.20	
67-66-3	Chloroform	119.38	ND		0.20	
74-87-3	Chloromethane	50.49	ND		0.50	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.20	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.20	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.20	
75-71-8	Dichlorodifluoromethane	120.91	ND		0.20	
75-34-3	1,1-Dichloroethane	98.96	ND		0.20	
107-06-2	1,2-Dichloroethane	98.96	ND		0.20	
75-35-4	1,1-Dichloroethene	96.94	ND		0.20	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.20	
78-87-5	1,2-Dichloropropane	112.99	ND		0.20	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.20	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.20	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		0.20	
100-41-4	Ethylbenzene	106.17	ND		0.20	
75-69-4	Trichlorofluoromethane	137.37	ND		0.20	
87-68-3	Hexachlorobutadiene	260.76	ND		1.0	
75-09-2	Methylene Chloride	84.93	ND		0.50	
100-42-5	Styrene	104.15	ND		0.20	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.20	
127-18-4	Tetrachloroethene	165.83	ND		0.20	
108-88-3	Toluene	92.14	ND		0.20	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		1.0	
71-55-6	1,1,1-Trichloroethane	133.41	ND		0.20	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.20	
79-01-6	Trichloroethene	131.39	ND		0.20	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 140-301/3
 Matrix: Air Lab File ID: MB200mL.D
 Analysis Method: TO-15 Date Collected: _____
 Sample wt/vol: 200 (mL) Date Analyzed: 10/16/2013 16:03
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 301 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.20	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.20	
75-01-4	Vinyl chloride	62.50	ND		0.20	
95-47-6	o-Xylene	106.17	ND		0.20	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.20	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		0.20	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	100		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 140-301/3

Matrix: Air Lab File ID: MB200mL.D

Analysis Method: TO-15 Date Collected: _____

Sample wt/vol: 200 (mL) Date Analyzed: 10/16/2013 16:03

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 301 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		0.64	
100-44-7	Benzyl chloride	126.58	ND		2.1	
74-83-9	Bromomethane	94.94	ND		0.78	
56-23-5	Carbon tetrachloride	153.81	ND		1.3	
108-90-7	Chlorobenzene	112.56	ND		0.92	
75-00-3	Chloroethane	64.52	ND		0.53	
67-66-3	Chloroform	119.38	ND		0.98	
74-87-3	Chloromethane	50.49	ND		1.0	
95-50-1	1,2-Dichlorobenzene	147.00	ND		1.2	
541-73-1	1,3-Dichlorobenzene	147.00	ND		1.2	
106-46-7	1,4-Dichlorobenzene	147.00	ND		1.2	
75-71-8	Dichlorodifluoromethane	120.91	ND		0.99	
75-34-3	1,1-Dichloroethane	98.96	ND		0.81	
107-06-2	1,2-Dichloroethane	98.96	ND		0.81	
75-35-4	1,1-Dichloroethene	96.94	ND		0.79	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.79	
78-87-5	1,2-Dichloropropane	112.99	ND		0.92	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.91	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.91	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		1.4	
100-41-4	Ethylbenzene	106.17	ND		0.87	
75-69-4	Trichlorofluoromethane	137.37	ND		1.1	
87-68-3	Hexachlorobutadiene	260.76	ND		11	
75-09-2	Methylene Chloride	84.93	ND		1.7	
100-42-5	Styrene	104.15	ND		0.85	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		1.4	
127-18-4	Tetrachloroethene	165.83	ND		1.4	
108-88-3	Toluene	92.14	ND		0.75	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		7.4	
71-55-6	1,1,1-Trichloroethane	133.41	ND		1.1	
79-00-5	1,1,2-Trichloroethane	133.41	ND		1.1	
79-01-6	Trichloroethene	131.39	ND		1.1	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		1.5	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 140-301/3
 Matrix: Air Lab File ID: MB200mL.D
 Analysis Method: TO-15 Date Collected: _____
 Sample wt/vol: 200(mL) Date Analyzed: 10/16/2013 16:03
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 301 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.98	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.98	
75-01-4	Vinyl chloride	62.50	ND		0.51	
95-47-6	o-Xylene	106.17	ND		0.87	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.87	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		1.5	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	100		60-140

FORM II
AIR - GC/MS VOA SURROGATE RECOVERY

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

SDG No.: _____

Matrix: Air

Level: Low

GC Column (1): RTX-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	BFB #
A-INFLUENT	140-278-1	101
A-MID GAC	140-278-2	98
A-EFFLUENT	140-278-3	99
C-INFLUENT	140-278-4	98
C-MID GAC	140-278-5	100
C-EFFLUENT	140-278-6	99
	MB 140-299/3	98
	MB 140-301/3	100
	LCS 140-299/1002	99
	LCS 140-301/1002	105

BFB = 4-Bromofluorobenzene (Surr)

QC LIMITS
60-140

Column to be used to flag recovery values

FORM II TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
SDG No.: _____
Matrix: Air Level: Low Lab File ID: GCCVJ15-LCS.d
Lab ID: LCS 140-299/1002 Client ID: _____

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Benzene	2.00	2.15	107	70-130	
Benzyl chloride	2.00	2.46	123	70-130	
Bromomethane	2.00	1.52	76	70-130	
Carbon tetrachloride	2.00	1.87	94	70-130	
Chlorobenzene	2.00	2.05	103	70-130	
Chloroethane	2.00	1.43	72	70-130	
Chloroform	2.00	1.98	99	70-130	
Chloromethane	2.00	1.38	69	60-140	
1,2-Dichlorobenzene	2.00	2.03	101	70-130	
1,3-Dichlorobenzene	2.00	1.99	99	70-130	
1,4-Dichlorobenzene	2.00	2.03	101	70-130	
Dichlorodifluoromethane	2.00	1.92	96	60-140	
1,1-Dichloroethane	2.00	2.22	111	70-130	
1,2-Dichloroethane	2.00	1.88	94	70-130	
1,1-Dichloroethene	2.00	2.01	100	70-130	
cis-1,2-Dichloroethene	2.00	2.16	108	70-130	
1,2-Dichloropropane	2.00	2.29	115	70-130	
cis-1,3-Dichloropropene	2.00	2.22	111	70-130	
trans-1,3-Dichloropropene	2.00	2.27	114	70-130	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	1.37	69	60-140	
Ethylbenzene	2.00	2.34	117	70-130	
Trichlorofluoromethane	2.00	1.78	89	60-140	
Hexachlorobutadiene	2.00	1.77	89	60-140	
Methylene Chloride	2.00	2.06	103	70-130	
Styrene	2.00	2.48	124	70-130	
1,1,2,2-Tetrachloroethane	2.00	2.39	119	70-130	
Tetrachloroethene	2.00	1.90	95	70-130	
Toluene	2.00	2.22	111	70-130	
1,2,4-Trichlorobenzene	2.00	1.71	85	60-140	
1,1,1-Trichloroethane	2.00	1.91	96	70-130	
1,1,2-Trichloroethane	2.00	2.21	110	70-130	
Trichloroethene	2.00	1.76	88	70-130	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	1.95	98	70-130	
1,2,4-Trimethylbenzene	2.00	2.35	118	70-130	
1,3,5-Trimethylbenzene	2.00	2.37	118	70-130	
Vinyl chloride	2.00	1.48	74	70-130	
o-Xylene	2.00	2.35	118	70-130	
m-Xylene & p-Xylene	4.00	4.68	117	70-130	
1,2-Dibromoethane (EDB)	2.00	2.08	104	70-130	

Column to be used to flag recovery and RPD values

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Matrix: Air Level: Low Lab File ID: GCCVJ16-LCS.d
 Lab ID: LCS 140-301/1002 Client ID: _____

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Benzene	2.00	1.75	87	70-130	
Benzyl chloride	2.00	2.23	111	70-130	
Bromomethane	2.00	2.48	124	70-130	
Carbon tetrachloride	2.00	2.52	126	70-130	
Chlorobenzene	2.00	1.98	99	70-130	
Chloroethane	2.00	2.33	117	70-130	
Chloroform	2.00	2.01	101	70-130	
Chloromethane	2.00	2.41	120	60-140	
1,2-Dichlorobenzene	2.00	2.11	105	70-130	
1,3-Dichlorobenzene	2.00	2.14	107	70-130	
1,4-Dichlorobenzene	2.00	2.18	109	70-130	
Dichlorodifluoromethane	2.00	2.42	121	60-140	
1,1-Dichloroethane	2.00	1.80	90	70-130	
1,2-Dichloroethane	2.00	2.02	101	70-130	
1,1-Dichloroethene	2.00	2.10	105	70-130	
cis-1,2-Dichloroethene	2.00	1.99	99	70-130	
1,2-Dichloropropane	2.00	1.62	81	70-130	
cis-1,3-Dichloropropene	2.00	1.93	96	70-130	
trans-1,3-Dichloropropene	2.00	1.87	94	70-130	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	2.40	120	60-140	
Ethylbenzene	2.00	1.69	84	70-130	
Trichlorofluoromethane	2.00	2.45	122	60-140	
Hexachlorobutadiene	2.00	1.99	100	60-140	
Methylene Chloride	2.00	1.88	94	70-130	
Styrene	2.00	1.88	94	70-130	
1,1,2,2-Tetrachloroethane	2.00	1.76	88	70-130	
Tetrachloroethene	2.00	2.19	110	70-130	
Toluene	2.00	1.70	85	70-130	
1,2,4-Trichlorobenzene	2.00	1.87	94	60-140	
1,1,1-Trichloroethane	2.00	2.16	108	70-130	
1,1,2-Trichloroethane	2.00	1.71	85	70-130	
Trichloroethene	2.00	2.30	115	70-130	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.09	105	70-130	
1,2,4-Trimethylbenzene	2.00	2.03	101	70-130	
1,3,5-Trimethylbenzene	2.00	1.98	99	70-130	
Vinyl chloride	2.00	2.50	125	70-130	
o-Xylene	2.00	1.72	86	70-130	
m-Xylene & p-Xylene	4.00	3.49	87	70-130	
1,2-Dibromoethane (EDB)	2.00	1.96	98	70-130	

Column to be used to flag recovery and RPD values

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Sample No.: ICIS 140-249/7 Date Analyzed: 09/25/2013 14:34
 Instrument ID: MG GC Column: RTX-5 ID: 0.32 (mm)
 Lab File ID (Standard): GICI256.D Heated Purge: (Y/N) N
 Calibration ID: 78

	CBM		DFB		CBZ	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	415229	9.67	1756224	11.81	1693892	16.44
UPPER LIMIT	581321	10.00	2458714	12.14	2371449	16.77
LOWER LIMIT	249137	9.34	1053734	11.48	1016335	16.11
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICV 140-249/13	513114	9.67	2370537	11.81	2181773	16.44

CBM = Chlorobromomethane (IS)
 DFB = 1,4-Difluorobenzene
 CBZ = Chlorobenzene-d5 (IS)

Area Limit = 60%-140% of internal standard area
 RT Limit = \pm 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Sample No.: CCVIS 140-299/2 Date Analyzed: 10/15/2013 14:30
 Instrument ID: MG GC Column: RTX-5 ID: 0.32 (mm)
 Lab File ID (Standard): GCCVJ15.D Heated Purge: (Y/N) N
 Calibration ID: 78

		CBM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		472006	9.67	2134375	11.80	1900827	16.43
UPPER LIMIT		660808	10.00	2988125	12.13	2661158	16.76
LOWER LIMIT		283204	9.34	1280625	11.47	1140496	16.10
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 140-299/1002		472006	9.67	2134375	11.80	1900827	16.43
MB 140-299/3		422807	9.66	1757919	11.80	1604848	16.43
140-278-1	A-INFLUENT	363481	9.67	1394782	11.81	1400088	16.43
140-278-2	A-MID GAC	452550	9.67	2077885	11.80	1874785	16.43
140-278-3	A-EFFLUENT	331870	9.67	1368744	11.81	1365361	16.43
140-278-4	C-INFLUENT	394754	9.68	1648992	11.81	1521757	16.43
140-278-6	C-EFFLUENT	365768	9.66	1519537	11.80	1391040	16.43

CBM = Chlorobromomethane (IS)

DFB = 1,4-Difluorobenzene

CBZ = Chlorobenzene-d5 (IS)

Area Limit = 60%-140% of internal standard area

RT Limit = \pm 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
 SDG No.: _____
 Sample No.: CCVIS 140-301/2 Date Analyzed: 10/16/2013 13:35
 Instrument ID: MG GC Column: RTX-5 ID: 0.32 (mm)
 Lab File ID (Standard): GCCVJ16.D Heated Purge: (Y/N) N
 Calibration ID: 78

		CBM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		246715	9.67	983785	11.80	943446	16.43
UPPER LIMIT		345401	10.00	1377299	12.13	1320824	16.76
LOWER LIMIT		148029	9.34	590271	11.47	566068	16.10
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 140-301/1002		246715	9.67	983785	11.80	943446	16.43
MB 140-301/3		274519	9.68	1121269	11.81	1042848	16.43
140-278-5	C-MID GAC	290615	9.66	1205712	11.80	1130401	16.42

CBM = Chlorobromomethane (IS)
 DFB = 1,4-Difluorobenzene
 CBZ = Chlorobenzene-d5 (IS)

Area Limit = 60%-140% of internal standard area
 RT Limit = \pm 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-278-1
SDG No.: _____
Client Sample ID: A-INFLUENT Lab Sample ID: 140-278-1
Matrix: Air Lab File ID: GI15P101.D
Analysis Method: TO-15 Date Collected: 10/10/2013 14:45
Sample wt/vol: 20 (mL) Date Analyzed: 10/15/2013 18:46
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 299 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	39		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	190		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	220		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	16		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	15		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	810		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	1400		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

TestAmerica Knoxville
Target Compound Quantitation Report*Sample Calculation*

Data File: \\KNXCHROM\ChromData\MG\20131015-133.b\GI15P101.D
 Lims ID: 140-278-A-1 Lab Sample ID:
 Client ID: A-INFLUENT
 Sample Type: Client
 Inject. Date: 15-Oct-2013 18:46:30 ALS Bottle#: 1 Worklist Smp#: 4
 Purge Vol: 500.000 mL Dil. Factor: 1.0000
 Sample Info: 140-278-a-1
 Misc. Info.: G101513,TO15,1-all.sub,,,140-0000133-004
 Operator ID: 403648 Instrument ID: MG
 Method: \\KNXCHROM\ChromData\MG\20131015-133.b\MG_TO15.m
 Limit Group: MSA TO14A_15 Routine ICAL
 Last Update: 16-Oct-2013 16:10:14 Calib Date: 26-Sep-2013 08:28:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\KNXCHROM\ChromData\MG\20131001-110.b\GIC1258R.D
 Column 1: RTX-5 (0.32 mm) Detector: MS SCAN
 Process Host: XAWRK036

First Level Reviewer: barlozhetskayaa

Date: 16-Oct-2013 16:10:14

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	On-Col Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	9.673	9.668	0.005	69	363481	4.00	
* 2 1,4-Difluorobenzene	114	11.808	11.803	0.005	92	1394782	4.00	
* 3 Chlorobenzene-d5 (IS)	117	16.430	16.430	0.0	83	1400088	4.00	
\$ 4 4-Bromofluorobenzene (Surr)	95	18.031	18.031	0.0	96	981457	4.04	
20 Trichlorofluoromethane	101	5.807	5.785	0.022	93	41229	0.1136	
27 1,1-Dichloroethene	96	6.589	6.573	0.016	96	160893	1.96	
31 Methylene Chloride	84	6.977	6.966	0.011	67	4711	0.0710	
37 1,1-Dichloroethane	63	8.293	8.282	0.011	97	48207	0.3891	
41 cis-1,2-Dichloroethene	96	9.323	9.317	0.006	86	190136	2.24	
43 Chloroform	83	9.689	9.673	0.016	16	3229	0.0167	
45 1,1,1-Trichloroethane	97	10.714	10.709	0.006	93	1450600	5.92	
56 Trichloroethene	130	12.499	12.493	0.006	94	1634243	10.7	
65 Toluene	91	14.494	14.489	0.005	92	42669	0.1582	

$$\frac{1634243}{1394782} * \frac{4 \text{ ppbv}}{0.4379} * \frac{500 \text{ mL}}{20 \text{ mL}} = 267.6 \text{ ppbv}$$

$$267.6 \text{ ppbv} * \frac{131.4 \text{ g/mole}}{29.45 \text{ g/mole}} = 1438.0 \text{ ug/m}^3$$

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Sample Calculations

Lab Name: TestAmerica Knoxville

Job No.: 140-278-1

Analy Batch No.: 249

SDG No.:

Instrument ID: MG

GC Column: RTX-5

ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 09/25/2013 10:26

Calibration End Date: 09/26/2013 08:28

Calibration ID: 78

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
Hexane	0.8718 0.4908	0.7611 0.5089	0.5261 0.5287	0.5398 0.4404	0.5228 0.4404	Ave		0.5767				25.0		30.0			
C6 Range	1.8730 1.0244	1.7503 1.0461	1.7503 1.0461	1.1562 0.8512	1.0951 0.8512	Ave		1.2338				28.0		30.0			
2-Butanone (MEK)	0.3324 0.2893	0.4378 0.3113	0.2501 0.2911	0.2687 0.2823	0.2545 0.2823	Ave		0.3019				19.0		30.0			
cis-1,2-Dichloroethene	0.9326 0.9127	0.8950 0.9875	0.9298 0.9795	0.9691 0.8599	0.9569 0.8599	Ave		0.9359				4.5		30.0			
Ethyl acetate	0.9510 0.8926	1.0720 1.0764	0.8283 0.9683	0.6866 0.9601	0.7330 0.9601	Ave		0.9076				15.0		30.0			
Chloroform	2.3826 2.0081	2.2608 2.1180	2.2547 2.0357	2.2303 1.7959	2.0686 1.7959	Ave		2.1283				8.2		30.0			
Tetrahydrofuran	0.5113 0.4770	0.4911 0.5307	0.3701 0.5243	0.3565 0.4595	0.3738 0.4595	Ave		0.4549				15.0		30.0			
1,1,1-Trichloroethane	2.9158 2.6031	2.8274 2.7648	2.8000 2.5533	2.7918 2.3212	2.6943 2.3212	Ave		2.6968				6.7		30.0			
1,2-Dichloroethane	0.3491 0.3037	0.3543 0.3225	0.3333 0.3020	0.3451 0.2679	0.3073 0.2679	Ave		0.3206				8.7		30.0			
Cyclohexane	0.0902 0.0874	0.0822 0.0924	0.1006 0.0865	0.0916 0.0727	0.0901 0.0727	Ave		0.0882				8.7		30.0			
Benzene	0.6033 0.5093	0.5907 0.5429	0.5145 0.5176	0.5614 0.4389	0.5138 0.4389	Ave		0.5325				9.3		30.0			
Carbon tetrachloride	0.3609 0.4892	0.3687 0.3468	0.8156 0.4945	0.5728 0.2476	0.5042 0.2476	Ave		0.4667				35.0	*	30.0			
1-Butanol	0.0343 0.0305	0.0448 0.0314	0.0326 0.0326	0.0325 0.0245	0.0279 0.0245	Ave		0.0323				17.0		30.0			
2,3-Dimethylpentane	0.1061 0.1111	0.1034 0.1215	0.1187 0.1166	0.1245 0.0972	0.1170 0.0972	Ave		0.1129				8.1		40.0			
Thiophene	0.3605 0.3532	0.3544 0.3831	0.3602 0.3687	0.3840 0.3157	0.3604 0.3157	Ave		0.3600				5.6		40.0			
2,2,4-Trimethylpentane	0.7294 0.6996	0.7181 0.7377	0.7654 0.7170	0.7754 0.5916	0.7092 0.5916	Ave		0.7159				7.4		30.0			
Heptane	0.1701 0.1913	0.1722 0.2028	0.1988 0.1955	0.2016 0.1648	0.1904 0.1648	Ave		0.1875				7.8		30.0			
1,2-Dichloropropane	0.1678 0.1591	0.1747 0.1670	0.1593 0.1609	0.1715 0.1354	0.1482 0.1354	Ave		0.1604				7.7		30.0			
Trichloroethene	0.4536 0.4201	0.4120 0.4460	0.5069 0.4038	0.5021 0.3557	0.4411 0.3557	Ave		0.4379				11.0		30.0			
Dibromomethane	0.3219 0.2909	0.3149 0.3081	0.3396 0.2866	0.3217 0.2533	0.2981 0.2533	Ave		0.3039				8.3		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.



Tetra Tech

INTERNAL CORRESPONDENCE

TO: P. RICH **DATE:** DECEMBER 4, 2013

FROM: A. COGNETTI **COPIES:** DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC
LOCKHEED MARTIN CORPORATION (LMC) – MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 140-414-1

SAMPLES: 6/Air/VOC

A-EFFLUENT
C-EFFLUENT

A-INFLUENT
C-INFLUENT

A-MID GAC
C-MID GAC

Overview

The sample set for LMC – Middle River, SDG 140-414-1 consisted of six (6) air samples. All samples were analyzed for volatile organic compounds (VOC). No field duplicate pair is included in this SDG.

The samples were collected by Geo Trans on November 7, 2013 and analyzed by Test America Laboratories, Inc. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

No minor noncompliances were noted.

Notes

The chain of custody indicated that no gauges were provided with the summa canisters. This means that the canister pressure before and after sampling could not be evaluated. No validation action was taken.

Nondetected results were reported to the reporting limit.

Executive Summary

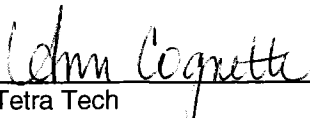
Laboratory Performance: None.


Other Factors Affecting Data Quality: None.

TO: P. Rich
FROM: A. Cagnetti
SDG: 140-414-1
DATE: December 4, 2013

PAGE 2

The data for these analyses were reviewed with reference to Region III modifications to U.S. EPA National Functional Guidelines for Organic Data Validation (Sept. 1994) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cagnetti
Chemist/Data Validator


Tetra Tech
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

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

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03265 SDG: 140-414-1 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	A-EFFLUENT-140-414-1	A-INFLUENT-140-414-1	A-MID GAC-140-414-1	C-EFFLUENT-140-414-1						
	LAB_ID	140-414-3	140-414-1	140-414-2	140-414-6						
	SAMP_DATE	11/7/2013	11/7/2013	11/7/2013	11/7/2013						
	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		
1,1,1-TRICHLOROETHANE	11 U			930			38			11 U	
1,1,2,2-TETRACHLOROETHANE	14 U			14 U			14 U			14 U	
1,1,2-TRICHLOROETHANE	11 U			11 U			11 U			11 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	15 U			15 U			15 U			15 U	
1,1-DICHLOROETHANE	8.1 U			39			48			8.1 U	
1,1-DICHLOROETHENE	7.9 U			170			95			7.9 U	
1,2,4-TRICHLOROETHANE	74 U			74 U			74 U			74 U	
1,2,4-TRIMETHYLBENZENE	9.8 U			9.8 U			9.8 U			9.8 U	
1,2-DIBROMOETHANE	15 U			15 U			15 U			15 U	
1,2-DICHLOROETHENE	12 U			12 U			12 U			12 U	
1,2-DICHLOROETHANE	8.1 U			8.1 U			8.1 U			8.1 U	
1,2-DICHLOROPROPANE	9.2 U			9.2 U			9.2 U			9.2 U	
1,2-DICHLOROTETRAFLUROETHANE	14 U			14 U			14 U			14 U	
1,3,5-TRIMETHYLBENZENE	9.8 U			9.8 U			9.8 U			9.8 U	
1,3-DICHLOROETHENE	12 U			12 U			12 U			12 U	
1,4-DICHLOROETHENE	12 U			12 U			12 U			12 U	
BENZENE	6.4 U			6.4 U			38			10	
BENZYL CHLORIDE	21 U			21 U			21 U			21 U	
BROMOMETHANE	7.8 U			7.8 U			7.8 U			7.8 U	
CARBON TETRACHLORIDE	13 U			13 U			13 U			13 U	
CHLOROBENZENE	9.2 U			9.2 U			9.2 U			9.2 U	
CHLOROETHANE	5.3 U			5.3 U			5.3 U			5.3 U	
CHLOROFORM	9.8 U			9.8 U			9.8 U			9.8 U	
CHLOROMETHANE	10 U			10 U			10 U			10 U	
CIS-1,2-DICHLOROETHENE	7.9 U			200			260			7.9 U	
CIS-1,3-DICHLOROPROPENE	9.1 U			9.1 U			9.1 U			9.1 U	
DICHLORODIFLUOROMETHANE	9.9 U			9.9 U			9.9 U			9.9 U	
ETHYLBENZENE	8.7 U			8.7 U			8.7 U			8.7 U	
HEXACHLOROBUTADIENE	110 U			110 U			110 U			110 U	
M+P-XYLENES	8.7 U			8.7 U			8.7 U			8.7 U	
METHYLENE CHLORIDE	17 U			17 U			17 U			20	
O-XYLENE	8.7 U			8.7 U			8.7 U			8.7 U	
STYRENE	8.5 U			8.5 U			8.5 U			8.5 U	
TETRACHLOROETHENE	14 U			14 U			14 U			14 U	
TOLUENE	7.5 U			11			7.5 U			7.5 U	

PROJ_NO: 03265 SDG: 140-414-1 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	C-INFLUENT-140-414-1			C-MID GAC-140-414-1		
	LAB_ID	140-414-4			140-414-5		
	SAMP_DATE	11/7/2013			11/7/2013		
	QC_TYPE	NM			NM		
	UNITS	UG/M3			UG/M3		
	PCT_SOLIDS						
DUP_OF							
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		11 U			11 U		
1,1,2,2-TETRACHLOROETHANE		14 U			14 U		
1,1,2-TRICHLOROETHANE		11 U			11 U		
1,1,2-TRICHLOROTRIFLUOROETHANE		15 U			15 U		
1,1-DICHLOROETHANE		8.1 U			8.1 U		
1,1-DICHLOROETHENE		7.9 U			7.9 U		
1,2,4-TRICHLOROBENZENE		74 U			74 U		
1,2,4-TRIMETHYLBENZENE		9.8 U			11		
1,2-DIBROMOETHANE		15 U			15 U		
1,2-DICHLOROBENZENE		12 U			12 U		
1,2-DICHLOROETHANE		8.1 U			8.1 U		
1,2-DICHLOROPROPANE		9.2 U			9.2 U		
1,2-DICHLOROTETRAFLUOROETHANE		14 U			14 U		
1,3,5-TRIMETHYLBENZENE		9.8 U			9.8 U		
1,3-DICHLOROBENZENE		12 U			12 U		
1,4-DICHLOROBENZENE		12 U			12 U		
BENZENE		13			11		
BENZYL CHLORIDE		21 U			21 U		
BROMOMETHANE		7.8 U			7.8 U		
CARBON TETRACHLORIDE		13 U			13 U		
CHLOROBENZENE		9.2 U			9.2 U		
CHLOROETHANE		5.3 U			5.3 U		
CHLOROFORM		9.8 U			9.8 U		
CHLOROMETHANE		10 U			10 U		
CIS-1,2-DICHLOROETHENE		18			9.3		
CIS-1,3-DICHLOROPROPENE		9.1 U			9.1 U		
DICHLORODIFLUOROMETHANE		9.9 U			9.9 U		
ETHYLBENZENE		9.8			8.7 U		
HEXACHLOROBUTADIENE		110 U			110 U		
M+P-XYLENES		45			8.7 U		
METHYLENE CHLORIDE		17 U			17 U		
O-XYLENE		24			8.7 U		
STYRENE		8.5 U			8.5 U		
TETRACHLOROETHENE		14 U			14 U		
TOLUENE		7.5 U			7.5 U		

PROJ_NO: 03265 SDG: 140-414-1 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	A-EFFLUENT-140-414-1			A-INFLUENT-140-414-1			A-MID GAC-140-414-1			C-EFFLUENT-140-414-1		
	LAB_ID	140-414-3			140-414-1			140-414-2			140-414-6		
	SAMP_DATE	11/7/2013			11/7/2013			11/7/2013			11/7/2013		
	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
TRANS-1,3-DICHLOROPROPENE			9.1 U			9.1 U			9.1 U			9.1 U	
TRICHLOROETHENE			11 U			1500			39			11 U	
TRICHLOROFLUOROMETHANE			11 U			41			11 U			11 U	
VINYL CHLORIDE			5.1 U			5.1 U			5.1 U			5.1 U	

PROJ_NO: 03265	NSAMPLE	C-INFLUENT-140-414-1	C-MID GAC-140-414-1
SDG: 140-414-1	LAB_ID	140-414-4	140-414-5
FRACTION: OV-M3	SAMP_DATE	11/7/2013	11/7/2013
MEDIA: AIR	QC_TYPE	NM	NM
	UNITS	UG/M3	UG/M3
	PCT SOLIDS		
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
TRANS-1,3-DICHLOROPROPENE	9.1	U	9.1
TRICHLOROETHENE	280		11
TRICHLOROFLUOROMETHANE	11	U	11
VINYL CHLORIDE	5.1	U	5.1

Appendix B

Results as Reported by the Laboratory

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1

SDG No.: _____

Client Sample ID: A-EFFLUENT Lab Sample ID: 140-414-3

Matrix: Air Lab File ID: RK08Pos09.D

Analysis Method: TO-15 Date Collected: 11/07/2013 10:08

Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 02:53

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	ND		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	ND		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	ND		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: A-EFFLUENT Lab Sample ID: 140-414-3
 Matrix: Air Lab File ID: RK08Pos09.D
 Analysis Method: TO-15 Date Collected: 11/07/2013 10:08
 Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 02:53
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	96		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1

SDG No.: _____

Client Sample ID: A-INFLUENT Lab Sample ID: 140-414-1

Matrix: Air Lab File ID: RK08Pos13.D

Analysis Method: TO-15 Date Collected: 11/07/2013 10:06

Sample wt/vol: 20(mL) Date Analyzed: 11/09/2013 06:02

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	39		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	170		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	200		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	41		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	11		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	930		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	1500		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: A-INFLUENT Lab Sample ID: 140-414-1
 Matrix: Air Lab File ID: RK08Pos13.D
 Analysis Method: TO-15 Date Collected: 11/07/2013 10:06
 Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 06:02
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	99		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1

SDG No.: _____

Client Sample ID: A-MID GAC Lab Sample ID: 140-414-2

Matrix: Air Lab File ID: RK08Pos11.D

Analysis Method: TO-15 Date Collected: 11/07/2013 10:07

Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 04:27

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	38		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	48		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	95		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	260		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	38		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	39		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: A-MID GAC Lab Sample ID: 140-414-2
 Matrix: Air Lab File ID: RK08Pos11.D
 Analysis Method: TO-15 Date Collected: 11/07/2013 10:07
 Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 04:27
 Soil Aliquot Vol.: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	98		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: C-EFFLUENT Lab Sample ID: 140-414-6
 Matrix: Air Lab File ID: RK08Pos10.D
 Analysis Method: TO-15 Date Collected: 11/07/2013 09:35
 Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 03:40
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	10		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	ND		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	ND		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	20		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	ND		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: C-EFFLUENT Lab Sample ID: 140-414-6
 Matrix: Air Lab File ID: RK08Pos10.D
 Analysis Method: TO-15 Date Collected: 11/07/2013 09:35
 Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 03:40
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	97		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1

SDG No.: _____

Client Sample ID: C-INFLUENT Lab Sample ID: 140-414-4

Matrix: Air Lab File ID: RK08Pos14.D

Analysis Method: TO-15 Date Collected: 11/07/2013 09:33

Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 06:51

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	13		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	ND		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	ND		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	18		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	9.8		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	280		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: C-INFLUENT Lab Sample ID: 140-414-4
 Matrix: Air Lab File ID: RK08Pos14.D
 Analysis Method: TO-15 Date Collected: 11/07/2013 09:33
 Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 06:51
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	24		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	45		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	99		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1

SDG No.: _____

Client Sample ID: C-MID GAC Lab Sample ID: 140-414-5

Matrix: Air Lab File ID: RK08Pos12.D

Analysis Method: TO-15 Date Collected: 11/07/2013 09:34

Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 05:15

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	11		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	ND		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	ND		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	9.3		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	ND		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	ND		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	ND		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	ND		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: C-MID GAC Lab Sample ID: 140-414-5
 Matrix: Air Lab File ID: RK08Pos12.D
 Analysis Method: TO-15 Date Collected: 11/07/2013 09:34
 Sample wt/vol: 20 (mL) Date Analyzed: 11/09/2013 05:15
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	11		9.8	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		9.8	
75-01-4	Vinyl chloride	62.50	ND		5.1	
95-47-6	o-Xylene	106.17	ND		8.7	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		8.7	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		15	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	99		60-140

Appendix C

Support Documentation

TestAmerica Knoxville
5815 Middlebrook Pike

Knoxville, TN 37921
phone 865.291.3000 fax 865.584.4315

Canister Samples Chain of Custody Record

TestAmerica Laboratories, Inc. assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact Information				Project Manager: Peter Rich				Samples Collected By: Dawn Monaco										COC No: 1 of 1 COCs						
Company Name: Tetra Tech				Phone: 410-990-4607																				
Address: 51 Franklin Street Suite 400				Email: peter.rich@tetratech.com																				
City/State/Zip: Annapolis, MD 21403																								
Phone: 410-990-4607																								
FAX: 410-990-4749																								
Project Name: SSD O&M																								
Site/Location: LMC MRC																								
P O #: 117-0507532.02																								
Sample Identification				Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, 'Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15 (Med / Std / Low / SIM)	MA-APH	EPA 30	EPA 25C / 25.3	ASTM D-1946 / 1945 / 3588	EPA 15/16	TO-3	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
A-INFLUENT	✓	11/7/13	1006	N/A	N/A	N/A	N/A	N/A	N/A	09591	X													
A-MID GAC	✓	11/7/13	1007	N/A	N/A	N/A	N/A	N/A	N/A	09579	X													
A-EFFLUENT	✓	11/7/13	1008	N/A	N/A	N/A	N/A	N/A	N/A	10759	X													
C-INFLUENT	✓	11/7/13	0933	N/A	N/A	N/A	N/A	N/A	N/A	09583	X													
C-MID GAC	✓	11/7/13	0934	N/A	N/A	N/A	N/A	N/A	N/A	10756	X													
C-EFFLUENT	✓	11/7/13	0935	N/A	N/A	N/A	N/A	N/A	N/A	10782	X													
Special Instructions/QC Requirements & Comments: 1 cooler NO CUSTODY SEAL RECEIVED @ AMBIENT Temp R.H. 11/8/13 6 CANS, NO FLOWS 1 cooler Fed Ex 803368732147																								
Samples Shipped by: [Signature]				Date / Time: 11/7/13 @ 1200				Samples Received by: [Signature]				Date / Time: 11/8/13 10:00												
Samples Relinquished by:				Date / Time:				Received by:				Date / Time:												
Relinquished by:				Date / Time:				Received by:				Date / Time:												
Lab Use Only:				Shipped Name:				Opened by:				Condition:												

Job Narrative
140-414-1

Receipt

The samples were received on 11/8/2013 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

Air - GC/MS VOA

Method(s) TO-15: EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

No other analytical or quality issues were noted.

Comments

No additional comments.

Method Summary

Client: Tetra Tech GEO
Project/Site: Middle River LMC

TestAmerica Job ID: 140-414-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: Tetra Tech GEO
Project/Site: Middle River LMC

TestAmerica Job ID: 140-414-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-414-1	A-INFLUENT	Air	11/07/13 10:06	11/08/13 10:00
140-414-2	A-MID GAC	Air	11/07/13 10:07	11/08/13 10:00
140-414-3	A-EFFLUENT	Air	11/07/13 10:08	11/08/13 10:00
140-414-4	C-INFLUENT	Air	11/07/13 09:33	11/08/13 10:00
140-414-5	C-MID GAC	Air	11/07/13 09:34	11/08/13 10:00
140-414-6	C-EFFLUENT	Air	11/07/13 09:35	11/08/13 10:00

TestAmerica Knoxville - Air Canister Initial Pressure Check

[illegible]

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 140-414-1

Login Number: 414

List Source: TestAmerica Knoxville

List Number: 1

Creator: Wilson, Ken

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	N/A	CHECKED IN LAB
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

HOLDTIME

SDG 140-414-1

SORT	UNITS	NSAMPLE	LAB ID	QC TYPE	SAMP DATE	EXTR DATE	ANAL DATE	SMP EXTR	EXTR ANL	SMP ANL
OV	PPB V/ V	C-MID GAC	140-414-5	NM	11/07/2013	11/09/2013	11/09/2013	2.2187E	0	2.2187E
OV	PPB V/ V	C-INFLUENT	140-414-4	NM	11/07/2013	11/09/2013	11/09/2013	41666E	0	41666E
OV	PPB V/ V	C-EFFLUENT	140-414-6	NM	11/07/2013	11/09/2013	11/09/2013	777777	0	777777
OV	PPB V/ V	A-MID GAC	140-414-2	NM	11/07/2013	11/09/2013	11/09/2013	41666E	0	41666E
OV	PPB V/ V	A-INFLUENT	140-414-1	NM	11/07/2013	11/09/2013	11/09/2013	38888E	0	38888E
OV	PPB V/ V	A-EFFLUENT	140-414-3	NM	11/07/2013	11/09/2013	11/09/2013	13888E	0	13888E
OV	UGM3	C-MID GAC	140-414-5	NM	11/07/2013	11/09/2013	11/09/2013	2.2187E	0	2.2187E
OV	UGM3	C-INFLUENT	140-414-4	NM	11/07/2013	11/09/2013	11/09/2013	41666E	0	41666E
OV	UGM3	C-EFFLUENT	140-414-6	NM	11/07/2013	11/09/2013	11/09/2013	777777	0	777777
OV	UGM3	A-MID GAC	140-414-2	NM	11/07/2013	11/09/2013	11/09/2013	41666E	0	41666E
OV	UGM3	A-INFLUENT	140-414-1	NM	11/07/2013	11/09/2013	11/09/2013	38888E	0	38888E
OV	UGM3	A-EFFLUENT	140-414-3	NM	11/07/2013	11/09/2013	11/09/2013	13888E	0	13888E

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
SDG No.: _____
Lab File ID: RBFBJ17.D BFB Injection Date: 10/17/2013
Instrument ID: MR BFB Injection Time: 17:01
Analysis Batch No.: 305

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	20.6
75	30.0 - 60.0 % of mass 95	47.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.9
173	Less than 2.0 % of mass 174	0.5 (0.5) 1
174	50.0 - 120.00 % of mass 95	90.6
175	5.0 - 9.0 % of mass 174	6.4 (7.0) 1
176	95.0 - 101.0 % of mass 174	86.3 (95.2) 1
177	5.0 - 9.0 % of mass 176	5.7 (6.6) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 140-305/3	RJ170003.D	10/17/2013	18:16
	IC 140-305/4	RJ170003R.D	10/17/2013	19:05
	IC 140-305/5	RJ170004.D	10/17/2013	19:53
	IC 140-305/6	RJ170005.D	10/17/2013	20:41
	IC 140-305/7	RJ170006.D	10/17/2013	21:30
	IC 140-305/8	RJ170007.D	10/17/2013	22:18
	IC 140-305/9	RJ170008.D	10/17/2013	23:06
	IC 140-305/10	RJ170009.D	10/17/2013	23:54
	IC 140-305/11	RJ170010.D	10/18/2013	00:43
	ICV 140-305/15	RJ170011R.D	10/18/2013	03:54

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-414-1 Analy Batch No.: 305

SDG No.: _____

Instrument ID: MR GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16 Calibration End Date: 10/18/2013 00:43 Calibration ID: 86

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 140-305/3	RJ170003.D
Level 2	IC 140-305/4	RJ170003R.D
Level 3	IC 140-305/5	RJ170004.D
Level 4	IC 140-305/6	RJ170005.D
Level 5	IC 140-305/7	RJ170006.D
Level 6	IC 140-305/8	RJ170007.D
Level 7	IC 140-305/9	RJ170008.D
Level 8	IC 140-305/10	RJ170009.D
Level 9	IC 140-305/11	RJ170010.D

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
Chlorodifluoromethane	0.4233 0.2887	0.3982 0.2908	0.3538 0.2548	0.3523 0.2344	0.3001 0.2344		Ave		0.3218				20.0		30.0			
Dichlorodifluoromethane	3.3906 2.3600	3.3302 2.7350	2.3921 2.5916	3.1272 2.3106	2.9643 2.3106		Ave		2.8002				15.0		30.0			
Chloromethane	0.5598 0.3808	0.5217 0.3774	0.4719 0.3335	0.4704 0.2548	0.4031 0.2548		Ave		0.4193				23.0		30.0			
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.7141 2.4039	2.6992 2.4705	2.5708 2.1609	2.7020 1.8543	2.5203 1.8543		Ave		2.4551				12.0		30.0			
Acetaldehyde	++++ 0.4263	++++ 0.4337	++++ 0.3559	0.7976 0.2640	0.4897 0.2640		Ave		0.4612				40.0		40.0			
Vinyl chloride	1.4015 1.1709	1.4070 1.1420	1.3046 0.9999	1.3480 0.8496	1.2182 0.8496		Ave		1.2046				16.0		30.0			
1,3-Butadiene	1.1477 0.9332	1.1085 0.9003	1.0816 0.7983	1.0815 0.6731	0.9744 0.6731		Ave		0.9665				16.0		30.0			
Butane	++++ 1.7600	++++ 1.6784	2.7255 1.4666	2.1107 1.1941	1.8554 1.1941		Ave		1.8272				27.0		30.0			
Bromomethane	1.3285 1.1263	1.3249 1.1186	1.2188 1.0068	1.2615 0.8878	1.1464 0.8878		Ave		1.1577				13.0		30.0			
Chloroethane	0.8145 0.6366	0.7722 0.6270	0.7318 0.5612	0.7335 0.4877	0.6471 0.4877		Ave		0.6680				16.0		30.0			
Ethanol	++++ 0.4077	++++ 0.3836	0.6555 0.3252	0.5058 0.2609	0.4369 0.2609		Ave		0.4251				30.0		40.0			
Vinyl bromide	1.3461 1.1425	1.2767 1.1439	1.2099 1.0280	1.2567 0.9196	1.1627 0.9196		Ave		1.1651				11.0		30.0			
2-Methylbutane	++++ 1.4412	++++ 1.3791	2.2701 1.1850	1.7104 0.9714	1.4946 0.9714		Ave		1.4931				28.0		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-414-1 Analy Batch No.: 305

SDG No.: _____

Instrument ID: MR GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16 Calibration End Date: 10/18/2013 00:43 Calibration ID: 86

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
Trichlorofluoromethane	4.0994 3.3246	4.0459 3.4394	3.6398 3.1199	3.7029 2.9256	3.3949		Ave		3.5214				11.0		30.0			
Acrolein	++++ 0.5906	++++ 0.6463	0.9736 0.5493	0.6843 0.4649	0.6736		Ave		0.6546				24.0		30.0			
Acetonitrile	++++ 0.6520	0.7121 0.6128	0.6523 0.5747	0.6659 0.5083	0.6374		Ave		0.6269				9.9		30.0			
Acetone	++++ 0.8065	++++ 1.0282	++++ 0.8530	++++ 0.6743	0.9992		Ave		0.8722				17.0		30.0			
Pentane	0.4216 0.2743	0.3804 0.2807	0.3282 0.2561	0.2970 0.2398	0.2731		Ave		0.3057				20.0		30.0			
Isopropyl alcohol	++++ 2.5266	++++ 2.5678	3.1726 2.2183	2.7736 1.9952	2.6247		Ave		2.5541				15.0		30.0			
Ethyl ether	1.9701 1.6511	1.9246 1.6768	1.7648 1.4242	1.8365 1.2490	1.7316		Ave		1.6921				14.0		30.0			
1,1-Dichloroethene	1.3853 1.0862	1.3265 1.1283	1.1016 1.0582	1.1557 1.0355	1.0679		Ave		1.1495				11.0		30.0			
Acrylonitrile	1.4913 1.2174	1.3981 1.2426	1.2469 1.1327	1.2702 1.0938	1.2158		Ave		1.2565				9.8		30.0			
tert-Butyl alcohol	3.9125 2.8076	3.6601 2.7876	2.9732 2.5847	2.9390 2.4355	2.7127		Ave		2.9792				16.0		30.0			
1,1,2-Trichloro-1,2,2-trifluoroethane	2.5945 2.3316	2.4958 2.4366	2.3883 2.2549	2.4926 2.1919	2.3272		Ave		2.3904				5.3		30.0			
Methylene Chloride	++++ 0.9833	++++ 1.0491	1.7535 0.9448	1.1551 0.9248	1.0142		Ave		1.1178				26.0		30.0			
3-Chloropropene	1.3449 1.1020	1.2609 1.1167	1.1667 0.9854	1.1989 0.9285	1.0816		Ave		1.1317				11.0		30.0			
Carbon disulfide	3.6162 4.1540	3.7932 3.9969	3.5033 3.7608	3.4312 3.8977	3.6357		Ave		3.7543				6.3		30.0			
trans-1,2-Dichloroethene	1.8012 1.3048	1.4809 1.3787	1.3381 1.2771	1.3939 1.2667	1.3081		Ave		1.3944				12.0		30.0			
2-Methylpentane	4.4162 3.5187	4.2475 3.6406	3.8342 3.2335	3.8844 2.9295	3.6065		Ave		3.7012				13.0		40.0			
Methyl tert-butyl ether	3.7571 3.5282	3.6874 3.6648	3.5364 3.3609	3.7647 3.2522	3.5504		Ave		3.5669				4.9		30.0			
1,1-Dichloroethane	2.6559 2.3251	2.5242 2.4361	2.3826 2.2146	2.5605 2.1487	2.3703		Ave		2.4020				6.8		30.0			
Vinyl acetate	3.9514 3.8856	4.0364 4.0391	3.9703 3.6896	4.0591 3.4941	3.9310		Ave		3.8952				4.8		30.0			
2-Butanone (MEK)	++++ 0.6544	++++ 0.7096	1.1324 0.6381	0.7671 0.6167	0.6575		Ave		0.7394				24.0		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville

Job No.: 140-414-1

Analy Batch No.: 305

SDG No.:

Instrument ID: MR

GC Column: RTX-5 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16

Calibration End Date: 10/18/2013 00:43

Calibration ID: 86

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
C6 Range	2.5681 3.2388	3.2156 3.4098	4.6511 3.2237	3.6603 3.1015	3.3055		Ave		3.3749				17.0		30.0			
Hexane	1.8027 1.2617	1.6571 1.3247	1.4427 1.1953	1.4084 1.1278	1.2973		Ave		1.3909				16.0		30.0			
cis-1,2-Dichloroethene	1.4523 1.2358	1.3173 1.3148	1.2715 1.2177	1.3391 1.2183	1.2493		Ave		1.2907				5.8		30.0			
Ethyl acetate	3.7912 3.4574	3.6355 3.5214	3.4373 3.1632	3.6547 2.9627	3.4426		Ave		3.4518				7.4		30.0			
Chloroform	2.6732 2.3919	2.5664 2.5033	2.4694 2.2967	2.6031 2.2442	2.4513		Ave		2.4666				5.7		30.0			
Tetrahydrofuran	1.9908 1.8190	1.9349 1.8568	1.8653 1.6750	1.9526 1.5662	1.8388		Ave		1.8333				7.4		30.0			
1,1,1-Trichloroethane	2.6615 2.4195	2.5967 2.5778	2.4628 2.3699	2.6471 2.3267	2.4948		Ave		2.5063				4.8		30.0			
1,2-Dichloroethane	0.3868 0.3650	0.3930 0.3792	0.3670 0.3532	0.3939 0.3485	0.3713		Ave		0.3731				4.4		30.0			
Benzene	0.8611 0.7617	0.8512 0.8145	0.7664 0.7546	0.8129 0.6918	0.7669		Ave		0.7868				6.8		30.0			
1-Butanol	0.1610 0.1145	0.1623 0.1160	0.1354 0.1049	0.1152 0.0860	0.1119		Ave		0.1230				21.0		30.0			
Cyclohexane	0.1563 0.1314	0.1420 0.1409	0.1330 0.1295	0.1390 0.1160	0.1335		Ave		0.1357				8.1		30.0			
Carbon tetrachloride	0.5534 0.5547	0.5674 0.5788	0.5301 0.5123	0.5370 0.5552	0.4922		Ave		0.5423				5.0		30.0			
2,3-Dimethylpentane	0.1906 0.1737	0.1832 0.1859	0.1726 0.1743	0.1850 0.1737	0.1768		Ave		0.1795				3.7		40.0			
Thiophene	0.4889 0.4579	0.4781 0.4943	0.4614 0.4670	0.4932 0.4696	0.4644		Ave		0.4750				3.0		40.0			
2,2,4-Trimethylpentane	1.7457 1.5817	1.7290 1.6668	1.5998 1.5309	1.7058 1.4465	1.5989		Ave		1.6228				6.1		30.0			
Heptane	0.3421 0.2893	0.3193 0.3142	0.2975 0.2943	0.3186 0.2850	0.2998		Ave		0.3067				6.0		30.0			
1,2-Dichloropropane	0.3407 0.3136	0.3342 0.3345	0.3202 0.3129	0.3420 0.3028	0.3227		Ave		0.3249				4.2		30.0			
Trichloroethene	0.3705 0.3534	0.3704 0.3826	0.3442 0.3667	0.3714 0.3725	0.3544		Ave		0.3651				3.3		30.0			
Dibromomethane	0.3305 0.3118	0.3264 0.3324	0.3079 0.3263	0.3314 0.3245	0.3126		Ave		0.3226				2.9		30.0			
Bromodichloromethane	0.5398 0.5528	0.5264 0.5968	0.5044 0.5590	0.5579 0.5630	0.5463		Ave		0.5496				4.7		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-414-1 Analy Batch No.: 305

SDG No.: _____

Instrument ID: MR GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16 Calibration End Date: 10/18/2013 00:43 Calibration ID: 86

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
1,4-Dioxane	0.1502 0.1430	0.1392 0.1523	0.1322 0.1434	0.1489 0.1400	0.1440		Ave		0.1437				4.3		30.0			
Methyl methacrylate	0.4784 0.4500	0.4364 0.4669	0.4158 0.4237	0.4483 0.3981	0.4423		Ave		0.4400				5.7		30.0			
Methylcyclohexane	0.5029 0.4700	0.5010 0.5017	0.4731 0.4743	0.5035 0.4721	0.4767		Ave		0.4861				3.2		40.0			
4-Methyl-2-pentanone (MIBK)	0.8193 0.7633	0.8271 0.7893	0.7536 0.7245	0.7824 0.6833	0.7520		Ave		0.7661				5.9		30.0			
cis-1,3-Dichloropropene	0.4467 0.4324	0.4287 0.4635	0.4147 0.4426	0.4488 0.4421	0.4356		Ave		0.4395				3.1		30.0			
trans-1,3-Dichloropropene	0.4962 0.5310	0.4889 0.5839	0.4778 0.5506	0.5087 0.5451	0.4896		Ave		0.5191				6.9		30.0			
Toluene	1.7023 1.1296	1.6501 1.2686	1.2927 1.1767	1.1497 1.1215	1.0922		Ave		1.2870				18.0		30.0			
Toluene Range	3.7352 4.0717	5.8368 4.3375	2.8394 4.0973	4.5120 2.2142	4.2671		Ave		3.9901				26.0		30.0			
1,1,2-Trichloroethane	0.3148 0.3265	0.3170 0.3567	0.3072 0.3356	0.3304 0.3248	0.3103		Ave		0.3248				4.7		30.0			
2-Methylthiophene	0.9511 0.9672	0.9361 1.0850	0.8954 1.0153	0.9578 0.9744	0.9291		Ave		0.9679				5.7		40.0			
3-Methylthiophene	1.0100 0.9897	0.9523 1.1009	0.9221 1.0345	0.9900 0.9896	0.9502		Ave		0.9933				5.3		40.0			
2-Hexanone	0.4715 0.4703	0.4820 0.5189	0.4213 0.4830	0.4341 0.4636	0.4216		Ave		0.4629				7.0		30.0			
Octane	0.4123 0.3977	0.3988 0.4338	0.3836 0.3918	0.4048 0.3478	0.3853		Ave		0.3951				5.9		30.0			
C8 Range	8.6295 4.9623	7.2922 5.1268	6.0731 4.5476	5.8262 4.0754	5.2839		Ave		5.7574				25.0		30.0			
Dibromochloromethane	0.5771 0.6818	0.5647 0.7804	0.5428 0.7001	0.6051 0.6690	0.6225		Ave		0.6382				12.0		30.0			
1,2-Dibromoethane (EDB)	0.5651 0.6061	0.5767 0.6657	0.5487 0.6325	0.5925 0.6340	0.5770		Ave		0.5998				6.3		30.0			
Tetrachloroethene	0.4078 0.4004	0.4202 0.4518	0.3791 0.4248	0.4064 0.4042	0.3914		Ave		0.4096				5.1		30.0			
Chlorobenzene	0.9222 0.8662	0.9279 0.9194	0.8641 0.8544	0.9298 0.8582	0.8784		Ave		0.8912				3.7		30.0			
2,3-Dimethylheptane	1.3714 1.3285	1.3360 1.3822	1.2384 1.2028	1.3188 1.0597	1.2629		Ave		1.2778				7.9		40.0			
Ethylbenzene	1.4790 1.3958	1.4620 1.4128	1.3874 1.2913	1.4670 1.3232	1.4101		Ave		1.4032				4.6		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville

Job No.: 140-414-1

Analy Batch No.: 305

SDG No.:

Instrument ID: MR

GC Column: RTX-5 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16

Calibration End Date: 10/18/2013 00:43

Calibration ID: 86

ANALYTE	RRF						CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5			B	M1	M2								
2-Ethylthiophene	1.0741 1.0634	1.0747 1.0915	1.0280 1.0019	1.1140 1.0280	1.0701 1.1396	Ave			1.0606				3.3		40.0			
m-Xylene & p-Xylene	1.1853 1.1525	1.1570 1.1455	1.1030 1.0333	1.1664 1.0084		Ave			1.1212				5.5		30.0			
Bromoform	0.5393 0.6877	0.5360 0.7405	0.5151 0.6356	0.5624 0.7637	0.6264 0.8444	Ave			0.6230				15.0		30.0			
Styrene	0.7345 0.8901	0.7149 0.8814	0.7373 0.7998	0.8205 0.8767		Ave			0.8111				8.4		30.0			
Nonane	0.9548 0.9888	0.9526 1.0037	0.9082 0.8598	0.9521 0.8218	0.9229 1.1645	Ave			0.9294				6.3		30.0			
o-Xylene	1.2156 1.1803	1.1998 1.1531	1.1380 1.0317	1.2088 1.0974		Ave			1.1544				5.1		30.0			
1,1,2,2-Tetrachloroethane	0.8165 0.8941	0.7969 0.9612	0.7803 0.8836	0.8395 0.9067	0.8200 0.2564	Ave			0.8554				6.9		30.0			
1,2,3-Trichloropropane	0.2543 0.2769	0.2553 0.2838	0.2469 0.2550	0.2640 0.2772		Ave			0.2633				4.9		30.0			
Isopropylbenzene	1.8775 1.8568	1.7955 1.7969	1.7205 1.5624	1.8126 1.6551	1.7653 0.4981	Ave			1.7603				5.7		30.0			
Propylbenzene	0.4936 0.5466	0.4932 0.5543	0.4739 0.4846	0.5051 0.5118		Ave			0.5068				5.3		30.0			
2-Chlorotoluene	0.4485 0.4552	0.4333 0.4390	0.4150 0.3875	0.4352 0.4254	0.4313 1.7701	Ave			0.4301				4.6		30.0			
4-Ethyltoluene	1.8780 1.9364	1.8323 2.0180	1.7251 1.7724	1.8114 1.8174		Ave			1.8401				5.0		30.0			
1,3,5-Trimethylbenzene	0.8091 0.9075	0.8158 0.9861	0.7879 0.8898	0.8330 0.8927	0.8238 0.7129	Ave			0.8606				7.3		30.0			
Alpha Methyl Styrene	0.5401 0.8220	0.5576 0.9164	0.5762 0.8468	0.6522 0.8795		Ave			0.7226				20.0		30.0			
Decane	1.2182 1.2875	1.1897 1.4067	1.1221 1.2445	1.2079 1.0928	1.1852 1.5992	Ave			1.2172				7.6		30.0			
tert-Butylbenzene	1.6016 1.7562	1.5808 1.9338	1.5172 1.7605	1.6061 1.6448		Ave			1.6667				7.7		30.0			
1,2,4-Trimethylbenzene	1.4839 1.6356	1.4875 1.7700	1.4012 1.5765	1.4890 1.4842	1.4938 1.0223	Ave			1.5357				7.1		30.0			
1,3-Dichlorobenzene	1.0145 1.1131	1.0025 1.2137	0.9634 1.1348	1.0183 1.1662		Ave			1.0721				8.1		30.0			
sec-Butylbenzene	2.1749 1.0698	2.1483 1.1048	2.0518 1.0502	2.1841 1.2109	2.1687 1.2881	Ave			2.2540				7.5		30.0			
Benzyl chloride	1.4459 1.6483	1.4483 1.5372	1.5372 1.5372	1.4039		Ave			1.3066				16.0		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-414-1 Job No.: 140-414-1 Analy Batch No.: 305

SDG No.: _____

Instrument ID: MR GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16 Calibration End Date: 10/18/2013 00:43 Calibration ID: 86

ANALYTE	RRF				CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9		B	M1	M2								
1,4-Dichlorobenzene	1.0399 1.1436	1.0291 1.2487	0.9740 1.1509	1.0414 1.1155	1.0349 Ave		1.0864				7.8		30.0			
4-Isopropyltoluene	1.8550 2.0945	1.8392 2.3366	1.7505 2.2366	1.9705 2.0629	1.9733 Ave		2.0135				9.5		30.0			
1,2,3-Trimethylbenzene	1.3397 1.4488	1.3404 1.5907	1.2621 1.4501	1.3410 1.4270	1.3237 Ave		1.3915				7.0		40.0			
Butylcyclohexane	1.1185 1.2127	1.1319 1.3464	1.0772 1.2137	1.1364 1.1267	1.1192 Ave		1.1648				7.0		40.0			
1,2-Dichlorobenzene	1.0111 1.0916	0.9827 1.2131	0.9336 1.1328	0.9888 1.0868	0.9944 Ave		1.0483				8.5		30.0			
Indane	1.4199 1.5264	1.4047 1.6206	1.3109 1.4800	1.4043 1.4134	1.3897 Ave		1.4411				6.2		40.0			
Indene	1.2251 1.5761	1.2327 1.7811	1.2259 1.6657	1.3658 1.6236	1.4108 Ave		1.4563				15.0		40.0			
Butylbenzene	1.7703 1.9176	1.7111 2.1277	1.6552 1.9335	1.7601 1.7671	1.7628 Ave		1.8228				8.0		30.0			
1,2-Dimethyl-4-Ethylbenzene	1.8463 2.0020	1.8406 2.2563	1.7172 2.0926	1.8571 1.9016	1.8543 Ave		1.9298				8.4		40.0			
Undecane	1.3955 1.5516	1.4180 1.6819	1.3333 1.4531	1.4385 1.1837	1.4653 Ave		1.4357				9.6		30.0			
1,2,4,5-Tetramethylbenzene	1.9835 2.0693	1.9591 2.3352	1.8388 2.1679	1.9627 1.9511	1.9705 Ave		2.0265				7.2		40.0			
1,2,3,5-Tetramethylbenzene	1.2500 1.2866	1.2550 1.4593	1.1523 1.3731	1.2158 1.3090	1.2239 Ave		1.2805				7.1		40.0			
1,2,3,4-Tetramethylbenzene	1.7394 1.6982	1.6965 1.9365	1.5707 1.8109	1.6487 1.6509	1.6787 Ave		1.7145				6.2		40.0			
Dodecane	1.5433 1.5698	1.5740 1.7456	1.4958 1.5087	1.5373 1.1487	1.6748 Ave		1.5331				11.0		30.0			
1,2,4-Trichlorobenzene	1.0364 1.0718	1.0729 1.2748	0.9671 1.2417	1.0093 1.1720	1.0665 Ave		1.1014				9.5		30.0			
Naphthalene	2.3905 2.3570	2.4390 2.7386	2.2500 2.5547	2.2847 ++++	2.3892 Ave		2.4255				6.5		30.0			
Benzo(b)thiophene	1.6317 1.6154	1.7175 1.8958	1.5732 1.8081	1.6871 1.6847	1.6533 Ave		1.6963				5.9		40.0			
Hexachlorobutadiene	0.9570 0.9444	0.9401 1.1469	0.8471 1.1340	0.8647 1.0145	0.9330 Ave		0.9758				11.0		30.0			
1,2,3-Trichlorobenzene	1.0958 1.0650	1.1362 1.2565	1.0123 1.2243	1.0464 1.1317	1.1008 Ave		1.1188				7.1		30.0			
2-Methylnaphthalene	0.3067 0.4213	0.3250 0.5009	0.3781 0.4560	0.3713 ++++	0.4728 Ave		0.4040				17.0		40.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI

AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-414-1 Analy Batch No.: 305

SDG No.:

Instrument ID: MR GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16 Calibration End Date: 10/18/2013 00:43 Calibration ID: 86

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
1-Methylnaphthalene	0.2875 0.3553	0.3082 0.4285	0.3473 0.3978	0.3311 ++++	0.4182	Ave		0.3593				14.0		40.0			
4-Bromofluorobenzene (Surr)	0.6926 0.7457	0.6988 0.6695	0.7098 0.6131	0.7159 0.6479	0.7308	Ave		0.6916				6.0		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Lab File ID: RBFBK08.D BFB Injection Date: 11/08/2013
 Instrument ID: MR BFB Injection Time: 14:59
 Analysis Batch No.: 405

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	19.4
75	30.0 - 60.0 % of mass 95	46.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.9
173	Less than 2.0 % of mass 174	0.5 (0.5) 1
174	50.0 - 120.00 % of mass 95	100.4
175	5.0 - 9.0 % of mass 174	7.0 (7.0) 1
176	95.0 - 101.0 % of mass 174	96.6 (96.2) 1
177	5.0 - 9.0 % of mass 176	6.3 (6.5) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	LCS 140-405/1002	RCCVK08-LC S.d	11/08/2013	15:25
	MB 140-405/3	MB200mL.D	11/08/2013	17:32
A-EFFLUENT	140-414-3	RK08Pos09.D	11/09/2013	02:53
C-EFFLUENT	140-414-6	RK08Pos10.D	11/09/2013	03:40
A-MID GAC	140-414-2	RK08Pos11.D	11/09/2013	04:27
C-MID GAC	140-414-5	RK08Pos12.D	11/09/2013	05:15
A-INFLUENT	140-414-1	RK08Pos13.D	11/09/2013	06:02
C-INFLUENT	140-414-4	RK08Pos14.D	11/09/2013	06:51

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-414-1

SDG No.: _____

Lab Sample ID: CCVIS 140-405/2

Calibration Date: 11/08/2013 15:25

Instrument ID: MR

Calib Start Date: 10/17/2013 18:16

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 10/18/2013 00:43

Lab File ID: RCCVK08.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Chlorodifluoromethane	Ave	0.3218	0.3322		2.06	2.00	3.2	30.0
Dichlorodifluoromethane	Ave	2.800	3.623		2.59	2.00	29.4	30.0
Chloromethane	Ave	0.4193	0.4197		2.00	2.00	0.1	30.0
1,2-Dichloro-1,1,2,2-tetrafluoroethane	Ave	2.455	2.865		2.33	2.00	16.7	30.0
Acetaldehyde	Ave	0.4612	0.4220		9.15	10.0	-8.5	50.0
Vinyl chloride	Ave	1.205	1.240		2.06	2.00	3.0	30.0
1,3-Butadiene	Ave	0.9665	0.9577		1.98	2.00	-0.9	30.0
Butane	Ave	1.827	1.782		1.95	2.00	-2.5	30.0
Bromomethane	Ave	1.158	1.182		2.04	2.00	2.1	30.0
Chloroethane	Ave	0.6680	0.6370		1.91	2.00	-4.6	30.0
Ethanol	Ave	0.4251	0.3924		9.23	10.0	-7.7	50.0
Vinyl bromide	Ave	1.165	1.221		2.10	2.00	4.8	30.0
2-Methylbutane	Ave	1.493	1.369		1.83	2.00	-8.3	30.0
Acrolein	Ave	0.6546	0.6514		1.99	2.00	-0.5	30.0
Trichlorofluoromethane	Ave	3.521	3.777		2.15	2.00	7.3	30.0
Acetonitrile	Ave	0.6269	0.6682		2.13	2.00	6.6	30.0
Acetone	Ave	0.8722	0.7523			2.00	-13.8	30.0
Isopropyl alcohol	Ave	2.554	2.688		2.10	2.00	5.2	30.0
Pentane	Ave	0.3057	0.2999		1.96	2.00	-1.9	30.0
Ethyl ether	Ave	1.692	1.713		2.03	2.00	1.3	30.0
1,1-Dichloroethene	Ave	1.149	1.220		2.12	2.00	6.2	30.0
Acrylonitrile	Ave	1.257	1.309		2.08	2.00	4.2	30.0
tert-Butyl alcohol	Ave	2.979	2.946		1.98	2.00	-1.1	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	2.390	2.680		2.24	2.00	12.1	30.0
Methylene Chloride	Ave	1.118	1.118		2.00	2.00	0.0	30.0
3-Chloropropene	Ave	1.132	1.096		1.94	2.00	-3.2	30.0
Carbon disulfide	Ave	3.754	4.063		2.16	2.00	8.2	30.0
trans-1,2-Dichloroethene	Ave	1.394	1.464		2.10	2.00	5.0	30.0
2-Methylpentane	Ave	3.701	3.806		2.06	2.00	2.8	50.0
Methyl tert-butyl ether	Ave	3.567	3.796		2.13	2.00	6.4	30.0
1,1-Dichloroethane	Ave	2.402	2.565		2.14	2.00	6.8	30.0
Vinyl acetate	Ave	3.895	4.122		2.12	2.00	5.8	30.0
2-Butanone (MEK)	Ave	0.7394	0.6825		1.85	2.00	-7.7	30.0
Hexane	Ave	1.391	1.355		1.95	2.00	-2.6	30.0
cis-1,2-Dichloroethene	Ave	1.291	1.361		2.11	2.00	5.5	30.0
Ethyl acetate	Ave	3.452	3.587		2.08	2.00	3.9	30.0
Chloroform	Ave	2.467	2.617		2.12	2.00	6.1	30.0
Tetrahydrofuran	Ave	1.833	1.904		2.08	2.00	3.8	30.0
1,1,1-Trichloroethane	Ave	2.506	2.657		2.12	2.00	6.0	30.0
1,2-Dichloroethane	Ave	0.3731	0.3913		2.10	2.00	4.9	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-414-1

SDG No.: _____

Lab Sample ID: CCVIS 140-405/2

Calibration Date: 11/08/2013 15:25

Instrument ID: MR

Calib Start Date: 10/17/2013 18:16

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 10/18/2013 00:43

Lab File ID: RCCVK08.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1-Butanol	Ave	0.1230	0.1177		1.91	2.00	-4.3	30.0
Benzene	Ave	0.7868	0.8396		2.13	2.00	6.7	30.0
Cyclohexane	Ave	0.1357	0.1446		2.13	2.00	6.5	30.0
Carbon tetrachloride	Ave	0.5423	0.6215		2.29	2.00	14.6	30.0
2,3-Dimethylpentane	Ave	0.1795	0.1913		2.13	2.00	6.5	50.0
Thiophene	Ave	0.4750	0.5086		2.14	2.00	7.1	50.0
2,2,4-Trimethylpentane	Ave	1.623	1.731		2.13	2.00	6.6	30.0
Heptane	Ave	0.3067	0.3225		2.10	2.00	5.2	30.0
1,2-Dichloropropane	Ave	0.3249	0.3485		2.15	2.00	7.3	30.0
Trichloroethene	Ave	0.3651	0.3983		2.18	2.00	9.1	30.0
Dibromomethane	Ave	0.3226	0.3557		2.20	2.00	10.2	30.0
Bromodichloromethane	Ave	0.5496	0.5858		2.13	2.00	6.6	30.0
1,4-Dioxane	Ave	0.1437	0.0099			2.00	-93.1*	30.0
Methyl methacrylate	Ave	0.4400	0.4587		2.08	2.00	4.2	30.0
Methylcyclohexane	Ave	0.4861	0.5124		2.11	2.00	5.4	50.0
4-Methyl-2-pentanone (MIBK)	Ave	0.7661	0.6844		1.79	2.00	-10.7	30.0
cis-1,3-Dichloropropene	Ave	0.4395	0.4629		2.11	2.00	5.3	30.0
trans-1,3-Dichloropropene	Ave	0.5191	0.5736		2.21	2.00	10.5	30.0
Toluene	Ave	1.287	1.299		2.02	2.00	1.0	30.0
1,1,2-Trichloroethane	Ave	0.3248	0.3646		2.24	2.00	12.2	30.0
2-Methylthiophene	Ave	0.9679	1.105		2.28	2.00	14.1	50.0
3-Methylthiophene	Ave	0.9933	1.122		2.26	2.00	13.0	50.0
2-Hexanone	Ave	0.4629	0.2187		0.945	2.00	-52.8*	30.0
Octane	Ave	0.3951	0.4541		2.30	2.00	14.9	30.0
Dibromochloromethane	Ave	0.6382	0.6974		2.19	2.00	9.3	30.0
1,2-Dibromoethane (EDB)	Ave	0.5998	0.6584		2.20	2.00	9.8	30.0
Tetrachloroethene	Ave	0.4096	0.4686		2.29	2.00	14.4	30.0
Chlorobenzene	Ave	0.8912	0.9371		2.10	2.00	5.1	30.0
2,3-Dimethylheptane	Ave	1.278	1.419		2.22	2.00	11.0	50.0
Ethylbenzene	Ave	1.403	1.494		2.13	2.00	6.5	30.0
2-Ethylthiophene	Ave	1.061	1.135		2.14	2.00	7.0	50.0
m-Xylene & p-Xylene	Ave	1.121	1.226		4.37	4.00	9.3	30.0
Bromoform	Ave	0.6230	0.5073		1.63	2.00	-18.6	30.0
Styrene	Ave	0.8111	0.9329		2.30	2.00	15.0	30.0
Nonane	Ave	0.9294	1.054		2.27	2.00	13.4	30.0
o-Xylene	Ave	1.154	1.252		2.17	2.00	8.5	30.0
1,1,2,2-Tetrachloroethane	Ave	0.8554	0.9400		2.20	2.00	9.9	30.0
1,2,3-Trichloropropane	Ave	0.2633	0.2943		2.23	2.00	11.7	30.0
Isopropylbenzene	Ave	1.760	2.031		2.31	2.00	15.4	30.0
Propylbenzene	Ave	0.5068	0.5876		2.32	2.00	15.9	30.0
2-Chlorotoluene	Ave	0.4301	0.4939		2.30	2.00	14.8	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville

Job No.: 140-414-1

SDG No.: _____

Lab Sample ID: CCVIS 140-405/2

Calibration Date: 11/08/2013 15:25

Instrument ID: MR

Calib Start Date: 10/17/2013 18:16

GC Column: RTX-5 ID: 0.32 (mm)

Calib End Date: 10/18/2013 00:43

Lab File ID: RCCVK08.D

Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Ethyltoluene	Ave	1.840	2.053		2.23	2.00	11.6	30.0
1,3,5-Trimethylbenzene	Ave	0.8606	0.9659		2.24	2.00	12.2	30.0
Alpha Methyl Styrene	Ave	0.7226	0.8311		2.30	2.00	15.0	30.0
Decane	Ave	1.217	1.353		2.22	2.00	11.2	30.0
tert-Butylbenzene	Ave	1.667	1.865		2.24	2.00	11.9	30.0
1,2,4-Trimethylbenzene	Ave	1.536	1.733		2.26	2.00	12.9	30.0
1,3-Dichlorobenzene	Ave	1.072	1.207		2.25	2.00	12.6	30.0
sec-Butylbenzene	Ave	2.254	2.524		2.24	2.00	12.0	30.0
Benzyl chloride	Ave	1.307	1.469		2.25	2.00	12.5	30.0
1,4-Dichlorobenzene	Ave	1.086	1.247		2.29	2.00	14.7	30.0
4-Isopropyltoluene	Ave	2.014	2.302		2.29	2.00	14.3	30.0
1,2,3-Trimethylbenzene	Ave	1.392	1.509		2.17	2.00	8.4	50.0
Butylcyclohexane	Ave	1.165	1.284		2.20	2.00	10.2	50.0
1,2-Dichlorobenzene	Ave	1.048	1.184		2.26	2.00	12.9	30.0
Indane	Ave	1.441	1.641		2.28	2.00	13.9	50.0
Indene	Ave	1.456	1.617		2.22	2.00	11.0	50.0
Butylbenzene	Ave	1.823	2.012		2.21	2.00	10.4	30.0
1,2-Dimethyl-4-Ethylbenzene	Ave	1.930	2.106		2.18	2.00	9.1	50.0
Undecane	Ave	1.436	1.632		2.27	2.00	13.7	30.0
1,2,4,5-Tetramethylbenzene	Ave	2.026	2.162		2.13	2.00	6.7	50.0
1,2,3,5-Tetramethylbenzene	Ave	1.281	1.334		2.08	2.00	4.1	50.0
1,2,3,4-Tetramethylbenzene	Ave	1.715	1.778		2.07	2.00	3.7	50.0
Dodecane	Ave	1.533	1.667		2.17	2.00	8.7	30.0
1,2,4-Trichlorobenzene	Ave	1.101	1.185		2.15	2.00	7.6	30.0
Naphthalene	Ave	2.425	2.452		2.02	2.00	1.1	30.0
Benzo(b)thiophene	Ave	1.696	1.673		1.97	2.00	-1.4	50.0
Hexachlorobutadiene	Ave	0.9758	1.070		2.19	2.00	9.7	30.0
1,2,3-Trichlorobenzene	Ave	1.119	1.186		2.12	2.00	6.0	30.0
2-Methylnaphthalene	Ave	0.4040	0.4191		13.0	12.5	3.7	50.0
1-Methylnaphthalene	Ave	0.3593	0.3606		12.5	12.5	0.4	50.0
4-Bromofluorobenzene (Surr)	Ave	0.6916	0.7742		4.48	4.00	12.0	30.0

FORM IV
AIR - GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Lab File ID: MB200mL.D Lab Sample ID: MB 140-405/3
 Matrix: Air Heated Purge: (Y/N) N
 Instrument ID: MR Date Analyzed: 11/08/2013 17:32
 GC Column: RTX-5 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 140-405/1002	RCCVK08-LCS .d	11/08/2013 15:25
A-EFFLUENT	140-414-3	RK08Pos09.D	11/09/2013 02:53
C-EFFLUENT	140-414-6	RK08Pos10.D	11/09/2013 03:40
A-MID GAC	140-414-2	RK08Pos11.D	11/09/2013 04:27
C-MID GAC	140-414-5	RK08Pos12.D	11/09/2013 05:15
A-INFLUENT	140-414-1	RK08Pos13.D	11/09/2013 06:02
C-INFLUENT	140-414-4	RK08Pos14.D	11/09/2013 06:51

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 140-405/3

Matrix: Air Lab File ID: MB200mL.D

Analysis Method: TO-15 Date Collected: _____

Sample wt/vol: 200(mL) Date Analyzed: 11/08/2013 17:32

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32(mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		0.64	
100-44-7	Benzyl chloride	126.58	ND		2.1	
74-83-9	Bromomethane	94.94	ND		0.78	
56-23-5	Carbon tetrachloride	153.81	ND		1.3	
108-90-7	Chlorobenzene	112.56	ND		0.92	
75-00-3	Chloroethane	64.52	ND		0.53	
67-66-3	Chloroform	119.38	ND		0.98	
74-87-3	Chloromethane	50.49	ND		1.0	
95-50-1	1,2-Dichlorobenzene	147.00	ND		1.2	
541-73-1	1,3-Dichlorobenzene	147.00	ND		1.2	
106-46-7	1,4-Dichlorobenzene	147.00	ND		1.2	
75-71-8	Dichlorodifluoromethane	120.91	ND		0.99	
75-34-3	1,1-Dichloroethane	98.96	ND		0.81	
107-06-2	1,2-Dichloroethane	98.96	ND		0.81	
75-35-4	1,1-Dichloroethene	96.94	ND		0.79	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.79	
78-87-5	1,2-Dichloropropane	112.99	ND		0.92	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.91	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.91	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		1.4	
100-41-4	Ethylbenzene	106.17	ND		0.87	
75-69-4	Trichlorofluoromethane	137.37	ND		1.1	
87-68-3	Hexachlorobutadiene	260.76	ND		11	
75-09-2	Methylene Chloride	84.93	ND		1.7	
100-42-5	Styrene	104.15	ND		0.85	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		1.4	
127-18-4	Tetrachloroethene	165.83	ND		1.4	
108-88-3	Toluene	92.14	ND		0.75	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		7.4	
71-55-6	1,1,1-Trichloroethane	133.41	ND		1.1	
79-00-5	1,1,2-Trichloroethane	133.41	ND		1.1	
79-01-6	Trichloroethene	131.39	ND		1.1	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		1.5	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 140-405/3
 Matrix: Air Lab File ID: MB200mL.D
 Analysis Method: TO-15 Date Collected: _____
 Sample wt/vol: 200(mL) Date Analyzed: 11/08/2013 17:32
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32(mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.98	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.98	
75-01-4	Vinyl chloride	62.50	ND		0.51	
95-47-6	o-Xylene	106.17	ND		0.87	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.87	
106-93-4	1,2-Dibromoethane (EDB)	187.87	ND		1.5	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	101		60-140

FORM II
AIR - GC/MS VOA SURROGATE RECOVERY

Lab Name: TestAmerica Knoxville

Job No.: 140-414-1

SDG No.: _____

Matrix: Air

Level: Low

GC Column (1): RTX-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	BFB #
A-INFLUENT	140-414-1	99
A-MID GAC	140-414-2	98
A-EFFLUENT	140-414-3	96
C-INFLUENT	140-414-4	99
C-MID GAC	140-414-5	99
C-EFFLUENT	140-414-6	97
	MB 140-405/3	101
	LCS 140-405/1002	112

BFB = 4-Bromofluorobenzene (Surr)

QC LIMITS
60-140

Column to be used to flag recovery values

FORM II TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Matrix: Air Level: Low Lab File ID: RCCVK08-LCS.d
 Lab ID: LCS 140-405/1002 Client ID: _____

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Benzene	2.00	2.13	107	70-130	
Benzyl chloride	2.00	2.25	112	70-130	
Bromomethane	2.00	2.04	102	70-130	
Carbon tetrachloride	2.00	2.29	115	70-130	
Chlorobenzene	2.00	2.10	105	70-130	
Chloroethane	2.00	1.91	95	70-130	
Chloroform	2.00	2.12	106	70-130	
Chloromethane	2.00	2.00	100	60-140	
1,2-Dichlorobenzene	2.00	2.26	113	70-130	
1,3-Dichlorobenzene	2.00	2.25	113	70-130	
1,4-Dichlorobenzene	2.00	2.29	115	70-130	
Dichlorodifluoromethane	2.00	2.59	129	60-140	
1,1-Dichloroethane	2.00	2.14	107	70-130	
1,2-Dichloroethane	2.00	2.10	105	70-130	
1,1-Dichloroethene	2.00	2.12	106	70-130	
cis-1,2-Dichloroethene	2.00	2.11	105	70-130	
1,2-Dichloropropane	2.00	2.15	107	70-130	
cis-1,3-Dichloropropene	2.00	2.11	105	70-130	
trans-1,3-Dichloropropene	2.00	2.21	111	70-130	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	2.33	117	60-140	
Ethylbenzene	2.00	2.13	106	70-130	
Trichlorofluoromethane	2.00	2.15	107	60-140	
Hexachlorobutadiene	2.00	2.19	110	60-140	
Methylene Chloride	2.00	2.00	100	70-130	
Styrene	2.00	2.30	115	70-130	
1,1,2,2-Tetrachloroethane	2.00	2.20	110	70-130	
Tetrachloroethene	2.00	2.29	114	70-130	
Toluene	2.00	2.02	101	70-130	
1,2,4-Trichlorobenzene	2.00	2.15	108	60-140	
1,1,1-Trichloroethane	2.00	2.12	106	70-130	
1,1,2-Trichloroethane	2.00	2.24	112	70-130	
Trichloroethene	2.00	2.18	109	70-130	
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.24	112	70-130	
1,2,4-Trimethylbenzene	2.00	2.26	113	70-130	
1,3,5-Trimethylbenzene	2.00	2.24	112	70-130	
Vinyl chloride	2.00	2.06	103	70-130	
o-Xylene	2.00	2.17	108	70-130	
m-Xylene & p-Xylene	4.00	4.37	109	70-130	
1,2-Dibromoethane (EDB)	2.00	2.20	110	70-130	

Column to be used to flag recovery and RPD values

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
 SDG No.: _____
 Sample No.: CCVIS 140-405/2 Date Analyzed: 11/08/2013 15:25
 Instrument ID: MR GC Column: RTX-5 ID: 0.32 (mm)
 Lab File ID (Standard): RCCVK08.D Heated Purge: (Y/N) N
 Calibration ID: 86

		CBM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		566304	8.62	2720290	10.89	2169084	17.17
UPPER LIMIT		792826	8.95	3808406	11.22	3036718	17.50
LOWER LIMIT		339782	8.29	1632174	10.56	1301450	16.84
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 140-405/1002		566304	8.62	2720290	10.89	2169084	17.17
MB 140-405/3		459216	8.62	2218465	10.88	2037870	17.16
140-414-3	A-EFFLUENT	446883	8.63	2148416	10.89	1959950	17.16
140-414-6	C-EFFLUENT	410503	8.63	1985252	10.90	1836862	17.16
140-414-2	A-MID GAC	403160	8.63	1924544	10.90	1750132	17.16
140-414-5	C-MID GAC	391992	8.63	1873929	10.89	1667126	17.16
140-414-1	A-INFLUENT	423768	8.63	2020496	10.90	1849685	17.16
140-414-4	C-INFLUENT	423622	8.63	2019238	10.89	1836954	17.16

CBM = Chlorobromomethane (IS)

DFB = 1,4-Difluorobenzene

CBZ = Chlorobenzene-d5 (IS)

Area Limit = 60%-140% of internal standard area

RT Limit = \pm 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

Sample Calculation

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-414-1
SDG No.: _____
Client Sample ID: A-INFLUENT Lab Sample ID: 140-414-1
Matrix: Air Lab File ID: RK08Pos13.D
Analysis Method: TO-15 Date Collected: 11/07/2013 10:06
Sample wt/vol: 20(mL) Date Analyzed: 11/09/2013 06:02
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RTX-5 ID: 0.32 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 405 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-43-2	Benzene	78.11	ND		6.4	
100-44-7	Benzyl chloride	126.58	ND		21	
74-83-9	Bromomethane	94.94	ND		7.8	
56-23-5	Carbon tetrachloride	153.81	ND		13	
108-90-7	Chlorobenzene	112.56	ND		9.2	
75-00-3	Chloroethane	64.52	ND		5.3	
67-66-3	Chloroform	119.38	ND		9.8	
74-87-3	Chloromethane	50.49	ND		10	
95-50-1	1,2-Dichlorobenzene	147.00	ND		12	
541-73-1	1,3-Dichlorobenzene	147.00	ND		12	
106-46-7	1,4-Dichlorobenzene	147.00	ND		12	
75-71-8	Dichlorodifluoromethane	120.91	ND		9.9	
75-34-3	1,1-Dichloroethane	98.96	39		8.1	
107-06-2	1,2-Dichloroethane	98.96	ND		8.1	
75-35-4	1,1-Dichloroethene	96.94	170		7.9	
156-59-2	cis-1,2-Dichloroethene	96.94	200		7.9	
78-87-5	1,2-Dichloropropane	112.99	ND		9.2	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		9.1	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		9.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	170.92	ND		14	
100-41-4	Ethylbenzene	106.17	ND		8.7	
75-69-4	Trichlorofluoromethane	137.37	41		11	
87-68-3	Hexachlorobutadiene	260.76	ND		110	
75-09-2	Methylene Chloride	84.93	ND		17	
100-42-5	Styrene	104.15	ND		8.5	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		14	
127-18-4	Tetrachloroethene	165.83	ND		14	
108-88-3	Toluene	92.14	11		7.5	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		74	
71-55-6	1,1,1-Trichloroethane	133.41	930		11	
79-00-5	1,1,2-Trichloroethane	133.41	ND		11	
79-01-6	Trichloroethene	131.39	1500		11	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	ND		15	

TestAmerica Knoxville
Target Compound Quantitation Report

Sample Calculation

Data File: \\KNXCHROM\ChromData\MR\20131108-191.b\RK08Pos13.D
 Lims ID: 140-414-A-1 Lab Sample ID: 140-414-1
 Client ID: A-INFLUENT
 Sample Type: Client
 Inject. Date: 09-Nov-2013 06:02:30 ALS Bottle#: 13 Worklist Smp#: 17
 Purge Vol: 500.000 mL Dil. Factor: 1.0000
 Sample Info: 140-414-a-1
 Misc. Info.: R110813,TO15,140-0000191-017
 Operator ID: 403648 Instrument ID: MR
 Method: \\KNXCHROM\ChromData\MR\20131108-191.b\MR_TO15.m
 Limit Group: MSA TO14A_15 Routine ICAL
 Last Update: 11-Nov-2013 11:46:12 Calib Date: 18-Oct-2013 00:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\KNXCHROM\ChromData\MR\20131016-137.b\RJ170010.D
 Column 1: RTX-5 (0.32 mm) Detector: MS SCAN
 Process Host: XAWRK001

First Level Reviewer: barlozhetskayaa

Date: 11-Nov-2013 11:46:12

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	On-Col Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	8.625	8.619	0.006	99	423768	4.00	
* 2 1,4-Difluorobenzene	114	10.895	10.890	0.005	95	2020496	4.00	
* 3 Chlorobenzene-d5 (IS)	117	17.156	17.172	-0.016	87	1849685	4.00	
\$ 4 4-Bromofluorobenzene (Surr)	95	19.900	19.916	-0.016	95	1261097	3.94	
8 Dichlorodifluoromethane	85	3.551	3.545	0.006	93	8615	0.0290	
20 Trichlorofluoromethane	101	5.012	5.012	0.0	98	108847	0.2918	
27 1,1-Dichloroethene	96	5.724	5.724	0.0	95	210071	1.73	
31 Methylene Chloride	84	6.058	6.063	-0.005	89	7859	0.0664	
37 1,1-Dichloroethane	63	7.309	7.304	0.005	99	98370	0.3866	
41 cis-1,2-Dichloroethene	96	8.301	8.296	0.005	97	276364	2.02	
43 Chloroform	83	8.652	8.646	0.006	60	12098	0.0463	
45 1,1,1-Trichloroethane	97	9.693	9.687	0.006	97	1808117	6.81	
56 Trichloroethene	130	11.704	11.698	0.006	98	2085242	11.3	
65 Toluene	91	14.303	14.303	0.0	92	68969	0.1159	

$$\frac{2085242}{2020496} * \frac{4 \text{ ppbv}}{0.3651} = 11.31 \text{ ppbv}$$

$$11.31 \text{ ppbv} * \frac{131.4 \text{ g/mole}}{24.45 \text{ L/mole}} = 60.77 * \frac{500 \text{ mL}}{20 \text{ mL}} = 1519.25 \text{ ug/m}^3$$

FORM VI
AIR - GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Sample Calibration

Lab Name: TestAmerica Knoxville

Job No.: 140-414-1

Analy Batch No.: 305

SDG No.: _____

Instrument ID: MR

GC Column: RTX-5 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2013 18:16

Calibration End Date: 10/18/2013 00:43

Calibration ID: 86

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
C6 Range	2.5681 3.2388	3.2156 3.4098	4.6511 3.2237	3.6603 3.1015	3.3055 1.2973	Ave		3.3749						17.0		30.0	
Hexane	1.8027 1.2617	1.6571 1.3247	1.4427 1.1953	1.4084 1.1278	1.2973 1.2493	Ave		1.3909						16.0		30.0	
cis-1,2-Dichloroethene	1.4523 1.2358	1.3173 1.3148	1.2715 1.2177	1.3391 1.2183	1.2493 1.2493	Ave		1.2907						5.8		30.0	
Ethyl acetate	3.7912 3.4574	3.6355 3.5214	3.4373 3.1632	3.6547 2.9627	3.4426 2.4513	Ave		3.4518						7.4		30.0	
Chloroform	2.6732 2.3919	2.5664 2.5033	2.4694 2.2967	2.6031 2.2442	2.4513 2.4513	Ave		2.4666						5.7		30.0	
Tetrahydrofuran	1.9908 1.8190	1.9349 1.8568	1.8653 1.6750	1.9526 1.5662	1.8388 1.8388	Ave		1.8333						7.4		30.0	
1,1,1-Trichloroethane	2.6615 2.4195	2.5967 2.5778	2.4628 2.3699	2.6471 2.3267	2.4948 0.3713	Ave		2.5063						4.8		30.0	
1,2-Dichloroethane	0.3868 0.3650	0.3930 0.3792	0.3670 0.3532	0.3939 0.3485	0.3713 0.3713	Ave		0.3731						4.4		30.0	
Benzene	0.8611 0.7617	0.8512 0.8145	0.7664 0.7546	0.8129 0.6918	0.7669 0.7669	Ave		0.7868						6.8		30.0	
1-Butanol	0.1610 0.1145	0.1623 0.1160	0.1354 0.1049	0.1152 0.0860	0.1119 0.1119	Ave		0.1230						21.0		30.0	
Cyclohexane	0.1563 0.1314	0.1420 0.1409	0.1330 0.1295	0.1390 0.1160	0.1335 0.1335	Ave		0.1357						8.1		30.0	
Carbon tetrachloride	0.5534 0.5547	0.5674 0.5788	0.5301 0.5123	0.5370 0.5552	0.4922 0.4922	Ave		0.5423						5.0		30.0	
2,3-Dimethylpentane	0.1906 0.1737	0.1832 0.1859	0.1726 0.1743	0.1850 0.1737	0.1768 0.1768	Ave		0.1795						3.7		40.0	
Thiophene	0.4889 0.4579	0.4781 0.4943	0.4614 0.4670	0.4932 0.4696	0.4644 0.4644	Ave		0.4750						3.0		40.0	
2,2,4-Trimethylpentane	1.7457 1.5817	1.7290 1.6668	1.5998 1.5309	1.7058 1.4465	1.5989 1.5989	Ave		1.6228						6.1		30.0	
Heptane	0.3421 0.2893	0.3193 0.3142	0.2975 0.2943	0.3186 0.2850	0.2998 0.2998	Ave		0.3067						6.0		30.0	
1,2-Dichloropropane	0.3407 0.3136	0.3342 0.3345	0.3202 0.3129	0.3420 0.3028	0.3227 0.3227	Ave		0.3249						4.2		30.0	
Trichloroethene	0.3705 0.3534	0.3704 0.3826	0.3442 0.3667	0.3714 0.3725	0.3544 0.3544	Ave		0.3651						3.3		30.0	
Dibromomethane	0.3305 0.3118	0.3264 0.3324	0.3079 0.3263	0.3314 0.3245	0.3126 0.3126	Ave		0.3226						2.9		30.0	
Bromodichloromethane	0.5398 0.5528	0.5264 0.5968	0.5044 0.5590	0.5579 0.5630	0.5463 0.5463	Ave		0.5496						4.7		30.0	

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.



Tetra Tech

INTERNAL CORRESPONDENCE

TO: P. RICH **DATE:** FEBRUARY 19, 2014

FROM: A. COGNETTI **COPIES:** DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC
LOCKHEED MARTIN CORPORATION (LMC) – MIDDLE RIVER
SAMPLE DELIVERY GROUPS (SDGs) – 10252866 and 10251738

SAMPLES: 6/Air/VOC

A-EFFLUENT	A-INFLUENT	A-MID GAC
C-EFFLUENT	C-INFLUENT	C-MID GAC

Overview

The sample sets for LMC – Middle River, SDGs 10252866 and 10251738 consisted of six (6) air samples. All samples were analyzed for volatile organic compounds (VOC). No field duplicate pair is included in this SDG.

The samples were collected by Geo Trans on December 5 and 18, 2013 and analyzed by PACE Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

- The internal standard area for 1,4-difluorobenzene was outside quality control limits in sample A-EFFLUENT. The detected and nondetected results quantitated using this internal standard were qualified as estimated (J) and (UJ), respectively.
- The analytes chlorodifluoromethane and 1,2,3-trimethylbenzene were reported as tentatively identified compounds (TICs). These analytes were only found in sample A-EFFLUENT. The TICs were qualified as presumptively present (NJ). Results reported in ppbv units were converted to $\mu\text{g}/\text{m}^3$.

Notes

The chain of custody indicated that no gauges were provided with the summa canisters. This means that the canister pressure before and after sampling could not be evaluated. No validation action was taken.

The data reviewer determined that carbon tetrachloride was not reported in sample A-EFFLUENT. A request was made to the laboratory and they provided the missing result.

As indicated in the comments section on the chain of custody record from December 18, 2013, the laboratory was instructed to analyze sample A-Influent if the original sample collected on December 5, 2013 for A-Influent was not usable. The original sample for A-Influent was analyzed by the laboratory and

TO: P. Rich
FROM: A. Cagnetti
SDG: 10252866 and 10251738
DATE: February 19, 2014

PAGE 2

was considered usable. Therefore, sample A-Influent collected on December 18, 2013 was not analyzed by the laboratory. No action was validation required.

The A-Effluent sample collected on December 5, 2013 was not analyzed by the laboratory but the A-Effluent sample collected on December 18, 2013 was analyzed. No action was validation required.

Nondetected results were reported to the reporting limit.

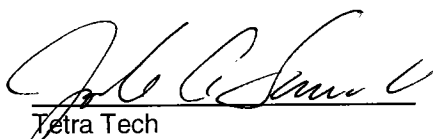
Executive Summary

Laboratory Performance: The internal standard 1,4-difluorobenzene was low in sample A-Effluent.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to Region III modifications to U.S. EPA National Functional Guidelines for Organic Data Validation (Sept. 1994) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cagnetti
Chemist/Data Validator


Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

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

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03265 SDG: 10251738 FRACTION: OV MEDIA: AIR	NSAMPLE	A-INFLUENT	A-MID GAC	C-EFFLUENT	C-INFLUENT
	LAB_ID	10251738001	10251738002	10251738005	10251738003
	SAMP_DATE	12/5/2013	12/5/2013	12/5/2013	12/5/2013
	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/M3	UG/M3	UG/M3	UG/M3
	PCT_SOLIDS				
PARAMETER	DUP_OF	RESULT	QLCD	RESULT	QLCD
		QLCD	QLCD	RESULT	QLCD
1,1,1-TRICHLOROETHANE		883		1.9 U	1.7 U
1,1,2-TRICHLOROETHANE		0.92 U		0.92 U	0.86 U
1,1-DICHLOROETHANE		30.7		1.4 U	1.3 U
1,1-DICHLOROETHENE		132		1.4 U	1.3 U
1,2,4-TRICHLOROBENZENE		2.5 U		2.5 U	2.4 U
1,2,4-TRIMETHYLBENZENE		1.7 U		4.9	4.8
1,2-DICHLOROETHANE		0.69 U		0.69 U	0.64 U
1,3,5-TRIMETHYLBENZENE		1.7 U		2.3	2.4
BENZENE		0.94		9.3	6.3
CARBON TETRACHLORIDE		1.1 U		1.1 U	1.1 U
CHLOROFORM		21.2		1.7 U	1.6 U
CIS-1,2-DICHLOROETHENE		165		2.1	13
DICHLORODIFLUOROMETHANE		1.7 U		9.2	6.6
ETHYLBENZENE		1.5 U		1.5 U	7.3
M+P-XYLENES		3 U		3 U	30.4
METHYL TERT-BUTYL ETHER		1.2 U		1.2 U	1.1 U
METHYLENE CHLORIDE		4.4		13.9	4.1
NAPHTHALENE		1.8 U		1.8 U	33.9
O-XYLENE		1.5 U		1.5 U	16.1
TETRACHLOROETHENE		1.2 U		1.2 U	5.4
TOLUENE		12.2		3.5	4
TRANS-1,2-DICHLOROETHENE		2.5		1.4 U	1.3 U
TRICHLOROETHENE		1530		3.7	228
VINYL CHLORIDE		0.44 U		0.44 U	0.41 U

PROJ_NO: 03265 SDG: 10251738 FRACTION: OV MEDIA: AIR	NSAMPLE	C-MID GAC			
	LAB_ID	10251738004			
	SAMP_DATE	12/5/2013			
	QC_TYPE	NM			
	UNITS	UG/M3			
	PCT_SOLIDS				
	DUP_OF				
PARAMETER		RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE		1.9 U			
1,1,2-TRICHLOROETHANE		0.92 U			
1,1-DICHLOROETHANE		1.4 U			
1,1-DICHLOROETHENE		1.4 U			
1,2,4-TRICHLOROBENZENE		2.5 U			
1,2,4-TRIMETHYLBENZENE		1.7 U			
1,2-DICHLOROETHANE		0.69 U			
1,3,5-TRIMETHYLBENZENE		1.7 U			
BENZENE		10.9			
CARBON TETRACHLORIDE		1.1 U			
CHLOROFORM		1.7 U			
CIS-1,2-DICHLOROETHENE		7.4			
DICHLORODIFLUOROMETHANE		8.6			
ETHYLBENZENE		1.5 U			
M+P-XYLENES		3 U			
METHYL TERT-BUTYL ETHER		1.2 U			
METHYLENE CHLORIDE		6.4			
NAPHTHALENE		1.8 U			
O-XYLENE		1.5 U			
TETRACHLOROETHENE		1.2 U			
TOLUENE		2.5			
TRANS-1,2-DICHLOROETHENE		1.4 U			
TRICHLOROETHENE		10.7			
VINYL CHLORIDE		0.44 U			

PROJ_NO: 03265 SDG: 10252866 FRACTION: OV MEDIA: AIR	NSAMPLE	A-EFFLUENT		
	LAB_ID	10252866002		
	SAMP_DATE	12/18/2013		
	QC_TYPE	NM		
	UNITS	UG/M3		
	PCT_SOLIDS			
DUP_OF				
PARAMETER				
1,1,1-TRICHLOROETHANE		RESULT	VQL	QLCD
			1.9 UJ	N
1,1,2-TRICHLOROETHANE			0.92 U	
1,1-DICHLOROETHANE			3 J	N
1,1-DICHLOROETHENE			14.8 J	N
1,2,4-TRICHLOROBENZENE			2.5 U	
1,2,4-TRIMETHYLBENZENE			1.7 U	
1,2-DICHLOROETHANE			0.69 UJ	N
1,3,5-TRIMETHYLBENZENE			1.7 U	
BENZENE			0.97 J	N
CARBON TETRACHLORIDE			1.1 UJ	N
CHLOROFORM			1.7 UJ	N
CIS-1,2-DICHLOROETHENE			1.9 J	N
DICHLORODIFLUOROMETHANE			1.7 UJ	N
ETHYLBENZENE			1.5 U	
M+P-XYLENES			3 U	
METHYL TERT-BUTYL ETHER			1.2 UJ	N
METHYLENE CHLORIDE			105 J	N
NAPHTHALENE			1.8 U	
O-XYLENE			1.5 U	
TETRACHLOROETHENE			1.6	
TOLUENE			3	
TRANS-1,2-DICHLOROETHENE			1.4 UJ	N
TRICHLOROETHENE			1.8	
VINYL CHLORIDE			0.44 UJ	N

PROJ_NO: 03265	NSAMPLE	A-EFFLUENT	
SDG: 10252866	LAB_ID	10252866002	
FRACTION: TICOV	SAMP_DATE	12/18/2013	
MEDIA: AIR	QC_TYPE	NM	
	UNITS	UG/M3	
	PCT_SOLIDS		
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,2,3-TRIMETHYLBENZENE	11	NJ	Z1
CHLORODIFLUOROMETHANE	837	NJ	Z1

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: SSD-04M
Pace Project No.: 10252866

Sample: A-EFFLUENT		Lab ID: 10252866002	Collected: 12/18/13 14:32	Received: 12/19/13 10:25	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR (TICS)		Analytical Method: TO-15						
Benzene	0.97	ug/m3	0.55	1.68		12/31/13 23:48	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		12/31/13 23:48	56-23-5	
Chloroform	ND	ug/m3	1.7	1.68		12/31/13 23:48	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.7	1.68		12/31/13 23:48	75-71-8	
1,1-Dichloroethane	3.0	ug/m3	1.4	1.68		12/31/13 23:48	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		12/31/13 23:48	107-06-2	
1,1-Dichloroethene	14.8	ug/m3	1.4	1.68		12/31/13 23:48	75-35-4	
cis-1,2-Dichloroethene	1.9	ug/m3	1.4	1.68		12/31/13 23:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		12/31/13 23:48	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		12/31/13 23:48	100-41-4	
Methylene Chloride	105	ug/m3	1.2	1.68		12/31/13 23:48	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		12/31/13 23:48	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		12/31/13 23:48	91-20-3	
Tetrachloroethene	1.6	ug/m3	1.2	1.68		12/31/13 23:48	127-18-4	
Toluene	3.0	ug/m3	1.3	1.68		12/31/13 23:48	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		12/31/13 23:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		12/31/13 23:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		12/31/13 23:48	79-00-5	
Trichloroethene	1.8	ug/m3	0.92	1.68		12/31/13 23:48	79-01-6	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		12/31/13 23:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		12/31/13 23:48	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		12/31/13 23:48	75-01-4	
m&p-Xylene	ND	ug/m3	3.0	1.68		12/31/13 23:48	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		12/31/13 23:48	95-47-6	
Tentatively Identified Compounds								
Difluorochloromethane	238	ppbv		1.68		12/31/13 23:48	75-45-6	N
Benzene, 1,2,3-trimethy	2.3	ppbv		1.68		12/31/13 23:48	526-73-8	N

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 LMC MRC SSDOem
Pace Project No.: 10251738

Sample: A-INFLUENT		Lab ID: 10251738001	Collected: 12/05/13 14:26	Received: 12/09/13 10:20	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR (TICS)		Analytical Method: TO-15						
Benzene	0.94	ug/m3	0.55	1.68		12/20/13 23:12	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		12/20/13 23:12	56-23-5	
Chloroform	21.2	ug/m3	1.7	1.68		12/20/13 23:12	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.7	1.68		12/20/13 23:12	75-71-8	
1,1-Dichloroethane	30.7	ug/m3	1.4	1.68		12/20/13 23:12	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		12/20/13 23:12	107-06-2	
1,1-Dichloroethene	132	ug/m3	1.4	1.68		12/20/13 23:12	75-35-4	
cis-1,2-Dichloroethene	165	ug/m3	1.4	1.68		12/20/13 23:12	156-59-2	
trans-1,2-Dichloroethene	2.5	ug/m3	1.4	1.68		12/20/13 23:12	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		12/20/13 23:12	100-41-4	
Methylene Chloride	4.4	ug/m3	1.2	1.68		12/20/13 23:12	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		12/20/13 23:12	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		12/20/13 23:12	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		12/20/13 23:12	127-18-4	
Toluene	12.2	ug/m3	1.3	1.68		12/20/13 23:12	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		12/20/13 23:12	120-82-1	
1,1,1-Trichloroethane	883	ug/m3	37.3	33.6		12/22/13 05:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		12/20/13 23:12	79-00-5	
Trichloroethene	1530	ug/m3	18.5	33.6		12/22/13 05:10	79-01-6	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		12/20/13 23:12	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		12/20/13 23:12	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		12/20/13 23:12	75-01-4	
m&p-Xylene	ND	ug/m3	3.0	1.68		12/20/13 23:12	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		12/20/13 23:12	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 LMC MRC SSDOem

Pace Project No.: 10251738

Sample: A-MID GAC		Lab ID: 10251738002	Collected: 12/05/13 14:28	Received: 12/09/13 10:20	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR (TICS)		Analytical Method: TO-15						
Benzene	31.8 ug/m3		0.92	2.82		12/22/13 03:44	71-43-2	
Carbon tetrachloride	ND ug/m3		1.8	2.82		12/22/13 03:44	56-23-5	
Chloroform	ND ug/m3		2.8	2.82		12/22/13 03:44	67-66-3	
Dichlorodifluoromethane	2.9 ug/m3		2.8	2.82		12/22/13 03:44	75-71-8	
1,1-Dichloroethane	18.8 ug/m3		2.3	2.82		12/22/13 03:44	75-34-3	
1,2-Dichloroethane	ND ug/m3		1.2	2.82		12/22/13 03:44	107-06-2	
1,1-Dichloroethene	51.6 ug/m3		2.3	2.82		12/22/13 03:44	75-35-4	
cis-1,2-Dichloroethene	107 ug/m3		2.3	2.82		12/22/13 03:44	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		2.3	2.82		12/22/13 03:44	156-60-5	
Ethylbenzene	ND ug/m3		2.5	2.82		12/22/13 03:44	100-41-4	
Methylene Chloride	6.0 ug/m3		2.0	2.82		12/22/13 03:44	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		2.1	2.82		12/22/13 03:44	1634-04-4	
Naphthalene	5.9 ug/m3		3.0	2.82		12/22/13 03:44	91-20-3	
Tetrachloroethene	ND ug/m3		1.9	2.82		12/22/13 03:44	127-18-4	
Toluene	4.7 ug/m3		2.2	2.82		12/22/13 03:44	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		4.3	2.82		12/22/13 03:44	120-82-1	
1,1,1-Trichloroethane	34.1 ug/m3		3.1	2.82		12/22/13 03:44	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.6	2.82		12/22/13 03:44	79-00-5	
Trichloroethene	43.5 ug/m3		1.6	2.82		12/22/13 03:44	79-01-6	
1,2,4-Trimethylbenzene	3.2 ug/m3		2.8	2.82		12/22/13 03:44	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		2.8	2.82		12/22/13 03:44	108-67-8	
Vinyl chloride	ND ug/m3		0.73	2.82		12/22/13 03:44	75-01-4	
m&p-Xylene	ND ug/m3		5.0	2.82		12/22/13 03:44	179601-23-1	
o-Xylene	ND ug/m3		2.5	2.82		12/22/13 03:44	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 LMC MRC SSDOem

Pace Project No.: 10251738

Sample: C-EFFLUENT		Lab ID: 10251738005	Collected: 12/05/13 12:08	Received: 12/09/13 10:20	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR (TICS)		Analytical Method: TO-15						
Benzene	9.3 ug/m3		0.55	1.68		12/21/13 01:16	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		12/21/13 01:16	56-23-5	
Chloroform	ND ug/m3		1.7	1.68		12/21/13 01:16	67-66-3	
Dichlorodifluoromethane	9.2 ug/m3		1.7	1.68		12/21/13 01:16	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		12/21/13 01:16	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		12/21/13 01:16	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		12/21/13 01:16	75-35-4	
cis-1,2-Dichloroethene	2.1 ug/m3		1.4	1.68		12/21/13 01:16	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		12/21/13 01:16	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.68		12/21/13 01:16	100-41-4	
Methylene Chloride	13.9 ug/m3		1.2	1.68		12/21/13 01:16	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		12/21/13 01:16	1634-04-4	
Naphthalene	ND ug/m3		1.8	1.68		12/21/13 01:16	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		12/21/13 01:16	127-18-4	
Toluene	3.5 ug/m3		1.3	1.68		12/21/13 01:16	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		12/21/13 01:16	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		12/21/13 01:16	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		12/21/13 01:16	79-00-5	
Trichloroethene	3.7 ug/m3		0.92	1.68		12/21/13 01:16	79-01-6	
1,2,4-Trimethylbenzene	4.9 ug/m3		1.7	1.68		12/21/13 01:16	95-63-6	
1,3,5-Trimethylbenzene	2.3 ug/m3		1.7	1.68		12/21/13 01:16	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		12/21/13 01:16	75-01-4	
m&p-Xylene	ND ug/m3		3.0	1.68		12/21/13 01:16	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.68		12/21/13 01:16	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 LMC MRC SSDOem

Pace Project No.: 10251738

Sample: C-INFLUENT		Lab ID: 10251738003	Collected: 12/05/13 12:06	Received: 12/09/13 10:20	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR (TICS)		Analytical Method: TO-15						
Benzene	6.3 ug/m3		0.51	1.57		12/21/13 00:14	71-43-2	
Carbon tetrachloride	ND ug/m3		1.0	1.57		12/21/13 00:14	56-23-5	
Chloroform	ND ug/m3		1.6	1.57		12/21/13 00:14	67-66-3	
Dichlorodifluoromethane	6.6 ug/m3		1.6	1.57		12/21/13 00:14	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.3	1.57		12/21/13 00:14	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.64	1.57		12/21/13 00:14	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.3	1.57		12/21/13 00:14	75-35-4	
cis-1,2-Dichloroethene	13.0 ug/m3		1.3	1.57		12/21/13 00:14	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.3	1.57		12/21/13 00:14	156-60-5	
Ethylbenzene	7.3 ug/m3		1.4	1.57		12/21/13 00:14	100-41-4	
Methylene Chloride	4.1 ug/m3		1.1	1.57		12/21/13 00:14	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.1	1.57		12/21/13 00:14	1634-04-4	
Naphthalene	33.9 ug/m3		1.7	1.57		12/21/13 00:14	91-20-3	
Tetrachloroethene	5.4 ug/m3		1.1	1.57		12/21/13 00:14	127-18-4	
Toluene	4.0 ug/m3		1.2	1.57		12/21/13 00:14	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.4	1.57		12/21/13 00:14	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.7	1.57		12/21/13 00:14	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.86	1.57		12/21/13 00:14	79-00-5	
Trichloroethene	228 ug/m3		0.86	1.57		12/21/13 00:14	79-01-6	
1,2,4-Trimethylbenzene	4.8 ug/m3		1.6	1.57		12/21/13 00:14	95-63-6	
1,3,5-Trimethylbenzene	2.4 ug/m3		1.6	1.57		12/21/13 00:14	108-67-8	
Vinyl chloride	ND ug/m3		0.41	1.57		12/21/13 00:14	75-01-4	
m&p-Xylene	30.4 ug/m3		2.8	1.57		12/21/13 00:14	179601-23-1	
o-Xylene	16.1 ug/m3		1.4	1.57		12/21/13 00:14	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 LMC MRC SSDOem

Pace Project No.: 10251738

Sample: C-MID GAC		Lab ID: 10251738004	Collected: 12/05/13 12:07	Received: 12/09/13 10:20	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR (TICS)		Analytical Method: TO-15						
Benzene	10.9 ug/m3		0.55	1.68		12/21/13 00:45	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		12/21/13 00:45	56-23-5	
Chloroform	ND ug/m3		1.7	1.68		12/21/13 00:45	67-66-3	
Dichlorodifluoromethane	8.6 ug/m3		1.7	1.68		12/21/13 00:45	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.4	1.68		12/21/13 00:45	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		12/21/13 00:45	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		12/21/13 00:45	75-35-4	
cis-1,2-Dichloroethene	7.4 ug/m3		1.4	1.68		12/21/13 00:45	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		12/21/13 00:45	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.68		12/21/13 00:45	100-41-4	
Methylene Chloride	6.4 ug/m3		1.2	1.68		12/21/13 00:45	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		12/21/13 00:45	1634-04-4	
Naphthalene	ND ug/m3		1.8	1.68		12/21/13 00:45	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		12/21/13 00:45	127-18-4	
Toluene	2.5 ug/m3		1.3	1.68		12/21/13 00:45	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.5	1.68		12/21/13 00:45	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		12/21/13 00:45	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		12/21/13 00:45	79-00-5	
Trichloroethene	10.7 ug/m3		0.92	1.68		12/21/13 00:45	79-01-6	
1,2,4-Trimethylbenzene	ND ug/m3		1.7	1.68		12/21/13 00:45	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		12/21/13 00:45	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		12/21/13 00:45	75-01-4	
m&p-Xylene	ND ug/m3		3.0	1.68		12/21/13 00:45	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.68		12/21/13 00:45	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

PROJECT NARRATIVE

Project: 117-0507599.20 LMC MRC SSDOem
Pace Project No.: 10251738

Method: TO-15
Description: TO15 MSV AIR (TICS)
Client: Tetra Tech GEO - Maryland
Date: January 10, 2014

General Information:

5 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Sample Comments:

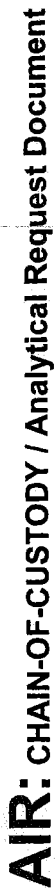
Chlorodifluoromethane (CAS 75-45-6) and 1,2,3-Trimethylbenzene (CAS 526-73-8) were not present as a tentatively identified compounds (TIC) in this GCMS analysis.

- A-INFLUENT (Lab ID: 10251738001)
- A-MID GAC (Lab ID: 10251738002)
- C-INFLUENT (Lab ID: 10251738003)
- C-MID GAC (Lab ID: 10251738004)
- C-EFFLUENT (Lab ID: 10251738005)

This data package has been reviewed for quality and completeness and is approved for release.


REPORT OF LABORATORY ANALYSIS


This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ORIGINAL

	Document Name: Air Sample Condition Upon Receipt	Document Revised: 19Sep2013 Page 1 of 1
	Document No.: F-MN-A-106-rev.08	Issuing Authority: Pace Minnesota Quality Office

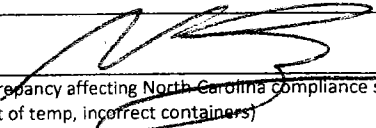
Air Sample Condition Upon Receipt	Client Name: <u>Tetra Tech</u>	Project #: WO#: 10251738
	Courier: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client <input type="checkbox"/> Commercial <input type="checkbox"/> Pace <input type="checkbox"/> Other: _____	 10251738
Tracking Number: <u>804759925967</u>		

Custody Seal on Cooler/Box Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Seals Intact? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Optional: _____	Proj. Due Date: _____	Proj. Name: _____
Packing Material: <input checked="" type="checkbox"/> Bubble Wrap <input type="checkbox"/> Bubble Bags <input type="checkbox"/> Foam <input type="checkbox"/> None <input type="checkbox"/> Other: _____				
Temp. (TO17 and TO13 samples only) (°C): _____ Corrected Temp (°C): _____		Thermom. Used: <input type="checkbox"/> B88A912167504 <input type="checkbox"/> 72337080 <input type="checkbox"/> B88A9132521491 <input type="checkbox"/> 80312447		
Temp should be above freezing to 6°C Correction Factor: _____		Date & Initials of Person Examining Contents: <u>12-9-13</u>		
Comments: _____				

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media: <u>Air Can</u>		11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received: <u>6 Air Cans</u>					
Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
A-INFLUENT	2551				
A-MIDGAC	2574				
C-INFLUENT	2529				
C-MIDGAC	2556				
C-EFFLUENT	2558				
Do Not Analyze	2528				

CLIENT NOTIFICATION/RESOLUTION	Field Data Required? <input type="checkbox"/> Yes <input type="checkbox"/> No
Person Contacted: <u>DAWN MONICO (owner)</u>	Date/Time: <u>12/10/13</u>
Comments/Resolution: <u>CHLORODIFLUOROMETHANE & 1,2,3 TRIMETHYLBENZENE WILL BE REPORTED AS TIL'S UNTIL 2014. (N)</u>	

Project Manager Review: 	Date: <u>12/10/13</u>
Note: Whenever there is a discrepancy affecting North Carolina Compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)	

SAMPLE SUMMARY

Project: 117-0507599.20 LMC MRC SSDOem

Pace Project No.: 10251738

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10251738001	A-INFLUENT	Air	12/05/13 14:26	12/09/13 10:20
10251738002	A-MID GAC	Air	12/05/13 14:28	12/09/13 10:20
10251738003	C-INFLUENT	Air	12/05/13 12:06	12/09/13 10:20
10251738004	C-MID GAC	Air	12/05/13 12:07	12/09/13 10:20
10251738005	C-EFFLUENT	Air	12/05/13 12:08	12/09/13 10:20

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

HOLDTIME

SDG 10251738

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/M3	C-MID GAC	10251738004	NM	12/05/2013	12/21/2013	12/21/2013	16	0	16
	UG/M3	C-INFLUENT	10251738003	NM	12/05/2013	12/21/2013	12/21/2013	16	0	16
	UG/M3	C-EFFLUENT	10251738005	NM	12/05/2013	12/21/2013	12/21/2013	16	0	16
	UG/M3	A-MID GAC	10251738002	NM	12/05/2013	12/22/2013	12/22/2013	17	0	17
	UG/M3	A-INFLUENT	10251738001	NM	12/05/2013	12/22/2013	12/22/2013	17	0	17
	UG/M3	A-INFLUENT	10251738001	NM	12/05/2013	12/20/2013	12/20/2013	15	0	15

PROJECT NARRATIVE

Project: SSD-04M
Pace Project No.: 10252866

Method: TO-15
Description: TO15 MSV AIR (TICS)
Client: Tetra Tech GEO - Maryland
Date: January 10, 2014

General Information:

1 sample was analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

QC Batch: AIR/19087

IQ: The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

- A-EFFLUENT (Lab ID: 10252866002)

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Sample Comments:

Chlorodifluoromethane (CAS 75-45-6) was present as a tentatively identified compound (TIC) in this GCMS analysis at an estimated concentration of 141.7974 ppbv.

- A-EFFLUENT (Lab ID: 10252866002)

1,2,3 Trimethylbenzene (CAS 108-67-8) was present as a tentatively identified compound (TIC) in this GCMS analysis at an estimated concentration of 1.3714 ppbv.

- A-EFFLUENT (Lab ID: 10252866002)

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ATTACHMENT A

PACE ANALYTICAL SERVICES MINNEAPOLIS - PLEASE FILL IN QLs and MDLs.

Analyte	Industrial Air Screening Level (ug/m ³)	QL (ug/m ³)	MDL (ug/m ³)
Benzene	16	0.33	0.16
Carbon Tetrachloride	20	0.64	0.32
Chlorodifluoromethane	220,000	1.00	0.50
Chloroform	5	0.99	0.50
Dichlorodifluoromethane	440	1.01	0.50
1,1-Dichloroethane	77	0.82	0.42
1,2-Dichloroethane	5	0.41	0.21
1,1-Dichloroethene	880	0.81	0.40
Cis-1,2-Dichloroethene	NA	0.81	0.15
Trans-1,2-Dichloroethene	260	0.81	0.40
Ethylbenzene	49	0.88	0.12
Methyl t-Butyl-Ether	470	0.73	0.09
Methylene Chloride	2600	0.71	0.35
Naphthalene	3.6	1.07	0.53
Tetrachloroethene	175	0.69	0.35
Toluene	22,000	0.77	0.38
1,2,4-Trichlorobenzene	9	1.51	0.76
1,1,1-Trichloroethane	22,000	1.11	0.56
1,1,2-Trichloroethane	8	0.55	0.28
Trichloroethene	8.8 ^M	0.55	0.27
1,2,3-Trimethylbenzene	22 ^A	1.00	0.50
1,2,4-Trimethylbenzene	31 ^A	1.00	0.50
1,3,5-Trimethylbenzene	NA	1.00	0.13
Vinyl Chloride	28	0.26	0.13
Xylenes (total)	440	2.65	1.32

M = Maryland Department of the Environment's screening level for trichloroethene

A = American Council of Governmental Industrial Hygienists Threshold Limit Value

Industrial Air Screening Levels from USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites May-12

reported as
TLC

reported as
TLC

EDD
has
mep xylene
O-xylene

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10251738

Lab File ID: 35401BFB.D

BFB Injection Date: 12/20/2013

Instrument ID: 10AIRD

BFB Injection Time: 13:17

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.81
75	30.00 - 66.00% of mass 95	49.76
96	5.00 - 9.00% of mass 95	6.69
173	Less than 2.00% of mass 174	0.46 (0.57)
174	50.00 - 120.00% of mass 95	80.71
175	4.00 - 9.00% of mass 174	6.77 (8.39)
176	93.00 - 101.00% of mass 174	78.74 (97.56)
177	5.00 - 9.00% of mass 176	4.94 (6.28)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	35402.D	12/20/2013	13:44
2	CAL2	CAL2	35403.D	12/20/2013	14:11
3	CAL3	CAL3	35404.D	12/20/2013	14:40
4	CAL4	CAL4	35405.D	12/20/2013	15:08
5	CAL5	CAL5	35406.D	12/20/2013	15:38
6	CAL6	CAL6	35407.D	12/20/2013	16:12
7	ICV (LCS)	ICV	35408.D	12/20/2013	16:41
8	LCS for HBN 281887 [AIR/	1599770	35409LT.D	12/20/2013	17:09
9	LCS (LCS)	LCS	35409.D	12/20/2013	17:09
10	CERT	CERT	35413.D	12/20/2013	19:10
11	BLANK for HBN 281887 [AI	1599769	35413LT.D	12/20/2013	19:10
12	A-INFLUENT	10251738001	35421.D	12/20/2013	23:12
13	C-INFLUENT	10251738003	35423.D	12/21/2013	00:14
14	C-MID GAC	10251738004	35424.D	12/21/2013	00:45
15	C-EFFLUENT	10251738005	35425.D	12/21/2013	01:16

Report Date : 20-Dec-2013 18:44

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 20-DEC-2013 13:44
 End Cal Date : 20-DEC-2013 16:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m
 Last Edit : 20-Dec-2013 17:05 jmasterman

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\122013.b\35402.d
 Level 2: \\192.168.10.12\chem\10airD.i\122013.b\35403.d
 Level 3: \\192.168.10.12\chem\10airD.i\122013.b\35404.d
 Level 4: \\192.168.10.12\chem\10airD.i\122013.b\35405.d
 Level 5: \\192.168.10.12\chem\10airD.i\122013.b\35406.d
 Level 6: \\192.168.10.12\chem\10airD.i\122013.b\35407.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Propylene	++++	0.46568	0.34162	0.30405	0.30553	0.29746	AVRG	0.34287			20.64774
2 Dichlorodifluoromethane	2.90911	2.43903	1.96960	1.73708	1.66463	1.51725	AVRG	2.03945			26.18047
3 Dichlorotetrafluoroethane	2.24787	1.83960	1.47208	1.32798	1.32163	1.19027	AVRG	1.56657			25.63165
4 Chloromethane	0.82471	0.63160	0.48674	0.45484	0.48447	0.46953	AVRG	0.55865			26.00192
5 Vinyl chloride	0.75094	0.58705	0.46683	0.44006	0.47454	0.47820	AVRG	0.53294			22.17873
6 1,3-Butadiene	0.50140	0.41708	0.32284	0.29305	0.31784	0.32359	AVRG	0.36263			22.12199
7 Bromomethane	0.79720	0.66569	0.53989	0.49707	0.52582	0.50237	AVRG	0.58800			20.34862
8 Chloroethane	0.26647	0.25488	0.20114	0.19584	0.20820	0.20610	AVRG	0.22210			13.68854
9 Ethanol	0.28048	0.32761	0.24847	0.18792	0.18955	0.22377	AVRG	0.24288			22.45573
10 Vinyl Bromide	0.75870	0.64346	0.50074	0.47509	0.48997	0.47217	AVRG	0.55669			21.21180
11 Acrolein	0.14765	0.19857	0.14055	0.14245	0.15313	0.15081	AVRG	0.15553			13.90312
12 Trichlorofluoromethane	2.34643	1.93587	1.52380	1.37090	1.34137	1.19236	AVRG	1.61845			27.06373
13 Acetone	++++	1.32361	0.98602	0.81334	0.81600	0.82040	AVRG	0.95187			23.15359
14 Isopropyl Alcohol	1.11134	0.90360	0.72234	0.63800	0.63146	0.68313	AVRG	0.78164			24.27275

Report Date : 20-Dec-2013 18:44

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 20-DEC-2013 13:44
 End Cal Date : 20-DEC-2013 16:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m
 Last Edit : 20-Dec-2013 17:05 jmasterman

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 1,1-Dichloroethene	1.23308	0.99976	0.90816	0.75046	0.73518	0.66616	AVRG		0.86547		24.59605
16 Acrylonitrile	0.39346	0.33492	0.29083	0.28848	0.30555	0.28559	AVRG		0.31646		13.23984
17 Tert Butyl Alcohol	1.70303	1.45614	1.14549	1.07666	1.00745	0.91417	AVRG		1.21749		24.73058
18 Freon 113	1.63702	1.45140	1.13030	1.02364	1.03369	0.92787	AVRG		1.20066		23.31633
19 Methylene chloride	12955	20785	73717	686745	1420379	2046419	LINR	-0.01726	0.53392		0.99902
20 Allyl Chloride	0.32593	0.26107	0.20004	0.19710	0.21690	0.20379	AVRG		0.23414		21.69754
21 Carbon Disulfide	2.32416	1.84853	1.43336	1.35753	1.38841	1.29460	AVRG		1.60777		25.04063
22 trans-1,2-dichloroethene	0.92811	0.70094	0.51346	0.48018	0.56065	0.58140	AVRG		0.62746		26.38709
23 Methyl Tert Butyl Ether	2.09871	1.91336	1.42095	1.37453	1.64156	1.58673	AVRG		1.67264		16.91087
24 Vinyl Acetate	1.11649	1.29468	1.12132	1.15279	1.18159	1.14381	AVRG		1.16678		5.63340
25 1,1-Dichloroethane	1.26836	1.37388	1.06634	0.98209	1.00659	0.97937	AVRG		1.11277		15.07419
27 Methyl Ethyl Ketone	0.45483	0.33931	0.28229	0.26496	0.26883	0.26544	AVRG		0.31244		24.04478
28 n-Hexane	1.22633	1.10709	0.83464	0.70928	0.68358	0.68503	AVRG		0.87433		27.02311
29 cis-1,2-Dichloroethene	0.92902	0.81654	0.67857	0.64173	0.62354	0.62308	AVRG		0.71875		17.54815
30 Ethyl Acetate	1.43666	1.17768	1.02971	1.02339	0.98633	0.98413	AVRG		1.10632		15.98113
31 Chloroform	1.97273	1.90285	1.55105	1.39153	1.37564	1.30561	AVRG		1.58324		18.12676
32 Tetrahydrofuran	0.72322	0.55008	0.47202	0.47494	0.47745	0.47779	AVRG		0.52925		18.82186
33 1,1,1-Trichloroethane	2.15001	1.91308	1.60592	1.49296	1.42250	1.37296	AVRG		1.65957		18.54842
34 1,2-Dichloroethane	1.44049	1.25106	1.06344	1.03161	1.02128	1.00334	AVRG		1.13054		15.23006
35 Benzene	2.67327	2.47469	2.30012	1.78410	1.66213	1.58262	AVRG		2.02949		22.12791
36 Carbon tetrachloride	2.06666	1.88150	1.54996	1.45141	1.34918	1.23427	AVRG		1.58883		20.24882
37 Cyclohexane	1.20265	1.02269	0.83329	0.70166	0.67003	0.66563	AVRG		0.84932		25.94806

Report Date : 20-Dec-2013 18:44

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 20-DEC-2013 13:44
 End Cal Date : 20-DEC-2013 16:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m
 Last Edit : 20-Dec-2013 17:05 jmasterman

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
39 2,2,4-Trimethylpentane	3.27445	3.03254	2.60671	2.23348	2.19232	2.08250	AVRG	2.57033			19.09996
40 Heptane	1.10438	1.00748	0.85247	0.76075	0.73906	0.72660	AVRG	0.96512			18.17714
41 1,2-Dichloropropane	0.80758	0.78181	0.64601	0.57241	0.56963	0.56330	AVRG	0.65679			16.94626
42 Trichloroethene	0.91743	0.85574	0.74132	0.70035	0.69583	0.69465	AVRG	0.76755			12.48351
43 1,4-Dioxane	0.46642	0.42899	0.34978	0.30199	0.26782	0.33025	AVRG	0.35754			21.26383
44 Bromodichloromethane	2.00690	1.81903	1.62669	1.51450	1.46393	1.38329	AVRG	1.63422			14.38054
45 Methyl Isobutyl Ketone	1.59610	1.35914	1.12022	1.08762	1.05340	1.02840	AVRG	1.20748			18.58575
46 cis-1,3-Dichloropropene	1.29285	1.15676	1.04834	1.02665	1.01487	1.00550	AVRG	1.09083			10.38232
47 trans-1,3-Dichloropropene	1.32580	1.16648	1.07916	1.06478	1.09516	1.08205	AVRG	1.13557			8.79151
49 Toluene	3.69300	2.97013	2.52063	2.14799	2.04078	1.93010	AVRG	2.55044			26.52921
50 1,1,2-Trichloroethane	1.10791	0.92299	0.81958	0.73050	0.72429	0.71401	AVRG	0.83655			18.53890
51 Methyl Butyl Ketone	2.56312	2.45689	2.19927	2.30468	2.18032	2.13811	AVRG	2.30707			7.36222
52 Dibromochloromethane	3.69168	2.88411	2.57522	2.63458	2.58076	2.47983	AVRG	2.80769			16.16743
53 1,2-Dibromoethane	3.58806	2.84973	2.40742	2.45038	2.36815	2.22545	AVRG	2.64820			19.09251
54 Tetrachloroethene	3.05035	2.62583	2.20296	2.19258	2.13702	2.08755	AVRG	2.38271			15.93480
56 Chlorobenzene	4.93662	3.87733	3.18224	3.18073	3.05953	3.02239	AVRG	3.54347			21.21530
57 Ethyl Benzene	9.08776	7.25376	6.04439	5.79633	5.32296	4.78303	AVRG	6.38137			24.49472
58 m&p-Xylene	7.49006	5.41193	4.73031	4.70191	4.39133	4.12974	AVRG	5.14254			23.87552
59 Bromoform	3.88635	2.65528	2.39313	2.56353	2.41836	2.25270	AVRG	2.69489			22.27330
60 Styrene	4.95670	3.54103	3.20681	3.28429	3.04665	2.89598	AVRG	3.48858			21.54927
61 o-Xylene	7.54760	5.59977	4.78033	4.60038	4.22576	3.93617	AVRG	5.11500			25.80313
62 1,1,2,2-Tetrachloroethane	5.07641	3.68830	2.99448	3.24617	2.95732	2.62535	AVRG	3.43134			25.64515

Report Date : 20-Dec-2013 18:44

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 20-DEC-2013 13:44
 End Cal Date : 20-DEC-2013 16:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m
 Last Edit : 20-Dec-2013 17:05 jmasterman

Compound	0.1000000 Level 1	0.2000000 Level 2	1.0000 Level 3	10.0000 Level 4	20.0000 Level 5	30.0000 Level 6	Curve	b	ml	m2	%RSD or R^2
63 Isopropylbenzene	++++	7.39472	6.01939	5.98208	5.38403	4.86909	AVRG		5.92966		15.95324
64 N-Propylbenzene	++++	8.69281	7.27719	7.39504	6.30053	5.42230	AVRG		7.01757		17.56178
65 4-Ethyltoluene		8.72378	6.81029	5.81309	5.93451	5.37804	AVRG		6.22806		22.54434
66 1,3,5-Trimethylbenzene		8.04188	5.80663	5.11884	5.29988	4.66261	AVRG		5.50461		24.91909
67 1,2,4-Trimethylbenzene		8.21583	6.02649	4.86202	5.31896	4.76687	AVRG		5.54179		26.38673
68 1,3-Dichlorobenzene		4.19786	3.27005	2.65626	3.15818	2.88574	AVRG		3.10122		19.96607
69 Sec- Butylbenzene		11.01176	8.47925	6.43040	7.31397	6.42181	AVRG		7.48373		27.19810
71 Benzyl Chloride		4.35219	3.30482	3.22418	4.61387	4.32420	AVRG		3.90114		15.39112
72 1,4-Dichlorobenzene		4.00474	3.18996	2.61313	3.10458	2.87163	AVRG		3.02785		18.67473
73 1,2-Dichlorobenzene		3.89406	2.95247	2.42197	2.92038	2.80499	AVRG		2.88394		19.46529
74 N-Butylbenzene		6.67500	5.58303	4.85592	5.69379	5.29284	AVRG		5.44869		13.46742
75 1,2,4-Trichlorobenzene		1.43214	1.01065	1.10564	1.58464	1.59525	AVRG		1.41398		20.90173
76 Naphthalene		3.63127	2.70621	2.41087	3.04662	2.98764	AVRG		2.99887		13.97792
77 Hexachlorobutadiene		2.83341	2.08681	1.58900	1.67596	1.63156	AVRG		1.90491		25.79805
26 Hexane-d14 (S)		0.46427	0.48609	0.47480	0.48017	0.48990	AVRG		0.48240		2.52711
48 Toluene-d8 (S)		0.79056	0.84527	0.83498	0.79637	0.83197	AVRG		0.82470		3.03963
70 1,4-dichlorobenzene-d4 (S)		0.42623	0.40723	0.41542	0.47296	0.40023	AVRG		0.41313		9.14649

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10251738

Lab File ID: 35503BFB.D

BFB Injection Date: 12/21/2013

Instrument ID: 10AIRD

BFB Injection Time: 16:27

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.96
75	30.00 - 66.00% of mass 95	48.63
96	5.00 - 9.00% of mass 95	6.65
173	Less than 2.00% of mass 174	0.51 (0.56)
174	50.00 - 120.00% of mass 95	91.70
175	4.00 - 9.00% of mass 174	7.00 (7.64)
176	93.00 - 101.00% of mass 174	87.34 (95.25)
177	5.00 - 9.00% of mass 176	5.69 (6.51)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	35505.D	12/21/2013	17:25
2	CAL2	CAL2	35506.D	12/21/2013	17:53
3	CAL3	CAL3	35507.D	12/21/2013	18:21
4	CAL4	CAL4	35508.D	12/21/2013	18:49
5	CAL5	CAL5	35509.D	12/21/2013	19:20
6	CAL6	CAL6	35510.D	12/21/2013	19:53
7	ICV (LCS)	ICV	35513.D	12/21/2013	21:16
8	LCS (LCS)	LCS	35514.D	12/21/2013	21:45
9	BLANK (BLK)	BLANK	35517.D	12/21/2013	23:14
10	A-MID GAC	10251738002	35526.D	12/22/2013	03:44
11	A-INFLUENT	10251738001	35529.D	12/22/2013	05:10

Report Date : 22-Dec-2013 10:30

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-DEC-2013 17:25
 End Cal Date : 21-DEC-2013 19:53
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122113.b\TO15_355-13.m
 Last Edit : 22-Dec-2013 10:27 drandall

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\122113.b\35505.d
 Level 2: \\192.168.10.12\chem\10airD.i\122113.b\35506.d
 Level 3: \\192.168.10.12\chem\10airD.i\122113.b\35507.d
 Level 4: \\192.168.10.12\chem\10airD.i\122113.b\35508.d
 Level 5: \\192.168.10.12\chem\10airD.i\122113.b\35509.d
 Level 6: \\192.168.10.12\chem\10airD.i\122113.b\35510.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Propylene	0.374921	0.323711	0.268401	0.333671	0.331174	0.331141	AVRG	0.327261			10.429421
2 Dichlorodifluoromethane	2.259741	1.951431	1.591981	1.992851	1.836281	1.710301	AVRG	1.890431			12.406911
3 Dichlorotetrafluoroethane	1.786861	1.573211	1.333771	1.606351	1.444961	1.359161	AVRG	1.517391			11.324571
4 Chloromethane	0.682781	0.587851	0.491051	0.602341	0.561301	0.536741	AVRG	0.577011			11.286141
5 Vinyl chloride	0.610521	0.532491	0.453621	0.585021	0.557411	0.559971	AVRG	0.549841			9.841071
6 1,3-Butadiene	0.402111	0.345061	0.302441	0.383161	0.374401	0.380631	AVRG	0.364631			9.773031
7 Bromomethane	0.703081	0.607521	0.507291	0.608211	0.584881	0.580271	AVRG	0.598541			10.553571
8 Chloroethane	0.289241	0.244751	0.204121	0.252221	0.248521	0.249421	AVRG	0.248051			10.902491
9 Ethanol	0.288311	0.287461	0.207181	0.283251	0.251641	0.262691	AVRG	0.263461			11.868061
10 Vinyl Bromide	0.630821	0.548691	0.454671	0.581491	0.559871	0.543861	AVRG	0.553231			10.441511
11 Acrolein	0.265221	0.194921	0.180511	0.183001	0.177201	0.173031	AVRG	0.195651			17.825921
12 Trichlorofluoromethane	1.845901	1.636151	1.414451	1.671391	1.520251	1.443111	AVRG	1.588541			10.208381
13 Acetone	++++	1.586631	1.149241	1.056781	0.989031	0.993501	AVRG	1.157041			21.963651
14 Isopropyl Alcohol	0.913721	0.822951	0.658021	0.881221	0.804761	0.807551	AVRG	0.814711			10.840301

Report Date : 22-Dec-2013 10:30

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-DEC-2013 17:25
 End Cal Date : 21-DEC-2013 19:53
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122113.b\TO15_355-13.m
 Last Edit : 22-Dec-2013 10:27 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 1,1-Dichloroethene	0.997731	0.921861	0.773521	0.903641	0.837701	0.806201	AVRG	0.873441			9.508361
16 Acrylonitrile	0.375291	0.316591	0.285651	0.369121	0.348031	0.340681	AVRG	0.339231			9.914971
17 Tert Butyl Alcohol	1.028271	0.999791	0.901881	1.119131	1.007091	0.962841	AVRG	1.006501			6.984741
18 Freon 113	1.398351	1.227021	1.058711	1.240461	1.148701	1.100691	AVRG	1.195661			10.178381
19 Methylene chloride	++++	1.207161	0.802731	0.690471	0.655611	0.635711	AVRG	0.798341			29.748551
20 Allyl Chloride	0.235041	0.205881	0.182701	0.244261	0.235931	0.230731	AVRG	0.222421			10.523291
21 Carbon Disulfide	1.848321	1.548111	1.343651	1.628281	1.583391	1.553661	AVRG	1.584231			10.248401
22 trans-1,2-dichloroethene	0.620021	0.540641	0.474371	0.589501	0.578401	0.567061	AVRG	0.561671			8.920191
23 Methyl Tert Butyl Ether	1.571371	1.402081	1.201631	1.522421	1.490091	1.500971	AVRG	1.448101			9.168701
24 Vinyl Acetate	1.306901	1.100851	0.973101	1.291261	1.250921	1.195851	AVRG	1.186481			10.831811
25 1,1-Dichloroethane	1.169821	1.022921	0.858331	1.039381	0.991461	0.937661	AVRG	1.003261			10.442751
27 Methyl Ethyl Ketone	0.294271	0.252991	0.191001	0.256051	0.249521	0.252501	AVRG	0.249391			13.287361
28 n-Hexane	1.102401	0.843931	0.690421	0.756801	0.755011	0.710851	AVRG	0.809901			18.857911
29 cis-1,2-Dichloroethene	0.685021	0.574171	0.520561	0.715131	0.683211	0.670711	AVRG	0.641471			11.886531
30 Ethyl Acetate	1.195711	1.075191	0.863161	1.231331	1.175471	1.162231	AVRG	1.117181			12.069881
31 Chloroform	1.643631	1.465961	1.196651	1.600941	1.513071	1.483211	AVRG	1.483911			10.565371
32 Tetrahydrofuran	25671	46801	206351	2945981	5844751	9081841	LTNR	0.008041	0.528861		0.999581
33 1,1,1-Trichloroethane	1.689451	1.357121	1.229771	1.656571	1.533481	1.463031	AVRG	1.488241			11.849871
34 1,2-Dichloroethane	1.249911	1.063011	0.893541	1.229161	1.147681	1.102031	AVRG	1.114221			11.647521
35 Benzene	2.046111	1.739281	1.465361	1.882061	1.796331	1.727391	AVRG	1.776091			10.825321
36 Carbon tetrachloride	1.729871	1.476171	1.272821	1.645181	1.483071	1.350791	AVRG	1.492981			11.537211
37 Cyclohexane	0.847431	0.711861	0.655911	0.809941	0.767931	0.738071	AVRG	0.755171			9.119451

Report Date : 22-Dec-2013 10:30

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-DEC-2013 17:25
 End Cal Date : 21-DEC-2013 19:53
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122113.b\TO15_355-13.m
 Last Edit : 22-Dec-2013 10:27 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
39 2,2,4-Trimethylpentane	2.82239	2.38735	2.00959	2.61061	2.46242	2.41783	AVRG		2.45170		10.99819
40 Heptane	0.89995	0.76834	0.67709	0.89275	0.84460	0.84790	AVRG		0.82177		10.34586
41 1,2-Dichloropropane	0.71687	0.59206	0.51211	0.67088	0.63804	0.62773	AVRG		0.62628		11.16660
42 Trichloroethene	0.88561	0.76469	0.63667	0.88535	0.85080	0.82347	AVRG		0.80776		11.78447
43 1,4-Dioxane	1569	2854	13665	223515	388835	595552	LINR	-0.01638	0.34918		0.99592
44 Bromodichloromethane	1.58124	1.40049	1.20028	1.71454	1.60983	1.51315	AVRG		1.50326		12.06737
45 Methyl Isobutyl Ketone	4788	8497	43044	683851	1359440	2057524	LINR	0.00488	1.20752		0.99960
46 cis-1,3-Dichloropropene	4665	8367	38416	595744	1232760	1818440	LINR	0.00461	1.07389		0.99955
47 trans-1,3-Dichloropropene	4002	7585	36119	647752	1307880	1962661	LINR	0.00825	1.15569		0.99961
49 Toluene	2.85760	2.33331	1.85971	2.35651	2.19463	2.02564	AVRG		2.27123		15.13064
50 1,1,2-Trichloroethane	0.84258	0.69912	0.59441	0.82903	0.77386	0.71750	AVRG		0.74275		12.47432
51 Methyl Butyl Ketone	4350	8864	37994	684762	1332200	1978501	LINR	0.00929	2.51912		0.99929
52 Dibromodichloromethane	7038	12290	55107	847269	1646209	2328738	LINR	-0.00853	2.99643		0.99840
53 1,2-Dibromoethane	6269	11201	47473	716550	1404059	2034545	LINR	-0.00165	2.59986		0.99927
54 Tetrachloroethene	2.45594	2.05453	1.73966	2.62124	2.46198	2.46135	AVRG		2.29745		14.44725
56 Chlorobenzene	3.11231	2.84974	2.35556	3.46675	3.32753	3.30167	AVRG		3.06893		13.34069
57 Ethyl Benzene	12306	23555	104760	1564968	2968411	4313105	LINR	-0.00685	5.50934		0.99865
58 m,p-Xylene	10815	17780	81641	1241584	2410825	3519784	LINR	-0.00081	4.49040		0.99922
59 Bromoform	6160	11170	48182	741372	1410189	2004088	LINR	-0.01154	2.57576		0.99804
60 Styrene	5721	10755	52650	860655	1658311	2413686	LINR	-0.00052	3.08531		0.99897
61 o-Xylene	11069	18840	84959	1211473	2389461	3366718	LINR	-0.00869	4.33424		0.99864
62 1,1,2,2-Tetrachloroethane	7453	13222	58616	826545	1562893	2200559	LINR	-0.01742	2.83301		0.99758

Report Date : 22-Dec-2013 10:30

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-DEC-2013 17:25
 End Cal Date : 21-DEC-2013 19:53
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122113.b\TO15_355-13.m
 Last Edit : 22-Dec-2013 10:27 drandall

Compound	0.100000	0.200000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Isopropylbenzene	5.15619	4.64115	4.04671	5.92419	5.30486	5.10836	AVRG		5.03024		12.62088
64 N-Propylbenzene	14958	27302	126456	185466	333358	460275	QUAD	0.01366	0.12334	0.00274	0.99946
65 4-Ethyltoluene	10759	20127	99920	151771	266366	370802	QUAD	0.01354	0.15233	0.00430	0.99899
66 1,3,5-Trimethylbenzene	10054	18668	90751	130999	239323	329486	QUAD	0.01432	0.17437	0.00515	0.99966
67 1,2,4-Trimethylbenzene	8375	15912	86253	130522	227518	318440	QUAD	0.01320	0.17910	0.00571	0.99876
68 1,3-Dichlorobenzene	6580	11689	57338	85565	149622	207894	QUAD	0.01305	0.26867	0.01409	0.99897
69 Sec- Butylbenzene	13534	24669	127164	179037	308637	424016	QUAD	0.01301	0.12358	0.00389	0.99899
71 Benzyl Chloride	4215	8000	45313	109354	196157	270303	QUAD	0.02501	0.20457	0.00837	0.99929
72 1,4-Dichlorobenzene	7084	12716	56378	85279	148859	204634	QUAD	0.01407	0.26142	0.01597	0.99914
73 1,2-Dichlorobenzene	6108	10531	52558	84093	143358	192599	QUAD	0.01863	0.24080	0.02297	0.99923
74 N-Butylbenzene	8037	15000	87459	156549	272712	369733	QUAD	0.02096	0.13514	0.00552	0.99931
75 1,2,4-Trichlorobenzene	1768	3078	20439	52603	107600	165722	LINR	0.03527	2.09962		0.99904
76 Naphthalene	3003	6179	37905	104213	215837	326175	LINR	0.03292	4.15079		0.99949
77 Hexachlorobutadiene	4003	7066	31517	498492	100306	149166	LINR	0.01197	1.89550		0.99972
26 Hexane-d14 (S)	0.47307	0.49069	0.45488	0.42800	0.44264	0.44567	AVRG		0.45583		4.96904
48 Toluene-d8 (S)	0.82875	0.81645	0.82722	0.79718	0.80947	0.80692	AVRG		0.81433		1.50537
70 1,4-dichlorobenzene-d4 (S)	0.40842	0.41530	0.45403	0.45175	0.37364	0.36993	AVRG		0.41218		8.82183

Report Date : 22-Dec-2013 10:30

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-DEC-2013 17:25
End Cal Date : 21-DEC-2013 19:53
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\122113.b\T015_355-13.m
Last Edit : 22-Dec-2013 10:27 drandall

Average %RSD Results.

Calculated Average %RSD = 16.20190
Maximum Average %RSD = 40.00000
Passed Average %RSD Test.

Curve	Formula	Units
Averaged	Ant = Rsp/ml	Response
Linear	Ant = b + Rsp/ml	Response
Quad	Ant = b + m1*Rsp + m2*Rsp^2	Response

QUALITY CONTROL DATA

Project: 117-0507599.20 LMC MRC SSDOem
Pace Project No.: 10251738

QC Batch: AIR/18997 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10251738001, 10251738003, 10251738004, 10251738005

METHOD BLANK: 1599769 Matrix: Air
Associated Lab Samples: 10251738001, 10251738003, 10251738004, 10251738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	12/20/13 19:10	
1,1,2-Trichloroethane	ug/m3	ND	0.55	12/20/13 19:10	
1,1-Dichloroethane	ug/m3	ND	0.82	12/20/13 19:10	
1,1-Dichloroethene	ug/m3	ND	0.81	12/20/13 19:10	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	12/20/13 19:10	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	12/20/13 19:10	
1,2-Dichloroethane	ug/m3	ND	0.41	12/20/13 19:10	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	12/20/13 19:10	
Benzene	ug/m3	ND	0.32	12/20/13 19:10	
Carbon tetrachloride	ug/m3	ND	0.64	12/20/13 19:10	
Chloroform	ug/m3	ND	0.99	12/20/13 19:10	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	12/20/13 19:10	
Dichlorodifluoromethane	ug/m3	ND	1.0	12/20/13 19:10	
Ethylbenzene	ug/m3	ND	0.88	12/20/13 19:10	
m&p-Xylene	ug/m3	ND	1.8	12/20/13 19:10	
Methyl-tert-butyl ether	ug/m3	ND	0.73	12/20/13 19:10	
Methylene Chloride	ug/m3	ND	0.71	12/20/13 19:10	
Naphthalene	ug/m3	ND	1.1	12/20/13 19:10	
o-Xylene	ug/m3	ND	0.88	12/20/13 19:10	
Tetrachloroethene	ug/m3	ND	0.69	12/20/13 19:10	
Toluene	ug/m3	ND	0.77	12/20/13 19:10	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	12/20/13 19:10	
Trichloroethene	ug/m3	ND	0.55	12/20/13 19:10	
Vinyl chloride	ug/m3	ND	0.26	12/20/13 19:10	

LABORATORY CONTROL SAMPLE: 1599770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	50.2	91	69-131	
1,1,2-Trichloroethane	ug/m3	55.5	51.7	93	68-132	
1,1-Dichloroethane	ug/m3	41.2	39.2	95	66-131	
1,1-Dichloroethene	ug/m3	40.3	35.8	89	64-136	
1,2,4-Trichlorobenzene	ug/m3	75.5	89.4	118	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	43.7	87	71-135	
1,2-Dichloroethane	ug/m3	41.2	38.9	95	66-136	
1,3,5-Trimethylbenzene	ug/m3	50	44.9	90	69-136	
Benzene	ug/m3	32.5	29.3	90	72-136	
Carbon tetrachloride	ug/m3	64	58.5	91	64-133	
Chloroform	ug/m3	49.7	46.5	94	66-129	
cis-1,2-Dichloroethene	ug/m3	40.3	36.8	91	73-135	
Dichlorodifluoromethane	ug/m3	50.3	42.9	85	64-131	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 117-0507599.20 LMC MRC SSDOem

Pace Project No.: 10251738

LABORATORY CONTROL SAMPLE: 1599770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/m3	44.2	39.8	90	74-136	
m&p-Xylene	ug/m3	44.2	39.7	90	72-135	
Methyl-tert-butyl ether	ug/m3	36.7	31.8	87	71-134	
Methylene Chloride	ug/m3	35.3	36.7	104	59-140	
Naphthalene	ug/m3	53.3	55.9	105	30-150	
o-Xylene	ug/m3	44.2	39.3	89	74-135	
Tetrachloroethene	ug/m3	69	62.4	90	66-135	
Toluene	ug/m3	38.3	34.0	89	71-134	
trans-1,2-Dichloroethene	ug/m3	40.3	32.5	81	68-129	
Trichloroethene	ug/m3	54.6	50.7	93	68-134	
Vinyl chloride	ug/m3	26	23.3	90	64-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 117-0507599.20 LMC MRC SSDOem
Pace Project No.: 10251738

QC Batch: AIR/19003 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10251738002

METHOD BLANK: 1600628 Matrix: Air
Associated Lab Samples: 10251738002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	12/21/13 23:14	
1,1,2-Trichloroethane	ug/m3	ND	0.55	12/21/13 23:14	
1,1-Dichloroethane	ug/m3	ND	0.82	12/21/13 23:14	
1,1-Dichloroethene	ug/m3	ND	0.81	12/21/13 23:14	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	12/21/13 23:14	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	12/21/13 23:14	
1,2-Dichloroethane	ug/m3	ND	0.41	12/21/13 23:14	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	12/21/13 23:14	
Benzene	ug/m3	ND	0.32	12/21/13 23:14	
Carbon tetrachloride	ug/m3	ND	0.64	12/21/13 23:14	
Chloroform	ug/m3	ND	0.99	12/21/13 23:14	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	12/21/13 23:14	
Dichlorodifluoromethane	ug/m3	ND	1.0	12/21/13 23:14	
Ethylbenzene	ug/m3	ND	0.88	12/21/13 23:14	
m&p-Xylene	ug/m3	ND	1.8	12/21/13 23:14	
Methyl-tert-butyl ether	ug/m3	ND	0.73	12/21/13 23:14	
Methylene Chloride	ug/m3	ND	0.71	12/21/13 23:14	
Naphthalene	ug/m3	ND	1.1	12/21/13 23:14	
o-Xylene	ug/m3	ND	0.88	12/21/13 23:14	
Tetrachloroethene	ug/m3	ND	0.69	12/21/13 23:14	
Toluene	ug/m3	ND	0.77	12/21/13 23:14	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	12/21/13 23:14	
Trichloroethene	ug/m3	ND	0.55	12/21/13 23:14	
Vinyl chloride	ug/m3	ND	0.26	12/21/13 23:14	

LABORATORY CONTROL SAMPLE: 1600629

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	59.8	108	69-131	
1,1,2-Trichloroethane	ug/m3	55.5	62.6	113	68-132	
1,1-Dichloroethane	ug/m3	41.2	43.9	107	66-131	
1,1-Dichloroethene	ug/m3	40.3	42.5	105	64-136	
1,2,4-Trichlorobenzene	ug/m3	75.5	73.5	97	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	57.2	114	71-135	
1,2-Dichloroethane	ug/m3	41.2	44.5	108	66-136	
1,3,5-Trimethylbenzene	ug/m3	50	56.5	113	69-136	
Benzene	ug/m3	32.5	35.2	108	72-136	
Carbon tetrachloride	ug/m3	64	69.7	109	64-133	
Chloroform	ug/m3	49.7	53.8	108	66-129	
cis-1,2-Dichloroethene	ug/m3	40.3	44.6	110	73-135	
Dichlorodifluoromethane	ug/m3	50.3	53.6	107	64-131	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 117-0507599.20 LMC MRC SSDOem
Pace Project No.: 10251738

LABORATORY CONTROL SAMPLE: 1600629

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/m3	44.2	48.5	110	74-136	
m&p-Xylene	ug/m3	44.2	48.2	109	72-135	
Methyl-tert-butyl ether	ug/m3	36.7	39.2	107	71-134	
Methylene Chloride	ug/m3	35.3	30.7	87	59-140	
Naphthalene	ug/m3	53.3	51.7	97	30-150	
o-Xylene	ug/m3	44.2	49.4	112	74-135	
Tetrachloroethene	ug/m3	69	76.3	111	66-135	
Toluene	ug/m3	38.3	40.1	105	71-134	
trans-1,2-Dichloroethene	ug/m3	40.3	43.6	108	68-129	
Trichloroethene	ug/m3	54.6	60.7	111	68-134	
Vinyl chloride	ug/m3	26	27.7	106	64-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10airD.i\122013.b\35421.d
Report Date: 26-Dec-2013 13:11

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 35421.d
Lab Smp Id: 10251738001
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m
Misc Info: 18997

A-INFLUENT

Calibration Date: 20-DEC-2013
Calibration Time: 15:08

Level: LOW
Sample Type: AIR

reported
results
except
trichlorobenzene

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	1291313	774788	1807838	1440292	11.54
55 Chlorobenzene - d	577772	346663	808881	648804	12.29

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.68	9.35	10.01	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\122113.b\35529.d
Report Date: 22-Dec-2013 11:09

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 35529.d
Lab Smp Id: 10251738001 A- INFLUENT
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\122113.b\T015_355-13.m
Misc Info:

Calibration Date: 21-DEC-2013
Calibration Time: 18:49

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	543955	326373	761537	551343	1.36
55 Chlorobenzene - d	258909	155345	362473	280171	8.21

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.68	9.35	10.01	9.69	0.00

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\122113.b\35526.d
Report Date: 26-Dec-2013 12:51

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 35526.d
Lab Smp Id: 10251738002
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\122113.b\TO15_355-13.m
Misc Info: 19003

A-MID GAC

Calibration Date: 21-DEC-2013
Calibration Time: 18:49

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	543955	326373	761537	518690	-4.64
55 Chlorobenzene - d	258909	155345	362473	258455	-0.18

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.00
55 Chlorobenzene - d	9.68	9.35	10.01	9.68	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\122013.b\35423.d
Report Date: 26-Dec-2013 13:12

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 35423.d

Lab Smp Id: 10251738003 C-INFLUENT

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m

Misc Info: 18997

Calibration Date: 20-DEC-2013

Calibration Time: 15:08

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	1291313	774788	1807838	1382333	7.05
55 Chlorobenzene - d	577772	346663	808881	643897	11.44

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.68	9.35	10.01	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\122013.b\35424.d
Report Date: 26-Dec-2013 13:12

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 35424.d
Lab Smp Id: 10251738004 C-MID GAC
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m
Misc Info: 18997

Calibration Date: 20-DEC-2013
Calibration Time: 15:08
Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	1291313	774788	1807838	1408268	9.06
55 Chlorobenzene - d	577772	346663	808881	669133	15.81

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.68	9.35	10.01	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\122013.b\35425.d
Report Date: 26-Dec-2013 13:12

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 35425.d

Lab Smp Id: 10251738005 C-EFFLUENT

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\122013.b\TO15_354-13.m

Misc Info: 18997

Calibration Date: 20-DEC-2013

Calibration Time: 15:08

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	1291313	774788	1807838	1413899	9.49
55 Chlorobenzene - d	577772	346663	808881	655407	13.44

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.68	9.35	10.01	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Sample Calculation

ANALYTICAL RESULTS

Project: 117-0507599.20 LMC MRC SSDOem
Pace Project No.: 10251738

Sample: A-INFLUENT		Lab ID: 10251738001	Collected: 12/05/13 14:26		Received: 12/09/13 10:20		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR (TICS)		Analytical Method: TO-15						
Benzene	0.94	ug/m3	0.55	1.68		12/20/13 23:12	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		12/20/13 23:12	56-23-5	
Chloroform	21.2	ug/m3	1.7	1.68		12/20/13 23:12	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.7	1.68		12/20/13 23:12	75-71-8	
1,1-Dichloroethane	30.7	ug/m3	1.4	1.68		12/20/13 23:12	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		12/20/13 23:12	107-06-2	
1,1-Dichloroethene	132	ug/m3	1.4	1.68		12/20/13 23:12	75-35-4	
cis-1,2-Dichloroethene	165	ug/m3	1.4	1.68		12/20/13 23:12	156-59-2	
trans-1,2-Dichloroethene	2.5	ug/m3	1.4	1.68		12/20/13 23:12	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		12/20/13 23:12	100-41-4	
Methylene Chloride	4.4	ug/m3	1.2	1.68		12/20/13 23:12	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		12/20/13 23:12	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		12/20/13 23:12	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		12/20/13 23:12	127-18-4	
Toluene	12.2	ug/m3	1.3	1.68		12/20/13 23:12	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		12/20/13 23:12	120-82-1	
1,1,1-Trichloroethane	883	ug/m3	37.3	33.6		12/22/13 05:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		12/20/13 23:12	79-00-5	
Trichloroethene	1530	ug/m3	18.5	33.6		12/22/13 05:10	79-01-6	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		12/20/13 23:12	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		12/20/13 23:12	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		12/20/13 23:12	75-01-4	
m&p-Xylene	ND	ug/m3	3.0	1.68		12/20/13 23:12	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		12/20/13 23:12	95-47-6	

$$\frac{371931}{551343} \times 33.6 \times \frac{10}{0.80776} = 280.61 \text{ ppbv}$$

$$280.61 \text{ ppbv} \times \frac{131.4 \text{ g/mole}}{24.45 \text{ L/mole}} = 1508.04 \text{ ug/m}^3$$

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Simple Calculation

Data File: \\192.168.10.12\chem\10airD.i\122113.b\35529.d
Report Date: 22-Dec-2013 11:09

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10airD.i\122113.b\35529.d
Lab Smp Id: 10251738001
Inj Date : 22-DEC-2013 05:10
Operator : DR1
Smp Info :
Misc Info :
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10airD.i\122113.b\TO15 355-13.m
Meth Date : 22-Dec-2013 10:30 drandall Quant Type: ISTD
Cal Date : 21-DEC-2013 19:53 Cal File: 35510.d
Als bottle: 27
Dil Factor: 33.60000
Integrator: HP RTE
Target Version: 4.14
Processing Host: 10MNCREINDL

Inst ID: 10airD.i

Compound Sublist: all.sub

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	33.600	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ppbv)	FINAL (ppbv)
1 Propylene	41						
2 Dichlorodifluoromethane	85						
3 Dichlorotetrafluoroethane	85						
4 Chloromethane	50						
5 Vinyl chloride	62						
6 1,3-Butadiene	54						
7 Bromomethane	94						
8 Chloroethane	64						
9 Ethanol	31	3.510	3.484	(0.577)	4382	0.30168	10.1 (MH)
10 Vinyl Bromide	106						
11 Acrolein	56						
12 Trichlorofluoromethane	101	3.696	3.694	(0.607)	15311	0.17482	5.87
13 Acetone	43	3.739	3.727	(0.614)	168880	2.64734	89.0
14 Isopropyl Alcohol	45	3.762	3.749	(0.618)	54924	1.22275	41.1 (Q)
15 1,1-Dichloroethene	61	3.975	3.976	(0.653)	55800	1.15872	38.9
16 Acrylonitrile	53						
17 Tert Butyl Alcohol	59						
18 Freon 113	101						
19 Methylene chloride	49	4.090	4.091	(0.672)	5175	0.11757	3.95
20 Allyl Chloride	76						
21 Carbon Disulfide	76						
22 trans-1,2-dichloroethene	96						
23 Methyl Tert Butyl Ether	73						

Sample Calculation

Data File: \\192.168.10.12\chem\10airD.i\122113.b\35529.d

Report Date: 22-Dec-2013 11:09

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ppbv)	FINAL (ppbv)
24 Vinyl Acetate	43				Compound Not Detected.		
25 1,1-Dichloroethane	63	4.579	4.582	(0.752)	15276	0.27617	9.28
\$ 26 Hexane-d14(S)	66	4.693	4.697	(0.771)	263517	10.4855	10.5
27 Methyl Ethyl Ketone	72	4.792	4.776	(0.787)	5117	0.37215	12.5(M)
28 n-Hexane	57				Compound Not Detected.		
29 cis-1,2-Dichloroethene	96	4.972	4.976	(0.817)	55574	1.57136	52.8(Q)
30 Ethyl Acetate	43				Compound Not Detected.		
31 Chloroform	83				Compound Not Detected.		
32 Tetrahydrofuran	42				Compound Not Detected.		
33 1,1,1-Trichloroethane	97	5.589	5.596	(0.918)	388931	4.74000	159
34 1,2-Dichloroethane	62				Compound Not Detected.		
35 Benzene	78				Compound Not Detected.		
36 Carbon tetrachloride	117				Compound Not Detected.		
37 Cyclohexane	56				Compound Not Detected.		
* 38 1,4-Difluorobenzene	114	6.087	6.091	(1.000)	551343	10.0000	
39 2,2,4-Trimethylpentane	57				Compound Not Detected.		
40 Heptane	43				Compound Not Detected.		
41 1,2-Dichloropropane	63				Compound Not Detected.		
42 Trichloroethene	130	6.523	6.534	(1.072)	371931	8.35135	281
43 1,4-Dioxane	88				Compound Not Detected.		
44 Bromodichloromethane	83				Compound Not Detected.		
45 Methyl Isobutyl Ketone	43				Compound Not Detected.		
46 cis-1,3-Dichloropropene	75				Compound Not Detected.		
47 trans-1,3-Dichloropropene	75				Compound Not Detected.		
\$ 48 Toluene-d8 (S)	98	7.838	7.845	(1.288)	447034	9.95674	9.96
49 Toluene	91	7.933	7.934	(1.303)	16081	0.12842	4.31
50 1,1,2-Trichloroethane	97				Compound Not Detected.		
51 Methyl Butyl Ketone	43				Compound Not Detected.		
52 Dibromochloromethane	129				Compound Not Detected.		
53 1,2-Dibromoethane	107				Compound Not Detected.		
54 Tetrachloroethene	166				Compound Not Detected.		
* 55 Chlorobenzene - d5	117	9.685	9.688	(1.000)	280171	10.0000	
56 Chlorobenzene	112				Compound Not Detected.		
57 Ethyl Benzene	91				Compound Not Detected.		
58 m&p-Xylene	91				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Styrene	104				Compound Not Detected.		
61 o-Xylene	91				Compound Not Detected.		
62 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
63 Isopropylbenzene	105				Compound Not Detected.		
64 N-Propylbenzene	91				Compound Not Detected.		
65 4-Ethyltoluene	105				Compound Not Detected.		
66 1,3,5-Trimethylbenzene	105				Compound Not Detected.		
67 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
68 1,3-Dichlorobenzene	146				Compound Not Detected.		
69 Sec- Butylbenzene	105				Compound Not Detected.		
\$ 70 1,4-dichlorobenzene-d4 (S)	150	13.446	13.453	(1.388)	112564	9.74743	9.75
71 Benzyl Chloride	91				Compound Not Detected.		
72 1,4-Dichlorobenzene	146				Compound Not Detected.		
73 1,2-Dichlorobenzene	146				Compound Not Detected.		
74 N-Butylbenzene	91				Compound Not Detected.		
75 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
76 Naphthalene	128				Compound Not Detected.		
77 Hexachlorobutadiene	225				Compound Not Detected.		


Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-DEC-2013 17:25
 End Cal Date : 21-DEC-2013 19:53
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\122113.b\TO15_355-13.m
 Last Edit : 22-Dec-2013 10:27 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
39 2,2,4-Trimethylpentane	2.82239	2.38735	2.00959	2.61061	2.46242	2.41783	AVRG		2.45170		10.99819
40 Heptane	0.89995	0.76834	0.67709	0.89275	0.84460	0.84790	AVRG		0.82177		10.34586
41 1,2-Dichloropropane	0.71687	0.59206	0.51211	0.67088	0.63804	0.62771	AVRG		0.62628		11.18660
42 Trichloroethene	0.88561	0.76469	0.63667	0.88535	0.85080	0.82347	AVRG		0.80776		11.78447
43 1,4-Dioxane	1569	2854	13865	223515	388835	595552	LNLR	-0.01638	0.34918		0.99592
44 Bromodichloromethane	1.58124	1.40049	1.20028	1.71454	1.60983	1.51315	AVRG		1.50326		12.06737
45 Methyl Isobutyl Ketone	4788	8497	43044	683851	1359440	2057524	LNLR	0.00488	1.20752		0.99960
46 cis-1,3-Dichloropropene	4665	8367	38416	595744	1232760	1818449	LNLR	0.00461	1.07389		0.99955
47 trans-1,3-Dichloropropene	4002	7585	36119	647752	1307880	1962661	LNLR	0.00825	1.15569		0.99961
49 Toluene	2.85760	2.33331	1.85971	2.35651	2.19463	2.02564	AVRG		2.27123		15.13064
50 1,1,2-Trichloroethane	0.84258	0.69912	0.59441	0.82903	0.77386	0.71750	AVRG		0.74275		12.47432
51 Methyl Butyl Ketone	4350	6864	37994	684762	1332200	1978501	LNLR	0.00929	2.51912		0.99929
52 Dibromochloromethane	7038	12290	55107	847269	1646209	2328738	LNLR	-0.00853	2.99643		0.99840
53 1,2-Dibromoethane	6269	11201	47473	716550	1404059	2034545	LNLR	-0.00165	2.59986		0.99927
54 Tetrachloroethene	2.45594	2.05453	1.73966	2.62124	2.45198	2.46135	AVRG		2.29745		14.44725
56 Chlorobenzene	3.11231	2.84974	2.35556	3.46675	3.32753	3.30167	AVRG		3.36893		13.34089
57 Ethyl Benzene	12306	23555	104760	1564968	2968411	4313109	LNLR	-0.00685	5.50934		0.99865
58 m,p-Xylene	10815	17780	81641	1241584	2410825	3519784	LNLR	-0.00081	4.49040		0.99922
59 Bromoform	6160	11170	48182	741372	1410189	2004086	LNLR	-0.01154	2.57576		0.99804
60 Styrene	5721	10755	52650	860855	1658311	2413686	LNLR	-0.00052	3.08531		0.99897
61 o-Xylene	11069	18840	84959	1211473	2389461	3366716	LNLR	-0.00869	4.33424		0.99864
62 1,1,2,2-Tetrachloroethane	7453	13222	58616	826545	1562893	2200559	LNLR	-0.01742	2.83301		0.99755

ORIGINAL

	Document Name:	Document Revised: 28Jan2013
	Air Sample Condition Upon Receipt	Page 1 of 1
	Document No.: F-MN-A-106-rev.07	Issuing Authority: Pace Minnesota Quality Office

**Air Sample Condition
Upon Receipt**

Client Name:

Project #:

WO# : 10252866



Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 804578711542

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other:

Temp. (TO17 and TO13 samples only) (°C): Corrected Temp (°C):
 Temp should be above freezing to 6°C Correction Factor:

Thermom. Used: ☐ 888A912167504 ☐ 80512447 ☒ 72337080
 Date & Initials of Person Examining Contents: 12-19-13

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media: <u>Air Can</u>		11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received: <u>2 Air Can</u>					
Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
Influent	1022	-			
Effluent	1027	-			

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review:

Date: 12/19/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

SAMPLE SUMMARY

Project: SSD-04M
Pace Project No.: 10252866

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10252866002	A-EFFLUENT	Air	12/18/13 14:32	12/19/13 10:25

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

HOLD TIME

SDG 10252866

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PPBV	A-EFFLUENT	10252866002	NM	12/18/2013	12/31/2013	12/31/2013	13	0	13
	UG/M3	A-EFFLUENT	10252866002	NM	12/18/2013	12/31/2013	12/31/2013	13	0	13

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10252866

Lab File ID: 36501BFB.D

BFB Injection Date: 12/31/2013

Instrument ID: 10AIR0

BFB Injection Time: 08:53

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.36
75	30.00 - 66.00% of mass 95	44.08
96	5.00 - 9.00% of mass 95	6.17
173	Less than 2.00% of mass 174	0.78 (0.91)
174	50.00 - 120.00% of mass 95	85.33
175	4.00 - 9.00% of mass 174	6.93 (8.12)
176	93.00 - 101.00% of mass 174	82.23 (96.37)
177	5.00 - 9.00% of mass 176	5.57 (6.77)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL5	CAL5	36503.D	12/31/2013	10:25
2	CAL6	CAL6	36504.D	12/31/2013	11:20
3	CAL7	CAL7	36505.D	12/31/2013	11:52
4	CAL1	CAL1	36507.D	12/31/2013	12:42
5	CAL2	CAL2	36508.D	12/31/2013	13:08
6	CAL3	CAL3	36509.D	12/31/2013	13:33
7	CAL4	CAL4	36510.D	12/31/2013	14:00
8	ICV (LCS)	ICV	36514.D	12/31/2013	16:58
9	LCS for HBN 282765 [AIR/	1603693	36515T.D	12/31/2013	17:25
10	LCS (LCS)	LCS	36515.D	12/31/2013	17:25
11	IC	IC	36518.D	12/31/2013	18:49
12	BLANK for HBN 282765 [AI	1603692	36518T.D	12/31/2013	18:49
13	A-EFFLUENT	10252866002	36528.D	12/31/2013	23:48

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air0.i\123113.b\36507.D
 Level 2: \\192.168.10.12\chem\10air0.i\123113.b\36508.D
 Level 3: \\192.168.10.12\chem\10air0.i\123113.b\36509.D
 Level 4: \\192.168.10.12\chem\10air0.i\123113.b\36510.D
 Level 5: \\192.168.10.12\chem\10air0.i\123113.b\36503.D
 Level 6: \\192.168.10.12\chem\10air0.i\123113.b\36504.D
 Level 7: \\192.168.10.12\chem\10air0.i\123113.b\36505.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
1 Propylene	3757 725505	6190	12983	22940	252611	501352	LINR	-0.02437	0.39477		0.99906
2 Dichlorodifluoromethane	12022 2150286	19715	40514	74866	804921	1538890	LINR	-0.03656	1.18353		0.99644
3 Dichlorotetrafluoroethane	12267 2094587	19688	40945	74238	779852	1493734	LINR	-0.03934	1.15059		0.99675
4 Chloromethane	5771 ++++	9562	19613	36750	369993	689343	LINR	-0.02672	0.56391		0.99591

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
5 Vinyl chloride	4757	8327	17228	32553	345078	685440					
	1013853						LINR	-0.01950	0.54826		0.99948
6 1,3-Butadiene	3522	6231	12885	24055	260561	520232					
	762562						LINR	-0.01982	0.41351		0.99940
7 Bromomethane	4393	7631	15716	29324	315216	625997					
	928766						LINR	-0.01884	0.50273		0.99952
8 Chloroethane	2200	3873	8142	15491	164171	329118					
	486797						LINR	-0.01754	0.26326		0.99960
9 Ethanol	0.35513	0.33074	0.27037	0.26160	0.28605	0.25300					
	0.24570						AVRG		0.28608		14.50522
10 Vinyl Bromide	0.70990	0.62028	0.56354	0.52676	0.51800	0.49756					
	0.49262						AVRG		0.56152		14.03749
11 Acrolein	1061	1721	3678	6792	109484	215378					
	304973						LINR	-0.01283	0.16833		0.99761

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\T015_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000									
	Level 7									
12 Trichlorofluoromethane	2.17170	1.88117	1.62794	1.53180	1.42890	1.30846				
	1.25649						AVRG	1.60092		20.45781
13 Acetone	18288	26218	51283	86994	586508	+++++				
	++++						LINE	-0.04398	0.96863	0.99764
14 Isopropyl Alcohol	1.13856	1.06973	1.16091	1.05536	0.91461	0.79289				
	0.76776						AVRG	0.98569		16.34320
15 1,1-Dichloroethene	1.25827	1.16195	1.02797	0.94279	0.86512	0.77995				
	0.71788						AVRG	0.96485		20.49170
16 Acrylonitrile	0.41089	0.39519	0.36335	0.33627	0.36051	0.34897				
	0.31262						AVRG	0.36397		9.43695
17 Tert Butyl Alcohol (TBA)	1.40552	1.63594	1.44086	1.33825	1.20940	0.97246				
	0.86926						AVRG	1.26738		21.33958
18 Freon 113	1.80891	1.56671	1.35048	1.23799	1.13094	0.98812				
	0.87985						AVRG	1.28043		25.43137

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
19 Methylene chloride	1.25113	1.02936	0.85143	0.77178	0.69009	0.62500				
	0.57523						AVRG	0.82772		29.07126
20 Allyl Chloride	769	1216	3452	6913	136926	273461				
	388956						LINR	-0.00091	0.21512	0.99799
21 Carbon Disulfide	13240	21503	43839	83311	900514	1799419				
	2603946						LINR	-0.02264	1.41710	0.99911
22 Trans-1,2-dichloroethene	0.58967	0.54093	0.59017	0.55076	0.55537	0.50662				
	0.48400						AVRG	0.54536		7.25211
23 Methyl Tert Butyl Ether	2.12936	1.88705	1.64418	1.57101	1.51302	1.37941				
	1.30787						AVRG	1.63313		17.66369
24 Vinyl Acetate	7075	11269	23137	42362	904032	1759217				
	2446045						LINR	-0.00936	1.36380	0.99596
25 1,1-Dichloroethane	1.64964	1.41214	1.24238	1.15488	1.07439	0.97250				
	0.92375						AVRG	1.20424		21.29941

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
27 Methyl Ethyl Ketone	0.30599	0.25442	0.26421	0.28492	0.28763	0.26221					
	0.24888						AVRG		0.27261		7.58293
28 n-Hexane	1.47940	1.25059	1.09886	1.07175	0.98866	0.87305					
	0.79885						AVRG		1.06019		21.35342
29 cis-1,2-Dichloroethene	0.72924	0.69513	0.58830	0.56754	0.60084	0.55438					
	0.53046						AVRG		0.60941		12.21391
30 Ethyl Acetate	1.50641	1.24728	1.05448	1.19585	1.28038	1.14670					
	1.02488						AVRG		1.20800		13.38377
31 Chloroform	1.67700	1.49204	1.32780	1.25080	1.19748	1.10937					
	1.07642						AVRG		1.30442		16.52867
32 Tetrahydrofuran	0.98505	0.86799	0.74306	0.70666	0.71253	0.66294					
	0.64836						AVRG		0.76094		16.05663
33 1,1,1-Trichloroethane	1.67787	1.50876	1.26742	1.18573	1.18207	1.09533					
	1.06380						AVRG		1.28300		17.71826

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		MRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
34 1,2-Dichloroethane	1.35527	0.93677	0.88193	0.82223	0.84183	0.75816				
	0.72050						AVRG		0.85953	13.10172
35 Benzene	2.65595	2.22901	1.97463	1.83398	1.73512	1.45953				
	1.24376						AVRG		1.87600	25.16701
36 Carbon tetrachloride	1.35463	1.19643	1.10006	1.00069	1.18943	1.08168				
	1.00002						AVRG		1.13185	11.13055
37 Cyclohexane	++++	1.24645	1.06975	1.00861	0.89457	0.68612				
	0.53181						AVRG		0.90622	28.84910
39 2,2,4-Trimethylpentane	4.28851	3.73908	3.27554	3.12372	2.94066	2.58096				
	2.35192						AVRG		3.18577	20.88170
40 Heptane	12346	18080	34602	62741	629449	1163689				
	1544922						QUAD	0.00099	0.70503	0.19393
41 1,2-Dichloropropane	1.07932	0.89567	0.76252	0.72585	0.67464	0.58574				
	0.50713						AVRG		0.74726	25.74138

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\T015_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
42 Trichloroethene	1.03732	0.90201	0.81535	0.77909	0.74227	0.69191					
	0.64023						AVRG		0.80117		16.74082
43 1,4-Dioxane	0.34920	0.26785	0.31557	0.27912	0.28497	0.25641					
	0.23569						AVRG		0.28412		13.34714
44 Bromodichloromethane	1.63117	1.44552	1.30222	1.22289	1.26273	1.16562					
	1.10043						AVRG		1.30437		13.85444
45 Methyl Isobutyl Ketone	8302	13439	29727	56142	866168	1667921					
	2352794						LNLR	-0.01785	1.30056		0.99682
46 cis-1,3-Dichloropropene	0.94932	0.82928	0.88643	0.85098	0.97548	0.93442					
	0.91691						AVRG		0.90612		5.86166
47 trans-1,3-Dichloropropene	4615	7671	16868	33370	549855	1150785					
	1712673						LNLR	0.00895	0.63148		0.99987
49 Toluene	3.55404	2.77344	2.36698	2.21682	2.10720	1.88642					
	1.70416						AVRG		2.37272		26.28846

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
50 1,1,2-Trichloroethane	1.14361	0.97750	0.80643	0.72421	0.73738	0.66923					
	0.61522						AVRG		0.81051		23.06858
51 Methyl Butyl Ketone	7566	12665	27197	52700	840748	1658414					
	2331783						QUAD	0.01712	0.26770	0.01651	0.99989
52 Dibromochloromethane	2.71385	2.34536	2.24273	2.17900	2.70510	2.49083					
	2.35941						AVRG		2.43375		8.71736
53 1,2-Dibromoethane	2.39161	2.09378	2.20653	2.09103	2.46460	2.23029					
	2.09019						AVRG		2.22400		6.84060
54 Tetrachloroethene	2.91125	2.51664	2.25531	2.13462	2.23978	2.04588					
	1.88974						AVRG		2.28475		14.78651
56 Chlorobenzene	4.22085	3.74820	3.34376	3.10362	3.41873	3.12394					
	2.99121						AVRG		3.42147		12.66404
57 Ethyl Benzene	6.64413	5.78708	5.15888	5.11056	5.45997	4.89463					
	4.58737						AVRG		5.37752		12.60192

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		WRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
58 mmp-Xylene	5.68292	4.81196	4.35828	4.21050	4.50616	4.04736					
	3.85790						AVRG		4.49644		13.52076
59 Bromoform	5112	8454	19512	36884	715762	1442713					
	++++						LINEAR	0.00734	2.46194		0.99742
60 Styrene	6515	11613	28448	58088	803571	1554736					
	++++						LINEAR	-0.00644	2.65882		0.99549
61 o-Xylene	5.47963	4.90099	4.30424	4.19325	4.37053	3.93212					
	3.68615						AVRG		4.40956		13.72356
62 1,1,2,2-Tetrachloroethane	3.54543	3.14066	2.81617	2.72022	3.06341	2.75348					
	2.60243						AVRG		2.94883		11.02232
63 Isopropylbenzene	5.41849	5.85788	5.45315	5.29381	5.77159	5.17723					
	4.89749						AVRG		5.40995		6.14738
64 N-Propylbenzene	16690	27551	76804	152280	1899828	3714538					
	++++						LINEAR	-0.00943	6.32381		0.99630

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
65 4-Ethyltoluene	13483	22778	58059	119079	1530430	2929635					
	4228009						QUAD	0.00840	0.15662	0.00447	0.99968
66 1,3,5-Trimethylbenzene	5.51351	6.03614	5.02960	4.89489	4.96412	4.63268					
	4.26304						AVRG		5.04771		11.47382
67 1,2,4-Trimethylbenzene	10435	21855	50004	100090	129982	2593484					
	3744197						QUAD	0.00890	0.18734	0.00480	0.99992
68 1,3-Dichlorobenzene	7741	12500	32017	64342	854414	1694147					
	2379270						QUAD	0.01316	0.26474	0.01560	0.99995
69 Sec- Butylbenzene	14920	24398	70793	150994	1797703	3407693					
	4665691						QUAD	0.01428	0.11239	0.00554	0.99996
71 Benzyl Chloride	7517	12316	26976	62125	1100532	2058968					
	2870914						QUAD	0.02209	0.19077	0.01378	0.99975
72 1,4-Dichlorobenzene	2.85085	2.94184	2.71684	2.84073	3.17558	2.78896					
	2.61225						AVRG		2.84672		6.29095

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
 End Cal Date : 31-DEC-2013 14:00
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
 Last Edit : 02-Jan-2014 10:07 ahamilton

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
73 1,2-Dichlorobenzene	6944	11483	24856	60629	822410	1609604					
	2369920						LINR	-0.01854	2.61810		0.99684
74 N-Butylbenzene	10672	17626	39763	81345	1437308	2692303					
	3856946						QUAD	0.01786	0.15996	0.00628	0.99946
75 1,2,4-Trichlorobenzene	3273	5297	11854	23017	511871	++++					
	++++						LINR	0.02182	1.92165		0.99820
76 Naphthalene	7255	11313	24908	50732	1060362	++++					
	++++						LINR	0.02072	3.97631		0.99841
77 Hexachlorobutadiene	4255	7850	16106	30050	456952	++++					
	++++						LINR	0.01000	1.69538		0.99941
19 26 Hexane-d14 (S)	0.54867	0.54408	0.55798	0.54787	0.53835	0.53007					
	0.52001						AVRG		0.54102		2.35305
19 48 Toluene-d8 (S)	0.84241	0.83958	0.83431	0.81392	0.81631	0.82896					
	0.83410						AVRG		0.82980		1.31067

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

```
Start Cal Date   : 31-DEC-2013 10:25
End Cal Date    : 31-DEC-2013 14:00
Quant Method    : ISTD
Target Version  : 4.14
Integrator      : HP RTE
Method file     : \\192.168.10.12\chem\10air0.i\010214.b\T015_365-13.m
Last Edit      : 02-Jan-2014 10:07 ahamilton
```

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000		Coefficients			RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Curve	b	m1	m2	or R^2
	30.0000										
	Level 7										
\$ 7C 1,4-dichlorobenzene-34 (S)	0.20054 0.23636	0.19919	0.23735	0.26651	0.22536	0.21369	AVRG		0.22557		10.54430 <-

Report Date : 02-Jan-2014 10:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-DEC-2013 10:25
End Cal Date : 31-DEC-2013 14:00
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10air0.i\010214.b\TO15_365-13.m
Last Edit : 02-Jan-2014 10:07 ahamilton

Average %RSD Results.	
Calculated Average %RSD =	17.42353
Maximum Average %RSD =	40.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
Averaged	$\text{Amt} = \text{Rsp}/\text{ml}$	Response
Linear	$\text{Amt} = b + \text{Rsp}/\text{ml}$	Response
Quad	$\text{Amt} = b + m1 \cdot \text{Rsp} + m2 \cdot \text{Rsp}^2$	Response

QUALITY CONTROL DATA

Project: SSD-04M
Pace Project No.: 10252866

QC Batch: AIR/19087 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10252866002

METHOD BLANK: 1603692 Matrix: Air
Associated Lab Samples: 10252866002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	12/31/13 18:49	
1,1,2-Trichloroethane	ug/m3	ND	0.55	12/31/13 18:49	
1,1-Dichloroethane	ug/m3	ND	0.82	12/31/13 18:49	
1,1-Dichloroethene	ug/m3	ND	0.81	12/31/13 18:49	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	12/31/13 18:49	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	12/31/13 18:49	
1,2-Dichloroethane	ug/m3	ND	0.41	12/31/13 18:49	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	12/31/13 18:49	
Benzene	ug/m3	ND	0.32	12/31/13 18:49	
Carbon tetrachloride	ug/m3	ND	0.64	12/31/13 18:49	
Chloroform	ug/m3	ND	0.99	12/31/13 18:49	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	12/31/13 18:49	
Dichlorodifluoromethane	ug/m3	ND	1.0	12/31/13 18:49	
Ethylbenzene	ug/m3	ND	0.88	12/31/13 18:49	
m&p-Xylene	ug/m3	ND	1.8	12/31/13 18:49	
Methyl-tert-butyl ether	ug/m3	ND	0.73	12/31/13 18:49	
Methylene Chloride	ug/m3	ND	0.71	12/31/13 18:49	
Naphthalene	ug/m3	ND	1.1	12/31/13 18:49	
o-Xylene	ug/m3	ND	0.88	12/31/13 18:49	
Tetrachloroethene	ug/m3	ND	0.69	12/31/13 18:49	
Toluene	ug/m3	ND	0.77	12/31/13 18:49	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	12/31/13 18:49	
Trichloroethene	ug/m3	ND	0.55	12/31/13 18:49	
Vinyl chloride	ug/m3	ND	0.26	12/31/13 18:49	

LABORATORY CONTROL SAMPLE: 1603693

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	51.4	93	69-131	
1,1,2-Trichloroethane	ug/m3	55.5	50.6	91	68-132	
1,1-Dichloroethane	ug/m3	41.2	37.1	90	66-131	
1,1-Dichloroethene	ug/m3	40.3	36.6	91	64-136	
1,2,4-Trichlorobenzene	ug/m3	75.5	71.7	95	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	50.6	101	71-135	
1,2-Dichloroethane	ug/m3	41.2	40.3	98	66-136	
1,3,5-Trimethylbenzene	ug/m3	50	48.0	96	69-136	
Benzene	ug/m3	32.5	30.5	94	72-136	
Carbon tetrachloride	ug/m3	64	67.9	106	64-133	
Chloroform	ug/m3	49.7	46.1	93	66-129	
cis-1,2-Dichloroethene	ug/m3	40.3	40.3	100	73-135	
Dichlorodifluoromethane	ug/m3	50.3	57.7	115	64-131	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: SSD-04M
Pace Project No.: 10252866

LABORATORY CONTROL SAMPLE: 1603693

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/m3	44.2	42.9	97	74-136	
m&p-Xylene	ug/m3	44.2	42.4	96	72-135	
Methyl-tert-butyl ether	ug/m3	36.7	34.6	94	71-134	
Methylene Chloride	ug/m3	35.3	29.9	85	59-140	
Naphthalene	ug/m3	53.3	51.2	96	30-150	
o-Xylene	ug/m3	44.2	42.0	95	74-135	
Tetrachloroethene	ug/m3	69	65.0	94	66-135	
Toluene	ug/m3	38.3	34.6	90	71-134	
trans-1,2-Dichloroethene	ug/m3	40.3	40.9	101	68-129	
Trichloroethene	ug/m3	54.6	51.9	95	68-134	
Vinyl chloride	ug/m3	26	28.4	109	64-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10air0.i\123113.b\36528.D
Report Date: 02-Jan-2014 14:35

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air0.i
Lab File ID: 36528.D
Lab Smp Id: 10252866001
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air0.i\123113.b\TO15_365-13.m
Misc Info: 19087

Calibration Date: 02-JAN-2014
Calibration Time: 09:41

Level: LOW
Sample Type: AIR

A-EFFLUENT

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	582685	349611	815759	312563	-46.36
55 Chlorobenzene - d	271957	163174	380740	172936	-36.41

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
38 1,4-Difluorobenze	6.68	6.35	7.01	6.67	-0.09
55 Chlorobenzene - d	9.85	9.52	10.18	9.84	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air0.i\123113.b\36528.D
 Report Date: 02-Jan-2014 14:35

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\123113.b\36528.D
 Lab Smp Id: 10252866001
 Inj Date : 31-DEC-2013 23:48
 Operator : AH2
 Smp Info :
 Misc Info : 19087
 Comment : Volatile Organic COMPOUNDS in Air
 Method : \\192.168.10.12\chem\10air0.i\123113.b\TO15 365-13.m
 Meth Date : 02-Jan-2014 14:13 ahamilton Quant Type: ISTD
 Cal Date : 31-DEC-2013 14:00 Cal File: 36510.D
 Als bottle: 28
 Dil Factor: 1.68000
 Integrator: HP RTE
 Target Version: 4.14

Inst ID: 10air0.i

Compound Sublist: all.sub

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	1.680	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS						CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE		ON-COLUMN (ppbv)	FINAL (ppbv)
1 Propylene	41	3.950	3.945 (0.592)		11491		0.68761	1.16 (QMH)
2 Dichlorodifluoromethane	85		Compound Not Detected.					
3 Dichlorotetrafluoroethane	85		Compound Not Detected.					
4 Chloromethane	50	4.074	4.075 (0.611)		9768		0.28697	0.482
5 Vinyl chloride	62		Compound Not Detected.					
6 1,3-Butadiene	54		Compound Not Detected.					
7 Bromomethane	94		Compound Not Detected.					
8 Chloroethane	64		Compound Not Detected.					
9 Ethanol	31	4.434	4.441 (0.664)		28810		3.22190	5.41 (M)
10 Vinyl Bromide	106		Compound Not Detected.					
11 Acrolein	56		Compound Not Detected.					
12 Trichlorofluoromethane	101	4.620	4.627 (0.692)		56050		1.12013	1.88
13 Acetone	43	4.639	4.639 (0.695)		281585		8.86088	14.9 (M)
14 Isopropyl Alcohol	45		Compound Not Detected.					
15 1,1-Dichloroethene	61	4.881	4.881 (0.731)		65964		2.18731	3.67
16 Acrylonitrile	53		Compound Not Detected.					
17 Tert Butyl Alcohol (TBA)	59		Compound Not Detected.					
18 Freon 113	101		Compound Not Detected.					
19 Methylene chloride	49	4.974	4.974 (0.745)		456567		17.6476	29.6
20 Allyl Chloride	76		Compound Not Detected.					
21 Carbon Disulfide	76	5.129	5.129 (0.769)		24241		0.32088	0.539
22 trans-1,2-dichloroethene	96		Compound Not Detected.					
23 Methyl Tert Butyl Ether	73		Compound Not Detected.					
24 Vinyl Acetate	43		Compound Not Detected.					

Data File: \\192.168.10.12\chem\10air0.i\123113.b\36528.D
Report Date: 02-Jan-2014 14:35

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ppbv)	FINAL (ppbv)
25 1,1-Dichloroethane	63	5.402	5.402	(0.809)	16358	0.43459	0.730
\$ 26 Hexane-d14 (S)	66	5.482	5.489	(0.822)	197771	11.6953	11.7
27 Methyl Ethyl Ketone	72	5.544	5.545	(0.831)	4252	0.49902	0.838 (QM)
28 n-Hexane	57	5.582	5.589	(0.836)	39916	1.18225	1.99 (QM)
29 cis-1,2-Dichloroethene	96	5.743	5.737	(0.861)	5419	0.28449	0.478 (Q)
30 Ethyl Acetate	43	Compound Not Detected.					
31 Chloroform	83	Compound Not Detected.					
32 Tetrahydrofuran	42	Compound Not Detected.					
33 1,1,1-Trichloroethane	97	6.283	6.283	(0.941)	5219	0.13014	0.219 (a)
34 1,2-Dichloroethane	62	Compound Not Detected.					
35 Benzene	78	6.531	6.538	(0.979)	10481	0.17874	0.300 (a)
36 Carbon tetrachloride	117	Compound Not Detected.					
37 Cyclohexane	56	Compound Not Detected.					
→ * 38 1,4-Difluorobenzene	114	6.673	6.680	(1.000)	312563	10.0000	
39 2,2,4-Trimethylpentane	57	Compound Not Detected.					
40 Heptane	43	6.946	6.953	(1.041)	7725	0.18609	0.313 (aM)
41 1,2-Dichloropropane	63	Compound Not Detected.					
42 Trichloroethene	130	7.083	7.083	(1.061)	4891	0.19532	0.328 (a)
43 1,4-Dioxane	88	Compound Not Detected.					
44 Bromodichloromethane	83	Compound Not Detected.					
45 Methyl Isobutyl Ketone	43	Compound Not Detected.					
46 cis-1,3-Dichloropropene	75	Compound Not Detected.					
47 trans-1,3-Dichloropropene	75	Compound Not Detected.					
\$ 48 Toluene-d8 (S)	98	8.212	8.218	(1.231)	279179	10.7640	10.8
49 Toluene	91	8.292	8.298	(1.243)	34301	0.46251	0.777
50 1,1,2-Trichloroethane	97	Compound Not Detected.					
51 Methyl Butyl Ketone	43	Compound Not Detected.					
52 Dibromochloromethane	129	Compound Not Detected.					
53 1,2-Dibromoethane	107	Compound Not Detected.					
54 Tetrachloroethene	166	9.161	9.161	(0.931)	5364	0.13576	0.228 (a)
* 55 Chlorobenzene - d5	117	9.843	9.844	(1.000)	172936	10.0000	
56 Chlorobenzene	112	Compound Not Detected.					
57 Ethyl Benzene	91	Compound Not Detected.					
58 m&p-Xylene	91	Compound Not Detected.					
59 Bromoform	173	Compound Not Detected.					
60 Styrene	104	Compound Not Detected.					
61 o-Xylene	91	Compound Not Detected.					
62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
63 Isopropylbenzene	105	Compound Not Detected.					
64 N-Propylbenzene	91	Compound Not Detected.					
65 4-Ethyltoluene	105	Compound Not Detected.					
66 1,3,5-Trimethylbenzene	105	Compound Not Detected.					
67 1,2,4-Trimethylbenzene	105	12.647	12.648	(1.285)	4167	0.13418	0.225 (a)
68 1,3-Dichlorobenzene	146	Compound Not Detected.					
69 Sec- Butylbenzene	105	Compound Not Detected.					
\$ 70 1,4-dichlorobenzene-d4 (S)	152	13.000	13.001	(1.321)	34309	8.79498	8.79
71 Benzyl Chloride	91	Compound Not Detected.					
72 1,4-Dichlorobenzene	146	Compound Not Detected.					
73 1,2-Dichlorobenzene	146	Compound Not Detected.					
74 N-Butylbenzene	91	Compound Not Detected.					
75 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
76 Naphthalene	128	Compound Not Detected.					
77 Hexachlorobutadiene	225	Compound Not Detected.					

Data File: \\192.168.10.12\chem\10air0.i\123113.b\36528.D
Report Date: 02-Jan-2014 14:35

Pace Analytical Services, Inc.

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 10252866001
Operator : AH2
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 31-DEC-2013 23:48

Client SDG: 123113.b
Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1. 75-45-6	Difluorochloromethane	3.932	238	NJ
2. 526-73-8	Benzene, 1,2,3-trimethyl-	12.474	2.30	NJ

Data File: \\192.168.10.12\chem\10air0.i\123113.b\36528.D
Report Date: 02-Jan-2014 14:35

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\123113.b\36528.D
Lab Smp Id: 10252866001
Inj Date : 31-DEC-2013 23:48
Operator : AH2
Smp Info :
Misc Info : 19087
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\123113.b\TO15_365-13.m
Meth Date : 02-Jan-2014 14:13 ahamilton Quant Type: ISTD
Cal Date : 31-DEC-2013 14:00 Cal File: 36510.D
Als bottle: 28
Dil Factor: 1.68000
Integrator: HP RTE
Target Version: 4.14
Inst ID: 10air0.i
Compound Sublist: all.sub

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	1.680	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

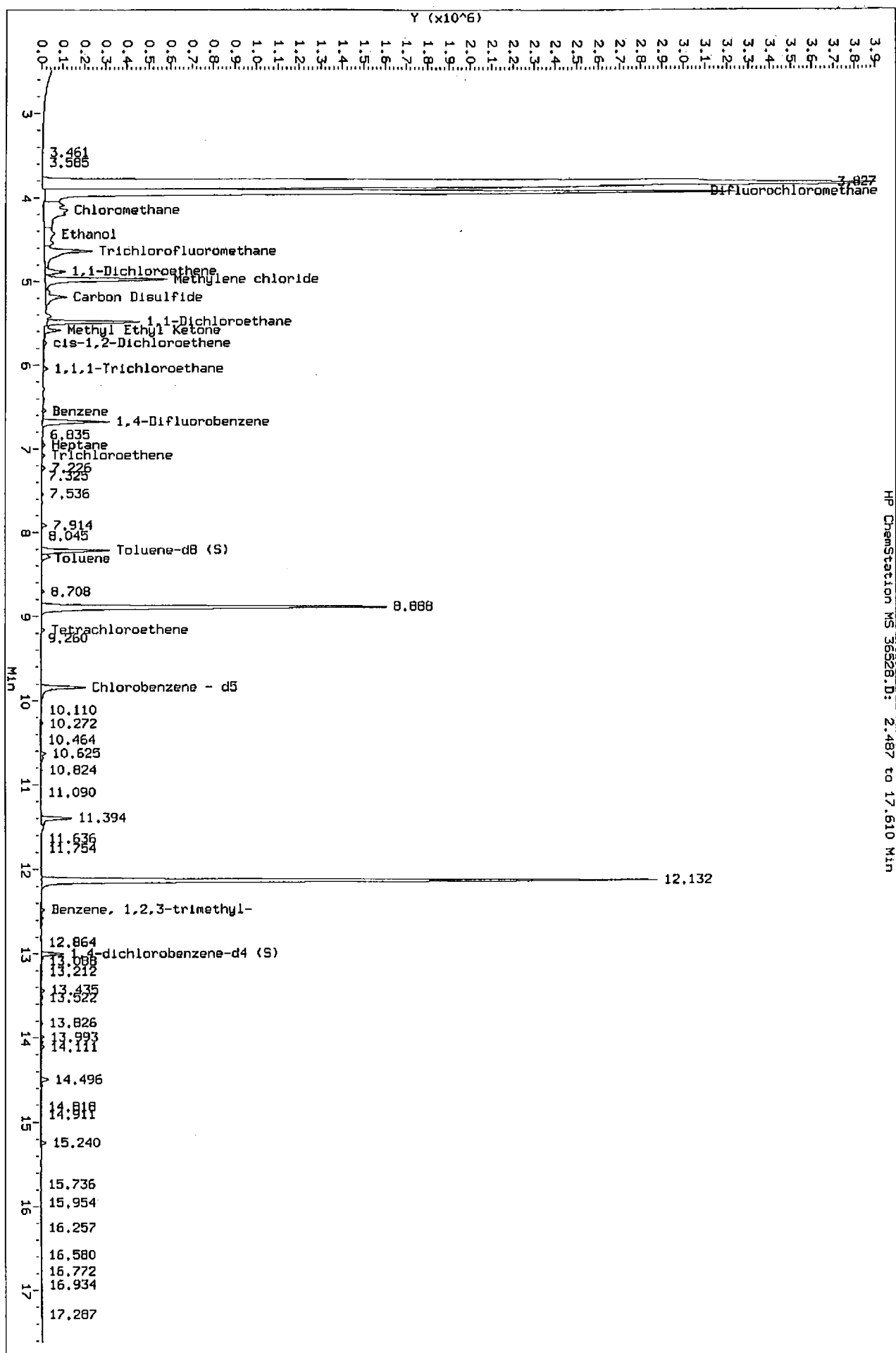
ISTD	RT	AREA	AMOUNT
* 38 1,4-Difluorobenzene	6.674	701926	10.000
* 55 Chlorobenzene - d5	9.844	543379	10.000

CONCENTRATIONS					QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Difluorochloromethane					CAS #: 75-45-6		
3.932	9953140	141.797378	238	83	NIST05.L	1809	38 (ML)
Benzene, 1,2,3-trimethyl-					CAS #: 526-73-8		
12.474	74520	1.37142601	2.30	5	NIST05.L	9117	55 (L)

QC Flag Legend

M - Compound response manually integrated.
L - Operator selected an alternate library search match.

Data File: \\192.168.10.12\chem\10a1r0.1\123113.b\36528.D
Injection Date: 31-DEC-2013 23:48
Instrument: 10a1r0.1
Client Sample ID:



HP ChemStation MS 36528.D: 2.487 to 17.610 Min



Tetra Tech

INTERNAL CORRESPONDENCE

TO: P. RICH **DATE:** MARCH 10, 2014
FROM: A. COGNETTI **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
LOCKHEED MARTIN CORPORATION (LMC) – MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 10254930
SAMPLES: 6/Air/VOC
A-EFFLUENT A-INFLUENT A-MID GAC
C-EFFLUENT C-INFLUENT C-MID GAC

Overview

The sample set for LMC – Middle River, SDG 10254930 consisted of six (6) air samples. All samples were analyzed for volatile organic compounds (VOC). No field duplicate pair is included in this SDG.

The samples were collected by Geo Trans on January 13, 2014 and analyzed by PACE Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

- The internal standard area of 1,4-difluorobenzene was outside quality control limits in the diluted sample analysis of C-INFLUENT on January 24, 2014. Trichloroethene was the only analyte reported from this analytical run. The detected trichloroethene result was qualified as estimated (J) in sample C-INFLUENT.

Notes

The chain of custody indicated that no gauges were provided with the summa canisters. This means that the canister pressure before and after sampling could not be evaluated. No validation action was taken.

Nondetected results were reported to the reporting limit.

Executive Summary

Laboratory Performance: The internal standard area of 1,4-difluorobenzene was outside quality control limits in sample C-INFLUENT.

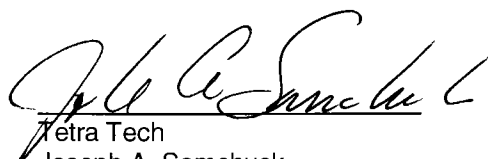
Other Factors Affecting Data Quality: None.

TO: P. Rich
FROM: A. Cognetti
SDG: 10254930
DATE: March 10, 2014

PAGE 2

The data for these analyses were reviewed with reference to Region III modifications to U.S. EPA National Functional Guidelines for Organic Data Validation (Sept. 1994) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cognetti
Chemist/Data Validator


Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

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

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03265 SDG: 10254930 FRACTION: OV MEDIA: AIR	NSAMPLE	A-EFFLUENT_20140113	A-INFLUENT_20140113	A-MID GAC_20140113	C-EFFLUENT_20140113				
	LAB_ID	10254930003	10254930001	10254930002	10254930006				
	SAMP_DATE	1/13/2014	1/13/2014	1/13/2014	1/13/2014				
	QC_TYPE	NM	NM	NM	NM				
	UNITS	UG/M3	UG/M3	UG/M3	UG/M3				
	PCT_SOLIDS								
DUP_OF									
PARAMETER	RESULT	VOL	QLCD	RESULT	VOL	QLCD	RESULT	VOL	QLCD
1,1,1-TRICHLOROETHANE	1.7 U			570			19.3		
1,1,2-TRICHLOROETHANE	0.86 U			0.86 U			0.86 U		
1,1-DICHLOROETHANE	5.9			29.3			22.4		
1,1-DICHLOROETHENE	31.3			141			113		
1,2,3-TRIMETHYLBENZENE	1.4			0.31 U			0.31 U		
1,2,4-TRICHLOROBENZENE	2.4 U			2.4 U			2.4 U		
1,2,4-TRIMETHYLBENZENE	4			1.9			3.7		
1,2-DICHLOROETHANE	0.64 U			0.64 U			0.64 U		
1,3,5-TRIMETHYLBENZENE	1.6 U			1.6 U			1.7		
BENZENE	1.7			0.51 U			0.51 U		
CARBON TETRACHLORIDE	1 U			1 U			1 U		
CHLORODIFLUOROMETHANE	12.5			6.5			3.9		
CHLOROFORM	1.6 U			11.6			1.6		
CIS-1,2-DICHLOROETHENE	6.4			173			162		
DICHLORODIFLUOROMETHANE	2.3			2.2			2.2		
ETHYLBENZENE	1.9			1.8			1.9		
M+P-XYLENES	5.8			4.3			7.4		
METHYL TERT-BUTYL ETHER	1.1 U			1.1 U			1.1 U		
METHYLENE CHLORIDE	1.8			3.3			2.3		
NAPHTHALENE	5.7			4.9			4.7		
O-XYLENE	2.2			1.7			2.5		
TETRACHLOROETHENE	1.1 U			1.1 U			42.1		
TOLUENE	22.2			9820			64		
TRANS-1,2-DICHLOROETHENE	1.3 U			1.3 U			1.3 U		
TRICHLOROETHENE	0.86 U			795			4.9		
VINYL CHLORIDE	0.41 U			0.41 U			0.41 U		

PROJ_NO: 03265 SDG: 10254930 FRACTION: OV MEDIA: AIR	NSAMPLE	C-INFLUENT_20140113	C-MID GAC_20140113			
	LAB_ID	10254930004	10254930005			
	SAMP_DATE	1/13/2014	1/13/2014			
	QC_TYPE	NM	NM			
	UNITS	UG/M3	UG/M3			
PCT_SOLIDS						
DUP_OF						
PARAMETER	RESULT	VL	QLCD	RESULT	VL	QLCD
1,1,1-TRICHLOROETHANE	2 U			3		
1,1,2-TRICHLOROETHANE	0.99 U			0.86 U		
1,1-DICHLOROETHANE	1.5 U			1.3 U		
1,1-DICHLOROETHENE	1.5 U			1.3 U		
1,2,3-TRIMETHYLBENZENE	5.5			0.31 U		
1,2,4-TRICHLOROBENZENE	2.7 U			2.4 U		
1,2,4-TRIMETHYLBENZENE	17.8			2.7		
1,2-DICHLOROETHANE	0.74 U			0.64 U		
1,3,5-TRIMETHYLBENZENE	1.8 U			1.6 U		
BENZENE	13.7			8.3		
CARBON TETRACHLORIDE	1.2 U			1 U		
CHLORODIFLUOROMETHANE	4.7			4.2		
CHLOROFORM	1.8 U			1.6 U		
CIS-1,2-DICHLOROETHENE	5.7			11		
DICHLORODIFLUOROMETHANE	1.8 U			2.2		
ETHYLBENZENE	10.3			1.7		
M+P-XYLENES	49.1			5.8		
METHYL TERT-BUTYL ETHER	1.3 U			1.1 U		
METHYLENE CHLORIDE	3.4			2.4		
NAPHTHALENE	22.6			4.8		
O-XYLENE	19.3			2.4		
TETRACHLOROETHENE	5.6			1.1 U		
TOLUENE	49.6			21.3		
TRANS-1,2-DICHLOROETHENE	1.5 U			1.3 U		
TRICHLOROETHENE	298 J	N		124		
VINYL CHLORIDE	0.47 U			0.41 U		

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD Oem

Pace Project No.: 10254930

Sample: A-EFFLUENT		Lab ID: 10254930003	Collected: 01/13/14 11:47	Received: 01/15/14 10:15	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.7 ug/m3		0.51	1.57		01/21/14 23:24	71-43-2	
Carbon tetrachloride	ND ug/m3		1.0	1.57		01/21/14 23:24	56-23-5	
Chlorodifluoromethane	12.5 ug/m3		0.31	1.57		01/21/14 23:24	75-45-6	
Chloroform	ND ug/m3		1.6	1.57		01/21/14 23:24	67-66-3	
Dichlorodifluoromethane	2.3 ug/m3		1.6	1.57		01/21/14 23:24	75-71-8	
1,1-Dichloroethane	5.9 ug/m3		1.3	1.57		01/21/14 23:24	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.64	1.57		01/21/14 23:24	107-06-2	
1,1-Dichloroethene	31.3 ug/m3		1.3	1.57		01/21/14 23:24	75-35-4	
cis-1,2-Dichloroethene	6.4 ug/m3		1.3	1.57		01/21/14 23:24	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.3	1.57		01/21/14 23:24	156-60-5	
Ethylbenzene	1.9 ug/m3		1.4	1.57		01/21/14 23:24	100-41-4	
Methylene Chloride	1.8 ug/m3		1.1	1.57		01/21/14 23:24	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.1	1.57		01/21/14 23:24	1634-04-4	
Naphthalene	5.7 ug/m3		1.7	1.57		01/21/14 23:24	91-20-3	
Tetrachloroethene	ND ug/m3		1.1	1.57		01/21/14 23:24	127-18-4	
Toluene	22.2 ug/m3		1.2	1.57		01/21/14 23:24	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.4	1.57		01/21/14 23:24	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.7	1.57		01/21/14 23:24	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.86	1.57		01/21/14 23:24	79-00-5	
Trichloroethene	ND ug/m3		0.86	1.57		01/21/14 23:24	79-01-6	
1,2,3-Trimethylbenzene	1.4 ug/m3		0.31	1.57		01/21/14 23:24	526-73-8	
1,2,4-Trimethylbenzene	4.0 ug/m3		1.6	1.57		01/21/14 23:24	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.6	1.57		01/21/14 23:24	108-67-8	
Vinyl chloride	ND ug/m3		0.41	1.57		01/21/14 23:24	75-01-4	
m&p-Xylene	5.8 ug/m3		2.8	1.57		01/21/14 23:24	179601-23-1	
o-Xylene	2.2 ug/m3		1.4	1.57		01/21/14 23:24	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD Oem
Pace Project No.: 10254930

Sample: A-INFLUENT		Lab ID: 10254930001	Collected: 01/13/14 11:49	Received: 01/15/14 10:15	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.51	1.57		01/21/14 19:48	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.0	1.57		01/21/14 19:48	56-23-5	
Chlorodifluoromethane	6.5	ug/m3	0.31	1.57		01/21/14 19:48	75-45-6	
Chloroform	11.6	ug/m3	1.6	1.57		01/21/14 19:48	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.6	1.57		01/21/14 19:48	75-71-8	
1,1-Dichloroethane	29.3	ug/m3	1.3	1.57		01/21/14 19:48	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.64	1.57		01/21/14 19:48	107-06-2	
1,1-Dichloroethene	141	ug/m3	1.3	1.57		01/21/14 19:48	75-35-4	
cis-1,2-Dichloroethene	173	ug/m3	1.3	1.57		01/21/14 19:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.57		01/21/14 19:48	156-60-5	
Ethylbenzene	1.8	ug/m3	1.4	1.57		01/21/14 19:48	100-41-4	
Methylene Chloride	3.3	ug/m3	1.1	1.57		01/21/14 19:48	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.1	1.57		01/21/14 19:48	1634-04-4	
Naphthalene	4.9	ug/m3	1.7	1.57		01/21/14 19:48	91-20-3	
Tetrachloroethene	ND	ug/m3	1.1	1.57		01/21/14 19:48	127-18-4	
Toluene	9820	ug/m3	96.7	125.6		01/24/14 21:10	108-88-3	A3
1,2,4-Trichlorobenzene	ND	ug/m3	2.4	1.57		01/21/14 19:48	120-82-1	
1,1,1-Trichloroethane	570	ug/m3	139	125.6		01/24/14 21:10	71-55-6	A3
1,1,2-Trichloroethane	ND	ug/m3	0.86	1.57		01/21/14 19:48	79-00-5	
Trichloroethene	795	ug/m3	69.1	125.6		01/24/14 21:10	79-01-6	A3
1,2,3-Trimethylbenzene	ND	ug/m3	0.31	1.57		01/21/14 19:48	526-73-8	
1,2,4-Trimethylbenzene	1.9	ug/m3	1.6	1.57		01/21/14 19:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.6	1.57		01/21/14 19:48	108-67-8	
Vinyl chloride	ND	ug/m3	0.41	1.57		01/21/14 19:48	75-01-4	
m&p-Xylene	4.3	ug/m3	2.8	1.57		01/21/14 19:48	179601-23-1	
o-Xylene	1.7	ug/m3	1.4	1.57		01/21/14 19:48	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD Oem

Pace Project No.: 10254930

Sample: A-MID GAC		Lab ID: 10254930002	Collected: 01/13/14 11:44	Received: 01/15/14 10:15	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.51	1.57		01/21/14 22:54	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.0	1.57		01/21/14 22:54	56-23-5	
Chlorodifluoromethane	3.9	ug/m3	0.31	1.57		01/21/14 22:54	75-45-6	
Chloroform	1.6	ug/m3	1.6	1.57		01/21/14 22:54	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.6	1.57		01/21/14 22:54	75-71-8	
1,1-Dichloroethane	22.4	ug/m3	1.3	1.57		01/21/14 22:54	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.64	1.57		01/21/14 22:54	107-06-2	
1,1-Dichloroethene	113	ug/m3	1.3	1.57		01/21/14 22:54	75-35-4	
cis-1,2-Dichloroethene	162	ug/m3	1.3	1.57		01/21/14 22:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.57		01/21/14 22:54	156-60-5	
Ethylbenzene	1.9	ug/m3	1.4	1.57		01/21/14 22:54	100-41-4	
Methylene Chloride	2.3	ug/m3	1.1	1.57		01/21/14 22:54	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.1	1.57		01/21/14 22:54	1634-04-4	
Naphthalene	4.7	ug/m3	1.7	1.57		01/21/14 22:54	91-20-3	
Tetrachloroethene	42.1	ug/m3	1.1	1.57		01/21/14 22:54	127-18-4	
Toluene	64.0	ug/m3	1.2	1.57		01/21/14 22:54	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.4	1.57		01/21/14 22:54	120-82-1	
1,1,1-Trichloroethane	19.3	ug/m3	1.7	1.57		01/21/14 22:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.86	1.57		01/21/14 22:54	79-00-5	
Trichloroethene	4.9	ug/m3	0.86	1.57		01/21/14 22:54	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.31	1.57		01/21/14 22:54	526-73-8	
1,2,4-Trimethylbenzene	3.7	ug/m3	1.6	1.57		01/21/14 22:54	95-63-6	
1,3,5-Trimethylbenzene	1.7	ug/m3	1.6	1.57		01/21/14 22:54	108-67-8	
Vinyl chloride	ND	ug/m3	0.41	1.57		01/21/14 22:54	75-01-4	
m&p-Xylene	7.4	ug/m3	2.8	1.57		01/21/14 22:54	179601-23-1	
o-Xylene	2.5	ug/m3	1.4	1.57		01/21/14 22:54	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD Oem
Pace Project No.: 10254930

Sample: C-EFFLUENT		Lab ID: 10254930006	Collected: 01/13/14 13:29	Received: 01/15/14 10:15	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	4.8 ug/m3		0.51	1.57		01/21/14 20:50	71-43-2	
Carbon tetrachloride	ND ug/m3		1.0	1.57		01/21/14 20:50	56-23-5	
Chlorodifluoromethane	4.3 ug/m3		0.31	1.57		01/21/14 20:50	75-45-6	
Chloroform	1.6 ug/m3		1.6	1.57		01/21/14 20:50	67-66-3	
Dichlorodifluoromethane	ND ug/m3		1.6	1.57		01/21/14 20:50	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.3	1.57		01/21/14 20:50	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.64	1.57		01/21/14 20:50	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.3	1.57		01/21/14 20:50	75-35-4	
cis-1,2-Dichloroethene	8.2 ug/m3		1.3	1.57		01/21/14 20:50	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.3	1.57		01/21/14 20:50	156-60-5	
Ethylbenzene	ND ug/m3		1.4	1.57		01/21/14 20:50	100-41-4	
Methylene Chloride	2.3 ug/m3		1.1	1.57		01/21/14 20:50	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.1	1.57		01/21/14 20:50	1634-04-4	
Naphthalene	4.8 ug/m3		1.7	1.57		01/21/14 20:50	91-20-3	
Tetrachloroethene	ND ug/m3		1.1	1.57		01/21/14 20:50	127-18-4	
Toluene	26.3 ug/m3		1.2	1.57		01/21/14 20:50	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.4	1.57		01/21/14 20:50	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.7	1.57		01/21/14 20:50	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.86	1.57		01/21/14 20:50	79-00-5	
Trichloroethene	3.8 ug/m3		0.86	1.57		01/21/14 20:50	79-01-6	
1,2,3-Trimethylbenzene	1.7 ug/m3		0.31	1.57		01/21/14 20:50	526-73-8	
1,2,4-Trimethylbenzene	7.3 ug/m3		1.6	1.57		01/21/14 20:50	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.6	1.57		01/21/14 20:50	108-67-8	
Vinyl chloride	ND ug/m3		0.41	1.57		01/21/14 20:50	75-01-4	
m&p-Xylene	3.6 ug/m3		2.8	1.57		01/21/14 20:50	179601-23-1	
o-Xylene	ND ug/m3		1.4	1.57		01/21/14 20:50	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD Oem

Pace Project No.: 10254930

Sample: C-INFLUENT		Lab ID: 10254930004	Collected: 01/13/14 13:24	Received: 01/15/14 10:15	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	13.7	ug/m3	0.58	1.8		01/21/14 22:23	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.2	1.8		01/21/14 22:23	56-23-5	
Chlorodifluoromethane	4.7	ug/m3	0.36	1.8		01/21/14 22:23	75-45-6	
Chloroform	ND	ug/m3	1.8	1.8		01/21/14 22:23	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	1.8	1.8		01/21/14 22:23	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		01/21/14 22:23	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		01/21/14 22:23	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		01/21/14 22:23	75-35-4	
cis-1,2-Dichloroethene	5.7	ug/m3	1.5	1.8		01/21/14 22:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		01/21/14 22:23	156-60-5	
Ethylbenzene	10.3	ug/m3	1.6	1.8		01/21/14 22:23	100-41-4	
Methylene Chloride	3.4	ug/m3	1.3	1.8		01/21/14 22:23	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		01/21/14 22:23	1634-04-4	
Naphthalene	22.6	ug/m3	1.9	1.8		01/21/14 22:23	91-20-3	
Tetrachloroethene	5.6	ug/m3	1.2	1.8		01/21/14 22:23	127-18-4	
Toluene	49.6	ug/m3	1.4	1.8		01/21/14 22:23	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.7	1.8		01/21/14 22:23	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		01/21/14 22:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.99	1.8		01/21/14 22:23	79-00-5	
Trichloroethene	298	ug/m3	4.1	7.4		01/24/14 20:44	79-01-6	IS
1,2,3-Trimethylbenzene	5.5	ug/m3	0.36	1.8		01/21/14 22:23	526-73-8	
1,2,4-Trimethylbenzene	17.8	ug/m3	1.8	1.8		01/21/14 22:23	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		01/21/14 22:23	108-67-8	
Vinyl chloride	ND	ug/m3	0.47	1.8		01/21/14 22:23	75-01-4	
m&p-Xylene	49.1	ug/m3	3.2	1.8		01/21/14 22:23	179601-23-1	
o-Xylene	19.3	ug/m3	1.6	1.8		01/21/14 22:23	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD Oem

Pace Project No.: 10254930

Sample: C-MID GAC		Lab ID: 10254930005	Collected: 01/13/14 13:26	Received: 01/15/14 10:15	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	8.3 ug/m3		0.51	1.57		01/21/14 21:52	71-43-2	
Carbon tetrachloride	ND ug/m3		1.0	1.57		01/21/14 21:52	56-23-5	
Chlorodifluoromethane	4.2 ug/m3		0.31	1.57		01/21/14 21:52	75-45-6	
Chloroform	ND ug/m3		1.6	1.57		01/21/14 21:52	67-66-3	
Dichlorodifluoromethane	2.2 ug/m3		1.6	1.57		01/21/14 21:52	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.3	1.57		01/21/14 21:52	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.64	1.57		01/21/14 21:52	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.3	1.57		01/21/14 21:52	75-35-4	
cis-1,2-Dichloroethene	11.0 ug/m3		1.3	1.57		01/21/14 21:52	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.3	1.57		01/21/14 21:52	156-60-5	
Ethylbenzene	1.7 ug/m3		1.4	1.57		01/21/14 21:52	100-41-4	
Methylene Chloride	2.4 ug/m3		1.1	1.57		01/21/14 21:52	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.1	1.57		01/21/14 21:52	1634-04-4	
Naphthalene	4.8 ug/m3		1.7	1.57		01/21/14 21:52	91-20-3	
Tetrachloroethene	ND ug/m3		1.1	1.57		01/21/14 21:52	127-18-4	
Toluene	21.3 ug/m3		1.2	1.57		01/21/14 21:52	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.4	1.57		01/21/14 21:52	120-82-1	
1,1,1-Trichloroethane	3.0 ug/m3		1.7	1.57		01/21/14 21:52	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.86	1.57		01/21/14 21:52	79-00-5	
Trichloroethene	124 ug/m3		0.86	1.57		01/21/14 21:52	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.31	1.57		01/21/14 21:52	526-73-8	
1,2,4-Trimethylbenzene	2.7 ug/m3		1.6	1.57		01/21/14 21:52	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.6	1.57		01/21/14 21:52	108-67-8	
Vinyl chloride	ND ug/m3		0.41	1.57		01/21/14 21:52	75-01-4	
m&p-Xylene	5.8 ug/m3		2.8	1.57		01/21/14 21:52	179601-23-1	
o-Xylene	2.4 ug/m3		1.4	1.57		01/21/14 21:52	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

PROJECT NARRATIVE

Project: 117-0507599.20 SSD Oem
Pace Project No.: 10254930

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: January 31, 2014

General Information:

6 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

QC Batch: AIR/19292

IS: The internal standard recovery associated with this result exceeds the lower control limit. The reported result should be considered an estimated value.

- C-INFLUENT (Lab ID: 10254930004)
- Trichloroethene

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: AIR/19292

A3: The sample was analyzed by serial dilution.

- A-INFLUENT (Lab ID: 10254930001)
- 1,1,1-Trichloroethane
- Toluene

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 117-0507599.20 SSD Oem
Pace Project No.: 10254930

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: January 31, 2014

Analyte Comments:

QC Batch: AIR/19292

A3: The sample was analyzed by serial dilution.

- A-INFLUENT (Lab ID: 10254930001)
- Trichloroethene

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..




The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

[illegible]

ORIGINAL

	Document Name: Air Sample Condition Upon Receipt	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: F-MN-A-106-rev.07	Issuing Authority: Pace Minnesota Quality Office

**Air Sample Condition
Upon Receipt**

Client Name:

Project #:

WO# : 10254930



Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: 80475992 5193

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other: _____

Temp. (TO17 and TO13 samples only) (°C): _____ Corrected Temp (°C): _____

Thermom. Used: ☐ B88A912167504 ☒ 80512447 ☐ 72337080

Temp should be above freezing to 6°C Correction Factor: _____

Date & Initials of Person Examining Contents: CH 1.15.14

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media: <u>Air Can</u>		11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received: <u>60 Air Can</u>					
Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
A-Influent	1427				
"-MidCAC	1441				
"-Effluent	1378				
C-Influent	1401				
"-MidCAC	1367				
"-Effluent	1373				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review:

Date: 1/16/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

SAMPLE SUMMARY

Project: 117-0507599.20 SSD Oem

Pace Project No.: 10254930

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10254930001	A-INFLUENT	Air	01/13/14 11:49	01/15/14 10:15
10254930002	A-MID GAC	Air	01/13/14 11:44	01/15/14 10:15
10254930003	A-EFFLUENT	Air	01/13/14 11:47	01/15/14 10:15
10254930004	C-INFLUENT	Air	01/13/14 13:24	01/15/14 10:15
10254930005	C-MID GAC	Air	01/13/14 13:26	01/15/14 10:15
10254930006	C-EFFLUENT	Air	01/13/14 13:29	01/15/14 10:15

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

HOLD TIME

SDG 10254930

SORT	UNITS	NSAMPLE	LAB ID	QC TYPE	SAMP DATE	EXTR DATE	ANAL DATE	SMP EXTR	EXTR ANL	SMP ANL
UGM3	C-MID GAC		10254930005	NM	01/13/2014	01/21/2014	01/21/2014	8	0	8
UGM3	C-INFLUENT		10254930004	NM	01/13/2014	01/24/2014	01/24/2014	11	0	11
UGM3	C-INFLUENT		10254930004	NM	01/13/2014	01/21/2014	01/21/2014	8	0	8
UGM3	C-EFFLUENT		10254930006	NM	01/13/2014	01/21/2014	01/21/2014	8	0	8
UGM3	A-MID GAC		10254930002	NM	01/13/2014	01/21/2014	01/21/2014	8	0	8
UGM3	A-INFLUENT		10254930001	NM	01/13/2014	01/24/2014	01/24/2014	11	0	11
UGM3	A-INFLUENT		10254930001	NM	01/13/2014	01/21/2014	01/21/2014	8	0	8
UGM3	A-EFFLUENT		10254930003	NM	01/13/2014	01/21/2014	01/21/2014	8	0	8

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10254930

Lab File ID: 02102BFB.D

BFB Injection Date: 01/21/2014

Instrument ID: 10AIR7

BFB Injection Time: 08:42

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	17.21
75	30.00 - 66.00% of mass 95	59.57
96	5.00 - 9.00% of mass 95	7.00
173	Less than 2.00% of mass 174	0.96 (0.98)
174	50.00 - 120.00% of mass 95	98.05
175	4.00 - 9.00% of mass 174	7.12 (7.26)
176	93.00 - 101.00% of mass 174	98.41 (100.36)
177	5.00 - 9.00% of mass 176	6.35 (6.46)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	02103.D	01/21/2014	09:08
2	CAL2	CAL2	02104.D	01/21/2014	09:35
3	CAL3	CAL3	02105.D	01/21/2014	10:02
4	CAL4	CAL4	02106.D	01/21/2014	10:30
5	CAL5	CAL5	02107.D	01/21/2014	10:59
6	CAL6	CAL6	02108.D	01/21/2014	11:30
7	CAL7	CAL7	02109.D	01/21/2014	12:04
8	ICV (LCS)	ICV	02110.D	01/21/2014	12:32
9	ICV (LCS)	ICV	02111.D	01/21/2014	13:00
10	LCS for HBN 284998 [AIR/	1615890	02112LL.D	01/21/2014	13:29
11	LCS (LCS)	LCS	02112.D	01/21/2014	13:29
12	BLANK for HBN 284998 [AI	1615889	02115LL.D	01/21/2014	15:04
13	BLANK (BLK)	BLANK	02115B.D	01/21/2014	15:04
14	A-INFLUENT	10254930001	02124.D	01/21/2014	19:48
15	C-EFFLUENT	10254930006	02126.D	01/21/2014	20:50
16	C-EFFLUENT(1609250DU	1615904-DUP	02127.D	01/21/2014	21:21
17	C-MID GAC	10254930005	02128.D	01/21/2014	21:52
18	C-INFLUENT	10254930004	02129.D	01/21/2014	22:23
19	A-MID GAC	10254930002	02130.D	01/21/2014	22:54
20	A-EFFLUENT	10254930003	02131.D	01/21/2014	23:24

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air7.i\012114.b\02103.D
 Level 2: \\192.168.10.12\chem\10air7.i\012114.b\02104.D
 Level 3: \\192.168.10.12\chem\10air7.i\012114.b\02105.D
 Level 4: \\192.168.10.12\chem\10air7.i\012114.b\02106.D
 Level 5: \\192.168.10.12\chem\10air7.i\012114.b\02107.D
 Level 6: \\192.168.10.12\chem\10air7.i\012114.b\02108.D
 Level 7: \\192.168.10.12\chem\10air7.i\012114.b\02109.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
1 Chlorodifluoromethane	2.31614	2.37490	2.45505	2.58111	2.75602	2.84642					
	3.01550						AVRG		2.62073		9.94180
2 Propylene	10.47855	10.22610	11.14823	10.47451	10.82324	10.12713					
	10.02447						AVRG		10.47174		3.82061
3 Dichlorodifluoromethane	0.66806	0.74712	0.73951	0.74235	0.80762	0.89757					
	0.99989						AVRG		0.80030		14.12951
4 Dichlorotetrafluoroethane	0.93089	0.99593	0.98100	1.00905	1.04809	1.10697					
	1.19167						AVRG		1.03766		8.42006

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			#RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
5 Chloromethane	4.27573	4.42979	4.25272	4.52033	4.47677	4.47368					
	4.59599					AVRG		4.43215			2.83909
6 Vinyl chloride	3.94533	3.78708	3.96338	4.09628	4.09214	4.16986					
	4.49341					AVRG		4.07821			5.45461
7 1,3-Butadiene	6.14132	7.35024	7.52348	7.20152	7.27847	7.59637					
	7.77861					AVRG		7.26715			7.35583
8 Bromomethane	2.40992	2.94576	2.97125	2.91816	3.04647	3.12435					
	3.14412					AVRG		2.93715			8.44763
9 Chloroethane	7.48791	6.86327	7.70563	8.02124	8.26360	8.43698					
	8.50725					AVRG		7.89798			7.46629
10 Ethanol	8.73799	10.63624	11.95820	11.67614	11.92952	12.68108					
	12.60991					AVRG		11.46129			12.03537
11 Vinyl Bromide	2.58133	2.88634	2.96502	3.03516	2.84874	2.83059					
	2.92919					AVRG		2.86805			5.04032

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
12 Isopentane	5.45895	4.87733	5.15278	5.43878	5.24832	4.92599					
	5.04415						AVRG	5.16376			4.49275
13 Acrolein	18.46774	15.42362	16.75994	13.42032	13.60826						
	13.02843						AVRG	15.11805			14.35168
14 Trichlorofluoromethane	0.58756	0.61143	0.59907	0.61435	0.65962	0.72233					
	0.79401						AVRG	0.65548			11.66914
15 Acetone	10393	15370	27808	56230	505862	1092224					
	1740523						LNIR	-0.02794	2.19726		0.99930
16 Isopropyl Alcohol	3.24072	3.27997	3.35896	3.55186	2.93044	3.10386					
	3.19470						AVRG	3.23722			6.03967
17 Acrylonitrile	8.54445	8.13487	7.39498	7.10371	6.64823	6.28875					
	6.30612						AVRG	7.20302			12.23837
18 1,1-Dichloroethene	1.68266	1.94236	1.90714	2.02294	1.98469	2.10240					
	2.24558						AVRG	1.98397			8.78834

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
19 Tert Butyl Alcohol (TBA)	1.50603	1.56366	1.79054	1.73744	1.62088	1.70010				
	1.91480						AVRG		1.69049	8.28088
20 Freon 113	1.21127	1.31476	1.26128	1.30030	1.29784	1.34010				
	1.41303						AVRG		1.30551	4.82094
21 Methylene chloride	2.93069	3.17728	3.76853	4.10126	3.96576	4.05242				
	4.10095						AVRG		3.72813	12.86779
22 Allyl Chloride	7.23311	6.17119	7.11789	6.94730	6.73817	6.92163				
	7.10121						AVRG		6.89007	5.15962
23 Carbon Disulfide	0.75994	0.89180	0.99263	1.05032	1.05071	1.11039				
	1.15282						AVRG		1.00123	13.52507
24 trans-1,2-dichloroethene	2.85753	2.55226	2.91308	2.83305	2.70443	2.72997				
	2.77150						AVRG		2.76597	4.31095
25 Methyl Tert Butyl Ether	0.90927	0.98513	0.99246	0.99070	0.97948	0.99791				
	1.05542						AVRG		0.98719	4.32643

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000 Level 7								m2	
26 Vinyl Acetate	1.832461 1.677491	1.843351	2.084941	2.023941	1.669861	1.659101	AVRG	1.827311		9.501101
27 1,1-Dichloroethane	1.547881 1.870571	1.555221	1.688751	1.717731	1.679521	1.777841	AVRG	1.691071		6.809211
29 Methyl Ethyl Ketone	4.858061 6.484751	6.043681	6.451871	6.148541	6.129061	6.230091	AVRG	6.049441		9.103421
30 n-Hexane	2.457111 2.526731	2.388871	2.526421	2.604061	2.498251	2.464351	AVRG	2.495111		2.715091
31 Di-isopropyl Ether	1.477821 1.434661	1.511491	1.634861	1.623311	1.425741	1.369661	AVRG	1.496651		6.735631
32 Ethyl Acetate	1.815211 1.973261	2.214651	2.275791	2.231751	1.968671	1.920511	AVRG	2.057121		8.767281
33 cis-1,2-Dichloroethene	2.782711 2.698161	2.678761	2.928701	2.817791	2.595631	2.641201	AVRG	2.734711		4.206341

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000									
	Level 7									
34 Ethyl Tert-Butyl Ether	1.08939	1.17781	1.19511	1.15647	1.10980	1.11656				
	1.17152						AVRG	1.14524		3.48593
35 Chloroform	0.96352	0.99132	0.97398	0.98074	1.00656	1.08821				
	1.17813						AVRG	1.02606		7.67949
36 Tetrahydrofuran	4.61893	5.70725	5.29004	4.89569	4.95179	4.80300				
	4.82413						AVRG	5.01298		7.33534
37 1,1,1-Trichloroethane	0.78038	0.82445	0.82178	0.83538	0.84691	0.90952				
	0.98958						AVRG	0.85828		8.10919
38 1,2-Dichloroethane	1.26266	1.34527	1.34848	1.33105	1.38238	1.50760				
	1.66369						AVRG	1.40588		9.65049
39 Benzene	0.96308	0.95449	1.02974	0.97570	0.99549	1.00852				
	1.06120						AVRG	0.99832		3.81027
40 Carbon tetrachloride	0.71936	0.74482	0.75521	0.76888	0.75711	0.81117				
	0.90682						AVRG	0.78048		7.97241

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m'	m''	
	30.0000										
	Level 7										
41 Cyclohexane	3.49754	3.43638	3.55395	3.34545	3.11767	2.93916					
	2.99591						AVRG		3.26944		7.63193
42 Tert Amyl Methyl Ether	+++	0.61358	0.87125	0.98591	1.07304	1.10185					
	1.14611						AVRG		0.96529		20.50687
44 2,2,4-Trimethylpentane	1.02993	1.05611	1.06774	1.01662	0.97139	0.94617					
	0.95471						AVRG		1.00610		4.87216
45 Heptane	3.91862	3.76771	3.58309	3.73125	3.46149	3.26155					
	3.13006						AVRG		3.55054		8.00438
46 1,2-Dichloropropane	3.26715	3.62093	3.46903	3.84296	3.33667	3.36483					
	3.42017						AVRG		3.47453		5.68623
47 Trichloroethene	2.23034	2.36277	2.22975	2.36802	2.11795	2.05276					
	2.02096						AVRG		2.19743		6.35746
48 1,4-Dioxane	5.90793	6.13692	5.50831	5.80033	4.60120	4.97228					
	5.37654						AVRG		5.47193		9.89335

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
49 Bromodichloromethane	1.03959	0.97218	0.94339	0.94820	0.93180	1.00670					
	1.09312						AVRG		0.99071		5.97075
50 Methylcyclohexane	5.63924	4.77316	4.70761	4.61525	4.16389	4.12679					
	4.16617						AVRG		4.59887		11.65629
51 Methyl Isobutyl Ketone	2.65910	2.95158	2.77067	2.69229	2.22302	2.15848					
	2.18072						AVRG		2.50512		12.13263
52 cis-1,3-Dichloropropene	2.07525	1.83620	1.77343	1.76455	1.67166	1.68800					
	1.76557						AVRG		1.79638		7.50803
53 trans-1,3-Dichloropropene	2.04229	1.96597	1.95002	1.70331	1.43319	1.48970					
	1.55530						AVRG		1.72997		14.28429
55 1,1,2-Trichloroethane	2.40658	2.60854	2.33550	2.42370	2.20478	2.14086					
	2.17458						AVRG		2.32784		7.18829
56 Toluene	0.69056	0.76078	0.79047	0.82680	0.75767	0.75050					
	0.77829						AVRG		0.76501		5.46016

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
57 Methyl Butyl Ketone	3349	5946	14423	33311	454900	1042472				
	1701811						LINR	0.02254	0.97406	0.99951
58 Dibromochloromethane	0.51654	0.53384	0.53366	0.51074	0.46553	0.46431				
	0.46203						AVRG		0.49809	6.63099
59 1,2-Dibromomethane	0.63534	0.70690	0.71905	0.68492	0.62430	0.60786				
	0.59399						AVRG		0.65320	7.63964
60 Tetrachloroethene	0.58301	0.64128	0.64027	0.62623	0.56197	0.52674				
	0.51689						AVRG		0.58520	8.95805
62 Chlorobenzene	0.50615	0.52686	0.52073	0.53347	0.47580	0.45699				
	0.43960						AVRG		0.49423	7.46168
63 Ethyl Benzene	11820	23878	67437	145596	1820363	4068581				
	6363699						LINR	0.00679	0.25790	0.99992
64 m,p-Xylene	9146	19683	54650	120853	1488519	3348192				
	5321971						LINR	0.01120	0.30970	0.99996

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
65 Bromoform	9443	17278	42575	89842	1218927	2751202					
	4277249						LINR	0.00847	0.38287		0.99982
66 Styrene	5456	10798	30795	70880	1027229	2466449					
	3994036						LINR	0.03009	0.41378		0.99915
67 o-Xylene	10720	21137	59915	124702	1535484	3458926					
	5409903						LINR	0.00700	0.30350		0.99991
68 1,1,2,2-Tetrachloroethane	0.52457	0.63231	0.67530	0.63649	0.56303	0.55418					
	0.55609						AVRG		0.59171		9.42196
69 Isopropylbenzene	0.26908	0.31059	0.30806	0.28729	0.23845	0.23537					
	0.23747						AVRG		0.26947		12.35173
70 N-Propylbenzene	14486	27046	76239	168506	2281773	5018164					
	7825052						LINR	0.00621	0.20933		0.99984
71 4-Ethyltoluene	10772	21283	60722	134010	1829643	4134923					
	6560866						LINR	0.01470	0.25077		0.99994

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
72 1,3,5-Trimethylbenzene	11814	24038	60836	133562	1704064	3840967				
	6103541						LINR	0.01195	0.26997	0.99995
73 Tert-Butyl Benzene	11304	20905	54966	123088	1736310	4008064				
	6355208						LINR	0.01847	0.23878	0.99982
74 1,2,4-Trimethylbenzene	10585	21533	56502	127139	1724246	3934032				
	6164429						LINR	0.01321	0.26606	0.99987
75 1,3-Dichlorobenzene	7724	13857	36129	77750	1092703	2595404				
	4091500						LINR	0.02089	0.40147	0.99957
76 Sec- Butylbenzene	++++	0.32869	0.29911	0.27547	0.20901	0.20363				
	0.21102						AVRG		0.25449	21.14722
78 Benzyl Chloride	7989	14083	33429	75925	1217424	2812568				
	4462629						LINR	0.02173	0.36812	0.99979
79 1,4-Dichlorobenzene	8798	14712	33859	71993	1008265	2397315				
	3891626						LINR	0.02617	0.42549	0.99919

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		m1	m2	
	30.0000									
	Level 7									
80 p-isopropyltoluene	++++	0.37434	0.37213	0.34477	0.26390	0.25068				
	0.25468						AVRG	0.31008		19.30237
81 1,2,3-Trimethylbenzene	++++	0.41032	0.44057	0.38823	0.31147	0.30396				
	0.31090						AVRG	0.36091		16.49488
82 1,2-Dichlorobenzene	7124	11611	29089	63695	896995	2079826				
	3342752						LINR	0.02125	0.49388	0.99967
83 N-Butylbenzene	9048	18614	50454	118990	1665506	3662729				
	5594003						LINR	0.00340	0.29098	0.99937
84 1,2,4-Trichlorobenzene	3155	5254	12750	28262	562589	1375048				
	2283543						LINR	0.04324	0.72672	0.99813
85 Naphthalene	3456	5860	16237	38608	814085	2020748				
	3347117						LINR	0.04662	0.49510	0.99796
86 Hexachlorobutadiene	0.62548	0.69303	0.72379	0.71469	0.56144	0.56727				
	0.57513						AVRG	0.63726		11.32276

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
 End Cal Date : 21-JAN-2014 12:04
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
 Last Edit : 21-Jan-2014 15:48 drandall

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
S 28 Hexane-d14 (S)	2.15646	2.15088	2.17337	2.16994	2.22369	2.35064					
	2.42226						AVRG		2.23532		4.82655
S 54 Toluene-d8 (S)	1.28834	1.32190	1.27853	1.29465	1.32492	1.35535					
	1.40029						AVRG		1.32343		3.23641
S 77 1,4-dichlorobenzene-d4 (S)	2.31289	2.22256	2.21502	2.06562	1.84338	1.84292					
	2.09851						AVRG		2.08584		8.86018

Report Date : 22-Jan-2014 15:10

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-JAN-2014 09:08
End Cal Date : 21-JAN-2014 12:04
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
Last Edit : 21-Jan-2014 15:48 drandall

Average %RSD Results.	
=====	
Calculated Average %RSD =	8.56199
Maximum Average %RSD =	30.00000
!* Passed Average %RSD Test.	

Curve	Formula	Units
=====		
Averaged	Amt = m1*Resp	Amount
Linear	Amt = b + m1*Resp	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10254930

Lab File ID: 02301BFB.D

BFB Injection Date: 01/23/2014

Instrument ID: 10AIR7

BFB Injection Time: 15:56

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	16.96
75	30.00 - 66.00% of mass 95	55.83
96	5.00 - 9.00% of mass 95	6.53
173	Less than 2.00% of mass 174	0.51 (0.48)
174	50.00 - 120.00% of mass 95	106.93
175	4.00 - 9.00% of mass 174	7.95 (7.43)
176	93.00 - 101.00% of mass 174	106.92 (99.99)
177	5.00 - 9.00% of mass 176	6.94 (6.49)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL2	CAL2	02303.D	01/23/2014	16:49
2	CAL3	CAL3	02304.D	01/23/2014	17:16
3	CAL4	CAL4	02305.D	01/23/2014	17:45
4	CAL5	CAL5	02306.D	01/23/2014	18:13
5	CAL6	CAL6	02307.D	01/23/2014	18:43
6	CAL7	CAL7	02308.D	01/23/2014	19:17
7	CAL1	CAL1	02327.D	01/24/2014	04:32
8	ICV (LCS)	ICV	02336.D	01/24/2014	09:24
9	LCS (LCS)	LCS	02337.D	01/24/2014	09:52
10	CERT	CERT	02340.D	01/24/2014	11:19

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Calibration File Names:

Level 1: \\192.168.10.12\chem\10air7.i\012314.b\02327.D
 Level 2: \\192.168.10.12\chem\10air7.i\012314.b\02303.D
 Level 3: \\192.168.10.12\chem\10air7.i\012314.b\02304.D
 Level 4: \\192.168.10.12\chem\10air7.i\012314.b\02305.D
 Level 5: \\192.168.10.12\chem\10air7.i\012314.b\02306.D
 Level 6: \\192.168.10.12\chem\10air7.i\012314.b\02307.D
 Level 7: \\192.168.10.12\chem\10air7.i\012314.b\02308.D

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			mL	mL	
	30.0000										
	Level 7										
1 Chlorodifluoromethane	3.37783 4.72370	4.76162	4.24085	3.96453	4.12847	4.47287					
							AVRG		4.23855		11.36357
2 Propylene	24.45865 16.30300	16.34721	16.42624	17.44796	16.44232	16.31678					
							AVRG		17.67745		17.07081
3 Dichlorodifluoromethane	1.14008 1.63292	1.44599	1.23711	1.20626	1.24046	1.43271					
							AVRG		1.33365		13.11997
4 Dichlorotetrafluoroethane	1.64650 1.92977	1.96263	1.76276	1.66484	1.64846	1.79726					
							AVRG		1.77318		7.44069

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
5 Chloromethane	7.60148	6.07658	7.21312	6.92826	6.77306	6.94503				
	7.29742						AVRG	7.26214		6.24314
6 Vinyl chloride	6.41556	7.63796	6.88812	7.03662	6.90094	7.31218				
	7.56213						AVRG	7.11764		5.70560
7 1,3-Butadiene	14.04917	14.04055	12.11862	12.64795	12.31589	12.88264				
	12.99302						AVRG	13.00683		5.92692
8 Bromomethane	4.94037	6.18999	5.20917	5.28740	5.30848	5.54355				
	5.60288						AVRG	5.44026		7.28813
9 Chloroethane	12.72377	15.82319	13.99602	14.07516	14.43521	15.13917				
	15.39715						AVRG	14.51281		7.20307
10 Ethanol	++H	17.82911	20.94536	21.66776	20.13783	22.64093				
	22.14790						AVRG	20.89481		9.34191
11 Vinyl Bromide	5.45095	6.16725	5.18525	4.87002	4.88864	4.90285				
	4.97233						AVRG	5.20533		9.09406

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			RRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
12 Isopentane	9.13060	8.87683	10.04756	9.86407	8.71338	8.53889					
	8.45666						AVRG		9.08971		6.97222
13 Acrolein	++++	46.53364	29.23765	31.25916	23.68930	23.73640					
	23.76987						AVRG		29.70434		29.84164
14 Trichlorofluoromethane	0.95210	1.18129	1.37791	1.03793	1.05871	1.16275					
	1.26437						AVRG		1.10457		9.45692
15 Acetone	++++	11319	23176	44245	320067	711323					
	1189664						LINR	-0.03932	3.60141		0.99968
16 Isopropyl Alcohol	5.20167	5.96416	5.31281	5.26067	4.99284	5.53533					
	5.33632						AVRG		5.37197		5.72380
17 Acrylonitrile	++++	13.29684	12.95879	12.85307	11.38702	10.74293					
	10.71536						AVRG		11.99267		9.82372
18 1,1-Dichloroethene	3.02597	3.68051	3.43297	3.47840	3.37888	3.46331					
	3.65869						AVRG		3.44553		6.29957

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000									
	Level 7									
19 Tert Butyl Alcohol (TBA)	2.14034	2.59186	2.47000	2.49571	2.37134	2.56085				
	2.72574						AVRG		2.47940	7.49060
20 Freon 113	2.01044	2.54624	2.34549	2.25647	2.20483	2.24647				
	2.30535						AVRG		2.27361	7.08110
21 Methylene chloride	5.38258	5.62437	6.74211	6.70988	6.64031	6.78749				
	6.82097						AVRG		6.38682	9.55329
22 Allyl Chloride	12.45520	14.54344	14.10161	13.27025	13.24882	13.48358				
	13.21235						AVRG		13.47361	5.01217
23 Carbon Disulfide	1.59585	1.97728	1.95114	1.89029	1.97265	2.04148				
	2.11795						AVRG		1.93523	8.57680
24 trans-1,2-dichloroethene	4.48192	5.50748	4.96170	4.70672	4.75506	4.85212				
	4.87723						AVRG		4.87761	6.50729
25 Methyl Tert Butyl Ether	1.43590	1.86784	1.67651	1.55468	1.57393	1.66169				
	1.72319						AVRG		1.64196	8.39151

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	or R^2
	30.0000									
	Level 7									
26 Vinyl Acetate	3.64801	3.88379	3.88578	3.59378	2.84003	2.90182				
	2.87233						AVRG	3.32959		15.42004
27 1,1-Dichloroethane	2.75570	3.19679	3.15779	3.00915	3.01180	3.16551				
	3.29244						AVRG	3.08417		5.72183
29 Methyl Ethyl Ketone	9.06050	13.52751	12.18400	11.90275	11.76811	11.88816				
	11.69377						AVRG	11.71783		11.35375
30 n-Hexane	4.39732	4.86092	4.72389	4.44940	4.42306	3.99569				
	4.04789						AVRG	4.41317		7.22986
31 Di-isopropyl Ether	++---	3.04963	2.80616	2.69487	2.41568	2.27496				
	2.28138						AVRG	2.58711		12.14735
32 Ethyl Acetate	3.25441	4.44783	3.64047	3.60712	3.32944	3.30092				
	3.27081						AVRG	3.55014		12.02537
33 cis-1,2-Dichloroethene	4.99262	5.57950	5.08219	4.96316	4.59316	4.67621				
	4.74409						AVRG	4.94727		6.70585

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\T015_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1300000	0.2000000	0.5000000	1.3000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
34 Ethyl Tert-Butyl Ether	1.69925	2.05491	1.92872	1.81193	1.72766	1.78869					
	1.85406						AVRG		1.83789		6.66659
35 Chloroform	1.52669	1.99404	1.91171	1.82068	1.76431	1.89553					
	2.01007						AVRG		1.84615		8.97931
36 Tetrahydrofuran	10.11901	10.41137	9.54006	8.65946	8.51817	8.81891					
	8.56783						AVRG		9.19069		8.93672
37 1,1,1-Trichloroethane	1.30096	1.68067	1.47149	1.41845	1.36835	1.46740					
	1.57554						AVRG		1.46898		8.65945
38 1,2-Dichloroethane	2.05732	2.63720	2.27129	2.22679	2.24368	2.43796					
	2.64147						AVRG		2.35970		9.35408
39 Benzene	1.61828	2.03202	1.75024	1.78071	1.63205	1.71939					
	1.77296						AVRG		1.75795		7.79835
40 Carbon tetrachloride	1.29223	1.55611	1.38703	1.25863	1.14131	1.24189					
	1.35322						AVRG		1.31863		9.97951

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
41 Cyclohexane	5.34903	6.33166	5.62484	5.35166	4.90017	4.77911				
	4.76528						AVRG	5.30025		10.59479
42 Tert Amyl Methyl Ether	++++	0.79143	1.12963	1.33837	1.53534	1.69091				
	1.78309						AVRG	1.37813		27.03527
44 2,2,4-Trimethylpentane	1.62524	1.85764	1.77256	1.68144	1.53633	1.55779				
	1.58389						AVRG	1.65927		7.17025
45 Heptane	4.81440	7.10949	6.38025	5.94176	5.41986	5.32746				
	5.18344						AVRG	5.73952		13.80220
46 1,2-Dichloropropane	5.30992	6.34923	5.93070	5.88811	5.53756	5.68363				
	5.82885						AVRG	5.78971		5.68136
47 Trichloroethene	3.39606	4.17699	3.57281	3.71400	3.21204	3.22025				
	3.20204						AVRG	3.49917		10.2389
48 1,4-Dioxane	++++	11.99938	9.10118	9.23623	7.56233	8.50189				
	8.97329						AVRG	9.22905		16.11756

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
49 Bromodichloromethane	1.65226	1.87843	1.73140	1.67349	1.51303	1.67469				
	1.79909						AVRG		1.70320	6.82818
50 Methylcyclohexane	6.24407	8.17626	7.18158	7.27923	6.56249	6.64504				
	6.86748						AVRG		6.99374	9.04438
51 Methyl Isobutyl Ketone	3.99536	4.85062	4.10190	3.96453	3.44432	3.49835				
	3.54811						AVRG		3.91474	12.55304
52 cis-1,3-Dichloropropene	2.86700	3.57139	3.14496	2.94751	2.65319	2.83898				
	2.99835						AVRG		3.00305	9.74716
53 trans-1,3-Dichloropropene	2.78579	3.31159	2.89581	2.75747	2.29478	2.44423				
	2.60641						AVRG		2.72801	12.12013
55 1,1,2-Trichloroethane	3.56131	4.23246	4.04829	3.90236	3.44024	3.49737				
	3.63404						AVRG		3.75944	3.07660
56 Toluene	1.01277	1.34373	1.36317	1.25570	1.18030	1.21368				
	1.26426						AVRG		1.23337	9.49857

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	
	30.0000									
	Level 7									
57 Methyl Butyl Ketone	1948	4566	11293	24055	309822	702876				
	1180966						LINEAR	0.02266	2.84807	0.99941
58 Dibromochloroethane	5015	10478	27428	53558	699803	1539999				
	2522104						LINEAR	0.01479	1.32348	0.99997
59 1,2-Dibromoethane	2.23269	2.34001	2.18115	2.14430	1.83026	1.81773				
	1.77477						AVRG		2.04584	11.31360
60 Tetrachloroethene	1.78596	1.89958	1.84581	1.79045	1.55933	1.52252				
	1.47682						AVRG		1.69721	10.13995
62 Chlorobenzene	1.52245	1.59418	1.61089	1.53082	1.33397	1.31583				
	1.27293						AVRG		1.45444	9.76932
63 Ethyl Benzene	0.84186	0.97693	0.91820	0.88515	0.75912	0.75647				
	0.77034						AVRG		0.84401	10.27966
64 m,p-Xylene	1.10279	1.18313	1.11324	1.04368	0.93208	0.93252				
	0.92402						AVRG		1.02307	10.16151

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	30.0000										
	Level 7										
65 Bromoform	5134	10595	26896	56645	838798	1850069					
	3034244						LINR	0.01685	1.09992		0.99993
66 Styrene	7113	9707	25436	51063	716737	1626130					
	2764133						LINR	0.02605	1.21996		0.99906
67 o-Xylene	1.06733	1.14508	1.12267	1.01533	0.89744	0.90822					
	0.90038						AVRG		1.00806		10.65911
68 1,1,2,2-Tetrachloroethane	1.97501	2.25950	2.19190	2.13488	1.73914	1.74405					
	1.73377						AVRG		1.96832		11.73998
69 Isopropylbenzene	0.69230	0.79438	0.79181	0.76547	0.66644	0.67154					
	0.67151						AVRG		0.72192		8.20790
70 N-Propylbenzene	0.76809	0.89736	0.80349	0.74298	0.61382	0.61966					
	0.62483						AVRG		0.72432		15.07466
71 4-Ethyltoluene	8328	18353	46448	94257	1265350	2759314					
	4527459						LINR	0.01491	0.73726		0.99997

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		RSP or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m2	
	30.0000									
	Level 7									
72 1,3,5-Trimethylbenzene	8730	18393	45874	91664	1176603	2580533				
	4202510						LINR	0.00957	0.79432	0.99998
73 Tert-Butyl Benzene	8421	17085	44313	86860	1183582	2716701				
	4497549						LINR	0.02188	0.74486	0.99959
74 1,2,4-Trimethylbenzene	8321	15952	42035	86554	1165115	2628842				
	4315923						LINR	0.01774	0.77444	0.99984
75 1,3-Dichlorobenzene	5529	10490	26334	55071	754428	1759996				
	2931001						LINR	0.02620	1.14439	0.99930
76 Sec- Butylbenzene	10451	21740	53459	111681	1522668	3425362				
	5602941						LINR	0.01686	0.59588	0.99988
78 Benzyl Chloride	2690	10504	24895	50845	906554	1841683				
	3052296						LINR	0.03208	1.09772	0.99966
79 1,4-Dichlorobenzene	5131	10738	26016	52973	714344	1620245				
	2741888						LINR	0.03127	1.22508	0.99920

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	Coefficients		WRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
	30.0000									
	Level 7									
80 p-Isopropyltoluene	++++	1.13149	1.02221	0.96929	0.75868	0.74683				
	0.73098						AVRG		0.89325	19.06786
81 1,2,3-Trimethylbenzene	1.04177	1.26841	1.27254	1.13797	0.92625	0.92224				
	0.91352						AVRG		1.06896	14.92798
82 1,2-Dichlorobenzene	1.70175	2.14581	2.02678	1.98304	1.52160	1.47756				
	1.44145						AVRG		1.75686	16.61394
83 N-Butylbenzene	7044	14090	38792	79219	1088921	2345560				
	3805079						LINE	0.00862	0.87534	0.99993
84 1,2,4-Trichlorobenzene	2439	3767	11509	24352	395121	930192				
	1603756						LINE	0.03946	2.10385	0.99802
85 Naphthalene	3231	5503	16909	34445	553705	1338928				
	2316337						LINE	0.04311	1.45959	0.99743
86 Hexachlorobutadiene	++++	2.52279	2.00891	1.85526	1.68389	1.66545				
	1.62776						AVRG		1.91054	17.79508

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.100000	0.200000	0.500000	1.0000	10.0000	20.0000	Curve	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m2	
	30.0000									
	Level 7									
S 28 Hexane-d14 (S)	2.37023	2.75400	2.60250	2.61582	2.95550	3.06518				
	3.35464						AVRG	2.81684		11.77323
S 54 Toluene-d8 (S)	0.90929	1.13337	1.00278	0.99839	0.92754	0.97762				
	1.02022						AVRG	0.99560		7.34134
S 77 1,4-dichlorobenzene-d4 (S)	1.56740	1.44673	1.40599	1.43100	1.41104	1.32263				
	1.32191						AVRG	1.41524		5.89646

Report Date : 24-Jan-2014 10:52

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
End Cal Date : 24-JAN-2014 04:32
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
Last Edit : 24-Jan-2014 10:46 drandall

Average %RSD Results.	
Calculated Average %RSD =	12.70809
Maximum Average %RSD =	30.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
Averaged	Amt = ml*Rsp	Amount
Linear	Amt = b + ml*Rsp	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10254930

Lab File ID: 02401BFB.D

BFB Injection Date: 01/24/2014

Instrument ID: 10AIR7

BFB Injection Time: 14:52

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.28
75	30.00 - 66.00% of mass 95	64.13
96	5.00 - 9.00% of mass 95	6.67
173	Less than 2.00% of mass 174	0.70 (0.67)
174	50.00 - 120.00% of mass 95	105.20
175	4.00 - 9.00% of mass 174	7.56 (7.18)
176	93.00 - 101.00% of mass 174	104.44 (99.28)
177	5.00 - 9.00% of mass 176	6.53 (6.25)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS (LCS)	LCS	02402L.D	01/24/2014	15:21
2	CCV	CCV	02402.D	01/24/2014	15:21
3	IC	IC	02405.D	01/24/2014	17:26
4	C-INFLUENT	10254930004	02412.D	01/24/2014	20:44
5	A-INFLUENT	10254930001	02413.D	01/24/2014	21:10

Data File: \\192.168.10.12\chem\10air7.i\012414.b\02402.D
Report Date: 24-Jan-2014 15:58

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air7.i Injection Date: 24-JAN-2014 15:21
Lab File ID: 02402.D Init. Cal. Date(s): 23-JAN-2014 24-JAN-2014
Analysis Type: AIR Init. Cal. Times: 16:23 04:32
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air7.i\012414.b\TO15_022-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	4.23855	4.12775	4.12775	0.010	-2.61433	30.00000	Averaged
2 Propylene	17.67745	18.56582	18.56582	0.010	5.02545	30.00000	Averaged
3 Dichlorodifluoromethane	1.33365	1.18782	1.18782	0.010	-10.93428	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.77318	1.58314	1.58314	0.010	-10.71733	30.00000	Averaged
5 Chloromethane	7.26214	6.73154	6.73154	0.010	-7.30628	30.00000	Averaged
6 Vinyl chloride	7.11764	6.73827	6.73827	0.010	-5.33009	30.00000	Averaged
7 1,3-Butadiene	13.00683	12.56959	12.56959	0.010	-3.36163	30.00000	Averaged
8 Bromomethane	5.44026	4.92435	4.92435	0.010	-9.48325	30.00000	Averaged
9 Chloroethane	14.51281	13.59109	13.59109	0.010	-6.35106	30.00000	Averaged
10 Ethanol	20.89481	19.31857	19.31857	0.005	-7.54372	30.00000	Averaged
11 Vinyl Bromide	5.20533	4.52043	4.52043	0.010	-13.15771	30.00000	Averaged
12 Isopentane	9.08971	8.85353	8.85353	0.010	-2.59837	30.00000	Averaged
13 Acrolein	29.70434	23.34513	23.34513	0.010	-21.40833	30.00000	Averaged
14 Trichlorofluoromethane	1.10457	0.93393	0.93393	0.010	-15.44885	30.00000	Averaged
15 Acetone	10.00000	11.42541	3.04724	0.010	14.25415	30.00000	Linear
16 Isopropyl Alcohol	5.37197	4.65371	4.65371	0.010	-13.37054	30.00000	Averaged
17 Acrylonitrile	11.99267	10.98786	10.98786	0.010	-8.37852	30.00000	Averaged
18 1,1-Dichloroethene	3.44553	2.96175	2.96175	0.010	-14.04096	30.00000	Averaged
19 Tert Butyl Alcohol (TBA)	2.47940	2.20709	2.20709	0.010	-10.98307	30.00000	Averaged
20 Freon 113	2.27361	1.97401	1.97401	0.010	-13.17744	30.00000	Averaged
21 Methylene chloride	6.38682	6.11727	6.11727	0.010	-4.22035	30.00000	Averaged
22 Allyl Chloride	13.47361	11.88170	11.88170	0.010	-11.81498	30.00000	Averaged
23 Carbon Disulfide	1.93523	1.73854	1.73854	0.010	-10.16389	30.00000	Averaged
24 trans-1,2-dichloroethene	4.87761	4.31686	4.31686	0.010	-11.49634	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.64196	1.40989	1.40989	0.010	-14.13393	30.00000	Averaged
26 Vinyl Acetate	3.32959	2.71978	2.71978	0.010	-18.31481	30.00000	Averaged
27 1,1-Dichloroethane	3.08417	2.68442	2.68442	0.010	-12.96118	30.00000	Averaged
28 Hexane-d14(S)	2.81684	2.59632	2.59632	0.010	-7.82868	30.00000	Averaged
29 Methyl Ethyl Ketone	11.71783	9.82867	9.82867	0.010	-16.12211	30.00000	Averaged
30 n-Hexane	4.41317	4.00381	4.00381	0.010	-9.27583	30.00000	Averaged
31 Di-isopropyl Ether	2.58711	2.23050	2.23050	0.010	-13.78428	30.00000	Averaged
32 Ethyl Acetate	3.55014	3.04659	3.04659	0.010	-14.18397	30.00000	Averaged
33 cis-1,2-Dichloroethene	4.94727	4.06610	4.06610	0.010	-17.81128	30.00000	Averaged
34 Ethyl Tert-Butyl Ether	1.83789	1.58183	1.58183	0.010	-13.93239	30.00000	Averaged
35 Chloroform	1.84615	1.51399	1.51399	0.010	-17.99178	30.00000	Averaged
36 Tetrahydrofuran	9.19069	7.80938	7.80938	0.010	-15.02937	30.00000	Averaged
37 1,1,1-Trichloroethane	1.46898	1.22682	1.22682	0.010	-16.48483	30.00000	Averaged
38 1,2-Dichloroethane	2.35970	2.00126	2.00126	0.010	-15.19014	30.00000	Averaged
39 Benzene	1.75795	1.61741	1.61741	0.010	-7.99488	30.00000	Averaged
40 Carbon tetrachloride	1.31863	1.07144	1.07144	0.010	-18.74622	30.00000	Averaged
41 Cyclohexane	5.30025	4.95435	4.95435	0.010	-6.52624	30.00000	Averaged
42 Tert Amyl Methyl Ether	1.37813	1.53014	1.53014	0.010	11.03034	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air7.i\012414.b\02402.D
Report Date: 24-Jan-2014 15:58

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air7.i Injection Date: 24-JAN-2014 15:21
Lab File ID: 02402.D Init. Cal. Date(s): 23-JAN-2014 24-JAN-2014
Analysis Type: AIR Init. Cal. Times: 16:23 04:32
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air7.i\012414.b\TO15_022-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
44 2,2,4-Trimethylpentane	1.65927	1.61395	1.61395	0.010	-2.73104	30.00000	Averaged
45 Heptane	5.73952	5.78219	5.78219	0.010	0.74344	30.00000	Averaged
46 1,2-Dichloropropane	5.78971	5.50697	5.50697	0.010	-4.88365	30.00000	Averaged
47 Trichloroethene	3.49917	3.31689	3.31689	0.010	-5.20926	30.00000	Averaged
48 1,4-Dioxane	9.22905	7.22239	7.22239	0.010	-21.74292	30.00000	Averaged
49 Bromodichloromethane	1.70320	1.43923	1.43923	0.010	-15.49846	30.00000	Averaged
50 Methylcyclohexane	6.99374	6.66073	6.66073	0.010	-4.76153	30.00000	Averaged
51 Methyl Isobutyl Ketone	3.91474	3.55270	3.55270	0.010	-9.24811	30.00000	Averaged
52 cis-1,3-Dichloropropene	3.00305	2.65499	2.65499	0.010	-11.59048	30.00000	Averaged
53 trans-1,3-Dichloropropene	2.72801	2.26289	2.26289	0.010	-17.04974	30.00000	Averaged
54 Toluene-d8 (S)	0.99560	0.96503	0.96503	0.010	-3.07046	30.00000	Averaged
55 1,1,2-Trichloroethane	3.75944	3.38575	3.38575	0.010	-9.94001	30.00000	Averaged
56 Toluene	1.23337	1.16581	1.16581	0.010	-5.47804	30.00000	Averaged
57 Methyl Butyl Ketone	10.00000	10.07119	2.89302	0.010	0.71191	30.00000	Linear
58 Dibromochloromethane	10.00000	11.07333	1.21138	0.010	10.73326	30.00000	Linear
59 1,2-Dibromoethane	2.04584	1.70393	1.70393	0.010	-16.71271	30.00000	Averaged
60 Tetrachloroethene	1.69721	1.44008	1.44008	0.010	-15.15012	30.00000	Averaged
62 Chlorobenzene	1.45444	1.27941	1.27941	0.010	-12.03417	30.00000	Averaged
63 Ethyl Benzene	0.84401	0.70422	0.70422	0.010	-16.56320	30.00000	Averaged
64 m,p-Xylene	1.03307	0.84502	0.84502	0.010	-18.20305	30.00000	Averaged
65 Bromoform	10.00000	11.34762	0.98390	0.010	13.47622	30.00000	Linear
66 Styrene	10.00000	10.38267	1.20524	0.010	3.82670	30.00000	Linear
67 o-Xylene	1.00806	0.80316	0.80316	0.010	-20.32656	30.00000	Averaged
68 1,1,2,2-Tetrachloroethane	1.96832	1.54435	1.54435	0.010	-21.53989	30.00000	Averaged
69 Isopropylbenzene	0.72192	0.59041	0.59041	0.010	-18.21680	30.00000	Averaged
70 N-Propylbenzene	0.72432	0.54311	0.54311	0.010	-25.01777	30.00000	Averaged
71 4-Ethyltoluene	10.00000	11.24927	0.66419	0.010	12.49274	30.00000	Linear
72 1,3,5-Trimethylbenzene	10.00000	11.22318	0.71383	0.010	12.23184	30.00000	Linear
73 Tert-Butyl Benzene	10.00000	11.00271	0.69071	0.010	10.02714	30.00000	Linear
74 1,2,4-Trimethylbenzene	10.00000	11.34754	0.69331	0.010	13.47542	30.00000	Linear
75 1,3-Dichlorobenzene	10.00000	10.96633	1.06909	0.010	9.66328	30.00000	Linear
76 Sec- Butylbenzene	10.00000	11.45518	0.52796	0.010	14.55185	30.00000	Linear
77 1,4-dichlorobenzene-d4 (S)	1.41524	1.29252	1.29252	0.010	-8.67125	30.00000	Averaged
78 Benzyl Chloride	10.00000	11.41103	0.98530	0.010	14.11028	30.00000	Linear
79 1,4-Dichlorobenzene	10.00000	11.01971	1.14418	0.010	10.19709	30.00000	Linear
80 p-Isopropyltoluene	0.89325	0.66457	0.66457	0.010	-25.60119	30.00000	Averaged
81 1,2,3-Trimethylbenzene	1.06896	0.80060	0.80060	0.010	-25.10510	30.00000	Averaged
82 1,2-Dichlorobenzene	1.75686	1.33460	1.33460	0.010	-24.03463	30.00000	Averaged
83 N-Butylbenzene	10.00000	11.92558	0.73935	0.010	19.25578	30.00000	Linear
84 1,2,4-Trichlorobenzene	10.00000	10.87924	2.00661	0.010	8.79245	30.00000	Linear
85 Naphthalene	10.00000	10.51469	1.44749	0.010	5.14686	30.00000	Linear
86 Hexachlorobutadiene	1.91084	1.35282	1.35282	0.010	-29.20292	30.00000	Averaged

Data File: \\192.168.10.12\chem\10air7.i\012414.b\02402.D
Report Date: 24-Jan-2014 15:58

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10air7.i Injection Date: 24-JAN-2014 15:21
Lab File ID: 02402.D Init. Cal. Date(s): 23-JAN-2014 24-JAN-2014
Analysis Type: AIR Init. Cal. Times: 16:23 04:32
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10air7.i\012414.b\TO15_022-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 12.23265

Maximum Average %D/Drift = 30.00000

* Passed Average %D/Drift Test.

QUALITY CONTROL DATA

Project: 117-0507599.20 SSD Oem
Pace Project No.: 10254930

QC Batch: AIR/19292 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10254930001, 10254930002, 10254930003, 10254930004, 10254930005, 10254930006

METHOD BLANK: 1615889 Matrix: Air
Associated Lab Samples: 10254930001, 10254930002, 10254930003, 10254930004, 10254930005, 10254930006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	01/21/14 15:04	
1,1,2-Trichloroethane	ug/m3	ND	0.55	01/21/14 15:04	
1,1-Dichloroethane	ug/m3	ND	0.82	01/21/14 15:04	
1,1-Dichloroethene	ug/m3	ND	0.81	01/21/14 15:04	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	01/21/14 15:04	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	01/21/14 15:04	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	01/21/14 15:04	
1,2-Dichloroethane	ug/m3	ND	0.41	01/21/14 15:04	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	01/21/14 15:04	
Benzene	ug/m3	ND	0.32	01/21/14 15:04	
Carbon tetrachloride	ug/m3	ND	0.64	01/21/14 15:04	
Chlorodifluoromethane	ug/m3	ND	0.20	01/21/14 15:04	
Chloroform	ug/m3	ND	0.99	01/21/14 15:04	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	01/21/14 15:04	
Dichlorodifluoromethane	ug/m3	ND	1.0	01/21/14 15:04	
Ethylbenzene	ug/m3	ND	0.88	01/21/14 15:04	
m&p-Xylene	ug/m3	ND	1.8	01/21/14 15:04	
Methyl-tert-butyl ether	ug/m3	ND	0.73	01/21/14 15:04	
Methylene Chloride	ug/m3	ND	0.71	01/21/14 15:04	
Naphthalene	ug/m3	ND	1.1	01/21/14 15:04	
o-Xylene	ug/m3	ND	0.88	01/21/14 15:04	
Tetrachloroethene	ug/m3	ND	0.69	01/21/14 15:04	
Toluene	ug/m3	ND	0.77	01/21/14 15:04	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	01/21/14 15:04	
Trichloroethene	ug/m3	ND	0.55	01/21/14 15:04	
Vinyl chloride	ug/m3	ND	0.26	01/21/14 15:04	

LABORATORY CONTROL SAMPLE: 1615890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	52.1	94	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	56.8	102	72-130	
1,1-Dichloroethane	ug/m3	41.2	39.4	96	68-128	
1,1-Dichloroethene	ug/m3	40.3	38.4	95	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	51.6	103	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	63.0	84	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	45.3	91	71-140	
1,2-Dichloroethane	ug/m3	41.2	38.7	94	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	46.2	92	73-136	
Benzene	ug/m3	32.5	32.5	100	69-134	
Carbon tetrachloride	ug/m3	64	60.7	95	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 117-0507599.20 SSD Oem
Pace Project No.: 10254930

LABORATORY CONTROL SAMPLE: 1615890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	33.3	93	60-140	
Chloroform	ug/m3	49.7	46.9	94	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	40.4	100	71-135	
Dichlorodifluoromethane	ug/m3	50.3	46.7	93	69-125	
Ethylbenzene	ug/m3	44.2	42.6	96	73-139	
m&p-Xylene	ug/m3	44.2	42.8	97	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	36.2	99	72-132	
Methylene Chloride	ug/m3	35.3	32.5	92	64-134	
Naphthalene	ug/m3	53.3	44.4	83	61-150	
o-Xylene	ug/m3	44.2	42.0	95	71-138	
Tetrachloroethene	ug/m3	69	70.8	103	69-136	
Toluene	ug/m3	38.3	38.1	99	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	39.9	99	70-131	
Trichloroethene	ug/m3	54.6	56.2	103	70-135	
Vinyl chloride	ug/m3	26	25.9	100	69-132	

SAMPLE DUPLICATE: 1615904

Parameter	Units	10254930006 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	1.7	1.7	5	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	7.3	7.5	3	25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	3.7		25	
Benzene	ug/m3	4.8	4.8	.4	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	4.3	4.1	4	25	
Chloroform	ug/m3	1.6	1.7	6	25	
cis-1,2-Dichloroethene	ug/m3	8.2	8.2	.4	25	
Dichlorodifluoromethane	ug/m3	ND	ND		25	
Ethylbenzene	ug/m3	ND	1.3J		25	
m&p-Xylene	ug/m3	3.6	3.6	.02	25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	2.3	2.3	1	25	
Naphthalene	ug/m3	4.8	4.7	1	25	
o-Xylene	ug/m3	ND	1.4		25	
Tetrachloroethene	ug/m3	ND	ND		25	
Toluene	ug/m3	26.3	23.8	10	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	3.8	3.6	7	25	
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10air7.i\012114.b\02131.D
Report Date: 28-Jan-2014 11:04

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i
Lab File ID: 02131.D
Lab Smp Id: 10254930003
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10air7.i\012114.b\T015_021-14.m
Misc Info: 19292

Calibration Date: 21-JAN-2014
Calibration Time: 10:59

Level: LOW
Sample Type: AIR

A - EFFLUENT

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1029983	617990	1441976	1081492	5.00
61 Chlorobenzene - d	472899	283739	662059	520375	10.04

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.51	-0.05
61 Chlorobenzene - d	8.49	8.16	8.82	8.48	-0.04

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air7.i\012114.b\02124.D
Report Date: 28-Jan-2014 11:04

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i

Lab File ID: 02124.D

Lab Smp Id: 10254930001

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m

Misc Info: 19292

Calibration Date: 21-JAN-2014

Calibration Time: 10:59

Level: LOW

Sample Type: AIR

A-INFLUENT
1.57X

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1029983	617990	1441976	827555	-19.65
61 Chlorobenzene - d	472899	283739	662059	420487	-11.08

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.52	0.06
61 Chlorobenzene - d	8.49	8.16	8.82	8.51	0.23

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air7.i\012414.b\02413.D
Report Date: 28-Jan-2014 11:05

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i
Lab File ID: 02413.D
Lab Smp Id: 10254930001
Analysis Type: VOA A-INFLUENT
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10air7.i\012414.b\TO15_022-14.m
Misc Info: 19292
Calibration Date: 24-JAN-2014
Calibration Time: 15:21
Level: LOW
Sample Type: AIR
125.6X

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1076347	645808	1506886	956681	-11.12
61 Chlorobenzene - d	945644	567386	1323902	718080	-24.06

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.51	-0.12
61 Chlorobenzene - d	8.48	8.15	8.81	8.48	-0.04

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air7.i\012114.b\02130.D
Report Date: 28-Jan-2014 11:04

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i

Lab File ID: 02130.D

Lab Smp Id: 10254930002

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m

Misc Info: 19292

Calibration Date: 21-JAN-2014

Calibration Time: 10:59

Level: LOW

Sample Type: AIR

A-MID GAC

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1029983	617990	1441976	1104200	7.21
61 Chlorobenzene - d	472899	283739	662059	525854	11.20

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.51	-0.06
61 Chlorobenzene - d	8.49	8.16	8.82	8.48	-0.04

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air7.i\012114.b\02126.D
Report Date: 28-Jan-2014 11:04

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i
Lab File ID: 02126.D
Lab Smp Id: 10254930006
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m
Misc Info: 19292

Calibration Date: 21-JAN-2014
Calibration Time: 10:59
Level: LOW
Sample Type: AIR

C-EFFLUENT

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1029983	617990	1441976	1009940	-1.95
61 Chlorobenzene - d	472899	283739	662059	481429	1.80

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.51	-0.06
61 Chlorobenzene - d	8.49	8.16	8.82	8.48	-0.04

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air7.i\012114.b\02129.D
Report Date: 28-Jan-2014 11:04

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i

Lab File ID: 02129.D

Lab Smp Id: 10254930004

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m

Misc Info: 19292

Calibration Date: 21-JAN-2014

Calibration Time: 10:59

Level: LOW

Sample Type: AIR

C-INFLUENT
1.8X

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1029983	617990	1441976	1076043	4.47
61 Chlorobenzene - d	472899	283739	662059	533955	12.91

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.52	0.06
61 Chlorobenzene - d	8.49	8.16	8.82	8.49	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air7.i\012414.b\02412.D
Report Date: 28-Jan-2014 11:05

Pace Analytical Services, Inc.

trichloroethene

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i

Lab File ID: 02412.D

Lab Smp Id: 10254930004 C-INFLUENT

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10air7.i\012414.b\TO15_022-14.m

Misc Info: 19292

Calibration Date: 24-JAN-2014

Calibration Time: 15:21

Level: LOW

Sample Type: AIR

7.4X

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1076347	645808	1506886	637426	-40.78 <-
61 Chlorobenzene - d	945644	567386	1323902	645777	-31.71

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.51	-0.12
61 Chlorobenzene - d	8.48	8.15	8.81	8.48	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10air7.i\012114.b\02128.D
Report Date: 28-Jan-2014 11:04

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10air7.i

Lab File ID: 02128.D

Lab Smp Id: 10254930005

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10air7.i\012114.b\TO15_021-14.m

Misc Info: 19292

Calibration Date: 21-JAN-2014

Calibration Time: 10:59

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	1029983	617990	1441976	1040915	1.06
61 Chlorobenzene - d	472899	283739	662059	502922	6.35

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	5.52	5.19	5.85	5.51	-0.06
61 Chlorobenzene - d	8.49	8.16	8.82	8.48	-0.04

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Instrument Run Log

1

Instrument: 10AIR7 Method: Misc. Prep. Info: Surrogate Lot: 10288-3-8
 Column: J&W DB-5 0.32mm Tune Standard: 10288-3-8 ISTD Lot: 10288-3-8 Cal. Standard: 10288-5-4/10288-5-5

Path/File	Lab ID	Matrix/Batch	Type	DF	pH	Method	Date & Time	Oper.	Comments
02401BFB.D	BFB	L/	Tune	1		50NG_BFB	1/24/14 14:52	DR1	
02402L.D	LCS	G/	LCS	1		TO15_022-14	1/24/14 15:21	DR1	
02402A.D	1615283	G/19276	LCS	1		TO15_022-14	1/24/14 15:21	AH2	
02402.D	CCV	G/	CCal	1		TO15_022-14	1/24/14 15:21	DR1	
02402LL.D	1615281	G/19275	LCS	1		TO15_022-14	1/24/14 15:21	AH2	
02403.D	0	G/	Sample	1		TO15_022-14	1/24/14 16:18	AH2	
02404.D	IC	G/	Sample	1		TO15_022-14	1/24/14 16:49	AH2	
02405A.D	1615282	G/19276	Blank	1		TO15_022-14	1/24/14 17:26	AH2	
02405.D	IC	G/	Sample	1		TO15_022-14	1/24/14 17:26	AH2	
02405LL.D	1615280	G/19275	Blank	1		TO15_022-14	1/24/14 17:26	AH2	
02406.D	10255714001	G/19275	Sample	1.49		TO15_022-14	1/24/14 17:57	AH2	
02407.D	10255529001	G/19276	Sample	1.34		TO15_022-14	1/24/14 18:28	AH2	
02408.D	1615611	G/19276	Duplicate	1.34		TO15_022-14	1/24/14 18:59	AH2	
02409.D	10255529002	G/19276	Sample	1715.2		TO15_022-14	1/24/14 19:25	AH2	
02410.D	-DUP	G/	Sample	1715.2		TO15_022-14	1/24/14 19:51	AH2	
02411.D	10255103002	G/19242	Sample	1075.2		TO15_022-14	1/24/14 20:17	AH2	
02412.D	10254930004	G/19292	Sample	7.4		TO15_022-14	1/24/14 20:44	AH2	
02413.D	10254930001	G/19292	Sample	125.6		TO15_022-14	1/24/14 21:10	AH2	
02414.D	10255043002	G/19275	Sample	350.4		TO15_022-14	1/24/14 21:36	AH2	
02415.D	92186864003	G/19275	Sample	1.39		TO15_022-14	1/24/14 22:07	AH2	
02416.D	92186864001	G/19275	Sample	1.44		TO15_022-14	1/24/14 22:38	AH2	
02417.D	92186864004	G/19275	Sample	1.39		TO15_022-14	1/24/14 23:09	AH2	
02418.D	92186864005	G/19275	Sample	1.39		TO15_022-14	1/24/14 23:40	AH2	
02419.D	92186864002	G/19275	Sample	1.49		TO15_022-14	1/25/14 00:11	AH2	
02420.D	92186736021	G/19275	Sample	1.34		TO15_022-14	1/25/14 00:42	AH2	
02421.D	10255486001	G/	Sample	1.49		TO15_022-14	1/25/14 01:13	AH2	
02422.D	10255486002	G/	Sample	8.4		TO15_022-14	1/25/14 01:40	AH2	
02423.D	10255176001	G/19275	Sample	1.57		TO15_022-14	1/25/14 02:12	AH2	
02424.D	0	G/	Sample	1		TO15_022-14	1/25/14 13:26	AH2	
02425.D	CERT	G/	Sample	1		TO15_022-14	1/25/14 13:57	AH2	
02426.D	CERT	G/	Sample	1		TO15_022-14	1/25/14 14:28	AH2	
02427.D	CERT	G/	Sample	1		TO15_022-14	1/25/14 14:59	AH2	

Check Maintenance Items Performed:

Changed septum
 Cleaned liner
 Replaced/Cleaned gold seal
 Additional Comments:

Clipped column
 Changed trap - Lot #
 Cleaned MS Source

Changed column - Lot #
 Other minor parts replaced
 No maintenance performed today

File Path 1: U:\10AIR7\1012414.B1
 Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 01/28/2014 15:04
 Reviewed By/Date:

Sample Calculation Example and Curve Parameters

Beginning in early January 2014, a change was made to the TO-15 methods that altered the way concentrations were calculated. Prior to January, concentrations were calculated by response rather than by amount. The EPA TO-15 method requires that curves are evaluated by amount. The net result of this change is that the calculation for analyte concentration needs to be revised. Specifically, the average relative retention time factor (RRF) needs to be moved from the bottom of Equation 17 from the Pace TO-15 SOP below to the top of the division sign.

14.17. Calculate the concentration of the sample component using Equation 17:

Equation 17

$$C_x = \frac{(A_x)(C_i)(D_f)}{(A_i)(R_x)}$$

where:

C_x = Concentration of compound x in ppbv;

A_x = EICP area of the quantitation ion for compound x;

C_i = Concentration of the internal standard associated with compound x in ppbv;

D_f = Dilution factor from Equation 12 (if no dilution was performed, D_f equals 1)

A_i = EICP area of the quantitation ion for the internal standard associated with compound x;

R_f = Average RRF for compound x from the most recent calibration curve.

Below are images of the before and after change applied in target. In the before, you can see that the amount (Amt) is equal to the response (Rsp) divided by the average RRF (m1). In the after evaluation, you can see that the equation has moved the average RRF (m1) to be multiplied by the response (Rsp). It is important to note that this is before applying the internal standard calculation. Therefore, Rsp is equal to A_x from equation 17, and m1 is equal to R_f . Once you apply the internal standard to the revised equation 17, it should be as follows:

$$C_x = \frac{(A_x)(C_i)(D_f)(R_x)}{A_i}$$

Revised equation 17

Sample calculation

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD Oem

Pace Project No.: 10254930

Sample: A-INFLUENT		Lab ID: 10254930001	Collected: 01/13/14 11:49	Received: 01/15/14 10:15	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

TO15 MSV AIR

Analytical Method: TO-15

Benzene	ND ug/m3	0.51	1.57	01/21/14 19:48	71-43-2	
Carbon tetrachloride	ND ug/m3	1.0	1.57	01/21/14 19:48	56-23-5	
Chlorodifluoromethane	6.5 ug/m3	0.31	1.57	01/21/14 19:48	75-45-6	
Chloroform	11.6 ug/m3	1.6	1.57	01/21/14 19:48	67-66-3	
Dichlorodifluoromethane	2.2 ug/m3	1.6	1.57	01/21/14 19:48	75-71-8	
1,1-Dichloroethane	29.3 ug/m3	1.3	1.57	01/21/14 19:48	75-34-3	
1,2-Dichloroethane	ND ug/m3	0.64	1.57	01/21/14 19:48	107-06-2	
1,1-Dichloroethene	141 ug/m3	1.3	1.57	01/21/14 19:48	75-35-4	
cis-1,2-Dichloroethene	173 ug/m3	1.3	1.57	01/21/14 19:48	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3	1.3	1.57	01/21/14 19:48	156-60-5	
Ethylbenzene	1.8 ug/m3	1.4	1.57	01/21/14 19:48	100-41-4	
Methylene Chloride	3.3 ug/m3	1.1	1.57	01/21/14 19:48	75-09-2	
Methyl-tert-butyl ether	ND ug/m3	1.1	1.57	01/21/14 19:48	1634-04-4	
Naphthalene	4.9 ug/m3	1.7	1.57	01/21/14 19:48	91-20-3	
Tetrachloroethene	ND ug/m3	1.1	1.57	01/21/14 19:48	127-18-4	
Toluene	9820 ug/m3	96.7	125.6	01/24/14 21:10	108-88-3	A3
1,2,4-Trichlorobenzene	ND ug/m3	2.4	1.57	01/21/14 19:48	120-82-1	
1,1,1-Trichloroethane	570 ug/m3	139	125.6	01/24/14 21:10	71-55-6	A3
1,1,2-Trichloroethane	ND ug/m3	0.86	1.57	01/21/14 19:48	79-00-5	
Trichloroethene	795 ug/m3	69.1	125.6	01/24/14 21:10	79-01-6	A3
1,2,3-Trimethylbenzene	ND ug/m3	0.31	1.57	01/21/14 19:48	526-73-8	
1,2,4-Trimethylbenzene	1.9 ug/m3	1.6	1.57	01/21/14 19:48	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3	1.6	1.57	01/21/14 19:48	108-67-8	
Vinyl chloride	ND ug/m3	0.41	1.57	01/21/14 19:48	75-01-4	
m&p-Xylene	4.3 ug/m3	2.8	1.57	01/21/14 19:48	179601-23-1	
o-Xylene	1.7 ug/m3	1.4	1.57	01/21/14 19:48	95-47-6	

New calculation

$$\frac{31662}{956681} * 125.6 * 10 * 3.49917 =$$

145.45 ppbv

$$145.45 \text{ ppbv} * \frac{131.4 \text{ g/mole}}{29.45} =$$

781.7 ug/m3

$$\frac{31662}{956681} * 125.6 * \frac{10 \text{ ppbv}}{3.49917} = 11.88 \text{ ppbv}$$

$$11.88 \text{ ppbv} * \frac{131.4 \text{ g/mole}}{29.45 \text{ L/mole}} = 63.85 \text{ ug/m}^3$$

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Sample Calculation

Data File: \\192.168.10.12\chem\10air7.i\012414.b\02413.D
Report Date: 28-Jan-2014 11:05

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air7.i\012414.b\02413.D
Lab Smp Id: 10254930001
Inj Date : 24-JAN-2014 21:10
Operator : AH2
Smp Info : A-INFLUENT
Misc Info : 19292
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air7.i\012414.b\TO15 022-14.m
Meth Date : 25-Jan-2014 18:02 ahamilton
Cal Date : 23-JAN-2014 19:17
Als bottle: 13
Dil Factor: 125.60000
Integrator: HP RTE
Target Version: 4.14
Processing Host: 10MNCREINDL

Inst ID: 10air7.i

Compound Sublist: all.sub

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	125.600	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT MASS	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ppbv)	FINAL (ppbv)
1 Chlorodifluoromethane	51							
2 Propylene	41							
3 Dichlorodifluoromethane	85							
4 Dichlorotetrafluoroethane	85							
5 Chloromethane	50							
6 Vinyl chloride	62							
7 1,3-Butadiene	54							
8 Bromomethane	94							
9 Chloroethane	64							
10 Ethanol	31							
11 Vinyl Bromide	106							
12 Isopentane	43							
13 Acrolein	56							
14 Trichlorofluoromethane	101							
15 Acetone	43		3.730	3.711 (0.677)		15130	0.17641	22.2 (M)
16 Isopropyl Alcohol	45							
17 Acrylonitrile	53							
18 1,1-Dichloroethene	61		3.907	3.914 (0.709)		7849	0.28269	35.5 (M)
19 Tert Butyl Alcohol (TBA)	59							
20 Freon 113	101							
21 Methylene chloride	49		3.995	3.992 (0.725)		4930	0.32913	41.3
22 Allyl Chloride	76							
23 Carbon Disulfide	76							

Sample Calculation

Data File: \\192.168.10.12\chem\10air7.i\012414.b\02413.D

Report Date: 28-Jan-2014 11:05

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv)	FINAL (ppbv)
24 trans-1,2-dichloroethene			96				Compound Not Detected.		
25 Methyl Tert Butyl Ether			73				Compound Not Detected.		
26 Vinyl Acetate			43				Compound Not Detected.		
27 1,1-Dichloroethane			63				Compound Not Detected.		
\$ 28 Hexane-d14(S)			66	4.440	4.443	(0.806)	387171	11.3998	11.4
29 Methyl Ethyl Ketone			72				Compound Not Detected.		
30 n-Hexane			57				Compound Not Detected.		
31 Di-isopropyl Ether			45				Compound Not Detected.		
32 Ethyl Acetate			43				Compound Not Detected.		
33 cis-1,2-Dichloroethene			96	4.662	4.669	(0.846)	6402	0.33107	41.6(M)
34 Ethyl Tert-Butyl Ether			59				Compound Not Detected.		
35 Chloroform			83				Compound Not Detected.		
36 Tetrahydrofuran			42				Compound Not Detected.		
37 1,1,1-Trichloroethane			97	5.146	5.156	(0.934)	53248	0.81762	103
38 1,2-Dichloroethane			62				Compound Not Detected.		
39 Benzene			78				Compound Not Detected.		
40 Carbon tetrachloride			117				Compound Not Detected.		
41 Cyclohexane			56				Compound Not Detected.		
42 Tert Amyl Methyl Ether			73				Compound Not Detected.		
* 43 1,4-Difluorobenzene			114	5.508	5.525	(1.000)	956681	10.0000	
44 2,2,4-Trimethylpentane			57				Compound Not Detected.		
45 Heptane			43				Compound Not Detected.		
46 1,2-Dichloropropane			63				Compound Not Detected.		
47 Trichloroethene			130	5.878	5.891	(1.067)	31662	1.15807	145
48 1,4-Dioxane			88				Compound Not Detected.		
49 Bromodichloromethane			83				Compound Not Detected.		
50 Methylcyclohexane			98				Compound Not Detected.		
51 Methyl Isobutyl Ketone			43				Compound Not Detected.		
52 cis-1,3-Dichloropropene			75				Compound Not Detected.		
53 trans-1,3-Dichloropropene			75				Compound Not Detected.		
\$ 54 Toluene-d8 (S)			98	6.937	6.950	(1.259)	971475	10.1100	10.1
55 1,1,2-Trichloroethane			97				Compound Not Detected.		
56 Toluene			91	7.012	7.026	(1.273)	1583391	20.4134	2560
57 Methyl Butyl Ketone			43				Compound Not Detected.		
58 Dibromochloromethane			129				Compound Not Detected.		
59 1,2-Dibromoethane			107				Compound Not Detected.		
60 Tetrachloroethene			166				Compound Not Detected.		
* 61 Chlorobenzene - d5			117	8.480	8.493	(1.000)	718080	10.0000	
62 Chlorobenzene			112				Compound Not Detected.		
63 Ethyl Benzene			91				Compound Not Detected.		
64 m&p-Xylene			91				Compound Not Detected.		
65 Bromoform			173				Compound Not Detected.		
66 Styrene			104				Compound Not Detected.		
67 o-Xylene			91				Compound Not Detected.		
68 1,1,2,2-Tetrachloroethane			83				Compound Not Detected.		
69 Isopropylbenzene			105				Compound Not Detected.		
70 N-Propylbenzene			91				Compound Not Detected.		
71 4-Ethyltoluene			105				Compound Not Detected.		
72 1,3,5-Trimethylbenzene			105				Compound Not Detected.		
73 Tert-Butyl Benzene			119				Compound Not Detected.		
74 1,2,4-Trimethylbenzene			105				Compound Not Detected.		
75 1,3-Dichlorobenzene			146				Compound Not Detected.		
76 Sec- Butylbenzene			105				Compound Not Detected.		
\$ 77 1,4-dichlorobenzene-d4 (S)			150	11.686	11.713	(1.378)	429857	8.47192	8.47
78 Benzyl Chloride			91				Compound Not Detected.		

Report Date : 24-Jan-2014 10:52

Sample Calculation

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-JAN-2014 16:23
 End Cal Date : 24-JAN-2014 04:32
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10air7.i\012314.b\TO15_022-14.m
 Last Edit : 24-Jan-2014 10:46 drandall

Compound	0.1000000	0.2000000	0.5000000	1.0000	10.0000	20.0000	Curve	b	Coefficients		WRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	30.0000										
	Level 7										
41 Cyclohexane	5.34903	6.33166	5.62484	5.35166	4.90017	4.77911					
	4.76528						AVRG		5.30025		10.59479
42 Tert Amyl Methyl Ether	++++	0.79143	1.12963	1.33837	1.53534	1.69091					
	1.78309						AVRG		1.37813		27.03527
44 2,2,4-Trimethylpentane	1.62524	1.85764	1.77256	1.68144	1.53633	1.55779					
	1.59389						AVRG		1.65927		7.17025
45 Heptane	4.81440	7.10949	6.38025	5.94176	5.41956	5.32746					
	5.18344						AVRG		5.73952		13.80220
46 1,2-Dichloropropane	5.30992	6.34923	5.93070	5.88811	5.53756	5.68363					
	5.82885						AVRG		5.78971		5.68136
47 Trichloroethene	3.39606	4.17699	3.57281	3.71400	3.21204	3.22025					
	3.20204						AVRG		3.49917		10.23891
48 1,4-Dioxane	++++	11.99938	9.10118	9.23623	7.56233	8.50189					
	8.97329						AVRG		9.22905		16.11756



Tetra Tech

INTERNAL CORRESPONDENCE

TO: P. RICH **DATE:** MARCH 10, 2014
FROM: A. COGNETTI **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
LOCKHEED MARTIN CORPORATION (LMC) – MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 10257905
SAMPLES: 6/Air/VOC
A-EFFLUENT A-INFLUENT A-MID GAC
C-EFFLUENT C-INFLUENT C-MID GAC

Overview

The sample set for LMC – Middle River, SDG 10257905 consisted of six (6) air samples. All samples were analyzed for volatile organic compounds (VOC). No field duplicate pair is included in this SDG.

The samples were collected by Geo Trans on February 14, 2014 and analyzed by PACE Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

No minor noncompliances were noted.

Notes

The chain of custody indicated that no gauges were provided with the summa canisters. This means that the canister pressure before and after sampling could not be evaluated. No validation action was taken.

Nondetected results were reported to the reporting limit.

Executive Summary


Laboratory Performance: None.


Other Factors Affecting Data Quality: None.

TO: P. Rich
FROM: A. Cognetti
SDG: 10257905
DATE: March 10, 2014

PAGE 2

The data for these analyses were reviewed with reference to Region III modifications to U.S. EPA National Functional Guidelines for Organic Data Validation (Sept. 1994) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cognetti
Chemist/Data Validator


Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03265 SDG: 10257905 FRACTION: OV MEDIA: AIR	NSAMPLE	A- EFFLUENT_20120214	A- INFLUENT_20120214	A- MID GAC_20120214	C-EFFLUENT_20120214	
	LAB_ID	10257905003	10257905001	10257905002	10257905006	
	SAMP_DATE	2/14/2014	2/14/2014	2/14/2014	2/14/2014	
	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
1,1,1-TRICHLOROETHANE	2.4			64.8		3.6
1,1,2-TRICHLOROETHANE	0.86 U		1.3 U	1.1 U		3.1
1,1-DICHLOROETHANE	26		21.2	31		2.5
1,1-DICHLOROETHENE	111		92.7	166		2.4
1,2,3-TRIMETHYLBENZENE	0.53 U		0.81 U	1.2 U		8.7
1,2,4-TRICHLOROBENZENE	2.4 U		3.6 U	2.9 U		3.3
1,2,4-TRIMETHYLBENZENE	1.6 U		2.4 U	1.9 U		6.1
1,2-DICHLOROETHANE	0.64 U		0.98 U	0.8 U		2.4
1,3,5-TRIMETHYLBENZENE	1.6 U		2.4 U	1.9 U		4.3
BENZENE	0.65		0.78 U	55.1		6.6
CARBON TETRACHLORIDE	1 U		1.5 U	1.2 U		3.3
CHLORODIFLUOROMETHANE	1.7		2.4	3.1		10.6
CHLOROFORM	1.6 U		7.4	3.1		3.8
CIS-1,2-DICHLOROETHENE	42.6		126	189		7
DICHLORODIFLUOROMETHANE	2.1		2.4 U	2.8		4.5
ETHYLBENZENE	1.4 U		2.1 U	1.7 U		2.9
M+P-XYLENES	2.8 U		4.2 U	3.4 U		3.4
METHYL TERT-BUTYL ETHER	1.1 U		1.8 U	1.4 U		2.1
METHYLENE CHLORIDE	1.1 U		2.1	1.4 U		1.3
NAPHTHALENE	1.7 U		2.6 U	2.1 U		3
O-XYLENE	1.4 U		2.1 U	1.7 U		2.8
TETRACHLOROETHENE	1.1 U		1.7 U	1.3 U		4.5
TOLUENE	4		15.3	1.5 U		4
TRANS-1,2-DICHLOROETHENE	1.3 U		1.9 U	2.5		2.3
TRICHLOROETHENE	10		843	54.9		5.7
VINYL CHLORIDE	0.41 U		0.62 U	0.5 U		0.44 U

PROJ_NO: 03265 SDG: 10257905 FRACTION: OV MEDIA: AIR	NSAMPLE	C-INFLUENT_20120214			C-MID GAC_20120214		
	LAB_ID	10257905004			10257905005		
	SAMP_DATE	2/14/2014			2/14/2014		
	QC_TYPE	NM			NM		
	UNITS	UG/M3			UG/M3		
	PCT_SOLIDS						
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	1.7 U				1.7 U		
1,1,2-TRICHLOROETHANE	0.86 U				0.86 U		
1,1-DICHLOROETHANE	1.3 U				1.3 U		
1,1-DICHLOROETHENE	1.3 U				1.3 U		
1,2,3-TRIMETHYLBENZENE	0.53 U				0.53 U		
1,2,4-TRICHLOROBENZENE	2.4 U				2.4 U		
1,2,4-TRIMETHYLBENZENE	2.8				1.6 U		
1,2-DICHLOROETHANE	0.64 U				0.64 U		
1,3,5-TRIMETHYLBENZENE	1.6 U				1.6 U		
BENZENE	1.8				5.8		
CARBON TETRACHLORIDE	1 U				1 U		
CHLORODIFLUOROMETHANE	4.5				6.1		
CHLOROFORM	1.6 U				1.6 U		
CIS-1,2-DICHLOROETHENE	2.3				5.7		
DICHLORODIFLUOROMETHANE	2.2				2		
ETHYLBENZENE	2.1				1.4 U		
M+P-XYLENES	8.9				2.8 U		
METHYL TERT-BUTYL ETHER	1.1 U				1.1 U		
METHYLENE CHLORIDE	1.1 U				1.1 U		
NAPHTHALENE	5.3				2.5		
O-XYLENE	4.7				1.4 U		
TETRACHLOROETHENE	2.2				1.1 U		
TOLUENE	2.7				1.2 U		
TRANS-1,2-DICHLOROETHENE	1.3 U				1.3 U		
TRICHLOROETHENE	157				256		
VINYL CHLORIDE	0.41 U				0.41 U		

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: 117-0507599 SSD Oem
Pace Project No.: 10257905

Sample: A-Effluent		Lab ID: 10257905003	Collected: 02/14/14 16:29	Received: 02/17/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	0.65	ug/m3	0.51	1.57		02/28/14 08:53	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.0	1.57		02/28/14 08:53	56-23-5	
Chlorodifluoromethane	1.7	ug/m3	0.53	2.6376		03/02/14 18:57	75-45-6	
Chloroform	ND	ug/m3	1.6	1.57		02/28/14 08:53	67-66-3	
Dichlorodifluoromethane	2.1	ug/m3	1.6	1.57		02/28/14 08:53	75-71-8	
1,1-Dichloroethane	26.0	ug/m3	1.3	1.57		02/28/14 08:53	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.64	1.57		02/28/14 08:53	107-06-2	
1,1-Dichloroethene	111	ug/m3	1.3	1.57		02/28/14 08:53	75-35-4	
cis-1,2-Dichloroethene	42.6	ug/m3	1.3	1.57		02/28/14 08:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.57		02/28/14 08:53	156-60-5	
Ethylbenzene	ND	ug/m3	1.4	1.57		02/28/14 08:53	100-41-4	
Methylene Chloride	ND	ug/m3	1.1	1.57		02/28/14 08:53	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.1	1.57		02/28/14 08:53	1634-04-4	
Naphthalene	ND	ug/m3	1.7	1.57		02/28/14 08:53	91-20-3	
Tetrachloroethene	ND	ug/m3	1.1	1.57		02/28/14 08:53	127-18-4	
Toluene	4.0	ug/m3	1.2	1.57		02/28/14 08:53	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.4	1.57		02/28/14 08:53	120-82-1	
1,1,1-Trichloroethane	2.4	ug/m3	1.7	1.57		02/28/14 08:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.86	1.57		02/28/14 08:53	79-00-5	
Trichloroethene	10	ug/m3	0.86	1.57		02/28/14 08:53	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.53	2.6376		03/02/14 18:57	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.6	1.57		02/28/14 08:53	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.6	1.57		02/28/14 08:53	108-67-8	
Vinyl chloride	ND	ug/m3	0.41	1.57		02/28/14 08:53	75-01-4	
m&p-Xylene	ND	ug/m3	2.8	1.57		02/28/14 08:53	179601-23-1	
o-Xylene	ND	ug/m3	1.4	1.57		02/28/14 08:53	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599 SSD Oem

Pace Project No.: 10257905

Sample: A- Influent		Lab ID: 10257905001	Collected: 02/14/14 16:25	Received: 02/17/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.78	2.4		02/28/14 07:51	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.5	2.4		02/28/14 07:51	56-23-5	
Chlorodifluoromethane	2.4	ug/m3	0.81	4.032		03/02/14 20:21	75-45-6	
Chloroform	7.4	ug/m3	2.4	2.4		02/28/14 07:51	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	2.4	2.4		02/28/14 07:51	75-71-8	
1,1-Dichloroethane	21.2	ug/m3	2.0	2.4		02/28/14 07:51	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.98	2.4		02/28/14 07:51	107-06-2	
1,1-Dichloroethene	92.7	ug/m3	1.9	2.4		02/28/14 07:51	75-35-4	
cis-1,2-Dichloroethene	126	ug/m3	1.9	2.4		02/28/14 07:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.9	2.4		02/28/14 07:51	156-60-5	
Ethylbenzene	ND	ug/m3	2.1	2.4		02/28/14 07:51	100-41-4	
Methylene Chloride	2.1	ug/m3	1.7	2.4		02/28/14 07:51	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.8	2.4		02/28/14 07:51	1634-04-4	
Naphthalene	ND	ug/m3	2.6	2.4		02/28/14 07:51	91-20-3	
Tetrachloroethene	ND	ug/m3	1.7	2.4		02/28/14 07:51	127-18-4	
Toluene	15.3	ug/m3	1.8	2.4		02/28/14 07:51	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	3.6	2.4		02/28/14 07:51	120-82-1	
1,1,1-Trichloroethane	429	ug/m3	2.7	2.4		02/28/14 07:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.3	2.4		02/28/14 07:51	79-00-5	
Trichloroethene	843	ug/m3	26.4	48		02/28/14 15:45	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.81	4.032		03/02/14 20:21	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.4	2.4		02/28/14 07:51	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.4	2.4		02/28/14 07:51	108-67-8	
Vinyl chloride	ND	ug/m3	0.62	2.4		02/28/14 07:51	75-01-4	
m&p-Xylene	ND	ug/m3	4.2	2.4		02/28/14 07:51	179601-23-1	
o-Xylene	ND	ug/m3	2.1	2.4		02/28/14 07:51	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599 SSD Oem
Pace Project No.: 10257905

Sample: A- Mid Gac		Lab ID: 10257905002	Collected: 02/14/14 16:27	Received: 02/17/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	55.1 ug/m3		0.63	1.94		02/28/14 08:22	71-43-2	
Carbon tetrachloride	ND ug/m3		1.2	1.94		02/28/14 08:22	56-23-5	
Chlorodifluoromethane	3.1 ug/m3		1.2	5.7618		03/02/14 18:28	75-45-6	
Chloroform	3.1 ug/m3		1.9	1.94		02/28/14 08:22	67-66-3	
Dichlorodifluoromethane	2.8 ug/m3		2.0	1.94		02/28/14 08:22	75-71-8	
1,1-Dichloroethane	31.0 ug/m3		1.6	1.94		02/28/14 08:22	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.80	1.94		02/28/14 08:22	107-06-2	
1,1-Dichloroethene	166 ug/m3		1.6	1.94		02/28/14 08:22	75-35-4	
cis-1,2-Dichloroethene	189 ug/m3		1.6	1.94		02/28/14 08:22	156-59-2	
trans-1,2-Dichloroethene	2.5 ug/m3		1.6	1.94		02/28/14 08:22	156-60-5	
Ethylbenzene	ND ug/m3		1.7	1.94		02/28/14 08:22	100-41-4	
Methylene Chloride	ND ug/m3		1.4	1.94		02/28/14 08:22	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.4	1.94		02/28/14 08:22	1634-04-4	
Naphthalene	ND ug/m3		2.1	1.94		02/28/14 08:22	91-20-3	
Tetrachloroethene	ND ug/m3		1.3	1.94		02/28/14 08:22	127-18-4	
Toluene	ND ug/m3		1.5	1.94		02/28/14 08:22	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.9	1.94		02/28/14 08:22	120-82-1	
1,1,1-Trichloroethane	64.8 ug/m3		2.2	1.94		02/28/14 08:22	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		1.1	1.94		02/28/14 08:22	79-00-5	
Trichloroethene	54.9 ug/m3		1.1	1.94		02/28/14 08:22	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		1.2	5.7618		03/02/14 18:28	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.9	1.94		02/28/14 08:22	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.9	1.94		02/28/14 08:22	108-67-8	
Vinyl chloride	ND ug/m3		0.50	1.94		02/28/14 08:22	75-01-4	
m&p-Xylene	ND ug/m3		3.4	1.94		02/28/14 08:22	179601-23-1	
o-Xylene	ND ug/m3		1.7	1.94		02/28/14 08:22	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599 SSD Oem

Pace Project No.: 10257905

Sample: C-Effluent		Lab ID: 10257905006	Collected: 02/14/14 15:54	Received: 02/17/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	6.6 ug/m3		0.55	1.68		02/28/14 10:26	71-43-2	
Carbon tetrachloride	3.3 ug/m3		1.1	1.68		02/28/14 10:26	56-23-5	
Chlorodifluoromethane	10.6 ug/m3		0.77	3.8472		03/02/14 19:53	75-45-6	
Chloroform	3.8 ug/m3		1.7	1.68		02/28/14 10:26	67-66-3	
Dichlorodifluoromethane	4.5 ug/m3		1.7	1.68		02/28/14 10:26	75-71-8	
1,1-Dichloroethane	2.5 ug/m3		1.4	1.68		02/28/14 10:26	75-34-3	
1,2-Dichloroethane	2.4 ug/m3		0.69	1.68		02/28/14 10:26	107-06-2	
1,1-Dichloroethene	2.4 ug/m3		1.4	1.68		02/28/14 10:26	75-35-4	
cis-1,2-Dichloroethene	7.0 ug/m3		1.4	1.68		02/28/14 10:26	156-59-2	
trans-1,2-Dichloroethene	2.3 ug/m3		1.4	1.68		02/28/14 10:26	156-60-5	
Ethylbenzene	2.9 ug/m3		1.5	1.68		02/28/14 10:26	100-41-4	
Methylene Chloride	1.3 ug/m3		1.2	1.68		02/28/14 10:26	75-09-2	
Methyl-tert-butyl ether	2.1 ug/m3		1.2	1.68		02/28/14 10:26	1634-04-4	
Naphthalene	3.0 ug/m3		1.8	1.68		02/28/14 10:26	91-20-3	
Tetrachloroethene	4.5 ug/m3		1.2	1.68		02/28/14 10:26	127-18-4	
Toluene	4.0 ug/m3		1.3	1.68		02/28/14 10:26	108-88-3	
1,2,4-Trichlorobenzene	3.3 ug/m3		2.5	1.68		02/28/14 10:26	120-82-1	
1,1,1-Trichloroethane	3.6 ug/m3		1.9	1.68		02/28/14 10:26	71-55-6	
1,1,2-Trichloroethane	3.1 ug/m3		0.92	1.68		02/28/14 10:26	79-00-5	
Trichloroethene	5.7 ug/m3		0.92	1.68		02/28/14 10:26	79-01-6	
1,2,3-Trimethylbenzene	8.7 ug/m3		0.77	3.8472		03/02/14 19:53	526-73-8	
1,2,4-Trimethylbenzene	6.1 ug/m3		1.7	1.68		02/28/14 10:26	95-63-6	
1,3,5-Trimethylbenzene	4.3 ug/m3		1.7	1.68		02/28/14 10:26	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		02/28/14 10:26	75-01-4	
m&p-Xylene	3.4 ug/m3		3.0	1.68		02/28/14 10:26	179601-23-1	
o-Xylene	2.8 ug/m3		1.5	1.68		02/28/14 10:26	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599 SSD Oem

Pace Project No.: 10257905

Sample: C-Influent		Lab ID: 10257905004	Collected: 02/14/14 15:50	Received: 02/17/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	1.8 ug/m3		0.51	1.57		02/28/14 09:24	71-43-2	
Carbon tetrachloride	ND ug/m3		1.0	1.57		02/28/14 09:24	56-23-5	
Chlorodifluoromethane	4.5 ug/m3		0.53	2.6376		03/02/14 20:49	75-45-6	
Chloroform	ND ug/m3		1.6	1.57		02/28/14 09:24	67-66-3	
Dichlorodifluoromethane	2.2 ug/m3		1.6	1.57		02/28/14 09:24	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.3	1.57		02/28/14 09:24	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.64	1.57		02/28/14 09:24	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.3	1.57		02/28/14 09:24	75-35-4	
cis-1,2-Dichloroethene	2.3 ug/m3		1.3	1.57		02/28/14 09:24	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.3	1.57		02/28/14 09:24	156-60-5	
Ethylbenzene	2.1 ug/m3		1.4	1.57		02/28/14 09:24	100-41-4	
Methylene Chloride	ND ug/m3		1.1	1.57		02/28/14 09:24	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.1	1.57		02/28/14 09:24	1634-04-4	
Naphthalene	5.3 ug/m3		1.7	1.57		02/28/14 09:24	91-20-3	
Tetrachloroethene	2.2 ug/m3		1.1	1.57		02/28/14 09:24	127-18-4	
Toluene	2.7 ug/m3		1.2	1.57		02/28/14 09:24	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.4	1.57		02/28/14 09:24	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.7	1.57		02/28/14 09:24	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.86	1.57		02/28/14 09:24	79-00-5	
Trichloroethene	157 ug/m3		0.86	1.57		02/28/14 09:24	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.53	2.6376		03/02/14 20:49	526-73-8	
1,2,4-Trimethylbenzene	2.8 ug/m3		1.6	1.57		02/28/14 09:24	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.6	1.57		02/28/14 09:24	108-67-8	
Vinyl chloride	ND ug/m3		0.41	1.57		02/28/14 09:24	75-01-4	
m&p-Xylene	8.9 ug/m3		2.8	1.57		02/28/14 09:24	179601-23-1	
o-Xylene	4.7 ug/m3		1.4	1.57		02/28/14 09:24	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599 SSD Oem

Pace Project No.: 10257905

Sample: C-Mid Gac		Lab ID: 10257905005	Collected: 02/14/14 15:52	Received: 02/17/14 10:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	5.8 ug/m3		0.51	1.57		02/28/14 09:54	71-43-2	
Carbon tetrachloride	ND ug/m3		1.0	1.57		02/28/14 09:54	56-23-5	
Chlorodifluoromethane	6.1 ug/m3		0.53	2.6376		03/02/14 19:25	75-45-6	
Chloroform	ND ug/m3		1.6	1.57		02/28/14 09:54	67-66-3	
Dichlorodifluoromethane	2.0 ug/m3		1.6	1.57		02/28/14 09:54	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.3	1.57		02/28/14 09:54	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.64	1.57		02/28/14 09:54	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.3	1.57		02/28/14 09:54	75-35-4	
cis-1,2-Dichloroethene	5.7 ug/m3		1.3	1.57		02/28/14 09:54	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.3	1.57		02/28/14 09:54	156-60-5	
Ethylbenzene	ND ug/m3		1.4	1.57		02/28/14 09:54	100-41-4	
Methylene Chloride	ND ug/m3		1.1	1.57		02/28/14 09:54	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.1	1.57		02/28/14 09:54	1634-04-4	
Naphthalene	2.5 ug/m3		1.7	1.57		02/28/14 09:54	91-20-3	
Tetrachloroethene	ND ug/m3		1.1	1.57		02/28/14 09:54	127-18-4	
Toluene	ND ug/m3		1.2	1.57		02/28/14 09:54	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		2.4	1.57		02/28/14 09:54	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.7	1.57		02/28/14 09:54	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.86	1.57		02/28/14 09:54	79-00-5	
Trichloroethene	256 ug/m3		0.86	1.57		02/28/14 09:54	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.53	2.6376		03/02/14 19:25	526-73-8	
1,2,4-Trimethylbenzene	ND ug/m3		1.6	1.57		02/28/14 09:54	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.6	1.57		02/28/14 09:54	108-67-8	
Vinyl chloride	ND ug/m3		0.41	1.57		02/28/14 09:54	75-01-4	
m&p-Xylene	ND ug/m3		2.8	1.57		02/28/14 09:54	179601-23-1	
o-Xylene	ND ug/m3		1.4	1.57		02/28/14 09:54	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

PROJECT NARRATIVE

Project: 117-0507599 SSD Oem
Pace Project No.: 10257905

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 04, 2014

General Information:

6 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:


This data package has been reviewed for quality and completeness and is approved for release.


REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

10257900

ORIGINAL

	Document Name:	Document Revised: 26Dec2013
	Air Sample Condition Upon Receipt	Page 1 of 1
	Document No.: F-MN-A-106-rev.09	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt	Client Name:	Project #:	WO#: 10257905 
	tetra tech		
Courier:	<input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client <input type="checkbox"/> Commercial <input type="checkbox"/> Pace <input type="checkbox"/> Other:		
Tracking Number:	804864972563		
Custody Seal on Cooler/Box Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Seals Intact?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Packing Material:	<input checked="" type="checkbox"/> Bubble Wrap <input type="checkbox"/> Bubble Bags <input type="checkbox"/> Foam <input type="checkbox"/> None <input type="checkbox"/> Other:	Temp Blank rec:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Temp. (TO17 and TO13 samples only) (°C):	Corrected Temp (°C):	Thermom. Used:	<input type="checkbox"/> B88A912167504 <input type="checkbox"/> 72337080 <input type="checkbox"/> B88A9132521491 <input type="checkbox"/> 80512447
Temp should be above freezing to 6°C	Correction Factor:	Date & Initials of Person Examining Contents:	2/21/14
Type of ice Received	<input type="checkbox"/> Blue <input type="checkbox"/> Wet <input checked="" type="checkbox"/> None		

				Comments:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	10.
Media:	air can			11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	12.

Samples Received:					
Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
A influent	2508				
A mid gsc	2557				
A effluent	2454				
C influent	2571				
C mid gsc	2255				
C effluent	2459				

CLIENT NOTIFICATION/RESOLUTION Person Contacted: _____ Comments/Resolution: _____	Field Data Required? <input type="checkbox"/> Yes <input type="checkbox"/> No Date/Time: _____
--	---

Project Manager Review: CTM Date: 2/18/14
 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

HOLDTIME

SDG 10257905

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UGIM3	C-MID GAC	10257905005	NM	02/14/2014	03/02/2014	03/02/2014	16	0	16
	UGIM3	C-MID GAC	10257905005	NM	02/14/2014	02/28/2014	02/28/2014	14	0	14
	UGIM3	C-INFLUENT	10257905004	NM	02/14/2014	03/02/2014	03/02/2014	16	0	16
	UGIM3	C-INFLUENT	10257905004	NM	02/14/2014	02/28/2014	02/28/2014	14	0	14
	UGIM3	C-EFFLUENT	10257905006	NM	02/14/2014	03/02/2014	03/02/2014	16	0	16
	UGIM3	C-EFFLUENT	10257905006	NM	02/14/2014	02/28/2014	02/28/2014	14	0	14
	UGIM3	A-EFFLUENT	10257905003	NM	02/14/2014	03/02/2014	03/02/2014	16	0	16
	UGIM3	A-EFFLUENT	10257905003	NM	02/14/2014	02/28/2014	02/28/2014	14	0	14
	UGIM3	A- MID GAC	10257905002	NM	02/14/2014	03/02/2014	03/02/2014	16	0	16
	UGIM3	A- MID GAC	10257905002	NM	02/14/2014	02/28/2014	02/28/2014	14	0	14
	UGIM3	A- INFLUENT	10257905001	NM	02/14/2014	03/02/2014	03/02/2014	16	0	16
	UGIM3	A- INFLUENT	10257905001	NM	02/14/2014	02/28/2014	02/28/2014	14	0	14

SAMPLE SUMMARY

Project: 117-0507599 SSD Oem

Pace Project No.: 10257905

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10257905001	A- Influent	Air	02/14/14 16:25	02/17/14 10:00
10257905002	A- Mid Gac	Air	02/14/14 16:27	02/17/14 10:00
10257905003	A-Effluent	Air	02/14/14 16:29	02/17/14 10:00
10257905004	C-Influent	Air	02/14/14 15:50	02/17/14 10:00
10257905005	C-Mid Gac	Air	02/14/14 15:52	02/17/14 10:00
10257905006	C-Effluent	Air	02/14/14 15:54	02/17/14 10:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10257905

Lab File ID: 05801BFB.D

BFB Injection Date: 02/27/2014

Instrument ID: 10AIRD

BFB Injection Time: 13:20

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	22.30
75	30.00 - 66.00% of mass 95	55.93
96	5.00 - 9.00% of mass 95	6.87
173	Less than 2.00% of mass 174	0.92 (1.12)
174	50.00 - 120.00% of mass 95	82.30
175	4.00 - 9.00% of mass 174	6.43 (7.82)
176	93.00 - 101.00% of mass 174	82.39 (100.11)
177	5.00 - 9.00% of mass 176	5.07 (6.15)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL4	CAL4	05803.D	02/27/2014	14:24
2	CAL5	CAL5	05804.D	02/27/2014	14:55
3	CAL6	CAL6	05805.D	02/27/2014	15:29
4	CAL1	CAL1	05807.D	02/27/2014	16:23
5	CAL2	CAL2	05808.D	02/27/2014	16:50
6	CAL3	CAL3	05809.D	02/27/2014	17:19
7	ICVADDN'L (LCS)	ICVADDN'L	05810.D	02/27/2014	17:47
8	ICV (LCS)	ICV	05811.D	02/27/2014	18:15
9	LCS (LCS)	LCS	05812.D	02/27/2014	18:44
10	LCS for HBN 287898 [AIR/	1632767	05812L.D	02/27/2014	18:44
11	BLANK for HBN 287898 [AI	1632768	05814L.D	02/27/2014	19:42
12	BLANK	BLANK	05814.D	02/27/2014	19:42
13	0	0	05816.D	02/27/2014	20:40
14	A- Influent	10257905001	05839.D	02/28/2014	07:51
15	A- Mid Gac	10257905002	05840.D	02/28/2014	08:22
16	A-Effluent	10257905003	05841.D	02/28/2014	08:53
17	C-Influent	10257905004	05842.D	02/28/2014	09:24
18	C-Mid Gac	10257905005	05843.D	02/28/2014	09:54
19	C-Effluent	10257905006	05844.D	02/28/2014	10:26

Report Date : 28-Feb-2014 14:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-FEB-2014 14:24
 End Cal Date : 27-FEB-2014 17:19
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
 Last Edit : 28-Feb-2014 13:47 ahamilton

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\022714.b\05807.d
 Level 2: \\192.168.10.12\chem\10airD.i\022714.b\05808.d
 Level 3: \\192.168.10.12\chem\10airD.i\022714.b\05809.d
 Level 4: \\192.168.10.12\chem\10airD.i\022714.b\05803.d
 Level 5: \\192.168.10.12\chem\10airD.i\022714.b\05804.d
 Level 6: \\192.168.10.12\chem\10airD.i\022714.b\05805.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	0.98193	1.05129	1.28926	1.47263	1.68332	1.82705	AVRG	1.38425			24.49985
2 Propylene	4.36764	5.23273	5.84069	5.36597	6.11454	6.65802	AVRG	5.59660			14.18313
3 Dichlorodifluoromethane	0.65054	0.70997	0.82320	0.72598	0.85546	0.88635	AVRG	0.77525			12.00627
4 Dichlorotetrafluoroethane	0.78681	0.86806	1.03646	0.89906	1.04624	1.09521	AVRG	0.95531			12.69960
5 Chloromethane	2.30244	2.27976	2.89665	2.71355	3.25524	3.37014	AVRG	2.80330			16.48407
6 Vinyl chloride	2.33873	2.87511	3.33381	2.89552	3.17959	3.37527	AVRG	2.99967			12.89669
7 1,3-Butadiene	4.04743	4.17752	5.23761	4.57880	5.14134	5.27267	AVRG	4.74256			11.60447
8 Bromomethane	2.00491	2.44204	2.87558	2.49560	2.73796	2.79398	AVRG	2.55835			17.51021
9 Chloroethane	4.93517	5.71387	7.43836	6.49082	7.36969	7.38432	AVRG	6.55536			15.95173
10 Ethanol	7.52398	8.32664	11.17923	9.35931	11.09658	11.65881	AVRG	9.85743			17.31382
11 Vinyl Bromide	2.15214	2.76392	3.03078	2.51389	2.79957	2.84890	AVRG	2.68487			11.52811
12 Isopentane	2.88434	3.28863	4.15611	3.86480	4.53288	4.60708	AVRG	3.89064			17.65838
13 Trichlorofluoromethane	0.61980	0.64811	0.78681	0.71513	0.81203	0.86665	AVRG	0.74142			13.06535
14 Acrolein	12.36362	9.81286	10.21546	9.65955	10.73399	11.17709	AVRG	10.66043			9.46578

Report Date : 28-Feb-2014 14:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-FEB-2014 14:24
 End Cal Date : 27-FEB-2014 17:19
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
 Last Edit : 28-Feb-2014 13:47 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			tkSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	1.05479	1.33030	1.78431	1.90119	2.17168	2.30496	AVRG	1.75787			27.50553
16 Isopropyl Alcohol	2.12042	2.52769	2.66065	2.37996	2.44817	2.75460	AVRG	2.51525			10.63020
17 1,1-Dichloroethene	1.46036	1.74637	2.02498	1.74619	1.97001	2.16568	AVRG	1.85227			13.61477
18 Tert Butyl Alcohol	1.33698	1.57078	1.80433	1.42408	1.57852	1.79016	AVRG	1.58414			11.90525
19 Acrylonitrile	5.61850	6.15240	5.83065	4.63071	5.09877	5.55892	AVRG	5.48166			9.88169
20 Freon 113	1.11212	1.24098	1.44377	1.26882	1.39106	1.46571	AVRG	1.32041			10.36620
21 Methylene chloride	4567	6185	22616	146815	291775	453086	LNLR	-0.06661	3.30123		0.99758
22 Allyl Chloride	6.27164	6.33415	7.98980	6.40980	7.28047	7.03796	AVRG	6.88730			9.85999
23 Carbon Disulfide	0.74182	0.82657	1.06694	0.92531	1.03667	1.06365	AVRG	0.94349			14.45774
24 trans-1,2-dichloroethene	2.22893	2.62437	3.02724	2.55825	2.76915	2.93361	AVRG	2.68526			10.52971
25 Methyl Tert Butyl Ether	0.96772	1.11151	1.22597	1.01923	1.12723	1.15243	AVRG	1.10068			8.47510
26 Vinyl Acetate	1.56429	1.59384	1.65757	1.33787	1.50321	1.63922	AVRG	1.53267			7.09944
27 1,1-Dichloroethane	1.32062	1.51207	1.65882	1.49449	1.68482	1.72354	AVRG	1.56572			9.71901
29 Methyl Ethyl Ketone	6.88062	7.09970	7.40960	6.25291	6.81977	6.82709	AVRG	6.88162			5.54634
30 n-Hexane	1.86988	2.09079	2.65253	2.39180	2.71905	2.65884	AVRG	2.39715			14.56143
31 Di-isopropyl Ether	0.93808	1.09856	1.26036	1.18698	1.31487	1.34689	AVRG	1.19096			12.84355
32 cis-1,2-Dichloroethene	2.55249	3.16942	3.33079	2.87028	2.89755	2.95734	AVRG	2.96298			9.04735
33 Ethyl Acetate	1.44086	1.47109	1.63264	1.58567	1.68647	1.87908	AVRG	1.61597			9.86436
34 Chloroform	0.95162	1.06646	1.13936	1.03240	1.11763	1.21729	AVRG	1.08746			8.46658
35 Ethyl Tert-Butyl Ether	0.88559	1.10936	1.20494	1.04995	1.08561	1.16533	AVRG	1.08013			9.96157
36 Tetrahydrofuran	3.64361	3.60506	3.79637	3.66422	3.67334	4.24231	AVRG	3.77082			6.35888
37 1,1,1-Trichloroethane	0.96693	1.00309	1.10645	1.02549	1.02764	1.10038	AVRG	1.03833			5.29419

Report Date : 28-Feb-2014 14:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-FEB-2014 14:24
 End Cal Date : 27-FEB-2014 17:19
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\022714.b\T015_058-14.m
 Last Edit : 28-Feb-2014 13:47 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.20193	1.24985	1.43358	1.36024	1.43492	1.53941	AVRG	1.36999			9.21770
39 Benzene	0.90105	1.00122	1.06390	0.95291	1.01791	1.05335	AVRG	0.99839			6.21408
40 Carbon tetrachloride	0.95010	0.95527	1.05446	0.90038	0.97820	1.08374	AVRG	0.98702			6.99865
41 Cyclohexane	2.04904	2.26351	2.35708	2.46238	2.69018	2.86133	AVRG	2.45059			11.99609
42 Tert Amyl Methyl Ether	11197	12367	36471	363052	809927	1280341	LINR	-0.01380	1.16040		0.99985
44 2,2,4-Trimethylpentane	0.67592	0.73016	0.77405	0.72007	0.75820	0.79056	AVRG	0.74149			5.60429
45 Heptane	2.28801	2.29501	2.29881	2.26587	2.44503	2.63551	AVRG	2.37137			6.09261
46 1,2-Dichloropropane	2.84801	2.75150	2.83434	2.53579	2.75693	2.88322	AVRG	2.76830			4.52315
47 Trichloroethene	2.48567	2.77196	2.71093	2.04767	2.12263	2.12707	AVRG	2.37765			13.49726
48 Bromodichloromethane	1.00246	1.02028	1.05007	0.96257	0.97324	1.02336	AVRG	0.98866			6.75503
49 1,4-Dioxane	5.59203	5.73675	6.04660	4.84879	5.74127	5.28940	AVRG	5.54247			7.56538
50 Methylcyclohexane	5.53337	5.47316	5.52377	4.07646	4.61790	4.43391	AVRG	4.94310			13.05640
51 Methyl Isobutyl Ketone	1.49390	1.51500	1.63956	1.34455	1.47095	1.59540	AVRG	1.50990			6.83569
52 cis-1,3-Dichloropropene	1.87062	1.82129	1.87270	1.45077	1.54289	1.55795	AVRG	1.68604			11.23645
53 trans-1,3-Dichloropropene	1.76623	1.95866	1.89688	1.23598	1.37681	1.40647	AVRG	1.60637			18.92191
55 Toluene	0.77576	0.86965	0.91117	0.69955	0.77975	0.76686	AVRG	0.80379			9.37372
56 1,1,2-Trichloroethane	2.15117	2.28157	2.43185	1.85608	2.04097	2.10597	AVRG	2.14460			9.25072
57 Methyl Butyl Ketone	0.83640	0.93524	0.95569	0.83275	0.93425	0.95110	AVRG	0.90757			6.30095
58 Dibromochloromethane	0.61520	0.71417	0.74553	0.59801	0.63269	0.61828	AVRG	0.65398			9.26830
59 1,2-Dibromoethane	0.67592	0.78687	0.86406	0.72482	0.76356	0.71200	AVRG	0.75437			8.80954
60 Tetrachloroethene	0.77655	0.98659	1.07740	0.84058	0.85208	0.78935	AVRG	0.88709			13.45967
62 Chlorobenzene	0.54122	0.61231	0.72027	0.61138	0.59907	0.58146	AVRG	0.61762			10.05124

Report Date : 28-Feb-2014 14:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-FEB-2014 14:24
 End Cal Date : 27-FEB-2014 17:19
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
 Last Edit : 28-Feb-2014 13:47 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m	m2	
63 Ethyl Benzene	0.32223	0.39869	0.40031	0.33395	0.34939	0.33942	AVRG	0.35733			9.46585
64 m&p-Xylene	0.39486	0.51380	0.49072	0.42220	0.43976	0.42704	AVRG	0.44790			10.06882
65 Bromoform	0.57969	0.73333	0.75501	0.56167	0.56446	0.56637	AVRG	0.62676			14.58582
66 Styrene	0.64155	0.77051	0.76264	0.60810	0.61063	0.60504	AVRG	0.66631			11.82865
67 o-Xylene	0.38139	0.43951	0.47686	0.40214	0.44231	0.43888	AVRG	0.43018			7.81758
68 1,1,2,2-Tetrachloroethane	0.44517	0.59541	0.69174	0.57563	0.61908	0.59550	AVRG	0.58709			13.70885
69 Isopropylbenzene	0.27136	0.34372	0.39472	0.32952	0.33859	0.33211	AVRG	0.33500			11.74754
70 N-Propylbenzene	0.24191	0.31036	0.30773	0.25757	0.27266	0.27004	AVRG	0.27671			9.87461
71 4-Ethyltoluene	0.32142	0.39040	0.42939	0.33455	0.34845	0.33925	AVRG	0.36058			11.39266
72 1,3,5-Trimethylbenzene	0.34451	0.45219	0.45918	0.38027	0.39400	0.39247	AVRG	0.40377			10.90999
73 Tert-Butyl Benzene	0.37111	0.48775	0.52717	0.42184	0.41763	0.42436	AVRG	0.44164			12.68065
74 1,2,4-Trimethylbenzene	0.32517	0.42647	0.46206	0.38413	0.39752	0.40014	AVRG	0.39925			11.42604
75 1,3-Dichlorobenzene	0.47772	0.66036	0.75156	0.56386	0.55596	0.56138	AVRG	0.59514			16.14516
76 Sec- Butylbenzene	0.25172	0.32388	0.34763	0.27892	0.28815	0.29392	AVRG	0.29904			11.92986
78 Benzyl Chloride	3652	5737	28787	536236	1206265	1937727	LINR	0.02407	0.47283		0.99966
79 1,4-Dichlorobenzene	0.49480	0.64215	0.73994	0.58595	0.56325	0.56262	AVRG	0.59812			14.05843
80 p-Isopropyltoluene	0.36031	0.45374	0.47426	0.39225	0.37325	0.37193	AVRG	0.40429			11.82671
81 1,2,3-Trimethylbenzene	0.36712	0.46485	0.50159	0.41191	0.41993	0.41336	AVRG	0.42980			10.91256
82 1,2-Dichlorobenzene	0.54677	0.76245	0.80207	0.63355	0.63575	0.61009	AVRG	0.66511			14.59621
83 N-Butylbenzene	0.31759	0.40603	0.41735	0.34100	0.36162	0.36231	AVRG	0.36715			10.83069
84 1,2,4-Trichlorobenzene	0.54584	1.01139	1.34232	0.93899	0.92186	0.94866	AVRG	0.95151			26.66758
85 Napthalene	0.34581	0.61900	0.73755	0.58818	0.57392	0.59327	AVRG	0.57629			22.13858

Report Date : 28-Feb-2014 14:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-FEB-2014 14:24
End Cal Date : 27-FEB-2014 17:19
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
Last Edit : 28-Feb-2014 13:47 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
86 Hexachlorobutadiene	0.48791	0.81009	1.06225	0.86107	0.88047	0.86343	AVRG		0.83087		22.69090
\$ 28 Hexane-d14 (S)	2.32775	2.17118	2.22313	2.16816	2.28968	2.32318	AVRG		2.25051		3.24133
\$ 54 Toluene-d8 (S)	1.20324	1.12661	1.13572	1.03271	1.10865	1.16297	AVRG		1.12865		5.07376
\$ 77 1,4-dichlorobenzene-d4 (S)	2.48090	2.48147	2.18697	2.19757	2.06679	2.06923	AVRG		2.25049		8.26367

Report Date : 28-Feb-2014 14:13

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-FEB-2014 14:24
End Cal Date : 27-FEB-2014 17:19
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
Last Edit : 28-Feb-2014 13:47 ahamilton

Average %RSD Results.	
=====	
Calculated Average %RSD =	11.56466
Maximum Average %RSD =	30.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
=====		
Averaged	Amt = m1*Rsp	Amount
Linear	Amt = b + m1*Rsp	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10257905

Lab File ID: 05901BFB.D

BFB Injection Date: 02/28/2014

Instrument ID: 10AIRD

BFB Injection Time: 11:55

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.92
75	30.00 - 66.00% of mass 95	51.82
96	5.00 - 9.00% of mass 95	6.51
173	Less than 2.00% of mass 174	0.55 (0.65)
174	50.00 - 120.00% of mass 95	85.32
175	4.00 - 9.00% of mass 174	6.40 (7.50)
176	93.00 - 101.00% of mass 174	84.11 (98.58)
177	5.00 - 9.00% of mass 176	5.37 (6.39)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS (LCS)	LCS	05902LCS.D	02/28/2014	12:24
2	CCV	CCV	05902.D	02/28/2014	12:24
3	CERT	CERT	05904.D	02/28/2014	13:47
4	A- Influent	10257905001	05907.D	02/28/2014	15:45

Data File: \\192.168.10.12\chem\10airD.i\022814.b\05902.d
Report Date: 28-Feb-2014 12:57

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 28-FEB-2014 12:24
Lab File ID: 05902.d Init. Cal. Date(s): 27-FEB-2014 27-FEB-2014
Analysis Type: AIR Init. Cal. Times: 14:24 17:19
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\022814.b\TO15_058-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	1.38425	1.65494	1.65494	0.010	19.55505	30.00000	Averaged
2 Propylene	5.59660	5.77976	5.77976	0.010	3.27264	30.00000	Averaged
3 Dichlorodifluoromethane	0.77525	0.80768	0.80768	0.010	4.18291	30.00000	Averaged
4 Dichlorotetrafluoroethane	0.95531	0.99681	0.99681	0.010	4.34409	30.00000	Averaged
5 Chloromethane	2.80330	2.98198	2.98198	0.010	6.37418	30.00000	Averaged
6 Vinyl chloride	2.99967	3.09973	3.09973	0.010	3.33568	30.00000	Averaged
7 1,3-Butadiene	4.74256	4.90367	4.90367	0.010	3.39712	30.00000	Averaged
8 Bromomethane	2.55835	2.70355	2.70355	0.010	5.67580	30.00000	Averaged
9 Chloroethane	6.55536	6.82715	6.82715	0.010	4.14607	30.00000	Averaged
10 Ethanol	9.85743	10.27407	10.27407	0.100	4.22671	30.00000	Averaged
11 Vinyl Bromide	2.68487	2.68145	2.68145	0.010	-0.12730	30.00000	Averaged
12 Isopentane	3.89064	4.21243	4.21243	0.010	8.27083	30.00000	Averaged
13 Trichlorofluoromethane	1.32038	1.35927	1.35927	0.010	2.94557	30.00000	Averaged
14 Acrolein	10.66043	10.32075	10.32075	0.010	-3.18630	30.00000	Averaged
15 Acetone	1.75787	2.11232	2.11232	0.010	20.16340	30.00000	Averaged
16 Isopropyl Alcohol	2.51525	2.64163	2.64163	0.010	5.02451	30.00000	Averaged
17 1,1-Dichloroethene	1.85227	1.86413	1.86413	0.010	0.64068	30.00000	Averaged
18 Tert Butyl Alcohol	1.58414	1.62878	1.62878	0.100	2.81819	30.00000	Averaged
19 Acrylonitrile	5.48166	4.84135	4.84135	0.010	-11.68088	30.00000	Averaged
20 Freon 113	1.32041	1.35927	1.35927	0.010	2.94324	30.00000	Averaged
21 Methylene chloride	10.00000	10.38496	2.98725	0.010	3.84960	30.00000	Linear
22 Allyl Chloride	6.88730	6.84386	6.84386	0.010	-0.63077	30.00000	Averaged
23 Carbon Disulfide	0.94349	0.98342	0.98342	0.010	4.23192	30.00000	Averaged
24 trans-1,2-dichloroethene	2.68526	2.70534	2.70534	0.010	0.74768	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.10068	1.06146	1.06146	0.010	-3.56300	30.00000	Averaged
26 Vinyl Acetate	1.53267	1.46006	1.46006	0.010	-4.73742	30.00000	Averaged
27 1,1-Dichloroethane	1.56572	1.58449	1.58449	0.010	1.19839	30.00000	Averaged
28 Hexane-d14(S)	2.25051	2.37766	2.37766	0.200	5.64965	30.00000	Averaged
29 Methyl Ethyl Ketone	6.88162	6.62757	6.62757	0.010	-3.69166	30.00000	Averaged
30 n-Hexane	2.39715	2.46630	2.46630	0.010	2.88458	30.00000	Averaged
31 Di-isopropyl Ether	1.19096	1.23197	1.23197	0.010	3.44393	30.00000	Averaged
32 cis-1,2-Dichloroethene	2.96298	2.68086	2.68086	0.010	-9.52156	30.00000	Averaged
33 Ethyl Acetate	1.61597	1.53327	1.53327	0.010	-5.11770	30.00000	Averaged
34 Chloroform	1.08746	1.06347	1.06347	0.010	-2.20605	30.00000	Averaged
35 Ethyl Tert-Butyl Ether	1.08013	1.00606	1.00606	0.010	-6.85783	30.00000	Averaged
36 Tetrahydrofuran	3.77082	3.51611	3.51611	0.010	-6.75478	30.00000	Averaged
37 1,1,1-Trichloroethane	1.03833	0.98302	0.98302	0.010	-5.32690	30.00000	Averaged
38 1,2-Dichloroethane	1.36999	1.33739	1.33739	0.010	-2.37973	30.00000	Averaged
39 Benzene	0.99839	0.92726	0.92726	0.300	-7.12447	30.00000	Averaged
40 Carbon tetrachloride	0.98702	0.93352	0.93352	0.010	-5.42047	30.00000	Averaged
41 Cyclohexane	2.45059	2.40236	2.40236	0.010	-1.96805	30.00000	Averaged
42 Tert Amyl Methyl Ether	10.00000	10.90786	1.05053	0.010	9.37859	30.00000	Linear

Data File: \\192.168.10.12\chem\10airD.i\022814.b\05902.d
Report Date: 28-Feb-2014 12:57

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 28-FEB-2014 12:24
Lab File ID: 05902.d Init. Cal. Date(s): 27-FEB-2014 27-FEB-2014
Analysis Type: AIR Init. Cal. Times: 14:24 17:19
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\022814.b\TO15_058-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
144 2,2,4-Trimethylpentane	0.74149	0.68982	0.68982 0.010	-6.96883	30.00000	Averaged	
145 Heptane	2.37137	2.26265	2.26265 0.010	-4.58492	30.00000	Averaged	
146 1,2-Dichloropropane	2.76830	2.58980	2.58980 0.010	-6.44793	30.00000	Averaged	
147 Trichloroethene	2.37765	2.13002	2.13002 0.010	-10.41507	30.00000	Averaged	
148 Bromodichloromethane	0.98866	0.93043	0.93043 0.010	-5.88980	30.00000	Averaged	
149 1,4-Dioxane	5.54247	4.53945	4.53945 0.010	-18.09693	30.00000	Averaged	
150 Methylcyclohexane	4.94310	4.13612	4.13612 0.010	-16.32534	30.00000	Averaged	
151 Methyl Isobutyl Ketone	1.50990	1.43041	1.43041 0.010	-5.26441	30.00000	Averaged	
152 cis-1,3-Dichloropropene	1.68604	1.48138	1.48138 0.010	-12.13815	30.00000	Averaged	
153 trans-1,3-Dichloropropene	1.60637	1.37841	1.37841 0.010	-14.19114	30.00000	Averaged	
154 m-Toluene-d8 (S)	1.12865	1.18129	1.18129 0.200	4.66400	30.00000	Averaged	
155 Toluene	0.80379	0.76507	0.76507 0.300	-4.81718	30.00000	Averaged	
156 1,1,2-Trichloroethane	2.14460	2.03477	2.03477 0.010	-5.12115	30.00000	Averaged	
157 Methyl Butyl Ketone	0.90757	0.87347	0.87347 0.010	-3.75711	30.00000	Averaged	
158 Dibromochloromethane	0.65398	0.59770	0.59770 0.010	-8.60533	30.00000	Averaged	
159 1,2-Dibromoethane	0.75437	0.70645	0.70645 0.010	-6.35272	30.00000	Averaged	
160 Tetrachloroethene	0.88709	0.82511	0.82511 0.010	-6.98751	30.00000	Averaged	
162 Chlorobenzene	0.61762	0.55967	0.55967 0.010	-9.38200	30.00000	Averaged	
163 Ethyl Benzene	0.35733	0.32690	0.32690 0.300	-8.51474	30.00000	Averaged	
164 m&p-Xylene	0.44790	0.39574	0.39574 0.300	-11.64493	30.00000	Averaged	
165 Bromoform	0.62676	0.54773	0.54773 0.010	-12.60819	30.00000	Averaged	
166 Styrene	0.66631	0.57815	0.57815 0.010	-13.23052	30.00000	Averaged	
167 o-Xylene	0.43018	0.39765	0.39765 0.300	-7.56280	30.00000	Averaged	
168 1,1,2,2-Tetrachloroethane	0.58709	0.56107	0.56107 0.010	-4.43116	30.00000	Averaged	
169 Isopropylbenzene	0.33500	0.31626	0.31626 0.010	-5.59364	30.00000	Averaged	
170 N-Propylbenzene	0.27671	0.25088	0.25088 0.010	-9.33478	30.00000	Averaged	
171 4-Ethyltoluene	0.36058	0.33622	0.33622 0.010	-6.75593	30.00000	Averaged	
172 1,3,5-Trimethylbenzene	0.40377	0.37375	0.37375 0.010	-7.43386	30.00000	Averaged	
173 Tert-Butyl Benzene	0.44164	0.39602	0.39602 0.010	-10.33134	30.00000	Averaged	
174 1,2,4-Trimethylbenzene	0.39925	0.36534	0.36534 0.010	-8.49297	30.00000	Averaged	
175 1,3-Dichlorobenzene	0.59514	0.55220	0.55220 0.010	-7.21498	30.00000	Averaged	
176 Sec- Butylbenzene	0.29904	0.26906	0.26906 0.010	-10.02446	30.00000	Averaged	
177 1,4-dichlorobenzene-d4 (S)	2.25049	2.20197	2.20197 0.200	-2.15594	30.00000	Averaged	
178 Benzyl Chloride	10.00000	10.08199	0.48045 0.010	0.81995	30.00000	Linear	
179 1,4-Dichlorobenzene	0.59812	0.55833	0.55833 0.010	-6.65229	30.00000	Averaged	
180 p-Isopropyltoluene	0.40429	0.38029	0.38029 0.010	-5.93535	30.00000	Averaged	
181 1,2,3-Trimethylbenzene	0.42980	0.40651	0.40651 0.010	-5.41753	30.00000	Averaged	
182 1,2-Dichlorobenzene	0.66511	0.61945	0.61945 0.010	-6.86555	30.00000	Averaged	
183 N-Butylbenzene	0.36715	0.33384	0.33384 0.010	-9.07298	30.00000	Averaged	
184 1,2,4-Trichlorobenzene	0.95151	0.91679	0.91679 0.010	-3.64870	30.00000	Averaged	
185 Naphthalene	0.57629	0.55032	0.55032 0.010	-4.50607	30.00000	Averaged	
186 Hexachlorobutadiene	0.83087	0.83344	0.83344 0.010	0.30981	30.00000	Averaged	

Data File: \\192.168.10.12\chem\10airD.i\022814.b\05902.d
Report Date: 28-Feb-2014 12:57

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 28-FEB-2014 12:24
Lab File ID: 05902.d Init. Cal. Date(s): 27-FEB-2014 27-FEB-2014
Analysis Type: AIR Init. Cal. Times: 14:24 17:19
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\022814.b\TO15_058-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 6.32457

Maximum Average %D/Drift = 30.00000

* Passed Average %D/Drift Test.

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10257905

Lab File ID: 06101BFB.D

BFB Injection Date: 03/02/2014

Instrument ID: 10AIRD

BFB Injection Time: 11:33

GC Column: J&W DB-5

ID: 0.32

(mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.06
75	30.00 - 66.00% of mass 95	58.91
96	5.00 - 9.00% of mass 95	7.18
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	85.52
175	4.00 - 9.00% of mass 174	6.96 (8.14)
176	93.00 - 101.00% of mass 174	84.97 (99.36)
177	5.00 - 9.00% of mass 176	5.26 (6.19)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	06102.D	03/02/2014	12:00
2	CAL2	CAL2	06103.D	03/02/2014	12:27
3	CAL3	CAL3	06104.D	03/02/2014	12:54
4	CAL4	CAL4	06105.D	03/02/2014	13:21
5	CAL5	CAL5	06106.D	03/02/2014	13:49
6	CAL6	CAL6	06107.D	03/02/2014	14:18
7	ICVADD (LCS)	ICVADD	06109.D	03/02/2014	15:12
8	ICV (LCS)	ICV	06110.D	03/02/2014	15:39
9	LCS for HBN 287898 [AIR/	1632767	06111ADD.D	03/02/2014	16:05
10	BLANK for HBN 287898 [AI	1632768	06115ADD.D	03/02/2014	18:01
11	A- Mid Gac	10257905002	06116.D	03/02/2014	18:28
12	A-Effluent	10257905003	06117.D	03/02/2014	18:57
13	C-Mid Gac	10257905005	06118.D	03/02/2014	19:25
14	C-Effluent	10257905006	06119.D	03/02/2014	19:53
15	A- Influent	10257905001	06120.D	03/02/2014	20:21
16	C-Influent	10257905004	06121.D	03/02/2014	20:49

Report Date : 03-Mar-2014 11:26

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAR-2014 12:00
 End Cal Date : 02-MAR-2014 14:18
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
 Last Edit : 03-Mar-2014 09:17 10airD.i

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\030214.b\06102.d
 Level 2: \\192.168.10.12\chem\10airD.i\030214.b\06103.d
 Level 3: \\192.168.10.12\chem\10airD.i\030214.b\06104.d
 Level 4: \\192.168.10.12\chem\10airD.i\030214.b\06105.d
 Level 5: \\192.168.10.12\chem\10airD.i\030214.b\06106.d
 Level 6: \\192.168.10.12\chem\10airD.i\030214.b\06107.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	0.95124	1.09325	1.30954	1.89538	1.73881	1.71802	AVRG	1.40104			23.83898
2 Propylene	4.18251	4.33779	5.71798	5.20960	5.40492	5.09058	AVRG	4.99056			12.14855
3 Dichlorodifluoromethane	0.52363	0.54749	0.67865	0.65455	0.74292	0.75679	AVRG	0.65067			14.95654
4 Dichlorotetrafluoroethane	0.62831	0.68588	0.84176	0.80715	0.83441	0.87678	AVRG	0.77905			12.67344
5 Chloromethane	1.90662	2.38485	2.65435	2.58723	2.72636	2.79837	AVRG	2.50963			13.05247
6 Vinyl chloride	2.39940	2.47730	3.00443	2.80539	2.91567	2.91407	AVRG	2.75271			9.18186
7 1,3-Butadiene	4.00128	4.34867	4.56918	4.48718	4.62966	4.67954	AVRG	4.50258			6.71506
8 Bromomethane	1.77632	1.96151	2.33355	2.36283	2.36387	2.39396	AVRG	2.19867			11.95043
9 Chloroethane	4.70392	5.28100	6.16206	6.10702	6.34712	6.28704	AVRG	5.81469			11.48873
10 Ethanol	3.93629	4.82698	7.44002	6.60585	6.19472	+++	AVRG	5.80075			24.25055
11 Vinyl Bromide	1.94897	2.21002	2.63253	2.36636	2.41012	2.44139	AVRG	2.33490			9.97274
12 isopentane	2.33864	2.54831	3.19417	3.03238	3.11478	3.11755	AVRG	2.89097			12.33529
13 Trichlorofluoromethane	0.50776	0.55665	0.66248	0.64250	0.68942	0.74863	AVRG	0.63457			13.91971
14 Acrolein	6.32845	6.77144	8.29199	9.84282	9.42178	9.59064	AVRG	8.37452			18.10524

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAR-2014 12:00
 End Cal Date : 02-MAR-2014 14:18
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
 Last Edit : 03-Mar-2014 09:17 10airD.i

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	8913	14562	54279	461970	970388	1542146	LINR	-0.02706	1.63462		0.99967
16 Isopropyl Alcohol	1.63443	1.99309	2.28356	1.89234	1.85765	2.19089	AVRG		1.96033		11.33069
17 1,1-Dichloroethene	1.11171	1.33140	1.59799	1.53600	1.62676	1.67776	AVRG		1.48060		14.66239
18 Tert Butyl Alcohol	1.08474	1.17904	1.33585	1.23548	1.26002	1.30543	AVRG		1.23343		7.36208
19 Acrylonitrile	3.32146	4.06922	5.08055	4.23042	4.25469	4.22731	AVRG		4.19728		13.34586
20 Freon 113	0.87794	0.98389	1.21425	1.15334	1.19532	1.25121	AVRG		1.11266		13.31127
21 Methylene chloride	6923	11655	42137	291906	607865	971561	LINR	-0.04008	2.61235		0.99967
22 Allyl Chloride	3.94505	4.71216	5.54736	5.30877	5.54280	5.59156	AVRG		5.10795		12.88348
23 Carbon Disulfide	0.58132	0.70192	0.85619	0.78889	0.81410	0.82472	AVRG		0.76119		13.46105
24 trans-1,2-dichloroethene	1.87604	2.17399	2.41863	2.33269	2.32984	2.33727	AVRG		2.24474		8.79139
25 Methyl Tert Butyl Ether	0.69481	0.75906	0.89375	0.85240	0.82785	0.86657	AVRG		0.81577		9.16916
26 Vinyl Acetate	0.87849	1.05757	1.19291	1.04862	1.05869	1.08751	AVRG		1.05396		9.60932
27 1,1-Dichloroethane	1.00476	1.17535	1.34155	1.33157	1.37309	1.40752	AVRG		1.27231		12.06050
29 Methyl Ethyl Ketone	3.89038	5.98528	5.50962	5.22302	5.49016	5.37513	AVRG		5.24560		13.56211
30 n-Hexane	1.49611	1.97183	2.25318	1.98200	2.05671	2.10929	AVRG		1.97819		13.01498
31 Di-isopropyl Ether	0.79132	0.86480	1.05336	0.92445	0.94489	0.95626	AVRG		0.92251		9.61096
32 cis-1,2-Dichloroethene	2.29730	2.13221	2.72962	2.46228	2.44057	2.36717	AVRG		2.40486		8.26162
33 Ethyl Acetate	1.15527	1.42630	1.47406	1.30525	1.32986	1.29695	AVRG		1.33128		8.39154
34 Chloroform	0.75449	0.79733	0.93004	0.85762	0.90353	0.94782	AVRG		0.86514		8.86656
35 Ethyl Tert-Butyl Ether	0.79392	0.90374	1.00855	0.88784	0.89424	0.91011	AVRG		0.89973		7.59239
36 Tetrahydrofuran	2.95505	3.42841	3.79311	3.21766	3.23263	3.06766	AVRG		3.28245		9.05784
37 1,1,1-Trichloroethane	0.68264	0.72041	0.85654	0.83833	0.86164	0.89309	AVRG		0.80678		10.60402

Report Date : 03-Mar-2014 11:26

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAR-2014 12:00
 End Cal Date : 02-MAR-2014 14:18
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030214.b\T015_061-14.m
 Last Edit : 03-Mar-2014 09:17 10airD.i

Compound	0.1000000 Level 1	0.2000000 Level 2	1.0000 Level 3	10.0000 Level 4	20.0000 Level 5	30.0000 Level 6	Curve	Coefficients		WRS
								b	m1	or R^2
38 1,2-Dichloroethane	0.89862	1.04317	1.21375	1.18344	1.26063	1.29677	AVRG	1.14940		13.11183
39 Benzene	0.69674	0.78585	0.94506	0.79930	0.80928	0.79410	AVRG	0.80506		9.91750
40 Carbon tetrachloride	0.65801	0.71480	0.90044	0.80124	0.88207	0.94286	AVRG	0.81670		13.71752
41 Cyclohexane	1.89018	2.18840	2.60933	2.12380	2.12090	2.12424	AVRG	2.17614		10.83664
42 Tert Amyl Methyl Ether	20759	26627	77597	826965	1752316	2977260	LNLR	-0.00029	0.85776	0.99917
44 2,2,4-Trimethylpentane	0.56957	0.67359	0.75052	0.66199	0.66292	0.65778	AVRG	0.66273		8.67582
45 Heptane	1.71052	1.96207	2.15590	1.92383	1.95136	1.91345	AVRG	1.93619		7.33223
46 1,2-Dichloropropane	2.38752	2.32693	2.63332	2.51369	2.46517	2.40099	AVRG	2.40459		7.76869
47 Trichloroethene	1.83148	1.97605	2.22979	2.01197	2.01382	1.95134	AVRG	2.00243		6.49002
48 Bromodichloromethane	0.67672	0.69980	0.95089	0.74294	0.78894	0.80734	AVRG	0.76111		8.75151
49 1,4-Dioxane	4.17504	5.24108	4.89251	4.25112	3.79867	5.00472	AVRG	4.56052		12.38623
50 Methylcyclohexane	4.22786	3.88674	4.57068	3.66358	3.73977	3.72187	AVRG	3.96842		9.03438
51 Methyl Isobutyl Ketone	1.27535	1.44759	1.60217	1.27197	1.26798	1.30331	AVRG	1.36140		10.01250
52 cis-1,3-Dichloropropene	1.29131	1.31114	1.54365	1.26900	1.27938	1.34075	AVRG	1.33921		7.71622
53 trans-1,3-Dichloropropene	1.16796	1.36361	1.45117	1.16382	1.12905	1.17418	AVRG	1.23163		11.47255
55 Toluene	0.58656	0.61899	0.76313	0.62422	0.62257	0.63607	AVRG	0.64193		9.60410
56 1,1,2-Trichloroethane	1.38893	1.78480	2.02556	1.69944	1.70116	1.73417	AVRG	1.72234		11.84547
57 Methyl Butyl Ketone	0.90630	0.88909	0.89596	0.75120	0.76881	0.76472	AVRG	0.82935		9.00460
58 Dibromochloromethane	0.48503	0.56128	0.62071	0.53409	0.56498	0.56456	AVRG	0.55511		8.00795
59 1,2-Dibromoethane	0.55826	0.62825	0.68884	0.62224	0.63069	0.61124	AVRG	0.62325		6.71269
60 Tetrachloroethene	0.61343	0.72609	0.78854	0.69521	0.70819	0.68199	AVRG	0.70224		8.15499
62 Chlorobenzene	0.42186	0.50195	0.58271	0.50865	0.50620	0.50112	AVRG	0.50375		10.11469

Report Date : 03-Mar-2014 11:26

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAR-2014 12:00
 End Cal Date : 02-MAR-2014 14:18
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
 Last Edit : 03-Mar-2014 09:17 10airD.i

Compound	C:1000000	C:2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			WRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	0.26147	0.29251	0.30765	0.27612	0.27634	0.26771	AVRG	0.28030			6.06151
64 m,p-Xylene	0.32213	0.36178	0.39576	0.33422	0.34260	0.34444	AVRG	0.34849			6.43622
65 Bromoform	0.47752	0.54044	0.55727	0.45789	0.47473	0.47279	AVRG	0.49678			8.30420
66 Styrene	0.59697	0.61837	0.62560	0.48926	0.49059	0.47443	AVRG	0.54921			13.00855
67 o-Xylene	0.32972	0.34551	0.36499	0.31591	0.33394	0.33028	AVRG	0.33671			4.96444
68 1,1,2,2-Tetrachloroethane	0.44010	0.50567	0.55515	0.48278	0.48309	0.48562	AVRG	0.49207			7.64387
69 Isopropylbenzene	0.24780	0.27724	0.30854	0.26210	0.26827	0.27093	AVRG	0.27248			7.44918
70 N-Propylbenzene	0.22763	0.23569	0.24724	0.20553	0.21408	0.21679	AVRG	0.22449			6.84262
71 4-Ethyltoluene	0.29875	0.32291	0.32236	0.26708	0.28635	0.28304	AVRG	0.29675			7.56639
72 1,3,5-Trimethylbenzene	0.32807	0.35340	0.34466	0.30056	0.31415	0.31294	AVRG	0.32563			6.23435
73 Tert-Butyl Benzene	0.36898	0.39444	0.40491	0.33143	0.33812	0.34491	AVRG	0.36378			8.44482
74 1,2,4-Trimethylbenzene	0.34360	0.34375	0.35579	0.30031	0.31406	0.31785	AVRG	0.32923			6.54108
75 1,3-Dichlorobenzene	0.53493	0.59198	0.61895	0.49516	0.50076	0.50617	AVRG	0.54132			9.65039
76 Sec- Butylbenzene	0.25834	0.27439	0.27143	0.22331	0.22874	0.23717	AVRG	0.24890			8.88532
78 Benzyl Chloride	7910	13982	69609	1154055	2527707	3903159	LINR	0.01198	0.36666		0.99886
79 1,4-Dichlorobenzene	0.48371	0.54198	0.61535	0.51884	0.50790	0.50963	AVRG	0.52957			8.69360
80 p-Isopropyltoluene	0.35104	0.36198	0.35815	0.29455	0.30458	0.30946	AVRG	0.32996			9.17491
81 1,2,3-Trimethylbenzene	0.33793	0.36841	0.38192	0.32407	0.33734	0.35398	AVRG	0.35061			6.18304
82 1,2-Dichlorobenzene	0.58315	0.62185	0.68327	0.55543	0.57641	0.57298	AVRG	0.60051			7.71432
83 N-Butylbenzene	0.32310	0.35060	0.31936	0.27541	0.26891	0.29398	AVRG	0.30856			8.92628
84 1,2,4-Trichlorobenzene	5034	8924	42238	592542	1284867	1942967	LINR	-0.00059	0.73445		0.99954
85 Naphthalene	6775	12056	66478	887022	1995891	3012244	LINR	0.00587	0.47332		0.99958

Report Date : 03-Mar-2014 11:26

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAR-2014 12:00
End Cal Date : 02-MAR-2014 14:18
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\030214.b\T015_061-14.m
Last Edit : 03-Mar-2014 09:17 10airD.i

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients		RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2
86 Hexachlorobutadiene	0.57881	0.62599	0.76656	0.66954	0.69342	0.75601	AVRG		0.68172	10.71888
18 Hexane-d14 (S)	2.11817	2.10276	2.13636	2.17011	2.18981	2.20074	AVRG		2.15299	1.85103
54 Toluene-d8 (S)	1.13207	1.10581	1.11264	1.07620	1.08546	1.12517	AVRG		1.10622	1.98091
77 1,4-dichlorobenzene-d4 (S)	2.12675	2.15862	2.00981	1.91053	2.00952	2.03827	AVRG		2.04225	4.38898

Report Date : 03-Mar-2014 11:26

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAR-2014 12:00
End Cal Date : 02-MAR-2014 14:18
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
Last Edit : 03-Mar-2014 09:17 10airD.i

Average %RSD Results.	
=====	
Calculated Average %RSD =	9.97310
Maximum Average %RSD =	30.00000
* Passed Average %RSD Test.	

Curve	Formula	Units
=====		
Averaged	Ant = ml*Rep	Amount
Linear	Ant = b + ml*Rep	Amount

QUALITY CONTROL DATA

Project: 117-0507599 SSD Oem
Pace Project No.: 10257905

QC Batch: AIR/19526 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10257905001, 10257905002, 10257905003, 10257905004, 10257905005, 10257905006

METHOD BLANK: 1632768 Matrix: Air
Associated Lab Samples: 10257905001, 10257905002, 10257905003, 10257905004, 10257905005, 10257905006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	02/27/14 19:42	
1,1,2-Trichloroethane	ug/m3	ND	0.55	02/27/14 19:42	
1,1-Dichloroethane	ug/m3	ND	0.82	02/27/14 19:42	
1,1-Dichloroethene	ug/m3	ND	0.81	02/27/14 19:42	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/02/14 18:01	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	02/27/14 19:42	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	02/27/14 19:42	
1,2-Dichloroethane	ug/m3	ND	0.41	02/27/14 19:42	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	02/27/14 19:42	
Benzene	ug/m3	ND	0.32	02/27/14 19:42	
Carbon tetrachloride	ug/m3	ND	0.64	02/27/14 19:42	
Chlorodifluoromethane	ug/m3	ND	0.20	03/02/14 18:01	
Chloroform	ug/m3	ND	0.99	02/27/14 19:42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	02/27/14 19:42	
Dichlorodifluoromethane	ug/m3	ND	1.0	02/27/14 19:42	
Ethylbenzene	ug/m3	ND	0.88	02/27/14 19:42	
m&p-Xylene	ug/m3	ND	1.8	02/27/14 19:42	
Methyl-tert-butyl ether	ug/m3	ND	0.73	02/27/14 19:42	
Methylene Chloride	ug/m3	ND	0.71	02/27/14 19:42	
Naphthalene	ug/m3	ND	1.1	02/27/14 19:42	
o-Xylene	ug/m3	ND	0.88	02/27/14 19:42	
Tetrachloroethene	ug/m3	ND	0.69	02/27/14 19:42	
Toluene	ug/m3	ND	0.77	02/27/14 19:42	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	02/27/14 19:42	
Trichloroethene	ug/m3	ND	0.55	02/27/14 19:42	
Vinyl chloride	ug/m3	ND	0.26	02/27/14 19:42	

LABORATORY CONTROL SAMPLE: 1632767

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	57.8	104	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	58.4	105	72-130	
1,1-Dichloroethane	ug/m3	41.2	39.9	97	68-128	
1,1-Dichloroethene	ug/m3	40.3	39.5	98	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	51.1	102	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	73.1	97	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	50.5	101	71-140	
1,2-Dichloroethane	ug/m3	41.2	42.0	102	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	52.0	104	73-136	
Benzene	ug/m3	32.5	32.8	101	69-134	
Carbon tetrachloride	ug/m3	64	67.5	105	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 117-0507599 SSD Oem
Pace Project No.: 10257905

LABORATORY CONTROL SAMPLE: 1632767

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	31.1	86	60-140	
Chloroform	ug/m3	49.7	49.3	99	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	41.8	104	71-135	
Dichlorodifluoromethane	ug/m3	50.3	48.9	97	69-125	
Ethylbenzene	ug/m3	44.2	46.3	105	73-139	
m&p-Xylene	ug/m3	44.2	45.3	103	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	37.4	102	72-132	
Methylene Chloride	ug/m3	35.3	37.6	106	64-134	
Naphthalene	ug/m3	53.3	51.4	96	61-150	
o-Xylene	ug/m3	44.2	44.6	101	71-138	
Tetrachloroethene	ug/m3	69	66.6	96	69-136	
Toluene	ug/m3	38.3	40.2	105	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	39.1	97	70-131	
Trichloroethene	ug/m3	54.6	56.8	104	70-135	
Vinyl chloride	ug/m3	26	25.2	97	69-132	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10airD.i\022714.b\05841.d
Report Date: 28-Feb-2014 13:29

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 05841.d

Lab Smp Id: 10257905003

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\022714.b\T015_058-14.m

Misc Info: 19526

Calibration Date: 27-FEB-2014

Calibration Time: 14:24

Level: LOW

Sample Type: AIR

A-Effluent 1.57x

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	411323	246794	575852	534425	29.93
61 Chlorobenzene - d	268150	160890	375410	318011	18.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.40	6.07	6.73	6.40	-0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.07	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030214.b\06117.d
Report Date: 03-Mar-2014 09:38

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 06117.d
Lab Smp Id: 10257905003 A-Effluent
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
Misc Info: 19526

Calibration Date: 02-MAR-2014
Calibration Time: 13:21
Level: LOW
Sample Type: AIR

2.6376X

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	709746	425848	993644	726179	2.32
61 Chlorobenzene - d	424828	254897	594759	426871	0.48

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\022714.b\05839.d
Report Date: 28-Feb-2014 13:24

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 05839.d
Lab Smp Id: 10257905001
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
Misc Info: 19526

Calibration Date: 27-FEB-2014
Calibration Time: 14:24

Level: LOW
Sample Type: AIR

A-Influent
2.4x

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	411323	246794	575852	541972	31.76
61 Chlorobenzene - d	268150	160890	375410	326517	21.77

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.40	6.07	6.73	6.41	0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.07	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\022814.b\05907.d
Report Date: 28-Feb-2014 16:54

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 05907.d
Lab Smp Id: 10257905001
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\022814.b\TO15_058-14.m
Misc Info: 19526

Calibration Date: 28-FEB-2014
Calibration Time: 12:24

Level: LOW
Sample Type: AIR

A-Influent

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	411323	246794	575852	326936	-20.52
61 Chlorobenzene - d	268150	160890	375410	249517	-6.95

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.40	6.07	6.73	6.40	-0.10
61 Chlorobenzene - d	10.08	9.75	10.41	10.07	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030214.b\06120.d
Report Date: 03-Mar-2014 09:41

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 06120.d
Lab Smp Id: 10257905001
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
Misc Info: 19526

Calibration Date: 02-MAR-2014
Calibration Time: 13:21

Level: LOW
Sample Type: AIR

A-Influent
4.032x

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	709746	425848	993644	746821	5.22
61 Chlorobenzene - d	424828	254897	594759	446573	5.12

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\022714.b\05840.d
Report Date: 28-Feb-2014 13:28

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 05840.d
Lab Smp Id: 10257905002
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\022714.b\T015_058-14.m
Misc Info: 19526

A-Mid GAC
1.94X

Calibration Date: 27-FEB-2014
Calibration Time: 14:24

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	411323	246794	575852	552423	34.30
61 Chlorobenzene - d	268150	160890	375410	324290	20.94

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.40	6.07	6.73	6.40	-0.00
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030214.b\06116.d
Report Date: 03-Mar-2014 15:34

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 06116.d
Lab Smp Id: 10257905002
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
Misc Info: 19526

Calibration Date: 02-MAR-2014
Calibration Time: 13:21

Level: LOW
Sample Type: AIR

A-MID GAC

S. 7618X

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	709746	425848	993644	723205	1.90
61 Chlorobenzene - d	424828	254897	594759	417893	-1.63

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\022714.b\05844.d
Report Date: 28-Feb-2014 13:35

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 05844.d

Lab Smp Id: 10257905006

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m

Misc Info: 19526

Calibration Date: 27-FEB-2014

Calibration Time: 14:24

Level: LOW

Sample Type: AIR

C-Effluent
1.68X

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	411323	246794	575852	544945	32.49
61 Chlorobenzene - d	268150	160890	375410	310377	15.75

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.40	6.07	6.73	6.40	-0.00
61 Chlorobenzene - d	10.08	9.75	10.41	10.07	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030214.b\06119.d
Report Date: 03-Mar-2014 09:40

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 06119.d

Lab Smp Id: 10257905006 C-Influent

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m

Misc Info: 19526

Calibration Date: 02-MAR-2014

Calibration Time: 13:21

Level: LOW

Sample Type: AIR

3.8472X

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	709746	425848	993644	756621	6.60
61 Chlorobenzene - d	424828	254897	594759	436055	2.64

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.10

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\022714.b\05842.d
Report Date: 28-Feb-2014 13:30

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 05842.d
Lab Smp Id: 10257905004
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
Misc Info: 19526

C-Influent
1.57X

Calibration Date: 27-FEB-2014
Calibration Time: 14:24

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	411323	246794	575852	520118	26.45
61 Chlorobenzene - d	268150	160890	375410	318311	18.71

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.40	6.07	6.73	6.41	0.05
61 Chlorobenzene - d	10.08	9.75	10.41	10.08	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030214.b\06121.d
Report Date: 03-Mar-2014 09:41

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 06121.d

Lab Smp Id: 10257905004

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m

Misc Info: 19526

Calibration Date: 02-MAR-2014

Calibration Time: 13:21

Level: LOW

Sample Type: AIR

C-Influent
2.6376x

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	709746	425848	993644	778461	9.68
61 Chlorobenzene - d	424828	254897	594759	458093	7.83

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	-0.05
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.06

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\022714.b\05843.d
Report Date: 28-Feb-2014 13:32

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i

Lab File ID: 05843.d

Lab Smp Id: 10257905005 C-MID 6AC

Analysis Type: VOA

Quant Type: ISTD

Operator: AH2

Method File: \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m

Misc Info: 19526

Calibration Date: 27-FEB-2014

Calibration Time: 14:24

Level: LOW

Sample Type: AIR

1.57X

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	411323	246794	575852	553562	34.58
61 Chlorobenzene - d	268150	160890	375410	324894	21.16

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.40	6.07	6.73	6.40	-0.00
61 Chlorobenzene - d	10.08	9.75	10.41	10.07	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\030214.b\06118.d
Report Date: 03-Mar-2014 09:39

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 06118.d
Lab Smp Id: 10257905005
Analysis Type: VOA
Quant Type: ISTD
Operator: AH2
Method File: \\192.168.10.12\chem\10airD.i\030214.b\TO15_061-14.m
Misc Info: 19526

C-MID GAC
2.6376X

Calibration Date: 02-MAR-2014
Calibration Time: 13:21

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	709746	425848	993644	742170	4.57
61 Chlorobenzene - d	424828	254897	594759	436280	2.70

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.40	-0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.07

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Sample Calculation Example and Curve Parameters

Beginning in early January 2014, a change was made to the TO-15 methods that altered the way concentrations were calculated. Prior to January, concentrations were calculated by response rather than by amount. The EPA TO-15 method requires that curves are evaluated by amount. The net result of this change is that the calculation for analyte concentration needs to be revised. Specifically, the average relative retention time factor (RRF) needs to be moved from the bottom of Equation 17 from the Pace TO-15 SOP below to the top of the division sign.

14.17. Calculate the concentration of the sample component using Equation 17:

Equation 17

$$C_x = \frac{(A_x)(C_i)(D_f)}{(A_i)(R_f)}$$

where:

C_x =Concentration of compound x in ppbv;

A_i =EICP area of the quantitation ion for compound x;

C_i =Concentration of the internal standard associated with compound x in ppbv;

D_f =Dilution factor from Equation 12 (if no dilution was performed, D_f equals 1.)

A_i =EICP area of the quantitation ion for the internal standard associated with compound x;

R_f =Average RRF for compound x from the most recent calibration curve.

Below are images of the before and after change applied in target. In the before, you can see that the amount (Amt) is equal to the response (Rsp) divided by the average RRF (m1). In the after evaluation, you can see that the equation has moved the average RRF (m1) to be multiplied by the response (Rsp). It is important to note that this is before applying the internal standard calculation. Therefore, Rsp is equal to A_x from equation 17, and m1 is equal to R_f . Once you apply the internal standard to the revised equation 17, it should be as follows:

$$C_x = \frac{(A_x)(C_i)(D_f)(R_x)}{A_i}$$

Revised equation 17

ANALYTICAL RESULTS

Project: 117-0507599 SSD Oem

Pace Project No.: 10257905

Sample: A- Influent		Lab ID: 10257905001	Collected: 02/14/14 16:25		Received: 02/17/14 10:00		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.78	2.4		02/28/14 07:51	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.5	2.4		02/28/14 07:51	56-23-5	
Chlorodifluoromethane	2.4	ug/m3	0.81	4.032		03/02/14 20:21	75-45-6	
Chloroform	7.4	ug/m3	2.4	2.4		02/28/14 07:51	67-66-3	
Dichlorodifluoromethane	ND	ug/m3	2.4	2.4		02/28/14 07:51	75-71-8	
1,1-Dichloroethane	21.2	ug/m3	2.0	2.4		02/28/14 07:51	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.98	2.4		02/28/14 07:51	107-06-2	
1,1-Dichloroethene	92.7	ug/m3	1.9	2.4		02/28/14 07:51	75-35-4	
cis-1,2-Dichloroethene	126	ug/m3	1.9	2.4		02/28/14 07:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.9	2.4		02/28/14 07:51	156-60-5	
Ethylbenzene	ND	ug/m3	2.1	2.4		02/28/14 07:51	100-41-4	
Methylene Chloride	2.1	ug/m3	1.7	2.4		02/28/14 07:51	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.8	2.4		02/28/14 07:51	1634-04-4	
Naphthalene	ND	ug/m3	2.6	2.4		02/28/14 07:51	91-20-3	
Tetrachloroethene	ND	ug/m3	1.7	2.4		02/28/14 07:51	127-18-4	
Toluene	15.3	ug/m3	1.8	2.4		02/28/14 07:51	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	3.6	2.4		02/28/14 07:51	120-82-1	
1,1,1-Trichloroethane	429	ug/m3	2.7	2.4		02/28/14 07:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.3	2.4		02/28/14 07:51	79-00-5	
Trichloroethene	843	ug/m3	26.4	48		02/28/14 15:45	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.81	4.032		03/02/14 20:21	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	2.4	2.4		02/28/14 07:51	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	2.4	2.4		02/28/14 07:51	108-67-8	
Vinyl chloride	ND	ug/m3	0.62	2.4		02/28/14 07:51	75-01-4	
m&p-Xylene	ND	ug/m3	4.2	2.4		02/28/14 07:51	179601-23-1	
o-Xylene	ND	ug/m3	2.1	2.4		02/28/14 07:51	95-47-6	

$$\frac{44226}{326936} \times 48 \times \frac{10}{2.37785} = 27.31 \text{ ppbv}$$

$$27.31 \text{ ppbv} \times \frac{131.4 \text{ g/mole}}{2445 \text{ L/mole}} = 146.75 \text{ ug/m}^3$$

New calc.

$$\frac{44226}{326936} \times 48 \times 10 \times 2.37785 = 154.40 \text{ ppbv}$$

$$154.40 \text{ ppbv} \times \frac{131.4 \text{ g/mole}}{24.45 \text{ L/mole}}$$

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Date: 03/04/2014 04:14 PM

829.8 ug/m³

Page 6 of 17

Sample Calculation

Data File: \\192.168.10.12\chem\10airD.i\022814.b\05907.d
Report Date: 28-Feb-2014 16:54

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10airD.i\022814.b\05907.d
Lab Smp Id: 10257905001
Inj Date : 28-FEB-2014 15:45
Operator : AH2
Smp Info :
Misc Info : 19526
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10airD.i\022814.b\TO15 058-14.m
Meth Date : 28-Feb-2014 12:55 ahamilton Quant Type: ISTD
Cal Date : 27-FEB-2014 15:29 Cal File: 05805.d
Als bottle: 5
Dil Factor: 48.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: 10MNSKAUFMANM72

A-Influent Inst ID: 10airD.i

Compound Sublist: MD.sub

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	48.000	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG						CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv)	FINAL (ppbv)
1 Chlorodifluoromethane	51							
3 Dichlorodifluoromethane	85							
6 Vinyl chloride	62							
17 1,1-Dichloroethene	61		4.206	4.210	(0.658)	10467	0.59301	28.5
21 Methylene chloride	49							
24 trans-1,2-dichloroethene	96							
25 Methyl Tert Butyl Ether	73							
27 1,1-Dichloroethane	63		4.839	4.846	(0.757)	2611	0.12504	6.00(M)
\$ 28 Hexane-d14(S)	66		4.954	4.961	(0.774)	169371	11.6589	11.6
32 cis-1,2-Dichloroethene	96		5.246	5.259	(0.820)	6441	0.58374	28.0
34 Chloroform	83							
37 1,1,1-Trichloroethane	97		5.892	5.902	(0.921)	63808	2.02651	97.3
38 1,2-Dichloroethane	62							
39 Benzene	78							
40 Carbon tetrachloride	117							
* 43 1,4-Difluorobenzene	114		6.397	6.410	(1.000)	326936	10.0000	
47 Trichloroethene	130		6.856	6.866	(1.072)	44226	3.21635	154
\$ 54 Toluene-d8 (S)	98		8.194	8.207	(1.281)	283231	9.77772	9.78
55 Toluene	91							
56 1,1,2-Trichloroethane	97							
60 Tetrachloroethene	166							
* 61 Chlorobenzene - d5	117		10.070	10.083	(1.000)	249517	10.0000	
63 Ethyl Benzene	91							

Report Date : 28-Feb-2014 14:13

Sample Calculation

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-FEB-2014 14:24
 End Cal Date : 27-FEB-2014 17:19
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\022714.b\TO15_058-14.m
 Last Edit : 28-Feb-2014 13:47 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.20193	1.24985	1.43358	1.36024	1.43492	1.53941	AVRG		1.36999		9.21770
39 Benzene	0.90105	1.00122	1.06390	0.95291	1.01791	1.05335	AVRG		0.99839		6.21408
40 Carbon tetrachloride	0.95010	0.95527	1.05446	0.90038	0.97820	1.08374	AVRG		0.98702		6.99865
41 Cyclohexane	2.04904	2.26351	2.35708	2.48238	2.69018	2.86133	AVRG		2.45059		11.99609
42 Tert Amyl Methyl Ether	111971	123671	364711	363052	809927	1280341	LNK	-0.01380	1.16040		0.99985
44 2,2,4-Trimethylpentane	0.67592	0.73016	0.77405	0.72007	0.75820	0.79056	AVRG		0.74149		5.60429
45 Heptane	2.28801	2.29501	2.29881	2.26587	2.44503	2.63551	AVRG		2.37137		6.09261
46 1,2-Dichloropropane	2.84801	2.75150	2.83434	2.52579	2.75693	2.85322	AVRG		2.76820		4.52315
47 Trichloroethene	2.48567	2.77196	2.71093	2.04767	2.12263	2.12707	AVRG		2.37765		13.49726
48 Bromodichloromethane	1.00246	1.02028	1.05007	0.86257	0.87324	1.02336	AVRG		0.98868		6.75503
49 1,4-Dioxane	5.59203	5.73675	6.04660	4.84879	5.74127	5.28940	AVRG		5.54247		7.56536
50 Methylcyclohexane	5.53337	5.47316	5.52377	4.07646	4.61790	4.43391	AVRG		4.94310		13.05640
51 Methyl Isobutyl Ketone	1.49390	1.51500	1.63956	1.34453	1.47095	1.59540	AVRG		1.50990		6.83569
52 cis-1,3-Dichloropropene	1.87062	1.82129	1.87270	1.45077	1.54289	1.55795	AVRG		1.68604		11.23645
53 trans-1,3-Dichloropropene	1.76623	1.92586	1.89688	1.23598	1.37681	1.40647	AVRG		1.60637		18.92191
55 Toluene	0.77576	0.86965	0.91117	0.69955	0.77975	0.78686	AVRG		0.80379		9.37372
56 1,1,2-Trichloroethane	2.15117	2.28157	2.43180	1.85608	2.04097	2.10597	AVRG		2.14460		9.25072
57 Methyl Butyl Ketone	0.83640	0.93524	0.95569	0.83275	0.93425	0.95110	AVRG		0.90757		6.30095
58 Dibromochloromethane	0.61520	0.71417	0.74553	0.58801	0.63269	0.61828	AVRG		0.65398		9.26830
59 1,2-Dibromoethane	0.67592	0.78897	0.86406	0.72482	0.76056	0.71200	AVRG		0.75437		8.80954
60 Tetrachloroethene	0.77655	0.98659	1.07740	0.84058	0.85208	0.79935	AVRG		0.88709		13.45967
62 Chlorobenzene	0.54122	0.65231	0.72027	0.61138	0.59907	0.58146	AVRG		0.61762		10.05124



Tetra Tech

INTERNAL CORRESPONDENCE

TO: P. RICH **DATE:** APRIL 14, 2014
FROM: A. COGNETTI **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
LOCKHEED MARTIN CORPORATION (LMC) – MIDDLE RIVER
SAMPLE DELIVERY GROUP (SDG) – 10260309

SAMPLES: 6/Air/VOC

A-EFFLUENT
C-EFFLUENT

A-INFLUENT
C-INFLUENT

A-MID GAC
C-MID GAC

Overview

The sample set for LMC – Middle River, SDG 10260309 consisted of six (6) air samples. All samples were analyzed for volatile organic compounds (VOC). No field duplicate pair is included in this SDG.

The samples were collected by Geo Trans on March 12, 2014 and analyzed by PACE Analytical. All analyses were conducted in accordance with EPA Method TO-15 analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major

No major noncompliances were noted.

Minor

- The laboratory control sample (LCS) percent recoveries (%Rs) of 1,1-dichloroethane, 1,1-dichloroethene and dichlorodifluoromethane were greater than the upper quality control limit in batch 1644037. The detected 1,1-dichloroethane, 1,1-dichloroethene and dichlorodifluoromethane results were qualified as estimated (J) in the affected samples.

Notes

The chain of custody indicated that no gauges were provided with the summa canisters. This means that the canister pressure before and after sampling could not be evaluated. No validation action was taken.

Nondetected results were reported to the reporting limit.

Executive Summary

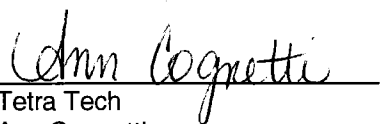
Laboratory Performance: The LCS %Rs of 1,1-dichloroethane, 1,1-dichloroethene and dichlorodifluoromethane exceeded quality control limits.

Other Factors Affecting Data Quality: None.

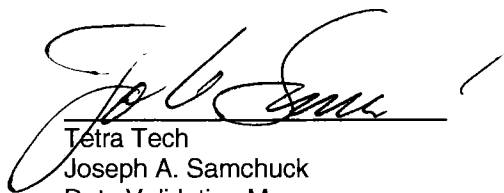
TO: P. Rich
FROM: A. Cognetti
SDG: 10260309
DATE: April 14, 2014

PAGE 2

The data for these analyses were reviewed with reference to USEPA National Functional Guidelines for Organic Data Validation (June 2008) and EPA Method TO-15. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Ann Cognetti
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

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

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % 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 = ICP PDS Recovery Noncompliance; 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 (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $< CRQL$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ 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 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03265 SDG: 10260309 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	A-EFFLUENT_20140312	A-INFLUENT_20140312	A-MID-GAC_20140312	C-EFFLUENT_20140312							
	LAB_ID	10260309003	10260309001	10260309002	10260309006							
	SAMP_DATE	3/12/2014	3/12/2014	3/12/2014	3/12/2014							
	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			
1,1,1-TRICHLOROETHANE	1.9 U			1310			38.5			1.9 U		
1,1,2-TRICHLOROETHANE	0.92 U			0.92 U			0.92 U			0.92 U		
1,1-DICHLOROETHANE	1.4 U			29.3 J	E		24.5			1.4 U		
1,1-DICHLOROETHENE	1.4 U			130 J	E		134			1.4 U		
1,2,3-TRIMETHYLBENZENE	0.34 U			0.34 U			1.7 U			0.94		
1,2,4-TRICHLOROBENZENE	12.7 U			12.7 U			2.5 U			12.7 U		
1,2,4-TRIMETHYLBENZENE	3			1.7 U			1.7 U			5.1		
1,2-DICHLOROETHANE	0.69 U			36.4			0.69 U			0.69 U		
1,3,5-TRIMETHYLBENZENE	1.7 U			1.7 U			1.7 U			2.3		
BENZENE	2			0.55 U			24.5			6.9		
CARBON TETRACHLORIDE	1.1 U			1.1 U			1.1 U			1.1 U		
CHLORODIFLUOROMETHANE	13.3			2.4			4.5			2.5		
CHLOROFORM	1.7 U			1.7 U			1.7 U			1.7 U		
CIS-1,2-DICHLOROETHENE	1.4 U			176			154			1.4 U		
DICHLORODIFLUOROMETHANE	2.3 J	E		2 J	E		2.2			2.2 J	E	
ETHYLBENZENE	3.5			1.5 U			1.5 U			1.5 U		
M+P-XYLENES	7.7			3			3 U			3 U		
METHYL TERT-BUTYL ETHER	1.2 U			1.2 U			1.2 U			1.2 U		
METHYLENE CHLORIDE	35.2			5.9 U			28.1			13.7		
NAPHTHALENE	8.9 U			8.9 U			1.8 U			8.9 U		
O-XYLENE	2.9			1.5 U			1.5 U			1.5 U		
TETRACHLOROETHENE	2.6			3.6			1.2 U			1.2 U		
TOLUENE	36.5			9.1			3.4			3.2		
TRANS-1,2-DICHLOROETHENE	1.4 U			1.4 U			1.4 U			1.4 U		
TRICHLOROETHENE	1.2			2100			47.5			1.9		
VINYL CHLORIDE	0.44 U			0.44 U			0.44 U			0.44 U		

PROJ_NO: 03265 SDG: 10260309 FRACTION: OV-M3 MEDIA: AIR	NSAMPLE	C-INFLUENT_20140312	C-MID-GAC_20140312			
	LAB_ID	10260309004	10260309005			
	SAMP_DATE	3/12/2014	3/12/2014			
	QC_TYPE	NM	NM			
	UNITS	UG/M3	UG/M3			
	PCT_SOLIDS					
DUP_OF						
PARAMETER	RESULT	VOL	QLCD	RESULT	VOL	QLCD
1,1,1-TRICHLOROETHANE	1.9 U			1.9 U		
1,1,2-TRICHLOROETHANE	0.92 U			0.92 U		
1,1-DICHLOROETHANE	1.4 U			1.4 U		
1,1-DICHLOROETHENE	1.4 U			1.4 U		
1,2,3-TRIMETHYLBENZENE	1.6			5.9		
1,2,4-TRICHLOROENZENE	12.7 U			12.7 U		
1,2,4-TRIMETHYLBENZENE	6			15.3		
1,2-DICHLOROETHANE	0.69 U			0.69 U		
1,3,5-TRIMETHYLBENZENE	3			4.4		
BENZENE	9.1			13.5		
CARBON TETRACHLORIDE	1.1 U			1.1 U		
CHLORODIFLUOROMETHANE	3			3.7		
CHLOROFORM	3.2			1.7 U		
CIS-1,2-DICHLOROETHENE	4.9			10.5		
DICHLORODIFLUOROMETHANE	2.2 J	E		2.4 J	E	
ETHYLBENZENE	5.9			3.7		
M+P-XYLENES	25.3			17.1		
METHYL TERT-BUTYL ETHER	1.2 U			1.2 U		
METHYLENE CHLORIDE	5.9 U			5.9 U		
NAPHTHALENE	11.5			8.9 U		
O-XYLENE	12.3			7.6		
TETRACHLOROETHENE	3.3			18.2		
TOLUENE	6			12.5		
TRANS-1,2-DICHLOROETHENE	1.4 U			1.4 U		
TRICHLOROETHENE	261			5.6		
VINYL CHLORIDE	0.44 U			0.44 U		

Appendix B

Results as Reported by the Laboratory

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

Sample: A-Effluent		Lab ID: 10260309003	Collected: 03/12/14 12:58	Received: 03/14/14 08:54	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	2.0 ug/m3		0.55	1.68		03/25/14 00:48	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/25/14 00:48	56-23-5	
Chlorodifluoromethane	13.3 ug/m3		0.34	1.68		03/25/14 00:48	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/25/14 00:48	67-66-3	
Dichlorodifluoromethane	2.3 ug/m3		1.7	1.68		03/25/14 00:48	75-71-8	L1
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/25/14 00:48	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/25/14 00:48	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 00:48	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 00:48	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 00:48	156-60-5	
Ethylbenzene	3.5 ug/m3		1.5	1.68		03/25/14 00:48	100-41-4	
Methylene Chloride	35.2 ug/m3		5.9	1.68		03/25/14 00:48	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/25/14 00:48	1634-04-4	
Naphthalene	ND ug/m3		8.9	1.68		03/25/14 00:48	91-20-3	
Tetrachloroethene	2.6 ug/m3		1.2	1.68		03/25/14 00:48	127-18-4	
Toluene	36.5 ug/m3		1.3	1.68		03/25/14 00:48	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		12.7	1.68		03/25/14 00:48	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/25/14 00:48	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/25/14 00:48	79-00-5	
Trichloroethene	1.2 ug/m3		0.92	1.68		03/25/14 00:48	79-01-6	
1,2,3-Trimethylbenzene	ND ug/m3		0.34	1.68		03/25/14 00:48	526-73-8	
1,2,4-Trimethylbenzene	3.0 ug/m3		1.7	1.68		03/25/14 00:48	95-63-6	
1,3,5-Trimethylbenzene	ND ug/m3		1.7	1.68		03/25/14 00:48	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/25/14 00:48	75-01-4	
m&p-Xylene	7.7 ug/m3		3.0	1.68		03/25/14 00:48	179601-23-1	
o-Xylene	2.9 ug/m3		1.5	1.68		03/25/14 00:48	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD O&M

Pace Project No.: 10260309

Sample: A-Influent		Lab ID: 10260309001	Collected: 03/12/14 12:56	Received: 03/14/14 08:54	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/25/14 02:38	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/25/14 02:38	56-23-5	
Chlorodifluoromethane	2.4	ug/m3	0.34	1.68		03/25/14 02:38	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/25/14 02:38	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.7	1.68		03/25/14 02:38	75-71-8	L1
1,1-Dichloroethane	29.3	ug/m3	1.4	1.68		03/25/14 02:38	75-34-3	L1
1,2-Dichloroethane	36.4	ug/m3	0.69	1.68		03/25/14 02:38	107-06-2	
1,1-Dichloroethene	130	ug/m3	1.4	1.68		03/25/14 02:38	75-35-4	L1
cis-1,2-Dichloroethene	176	ug/m3	1.4	1.68		03/25/14 02:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/25/14 02:38	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/25/14 02:38	100-41-4	
Methylene Chloride	ND	ug/m3	5.9	1.68		03/25/14 02:38	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/25/14 02:38	1634-04-4	
Naphthalene	ND	ug/m3	8.9	1.68		03/25/14 02:38	91-20-3	
Tetrachloroethene	3.6	ug/m3	1.2	1.68		03/25/14 02:38	127-18-4	
Toluene	9.1	ug/m3	1.3	1.68		03/25/14 02:38	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	12.7	1.68		03/25/14 02:38	120-82-1	
1,1,1-Trichloroethane	1310	ug/m3	117	105.5		03/26/14 13:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/25/14 02:38	79-00-5	
Trichloroethene	2100	ug/m3	58.0	105.5		03/26/14 13:57	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/25/14 02:38	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/25/14 02:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/25/14 02:38	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/25/14 02:38	75-01-4	
m&p-Xylene	3.0	ug/m3	3.0	1.68		03/25/14 02:38	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/25/14 02:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/26/2014 04:44 PM

Page 6 of 19

10260309

Page 6 of 916

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

Sample: A-Mid-GAC		Lab ID: 10260309002	Collected: 03/12/14 12:57	Received: 03/14/14 08:54	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	24.5	ug/m3	0.55	1.68		03/26/14 01:13	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/26/14 01:13	56-23-5	
Chlorodifluoromethane	4.5	ug/m3	1.2	1.68		03/26/14 01:13	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/26/14 01:13	67-66-3	
Dichlorodifluoromethane	2.2	ug/m3	1.7	1.68		03/26/14 01:13	75-71-8	
1,1-Dichloroethane	24.5	ug/m3	1.4	1.68		03/26/14 01:13	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/26/14 01:13	107-06-2	
1,1-Dichloroethene	134	ug/m3	1.4	1.68		03/26/14 01:13	75-35-4	
cis-1,2-Dichloroethene	154	ug/m3	1.4	1.68		03/26/14 01:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/26/14 01:13	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/26/14 01:13	100-41-4	
Methylene Chloride	28.1	ug/m3	1.2	1.68		03/26/14 01:13	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/26/14 01:13	1634-04-4	
Naphthalene	ND	ug/m3	1.8	1.68		03/26/14 01:13	91-20-3	
Tetrachloroethene	ND	ug/m3	1.2	1.68		03/26/14 01:13	127-18-4	
Toluene	3.4	ug/m3	1.3	1.68		03/26/14 01:13	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.5	1.68		03/26/14 01:13	120-82-1	
1,1,1-Trichloroethane	38.5	ug/m3	1.9	1.68		03/26/14 01:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/26/14 01:13	79-00-5	
Trichloroethene	47.5	ug/m3	0.92	1.68		03/26/14 01:13	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/26/14 01:13	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/26/14 01:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/26/14 01:13	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/26/14 01:13	75-01-4	
m&p-Xylene	ND	ug/m3	3.0	1.68		03/26/14 01:13	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/26/14 01:13	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD O&M

Pace Project No.: 10260309

Sample: C-Effluent		Lab ID: 10260309006	Collected: 03/12/14 13:32	Received: 03/14/14 08:54	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	6.9 ug/m3		0.55	1.68		03/25/14 02:11	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/25/14 02:11	56-23-5	
Chlorodifluoromethane	2.5 ug/m3		0.34	1.68		03/25/14 02:11	75-45-6	
Chloroform	ND ug/m3		1.7	1.68		03/25/14 02:11	67-66-3	
Dichlorodifluoromethane	2.2 ug/m3		1.7	1.68		03/25/14 02:11	75-71-8	L1
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/25/14 02:11	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/25/14 02:11	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 02:11	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 02:11	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 02:11	156-60-5	
Ethylbenzene	ND ug/m3		1.5	1.68		03/25/14 02:11	100-41-4	
Methylene Chloride	13.7 ug/m3		5.9	1.68		03/25/14 02:11	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/25/14 02:11	1634-04-4	
Naphthalene	ND ug/m3		8.9	1.68		03/25/14 02:11	91-20-3	
Tetrachloroethene	ND ug/m3		1.2	1.68		03/25/14 02:11	127-18-4	
Toluene	3.2 ug/m3		1.3	1.68		03/25/14 02:11	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		12.7	1.68		03/25/14 02:11	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/25/14 02:11	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/25/14 02:11	79-00-5	
Trichloroethene	1.9 ug/m3		0.92	1.68		03/25/14 02:11	79-01-6	
1,2,3-Trimethylbenzene	0.94 ug/m3		0.34	1.68		03/25/14 02:11	526-73-8	
1,2,4-Trimethylbenzene	5.1 ug/m3		1.7	1.68		03/25/14 02:11	95-63-6	
1,3,5-Trimethylbenzene	2.3 ug/m3		1.7	1.68		03/25/14 02:11	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/25/14 02:11	75-01-4	
m&p-Xylene	ND ug/m3		3.0	1.68		03/25/14 02:11	179601-23-1	
o-Xylene	ND ug/m3		1.5	1.68		03/25/14 02:11	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

Sample: C-Influent		Lab ID: 10260309004	Collected: 03/12/14 13:30	Received: 03/14/14 08:54	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	9.1 ug/m3		0.55	1.68		03/25/14 01:15	71-43-2	
Carbon tetrachloride	ND ug/m3		1.1	1.68		03/25/14 01:15	56-23-5	
Chlorodifluoromethane	3.0 ug/m3		0.34	1.68		03/25/14 01:15	75-45-6	
Chloroform	3.2 ug/m3		1.7	1.68		03/25/14 01:15	67-66-3	
Dichlorodifluoromethane	2.2 ug/m3		1.7	1.68		03/25/14 01:15	75-71-8	L1
1,1-Dichloroethane	ND ug/m3		1.4	1.68		03/25/14 01:15	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.69	1.68		03/25/14 01:15	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 01:15	75-35-4	
cis-1,2-Dichloroethene	4.9 ug/m3		1.4	1.68		03/25/14 01:15	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.4	1.68		03/25/14 01:15	156-60-5	
Ethylbenzene	5.9 ug/m3		1.5	1.68		03/25/14 01:15	100-41-4	
Methylene Chloride	ND ug/m3		5.9	1.68		03/25/14 01:15	75-09-2	
Methyl-tert-butyl ether	ND ug/m3		1.2	1.68		03/25/14 01:15	1634-04-4	
Naphthalene	11.5 ug/m3		8.9	1.68		03/25/14 01:15	91-20-3	
Tetrachloroethene	3.3 ug/m3		1.2	1.68		03/25/14 01:15	127-18-4	
Toluene	6.0 ug/m3		1.3	1.68		03/25/14 01:15	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		12.7	1.68		03/25/14 01:15	120-82-1	
1,1,1-Trichloroethane	ND ug/m3		1.9	1.68		03/25/14 01:15	71-55-6	
1,1,2-Trichloroethane	ND ug/m3		0.92	1.68		03/25/14 01:15	79-00-5	
Trichloroethene	261 ug/m3		0.92	1.68		03/25/14 01:15	79-01-6	
1,2,3-Trimethylbenzene	1.6 ug/m3		0.34	1.68		03/25/14 01:15	526-73-8	
1,2,4-Trimethylbenzene	6.0 ug/m3		1.7	1.68		03/25/14 01:15	95-63-6	
1,3,5-Trimethylbenzene	3.0 ug/m3		1.7	1.68		03/25/14 01:15	108-67-8	
Vinyl chloride	ND ug/m3		0.44	1.68		03/25/14 01:15	75-01-4	
m&p-Xylene	25.3 ug/m3		3.0	1.68		03/25/14 01:15	179601-23-1	
o-Xylene	12.3 ug/m3		1.5	1.68		03/25/14 01:15	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

Sample: C-Mid-GAC		Lab ID: 10260309005	Collected: 03/12/14 13:31	Received: 03/14/14 08:54	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	13.5	ug/m3	0.55	1.68		03/25/14 01:43	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/25/14 01:43	56-23-5	
Chlorodifluoromethane	3.7	ug/m3	0.34	1.68		03/25/14 01:43	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/25/14 01:43	67-66-3	
Dichlorodifluoromethane	2.4	ug/m3	1.7	1.68		03/25/14 01:43	75-71-8	L1
1,1-Dichloroethane	ND	ug/m3	1.4	1.68		03/25/14 01:43	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.69	1.68		03/25/14 01:43	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.68		03/25/14 01:43	75-35-4	
cis-1,2-Dichloroethene	10.5	ug/m3	1.4	1.68		03/25/14 01:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/25/14 01:43	156-60-5	
Ethylbenzene	3.7	ug/m3	1.5	1.68		03/25/14 01:43	100-41-4	
Methylene Chloride	ND	ug/m3	5.9	1.68		03/25/14 01:43	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/25/14 01:43	1634-04-4	
Naphthalene	ND	ug/m3	8.9	1.68		03/25/14 01:43	91-20-3	
Tetrachloroethene	18.2	ug/m3	1.2	1.68		03/25/14 01:43	127-18-4	
Toluene	12.5	ug/m3	1.3	1.68		03/25/14 01:43	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	12.7	1.68		03/25/14 01:43	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.68		03/25/14 01:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/25/14 01:43	79-00-5	
Trichloroethene	5.6	ug/m3	0.92	1.68		03/25/14 01:43	79-01-6	
1,2,3-Trimethylbenzene	5.9	ug/m3	0.34	1.68		03/25/14 01:43	526-73-8	
1,2,4-Trimethylbenzene	15.3	ug/m3	1.7	1.68		03/25/14 01:43	95-63-6	
1,3,5-Trimethylbenzene	4.4	ug/m3	1.7	1.68		03/25/14 01:43	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/25/14 01:43	75-01-4	
m&p-Xylene	17.1	ug/m3	3.0	1.68		03/25/14 01:43	179601-23-1	
o-Xylene	7.6	ug/m3	1.5	1.68		03/25/14 01:43	95-47-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Appendix C

Support Documentation

PROJECT NARRATIVE

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

Method: TO-15
Description: TO15 MSV AIR
Client: Tetra Tech GEO - Maryland
Date: March 26, 2014

General Information:

6 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/19758

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results may be biased high.

- LCS (Lab ID: 1644037)
 - 1,1-Dichloroethane
 - 1,1-Dichloroethene
 - Dichlorodifluoromethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Document Name:
Air Sample Condition Upon Receipt
Document No.:
F-MN-A-106-rev.09

Document Revised: 26Dec2013
Page 1 of 1
Issuing Authority:
Pace Minnesota Quality Office

Air Sample Condition
Upon Receipt

Client Name:

Project #:

WO#: 10260309



Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 8045 7870 4702

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other:

Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): Corrected Temp (°C):

Thermom. Used: ☐ B88A912167504 ☐ B88A9132521491

☐ 72337080
☐ 80512447

Temp should be above freezing to 6°C Correction Factor:

Date & Initials of Person Examining Contents: 3/15/14

Type of ice Received ☐ Blue ☐ Wet ☒ None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media: air can		11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Canisters		Flow Controllers		Stand Alone G	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
A- influent	2460				
A- mid-gac	2474				
A- effluent	2587				
C- influent	2511				
C- mid-gac	2406				
C- effluent	2206				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted:

Date/Time:

Comments/Resolution:

Project Manager Review:

3/15/14

Date: 3/15/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

SAMPLE SUMMARY

Project: 117-0507599.20 SSD O&M

Pace Project No.: 10260309

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10260309001	A-Influent	Air	03/12/14 12:56	03/14/14 08:54
10260309002	A-Mid-GAC	Air	03/12/14 12:57	03/14/14 08:54
10260309003	A-Effluent	Air	03/12/14 12:58	03/14/14 08:54
10260309004	C-Influent	Air	03/12/14 13:30	03/14/14 08:54
10260309005	C-Mid-GAC	Air	03/12/14 13:31	03/14/14 08:54
10260309006	C-Effluent	Air	03/12/14 13:32	03/14/14 08:54

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10260309

Lab File ID: 08301BFB.D

BFB Injection Date: 03/24/2014

Instrument ID: 10AIRD

BFB Injection Time: 10:26

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.33
75	30.00 - 66.00% of mass 95	55.09
96	5.00 - 9.00% of mass 95	6.94
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	93.48
175	4.00 - 9.00% of mass 174	7.19 (7.69)
176	93.00 - 101.00% of mass 174	93.20 (99.70)
177	5.00 - 9.00% of mass 176	6.50 (6.97)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL1	CAL1	08302.D	03/24/2014	10:53
2	CAL2	CAL2	08303.D	03/24/2014	11:20
3	CAL3	CAL3	08304.D	03/24/2014	11:48
4	CAL4	CAL4	08305.D	03/24/2014	12:16
5	CAL5	CAL5	08306.D	03/24/2014	12:43
6	CAL6	CAL6	08307.D	03/24/2014	13:12
7	ICVADD (LCS)	ICVADD	08309.D	03/24/2014	14:07
8	ICV (LCS)	ICV	08310.D	03/24/2014	14:35
9	LCS for HBN 290234 [AIR/	1644037	08311L.D	03/24/2014	15:02
10	BLANK for HBN 290234 [AI	1644036	08313L.D	03/24/2014	15:58
11	AMS 03-030814-TO15(163	1644262-DUP	08316.D	03/24/2014	17:49
12	A-Effluent	10260309003	08331.D	03/25/2014	00:48
13	C-Influent	10260309004	08332.D	03/25/2014	01:15
14	C-Mid-GAC	10260309005	08333.D	03/25/2014	01:43
15	C-Effluent	10260309006	08334.D	03/25/2014	02:11
16	A-Influent	10260309001	08335.D	03/25/2014	02:38

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAR-2014 10:53
 End Cal Date : 24-MAR-2014 13:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
 Last Edit : 24-Mar-2014 14:54 ahamilton

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\032414.b\08302.d
 Level 2: \\192.168.10.12\chem\10airD.i\032414.b\08303.d
 Level 3: \\192.168.10.12\chem\10airD.i\032414.b\08304.d
 Level 4: \\192.168.10.12\chem\10airD.i\032414.b\08305.d
 Level 5: \\192.168.10.12\chem\10airD.i\032414.b\08306.d
 Level 6: \\192.168.10.12\chem\10airD.i\032414.b\08307.d

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	1.64100	2.35279	2.35078	2.55057	2.42617	2.40721	AVRG		2.28809		14.21571
2 Propylene	6.12548	7.76873	7.51419	7.70216	6.77247	6.33641	AVRG		7.03657		10.24259
3 Dichlorodifluoromethane	0.59959	0.96537	0.88786	0.99871	0.93255	1.01831	AVRG		0.90040		17.16726
4 Dichlorotetrafluoroethane	0.81970	1.12967	1.05246	1.22991	1.05809	1.11680	AVRG		1.06777		12.86781
5 Chloromethane	2.82261	3.48714	3.59589	4.08535	3.50263	3.63160	AVRG		3.52087		11.54092
6 Vinyl chloride	2.64572	3.80854	3.70589	4.41227	3.70430	3.59055	AVRG		3.64455		15.63834
7 1,3-Butadiene	5.23013	5.60071	6.48065	7.26093	6.37555	6.27873	AVRG		6.15445		11.52001
8 Bromomethane	2.17502	2.75925	2.95478	3.49897	2.99378	3.04780	AVRG		2.90493		14.90741
9 Chloroethane	6.42036	6.73064	8.72847	9.86201	8.56138	8.24426	AVRG		8.09119		16.04708
10 Ethanol	3.65849	6.20747	6.83076	8.59628	11.81841	++++	AVRG		7.42228		40.80769<-
11 Vinyl Bromide	2.09056	3.09626	3.04535	3.71710	3.01987	2.94481	AVRG		2.98566		17.43489
12 Isopentane	2.29317	3.23874	3.61765	5.23768	4.04618	4.00055	AVRG		3.73899		26.10695
13 Trichlorofluoromethane	0.62051	0.85667	0.90366	0.99226	0.97011	0.94259	AVRG		0.88097		15.48693
14 Acrolein	10.06554	14.11462	14.76303	17.06319	15.21356	13.75402	AVRG		14.16233		16.35762

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAR-2014 10:53
 End Cal Date : 24-MAR-2014 13:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
 Last Edit : 24-Mar-2014 14:54 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	12675	21545	86989	338316	794339	1187691	LINEAR	-0.05755	2.10638		0.99769
16 Isopropyl Alcohol	1.59940	2.35964	2.60609	2.82249	3.30486	++++	AVRG		2.53849		24.80858
17 1,1-Dichloroethene	1.61259	2.18131	2.27206	2.41038	2.14980	2.25614	AVRG		2.14705		12.90242
18 Tert Butyl Alcohol	0.96169	1.49063	1.58553	1.73656	1.91471	++++	AVRG		1.53782		23.40013
19 Acrylonitrile	3.98656	6.39816	5.79334	6.28472	5.32197	5.51733	AVRG		5.55035		15.73942
20 Freon 113	1.09441	1.43806	1.64567	1.75221	1.51535	1.53055	AVRG		1.49604		15.07294
21 Methylene chloride	++++	2.14072	3.75924	3.30603	3.03764	2.98633	AVRG		3.04599		19.41905
22 Allyl Chloride	6.44150	9.63925	12.87822	8.37078	7.49502	7.32559	AVRG		8.69173		26.68089
23 Carbon Disulfide	0.74888	1.07559	1.42925	1.18784	1.07580	1.01963	AVRG		1.08950		20.37495
24 trans-1,2-dichloroethene	2.75374	3.73471	3.45470	3.28477	3.00015	2.89262	AVRG		3.18678		11.66125
25 Methyl Tert Butyl Ether	0.85956	1.34191	1.23766	1.27058	1.16455	1.07149	AVRG		1.15763		14.93399
26 Vinyl Acetate	1.37719	1.88864	1.97661	1.53727	1.52544	1.43750	AVRG		1.62377		15.26754
27 1,1-Dichloroethane	1.69210	2.23703	2.26501	1.92240	1.86349	1.81838	AVRG		1.96640		11.86306
28 Methyl Ethyl Ketone	5.65883	7.00280	7.11711	7.05725	7.21117	6.87597	AVRG		6.82052		8.50483
30 n-Hexane	2.69927	2.66019	3.55122	2.84144	2.75758	2.62275	AVRG		2.85541		12.23774
31 Di-isopropyl Ether	1.45397	1.44901	1.74861	1.29516	1.29605	1.29325	AVRG		1.42268		12.45336
32 cis-1,2-Dichloroethene	3.60234	3.17732	3.62146	3.34407	3.18509	3.05601	AVRG		3.33105		7.08752
33 Ethyl Acetate	1.82243	1.88126	1.92859	1.87497	1.76726	1.71742	AVRG		1.83199		4.29909
34 Chloroform	1.09176	1.17613	1.21002	1.26652	1.24603	1.19726	AVRG		1.19795		5.13390
35 Ethyl Tert-Butyl Ether	1.39753	1.43272	1.74334	1.27302	1.22297	1.13657	AVRG		1.28436		8.68682
36 Tetrahydrofuran	4.96885	4.73814	4.16518	4.68952	4.44035	3.90683	AVRG		4.48481		8.79880
37 1,1,1-Trichloroethane	0.99664	1.16449	1.15926	1.14414	1.18757	1.10165	AVRG		1.12563		6.15938

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAR-2014 10:53
 End Cal Date : 24-MAR-2014 13:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
 Last Edit : 24-Mar-2014 14:54 ahamilton

Compound	0.100000	0.200000	1.0390	10.0300	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.61748	1.58686	1.70922	1.70697	1.76800	1.66927	AVRG		1.67629		3.95200
39 Benzene	1.05524	1.16740	1.11549	1.07673	1.10084	1.03069	AVRG		1.09107		4.42459
40 Carbon tetrachloride	1.12246	1.25760	1.35332	1.13869	1.22886	1.22979	AVRG		1.20512		4.90855
41 Cyclohexane	2.61274	3.12767	2.88500	2.93674	2.88820	2.71360	AVRG		2.86066		6.28303
42 Tert Amyl Methyl Ether	++++	0.65510	1.03622	1.14228	1.14856	1.02874	AVRG		1.00218		20.16647
44 2,2,4-Trimethylpentane	0.84168	0.90056	0.85706	0.93818	0.90923	0.82071	AVRG		0.87790		5.13094
45 Heptane	2.57039	3.04668	2.71875	2.77099	2.65477	2.44705	AVRG		2.70144		7.55725
46 1,2-Dichloropropane	2.71425	3.48399	3.35284	3.49527	3.22389	2.95022	AVRG		3.20341		9.77272
47 Trichloroethene	2.58625	2.76172	2.63937	2.70962	2.55867	2.32423	AVRG		2.59664		5.90615
48 Bromodichloromethane	1.09054	1.14912	1.11152	1.09055	1.11363	1.03736	AVRG		1.09879		3.36248
49 1,4-Dioxane	949	2833	13320	146642	++++	++++	LINR	0.00386	4.97859		0.99996
50 Methylcyclohexane	6.44150	6.05150	5.18750	5.07769	5.28505	4.64299	AVRG		5.44770		12.26128
51 Methyl Isobutyl Ketone	1.49585	2.27065	1.87645	1.73284	1.91945	1.62326	AVRG		1.81975		14.89894
52 cis-1,3-Dichloropropene	1.50583	1.97731	1.94797	1.74825	1.85740	1.60336	AVRG		1.77336		10.70658
53 trans-1,3-Dichloropropene	1.54224	2.19749	1.79781	1.60059	1.61582	1.46119	AVRG		1.70252		15.67085
54 Toluene	0.55518	0.87779	0.84272	0.83804	0.85241	0.77792	AVRG		0.79068		15.17430
56 1,1,2-Trichloroethane	1.62870	2.42117	2.31452	2.27342	2.37138	2.08652	AVRG		2.18262		13.50208
57 Methyl Butyl Ketone	1.11808	1.11164	0.99211	0.87612	0.89946	0.88781	AVRG		0.98087		11.38135
58 Dibromochloromethane	0.61401	0.68010	0.65859	0.64476	0.63328	0.61978	AVRG		0.64176		3.87478
59 1,2-Dibromoethane	0.72341	0.79784	0.72087	0.70818	0.70609	0.66142	AVRG		0.71964		6.16282
60 Tetrachloroethene	0.71535	0.86409	0.82294	0.77098	0.76651	0.71125	AVRG		0.77519		7.72823
62 Chlorobenzene	0.55501	0.56014	0.59016	0.58071	0.57042	0.53812	AVRG		0.56576		3.30816

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAR-2014 10:53
 End Cal Date : 24-MAR-2014 13:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032414.b\T015_083-14.m
 Last Edit : 24-Mar-2014 14:54 ahamilton

Compound	0.100000	0.200000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			MRSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	0.39088	0.42404	0.33879	0.33855	0.31565	0.30866	AVRG	0.35276			12.83696
64 m,p-Xylene	0.46611	0.55008	0.43394	0.40287	0.42992	0.39760	AVRG	0.44675			12.59953
65 Bromoform	0.57097	0.62600	0.59761	0.52378	0.52859	0.50745	AVRG	0.55930			8.37445
66 Styrene	+++++	0.84367	0.67472	0.57372	0.56995	0.51618	AVRG	0.63565			20.39456
67 o-Xylene	0.47246	0.46019	0.39989	0.38918	0.40254	0.39158	AVRG	0.41931			8.81538
68 1,1,2,2-Tetrachloroethane	0.53224	0.56383	0.58637	0.55515	0.55865	0.55230	AVRG	0.55809			3.14832
69 Isopropylbenzene	0.33001	0.35771	0.32932	0.30895	0.30463	0.29776	AVRG	0.32140			6.88725
70 N-Propylbenzene	0.32086	0.34359	0.26550	0.24530	0.23684	0.25734	AVRG	0.27824			15.65413
71 4-Ethyltoluene	0.38483	0.41929	0.33007	0.31726	0.31508	0.31968	AVRG	0.34770			12.59590
72 1,3,5-Trimethylbenzene	0.46203	0.46531	0.38901	0.37037	0.35618	0.35770	AVRG	0.40010			12.65633
73 Tert-Butyl Benzene	0.51440	0.52072	0.41979	0.39225	0.37505	0.38512	AVRG	0.43456			15.19230
74 1,2,4-Trimethylbenzene	0.43262	0.43499	0.38418	0.35779	0.34933	0.36052	AVRG	0.38657			9.92773
75 1,3-Dichlorobenzene	0.56535	0.61130	0.58946	0.56806	0.52890	0.56143	AVRG	0.57075			4.87380
76 Sec- Butylbenzene	0.27623	0.29488	0.29303	0.27082	0.24738	0.26908	AVRG	0.27524			6.36998
78 Benzyl Chloride	0.56953	0.64100	0.56711	0.46500	0.39127	0.42817	AVRG	0.51035			18.95418
79 1,4-Dichlorobenzene	0.55270	0.65114	0.62824	0.58622	0.51074	0.57174	AVRG	0.58346			8.72711
80 p-Isopropyltoluene	0.40180	0.40965	0.38140	0.34987	0.33596	0.36397	AVRG	0.37377			7.78000
81 1,2,3-Trimethylbenzene	0.42298	0.50475	0.44122	0.41047	0.36334	0.40160	AVRG	0.42406			11.15206
82 1,2-Dichlorobenzene	0.64896	0.88071	0.78406	0.61965	0.57437	0.64179	AVRG	0.69159			16.80396
83 N-Butylbenzene	0.39183	0.58498	0.42498	0.34218	0.34420	0.35436	AVRG	0.40709			22.61883
84 1,2,4-Trichlorobenzene	3912	5041	28444	533178	1167908	1952659	LINR	0.03348	0.66297		0.99902
85 Napthalene	4306	7091	45834	835052	1796273	3043046	LINR	0.03673	0.42332		0.99820

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAR-2014 10:53
 End Cal Date : 24-MAR-2014 13:12
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
 Last Edit : 24-Mar-2014 14:54 ahamilton

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
86 Hexachlorobutadiene	0.77931	0.95599	1.08093	0.65418	0.75155	0.71174	AVRG		0.82228		19.7676
\$ 28 Hexane-d14 (S)	2.29689	2.42596	2.49759	2.32152	2.30837	2.43919	AVRG		2.38159		3.50746
\$ 54 Toluene-d8 (S)	0.89743	1.16949	1.15204	1.15091	1.19442	1.17230	AVRG		1.12276		9.93377
\$ 77 1,4-dichlorobenzene-d4 (S)	2.19763	2.31553	1.91965	1.77864	1.73482	2.00254	AVRG		1.99147		11.53750

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10260309

Lab File ID: 08401BFB.D

BFB Injection Date: 03/25/2014

Instrument ID: 10AIRD

BFB Injection Time: 10:05

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	18.20
75	30.00 - 66.00% of mass 95	54.79
96	5.00 - 9.00% of mass 95	6.60
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	92.96
175	4.00 - 9.00% of mass 174	7.41 (7.97)
176	93.00 - 101.00% of mass 174	90.74 (97.61)
177	5.00 - 9.00% of mass 176	6.25 (6.89)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CAL4	CAL4	08403.D	03/25/2014	11:09
2	CAL5	CAL5	08404.D	03/25/2014	11:36
3	CAL6	CAL6	08405.D	03/25/2014	12:04
4	CAL1	CAL1	08407.D	03/25/2014	12:59
5	CAL2	CAL2	08408.D	03/25/2014	13:27
6	CAL3	CAL3	08409.D	03/25/2014	13:55
7	ICVADD (LCS)	ICVADD	08410.D	03/25/2014	14:33
8	ICV (LCS)	ICV	08411.D	03/25/2014	15:00
9	LCS (LCS)	LCS	08412.D	03/25/2014	15:28
10	LCS for HBN 290310 [AIR/	1644402	08412L.D	03/25/2014	15:28
11	BLANK	BLANK	08414.D	03/25/2014	16:24
12	BLANK for HBN 290310 [AI	1644401	08414L.D	03/25/2014	16:24
13	A-Mid-GAC	10260309002	08433.D	03/26/2014	01:13
14	Effluent (After...(1641142D	1645107-DUP	08438.D	03/26/2014	03:31

Report Date : 26-Mar-2014 10:04

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 25-MAR-2014 11:09
 End Cal Date : 25-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032514.b\TO15_084-14.m
 Last Edit : 26-Mar-2014 10:03 drandall

Calibration File Names:

Level 1: \\192.168.10.12\chem\10airD.i\032514.b\08407.d
 Level 2: \\192.168.10.12\chem\10airD.i\032514.b\08408.d
 Level 3: \\192.168.10.12\chem\10airD.i\032514.b\08409.d
 Level 4: \\192.168.10.12\chem\10airD.i\032514.b\08403.d
 Level 5: \\192.168.10.12\chem\10airD.i\032514.b\08404.d
 Level 6: \\192.168.10.12\chem\10airD.i\032514.b\08405.d

Compound	0.100000	0.200000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			*RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
1 Chlorodifluoromethane	1.94861	2.77922	2.73323	2.36592	2.40850	2.54167	AVRG		2.46286		12.26454
2 Propylene	5.00986	8.63602	8.58730	7.03651	6.70854	6.67369	AVRG		7.10865		19.16331
3 Dichlorodifluoromethane	0.82869	1.09290	1.10018	0.91692	0.95199	0.98822	AVRG		0.97982		10.69585
4 Dichlorotetrafluoroethane	0.88646	1.26807	1.30815	1.09261	1.10447	1.16040	AVRG		1.13669		13.21464
5 Chloromethane	2.88328	4.19457	4.33665	3.59476	3.61605	3.75953	AVRG		3.73081		13.83932
6 Vinyl chloride	3.33922	4.88204	4.28699	3.72473	3.77885	3.82299	AVRG		3.97247		13.54895
7 1,3-Butadiene	5.34494	8.05239	7.24068	6.21509	6.17038	6.34781	AVRG		6.56188		14.42965
8 Bromomethane	2.48811	3.55715	3.64588	3.05173	3.04418	3.22597	AVRG		3.16884		13.19585
9 Chloroethane	6.01553	8.79906	9.41595	7.84720	8.42889	9.14026	AVRG		8.27448		14.93602
10 Ethanol	5.18844	7.82187	9.37737	8.56183	8.47604	++++	AVRG		7.88511		20.36067
11 Vinyl Bromide	2.71973	3.80574	3.80791	3.05156	3.18625	3.17588	AVRG		3.29118		13.17470
12 Isopentane	3.46263	4.88656	5.05974	4.07736	4.19583	4.19384	AVRG		4.31266		13.49334
13 Trichlorofluoromethane	0.82044	0.99293	1.07086	0.89042	0.93208	1.02020	AVRG		0.95449		9.59236
14 Acrolein	8.87913	13.30571	16.35250	12.13567	12.23161	12.48958	AVRG		12.56570		19.09319

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 25-MAR-2014 11:09
 End Cal Date : 25-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032514.b\TO15_084-14.m
 Last Edit : 26-Mar-2014 10:03 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
15 Acetone	1.00333	1.48173	2.19122	2.25311	2.26259	2.51907	AVRG		1.95184		29.76022
16 Isopropyl Alcohol	2.41942	2.85225	3.24139	2.68181	2.62191	2.94629	AVRG		2.79384		10.24014
17 1,1-Dichloroethene	2.27746	2.38195	2.77124	2.16381	2.26864	2.36229	AVRG		2.37090		8.89823
18 Tert Butyl Alcohol	1.47530	1.50452	2.10585	1.63674	1.68053	1.75125	AVRG		1.69237		13.47634
19 Acrylonitrile	6.64848	6.48674	8.83836	5.66741	5.64821	5.76088	AVRG		6.50835		18.76125
20 Freon 113	1.95891	1.65074	2.07032	1.58292	1.64994	1.63958	AVRG		1.75874		11.53435
21 Methylene chloride	6065	10806	30543	226939	473205	736496	LINR	-0.03040	3.59595		0.99974
22 Allyl Chloride	8.44667	7.70399	8.97601	7.25027	7.42098	7.29042	AVRG		7.84806		9.01371
23 Carbon Disulfide	0.94319	1.12017	1.64807	1.15910	1.21840	1.38883	AVRG		1.24629		19.58517
24 trans-1,2-dichloroethene	2.99231	3.42196	4.96873	3.33055	3.63445	3.33367	AVRG		3.61361		19.24439
25 Methyl Tert Butyl Ether	0.99197	1.11005	1.69914	1.24720	1.48425	1.20885	AVRG		1.29024		20.05399
26 Vinyl Acetate	1.58303	1.74067	2.29203	1.56584	1.58195	1.53370	AVRG		1.71620		16.96481
27 1,1-Dichloroethane	1.87337	1.94610	2.64436	1.94432	1.96995	1.91507	AVRG		2.04886		14.33033
29 Methyl Ethyl Ketone	7.01466	7.11270	12.18231	9.28364	7.81433	8.59211	AVRG		8.66663		22.26449
30 n-Hexane	2.85601	2.66786	4.16052	3.80885	3.43903	2.95668	AVRG		3.31482		17.75549
31 Di-isopropyl Ether	1.44164	1.28379	2.06802	1.57854	1.66202	1.29606	AVRG		1.55501		18.82929
32 cis-1,2-Dichloroethene	4.12920	3.69138	4.00134	3.10575	3.08880	3.01758	AVRG		3.50568		14.21069
33 Ethyl Acetate	1.87899	1.92413	2.13823	1.74171	1.70871	1.68534	AVRG		1.84618		9.32292
34 Chloroform	1.36808	1.27583	1.42091	1.19077	1.24052	1.24205	AVRG		1.28969		6.76219
35 Ethyl Tert-Butyl Ether	1.34085	1.29894	1.45292	1.17875	1.22694	1.15350	AVRG		1.27532		8.79459
36 Tetrahydrofuran	5.44492	4.35839	5.40414	4.23153	4.23995	4.06439	AVRG		4.62388		13.56730
37 1,1,1-Trichloroethane	1.07392	1.22551	1.40706	1.12634	1.15197	1.27605	AVRG		1.21014		9.93812

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 25-MAR-2014 11:09
 End Cal Date : 25-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032514.b\TO15_084-14.m
 Last Edit : 26-Mar-2014 10:03 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.70061	1.76079	2.04851	1.68409	1.71246	1.86670	AVRG		1.79553		7.82080
39 Benzene	1.00185	1.17508	1.38574	1.03207	1.01106	1.05359	AVRG		1.10990		13.42479
40 Carbon tetrachloride	1.07747	1.18218	1.38531	1.11252	1.17061	1.29486	AVRG		1.20382		9.62292
41 Cyclohexane	2.81361	3.15805	3.67819	2.77047	2.77236	2.88211	AVRG		3.01247		11.84966
42 Tert Amyl Methyl Ether	++++	0.67731	1.17126	1.10566	1.14307	1.08808	AVRG		1.03708		19.64175
44 2,2,4-Trimethylpentane	0.88714	0.97204	1.08393	0.87729	0.87219	0.87357	AVRG		0.92769		9.21892
45 Heptane	2.44997	3.13122	3.31544	2.59759	2.56520	2.53139	AVRG		2.76513		13.12794
46 1,2-Dichloropropane	2.91943	3.63799	4.00735	3.26142	3.20669	3.17308	AVRG		3.36766		11.56364
47 Trichloroethene	2.45292	2.79490	3.22222	2.58458	2.50100	2.54560	AVRG		2.68354		10.77327
48 Bromodichloromethane	1.02195	1.16823	1.36923	1.06900	1.09130	1.12357	AVRG		1.14054		10.73555
49 1,4-Dioxane	4.97318	6.07867	6.75187	5.63830	5.24110	5.42064	AVRG		5.68396		11.31730
50 Methylcyclohexane	4.76948	5.55259	6.38741	5.33019	4.75276	4.91133	AVRG		5.28396		11.90221
51 Methyl Isobutyl Ketone	1.61439	2.11860	2.42532	1.71376	1.73287	1.74430	AVRG		1.89154		16.57961
52 cis-1,3-Dichloropropene	1.64901	2.05860	2.42437	1.73035	1.70742	1.78846	AVRG		1.89303		15.69070
53 trans-1,3-Dichloropropene	1.56781	2.22603	2.42085	1.55932	1.54140	1.57492	AVRG		1.81505		21.96860
55 Toluene	0.70891	0.92923	1.08224	0.82014	0.83882	0.82424	AVRG		0.86726		14.58634
56 1,1,2-Trichloroethane	2.13078	2.59491	3.03726	2.26200	2.28318	2.25506	AVRG		2.42220		14.11392
57 Methyl Butyl Ketone	0.84345	1.05229	1.17996	0.86324	0.87720	0.85152	AVRG		0.94461		14.74903
58 Dibromochloromethane	0.57124	0.70860	0.80413	0.59659	0.61228	0.60722	AVRG		0.65001		13.67407
59 1,2-Dibromoethane	0.58047	0.77017	0.92909	0.67959	0.67656	0.66101	AVRG		0.71615		16.82792
60 Tetrachloroethene	0.69924	0.84502	0.96651	0.75210	0.75443	0.72375	AVRG		0.79038		12.59339
62 Chlorobenzene	0.44646	0.61597	0.75787	0.56230	0.56093	0.54691	AVRG		0.58174		17.61756

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 25-MAR-2014 11:09
 End Cal Date : 25-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032514.b\TO15_084-14.m
 Last Edit : 26-Mar-2014 10:03 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
63 Ethyl Benzene	0.28656	0.38933	0.42029	0.31485	0.31515	0.30713	AVRG		0.33888		15.64796
64 m,p-Xylene	0.40285	0.47872	0.51182	0.39933	0.40424	0.39245	AVRG		0.43157		11.72614
65 Bromoform	0.46815	0.61150	0.73398	0.53032	0.52100	0.52180	AVRG		0.56446		16.82563
66 Styrene	0.59696	0.76425	0.84120	0.57447	0.56010	0.54722	AVRG		0.65070		19.64965
67 o-Xylene	0.37026	0.44366	0.52394	0.39565	0.38544	0.38825	AVRG		0.41787		13.79090
68 1,1,2,2-Tetrachloroethane	0.46058	0.59111	0.73140	0.56551	0.56769	0.54158	AVRG		0.57631		15.33720
69 Isopropylbenzene	0.27096	0.34478	0.40818	0.30931	0.30793	0.30474	AVRG		0.32432		14.57739
70 N-Propylbenzene	0.24747	0.33997	0.34307	0.25189	0.24927	0.26066	AVRG		0.28205		16.41283
71 4-Ethyltoluene	0.32864	0.42452	0.44317	0.32747	0.32937	0.31423	AVRG		0.36123		15.73090
72 1,3,5-Trimethylbenzene	0.37757	0.44659	0.49337	0.37033	0.37663	0.40098	AVRG		0.41091		11.97360
73 Tert-Butyl Benzene	0.41525	0.52554	0.56680	0.39197	0.38870	0.43291	AVRG		0.45353		16.47063
74 1,2,4-Trimethylbenzene	0.35090	0.43074	0.51058	0.36546	0.36389	0.41067	AVRG		0.40537		14.81015
75 1,3-Dichlorobenzene	0.48732	0.65826	0.81409	0.62840	0.59842	0.61360	AVRG		0.63335		16.74669
76 Sec-Butylbenzene	0.26219	0.36539	0.37360	0.29540	0.27816	0.29559	AVRG		0.31172		14.92064
78 Benzyl Chloride	0.51055	0.59716	0.75166	0.49365	0.47218	0.47268	AVRG		0.54965		19.87289
79 1,4-Dichlorobenzene	0.49275	0.66697	0.79677	0.63689	0.63604	0.62171	AVRG		0.64186		15.15756
80 p-Isopropyltoluene	0.36347	0.42587	0.50109	0.42414	0.40109	0.43425	AVRG		0.42499		10.64559
81 1,2,3-Trimethylbenzene	0.43410	0.48996	0.54461	0.49247	0.45797	0.48767	AVRG		0.48446		7.70157
82 1,2-Dichlorobenzene	0.68712	0.75674	0.91346	0.76396	0.78297	0.69699	AVRG		0.76687		10.61037
83 N-Butylbenzene	0.42302	0.42004	0.48873	0.42047	0.41979	0.43384	AVRG		0.43432		6.25964
84 1,2,4-Trichlorobenzene	0.81762	1.11564	1.36900	0.97118	0.98432	0.98775	AVRG		1.04092		17.92031
85 Naphthalene	0.66467	0.87928	0.88267	0.62286	0.61608	0.62235	AVRG		0.71465		18.18957

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 25-MAR-2014 11:09
 End Cal Date : 25-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032514.b\T015_084-14.m
 Last Edit : 26-Mar-2014 10:03 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
86 Hexachlorobutadiene	0.61276	0.92395	1.07531	0.96217	1.04118	1.08372	AVRG		0.94985		18.62339
18 Hexane-d14 (S)	2.85298	2.38662	2.93971	2.53794	2.67521	3.06046	AVRG		2.74249		9.27912
54 Toluene-d8 (S)	1.21827	1.20451	1.17372	1.17289	1.17151	1.21618	AVRG		1.19285		1.69178
77 1,4-dichlorobenzene-d4 (S)	2.14505	2.15947	2.03595	2.06983	2.08538	1.87752	AVRG		2.06553		4.95404

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 25-MAR-2014 11:09
End Cal Date : 25-MAR-2014 13:55
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\032514.b\TO15_084-14.m
Last Edit : 26-Mar-2014 10:03 drandall

Average %RSD Results.
Calculated Average %RSD = 14.53365
Maximum Average %RSD = 30.00000
* Passed Average %RSD Test.

Curve	Formula	Units
Averaged	Ant = ml*Rsp	Amount
Linear	Ant = b + ml*Rsp	Amount

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB

Lab Name: Pace Analytical

Contract:

Lab Code: PASI

Case No.:

SAS No.:

SDG No.: 10260309

Lab File ID: 08501BFB.D

BFB Injection Date: 03/26/2014

Instrument ID: 10AIRD

BFB Injection Time: 10:23

GC Column: J&W DB-5 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.16
75	30.00 - 66.00% of mass 95	56.03
96	5.00 - 9.00% of mass 95	6.64
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	90.39
175	4.00 - 9.00% of mass 174	6.80 (7.52)
176	93.00 - 101.00% of mass 174	89.73 (99.27)
177	5.00 - 9.00% of mass 176	5.57 (6.21)

1 - Value is %mass 174 2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS (LCS)	LCS	08502LCS.D	03/26/2014	10:51
2	CCV	CCV	08502.D	03/26/2014	10:51
3	BLANK	BLANK	08504_BLANK.	03/26/2014	11:58
4	A-Influent	10260309001	08508.D	03/26/2014	13:57

Data File: \\192.168.10.12\chem\10airD.i\032614.b\08502.d
Report Date: 26-Mar-2014 11:15

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 26-MAR-2014 10:51
Lab File ID: 08502.d Init. Cal. Date(s): 25-MAR-2014 25-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:09 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\032614.b\TO15_084-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Chlorodifluoromethane	2.46286	2.22802	2.22802	0.010	-9.53520	30.00000	Averaged
2 Propylene	7.10865	6.66488	6.66488	0.010	-6.24274	30.00000	Averaged
3 Dichlorodifluoromethane	0.97982	0.83409	0.83409	0.010	-14.87327	30.00000	Averaged
4 Dichlorotetrafluoroethane	1.13669	0.99751	0.99751	0.010	-12.24469	30.00000	Averaged
5 Chloromethane	3.73081	3.29787	3.29787	0.010	-11.60437	30.00000	Averaged
6 Vinyl chloride	3.97247	3.48809	3.48809	0.010	-12.19340	30.00000	Averaged
7 1,3-Butadiene	6.56188	5.66457	5.66457	0.010	-13.67457	30.00000	Averaged
8 Bromomethane	3.16884	2.86145	2.86145	0.010	-9.70020	30.00000	Averaged
9 Chloroethane	8.27448	7.81105	7.81105	0.010	-5.60069	30.00000	Averaged
10 Ethanol	7.88511	7.58170	7.58170	0.100	-3.84782	30.00000	Averaged
11 Vinyl Bromide	3.29118	2.90428	2.90428	0.010	-1.75555	30.00000	Averaged
12 Isopentane	4.31266	4.01336	4.01336	0.010	-6.94002	30.00000	Averaged
13 Trichlorofluoromethane	0.95449	0.82250	0.82250	0.010	-13.82796	30.00000	Averaged
14 Acrolein	12.56570	11.80915	11.80915	0.010	-6.02077	30.00000	Averaged
15 Acetone	1.95184	2.09346	2.09346	0.010	7.25542	30.00000	Averaged
16 Isopropyl Alcohol	2.79384	2.49882	2.49882	0.010	-10.55981	30.00000	Averaged
17 1,1-Dichloroethene	2.37090	1.96832	1.96832	0.010	-16.97994	30.00000	Averaged
18 Tert Butyl Alcohol	1.69237	1.50207	1.50207	0.100	-11.24439	30.00000	Averaged
19 Acrylonitrile	6.50835	5.25870	5.25870	0.010	-19.20072	30.00000	Averaged
20 Freon 113	1.75874	1.44786	1.44786	0.010	-17.67612	30.00000	Averaged
21 Methylene chloride	10.00000	11.33686	3.08907	0.010	13.36858	30.00000	Linear
22 Allyl Chloride	7.84806	6.91038	6.91038	0.010	-11.94793	30.00000	Averaged
23 Carbon Disulfide	1.24629	1.07738	1.07738	0.010	-13.55338	30.00000	Averaged
24 trans-1,2-dichloroethene	3.61361	3.06665	3.06665	0.010	-15.13632	30.00000	Averaged
25 Methyl Tert Butyl Ether	1.29024	1.08104	1.08104	0.010	-16.21440	30.00000	Averaged
26 Vinyl Acetate	1.71620	1.50605	1.50605	0.010	-12.24559	30.00000	Averaged
27 1,1-Dichloroethane	2.04886	1.82110	1.82110	0.010	-11.11675	30.00000	Averaged
28 Hexane-d14(S)	2.74249	2.76128	2.76128	0.200	0.68529	30.00000	Averaged
29 Methyl Ethyl Ketone	8.66663	9.00079	9.00079	0.010	3.85572	30.00000	Averaged
30 n-Hexane	3.31482	3.38052	3.38052	0.010	1.98178	30.00000	Averaged
31 Di-isopropyl Ether	1.55501	1.56873	1.56873	0.010	0.88220	30.00000	Averaged
32 cis-1,2-Dichloroethene	3.50568	2.92434	2.92434	0.010	-16.58276	30.00000	Averaged
33 Ethyl Acetate	1.84618	1.63398	1.63398	0.010	-11.49418	30.00000	Averaged
34 Chloroform	1.28969	1.11854	1.11854	0.010	-13.27122	30.00000	Averaged
35 Ethyl Tert-Butyl Ether	1.27532	1.10788	1.10788	0.010	-13.12905	30.00000	Averaged
36 Tetrahydrofuran	4.62388	4.24400	4.24400	0.010	-8.21578	30.00000	Averaged
37 1,1,1-Trichloroethane	1.21014	1.06202	1.06202	0.010	-12.23998	30.00000	Averaged
38 1,2-Dichloroethane	1.79553	1.57871	1.57871	0.010	-12.07557	30.00000	Averaged
39 Benzene	1.10990	1.00665	1.00665	0.300	-9.30262	30.00000	Averaged
40 Carbon tetrachloride	1.20382	1.02024	1.02024	0.010	-15.25043	30.00000	Averaged
41 Cyclohexane	3.01247	2.63904	2.63904	0.010	-12.39606	30.00000	Averaged
42 Tert Amyl Methyl Ether	1.03708	1.02032	1.02032	0.010	-1.61615	30.00000	Averaged

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 26-MAR-2014 10:51
Lab File ID: 08502.d Init. Cal. Date(s): 25-MAR-2014 25-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:09 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\032614.b\TO15_084-14.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
144 2,2,4-Trimethylpentane	0.92769	0.85796	0.85796	0.010	-7.51656	30.00000	Averaged
145 Heptane	2.76513	2.50247	2.50247	0.010	-9.49928	30.00000	Averaged
146 1,2-Dichloropropane	3.36766	3.00794	3.00794	0.010	-10.68145	30.00000	Averaged
147 Trichloroethene	2.68354	2.39393	2.39393	0.010	-10.79207	30.00000	Averaged
148 Bromodichloromethane	1.14054	0.98610	0.98610	0.010	-13.54093	30.00000	Averaged
149 1,4-Dioxane	5.68396	4.89505	4.89505	0.010	-13.87951	30.00000	Averaged
150 Methylcyclohexane	5.28396	4.85408	4.85408	0.010	-8.13552	30.00000	Averaged
151 Methyl Isobutyl Ketone	1.89154	1.63434	1.63434	0.010	-13.59762	30.00000	Averaged
152 cis-1,3-Dichloropropene	1.89303	1.64852	1.64852	0.010	-12.91673	30.00000	Averaged
153 trans-1,3-Dichloropropene	1.81505	1.46650	1.46650	0.010	-19.20350	30.00000	Averaged
154 Toluene-d8 (S)	1.19285	1.21375	1.21375	0.200	1.75266	30.00000	Averaged
155 Toluene	0.86726	0.77567	0.77567	0.300	-10.56134	30.00000	Averaged
156 1,1,2-Trichloroethane	2.42220	2.14640	2.14640	0.010	-11.38625	30.00000	Averaged
157 Methyl Butyl Ketone	0.94461	0.78001	0.78001	0.010	-17.42464	30.00000	Averaged
158 Dibromochloromethane	0.65001	0.53983	0.53983	0.010	-16.95018	30.00000	Averaged
159 1,2-Dibromoethane	0.71615	0.63989	0.63989	0.010	-10.64869	30.00000	Averaged
160 Tetrachloroethene	0.79018	0.68912	0.68912	0.010	-12.78956	30.00000	Averaged
162 Chlorobenzene	0.58174	0.51315	0.51315	0.010	-11.79087	30.00000	Averaged
163 Ethyl Benzene	0.33888	0.29148	0.29148	0.300	-13.98761	30.00000	Averaged
164 m,p-Xylene	0.43157	0.36493	0.36493	0.300	-15.44060	30.00000	Averaged
165 Bromoform	0.56446	0.47248	0.47248	0.010	-16.29502	30.00000	Averaged
166 Styrene	0.65070	0.51613	0.51613	0.010	-20.68065	30.00000	Averaged
167 o-Xylene	0.41787	0.34529	0.34529	0.300	-17.36738	30.00000	Averaged
168 1,1,2,2-Tetrachloroethane	0.57631	0.51548	0.51548	0.010	-10.55590	30.00000	Averaged
169 Isopropylbenzene	0.32432	0.27907	0.27907	0.010	-13.94972	30.00000	Averaged
170 N-Propylbenzene	0.28205	0.22617	0.22617	0.010	-19.81223	30.00000	Averaged
171 4-Ethyltoluene	0.36123	0.29317	0.29317	0.010	-18.84201	30.00000	Averaged
172 1,3,5-Trimethylbenzene	0.41091	0.34695	0.34695	0.010	-15.56586	30.00000	Averaged
173 Tert-Butyl Benzene	0.45353	0.35236	0.35236	0.010	-22.30721	30.00000	Averaged
174 1,2,4-Trimethylbenzene	0.40537	0.32763	0.32763	0.010	-19.17804	30.00000	Averaged
175 1,3-Dichlorobenzene	0.63335	0.53266	0.53266	0.010	-15.89792	30.00000	Averaged
176 Sec- Butylbenzene	0.31172	0.24412	0.24412	0.010	-21.68761	30.00000	Averaged
177 1,4-dichlorobenzene-d4 (S)	2.06553	2.04114	2.04114	0.200	-1.18117	30.00000	Averaged
178 Benzyl Chloride	0.54965	0.40076	0.40076	0.010	-27.08752	30.00000	Averaged
179 1,4-Dichlorobenzene	0.64186	0.53685	0.53685	0.010	-16.35937	30.00000	Averaged
180 p-Isopropyltoluene	0.42499	0.31771	0.31771	0.010	-25.24098	30.00000	Averaged
181 1,2,3-Trimethylbenzene	0.48446	0.36148	0.36148	0.010	-25.38454	30.00000	Averaged
182 1,2-Dichlorobenzene	0.76687	0.59600	0.59600	0.010	-22.28222	30.00000	Averaged
183 N-Butylbenzene	0.43432	0.30804	0.30804	0.010	-29.07579	30.00000	Averaged
184 1,2,4-Trichlorobenzene	1.04092	0.93769	0.93769	0.010	-9.91703	30.00000	Averaged
185 Naphthalene	0.71465	0.59755	0.59755	0.010	-16.38652	30.00000	Averaged
186 Hexachlorobutadiene	0.94985	0.93311	0.93311	0.010	-1.76258	30.00000	Averaged

Data File: \\192.168.10.12\chem\10airD.i\032614.b\08502.d
Report Date: 26-Mar-2014 11:15

Pace Analytical Services, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 26-MAR-2014 10:51
Lab File ID: 08502.d Init. Cal. Date(s): 25-MAR-2014 25-MAR-2014
Analysis Type: AIR Init. Cal. Times: 11:09 13:55
Lab Sample ID: CCV Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\032614.b\TO15_084-14.m

Average %D / Drift Results.

Calculated Average %D/Drift = 12.81967

Maximum Average %D/Drift = 30.00000

* Passed Average %D/Drift Test.

QUALITY CONTROL DATA

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

QC Batch: AIR/19758 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10260309001, 10260309003, 10260309004, 10260309005, 10260309006

METHOD BLANK: 1644036 Matrix: Air
Associated Lab Samples: 10260309001, 10260309003, 10260309004, 10260309005, 10260309006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/24/14 15:58	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/24/14 15:58	
1,1-Dichloroethane	ug/m3	ND	0.82	03/24/14 15:58	
1,1-Dichloroethene	ug/m3	ND	0.81	03/24/14 15:58	
1,2,3-Trimethylbenzene	ug/m3	ND	0.20	03/24/14 15:58	
1,2,4-Trichlorobenzene	ug/m3	ND	7.5	03/24/14 15:58	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/24/14 15:58	
1,2-Dichloroethane	ug/m3	ND	0.41	03/24/14 15:58	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/24/14 15:58	
Benzene	ug/m3	ND	0.32	03/24/14 15:58	
Carbon tetrachloride	ug/m3	ND	0.64	03/24/14 15:58	
Chlorodifluoromethane	ug/m3	ND	0.20	03/24/14 15:58	
Chloroform	ug/m3	ND	0.99	03/24/14 15:58	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/24/14 15:58	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/24/14 15:58	
Ethylbenzene	ug/m3	ND	0.88	03/24/14 15:58	
m&p-Xylene	ug/m3	ND	1.8	03/24/14 15:58	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/24/14 15:58	
Methylene Chloride	ug/m3	ND	3.5	03/24/14 15:58	
Naphthalene	ug/m3	ND	5.3	03/24/14 15:58	
o-Xylene	ug/m3	ND	0.88	03/24/14 15:58	
Tetrachloroethene	ug/m3	ND	0.69	03/24/14 15:58	
Toluene	ug/m3	ND	0.77	03/24/14 15:58	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/24/14 15:58	
Trichloroethene	ug/m3	ND	0.55	03/24/14 15:58	
Vinyl chloride	ug/m3	ND	0.26	03/24/14 15:58	

LABORATORY CONTROL SAMPLE: 1644037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	52.9	95	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	50.6	91	72-130	
1,1-Dichloroethane	ug/m3	41.2	55.3	134	68-128 L1	
1,1-Dichloroethene	ug/m3	40.3	54.0	134	68-130 L1	
1,2,3-Trimethylbenzene	ug/m3	50	53.3	107	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	89.4	118	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	54.2	108	71-140	
1,2-Dichloroethane	ug/m3	41.2	39.5	96	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	55.2	110	73-136	
Benzene	ug/m3	32.5	30.6	94	69-134	
Carbon tetrachloride	ug/m3	64	65.8	103	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 03/26/2014 04:44 PM

Page 12 of 19

10260309

Page 12 of 916

QUALITY CONTROL DATA

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

LABORATORY CONTROL SAMPLE: 1644037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	44.9	125	60-140	
Chloroform	ug/m3	49.7	47.0	95	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	40.6	101	71-135	
Dichlorodifluoromethane	ug/m3	50.3	63.4	126	69-125	L1
Ethylbenzene	ug/m3	44.2	46.1	104	73-139	
m&p-Xylene	ug/m3	44.2	47.4	107	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	46.6	127	72-132	
Methylene Chloride	ug/m3	35.3	43.0	122	64-134	
Naphthalene	ug/m3	53.3	63.9	120	61-150	
o-Xylene	ug/m3	44.2	44.9	102	71-138	
Tetrachloroethene	ug/m3	69	66.6	97	69-136	
Toluene	ug/m3	38.3	35.4	92	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	51.1	127	70-131	
Trichloroethene	ug/m3	54.6	54.2	99	70-135	
Vinyl chloride	ug/m3	26	34.1	131	69-132	

SAMPLE DUPLICATE: 1644262

Parameter	Units	10260152009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND			25
1,1,2-Trichloroethane	ug/m3	ND	ND			25
1,1-Dichloroethane	ug/m3	ND	ND			25
1,1-Dichloroethene	ug/m3	ND	ND			25
1,2,3-Trimethylbenzene	ug/m3	ND	ND			25
1,2,4-Trichlorobenzene	ug/m3	ND	ND			25
1,2,4-Trimethylbenzene	ug/m3	ND	ND			25
1,2-Dichloroethane	ug/m3	ND	ND			25
1,3,5-Trimethylbenzene	ug/m3	ND	ND			25
Benzene	ug/m3	0.71	0.74	4		25
Carbon tetrachloride	ug/m3	ND	ND			25
Chlorodifluoromethane	ug/m3	2.5	2.6	2		25
Chloroform	ug/m3	ND	ND			25
cis-1,2-Dichloroethene	ug/m3	ND	ND			25
Dichlorodifluoromethane	ug/m3	2.1	2.2	3		25 L1
Ethylbenzene	ug/m3	ND	ND			25
m&p-Xylene	ug/m3	ND	ND			25
Methyl-tert-butyl ether	ug/m3	ND	ND			25
Methylene Chloride	ug/m3	7.9	4.2J			25
Naphthalene	ug/m3	ND	3.1J			25
o-Xylene	ug/m3	ND	ND			25
Tetrachloroethene	ug/m3	ND	ND			25
Toluene	ug/m3	ND	.89J			25
trans-1,2-Dichloroethene	ug/m3	ND	ND			25
Trichloroethene	ug/m3	ND	ND			25
Vinyl chloride	ug/m3	ND	ND			25

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

QC Batch:	AIR/19764	Analysis Method:	TO-15
QC Batch Method:	TO-15	Analysis Description:	TO15 MSV AIR Low Level
Associated Lab Samples:	10260309002		

METHOD BLANK: 1644401 Matrix: Air
Associated Lab Samples: 10260309002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/25/14 16:24	
1,1,2-Trichloroethane	ug/m3	ND	0.55	03/25/14 16:24	
1,1-Dichloroethane	ug/m3	ND	0.82	03/25/14 16:24	
1,1-Dichloroethene	ug/m3	ND	0.81	03/25/14 16:24	
1,2,3-Trimethylbenzene	ug/m3	ND	1.0	03/25/14 16:24	
1,2,4-Trichlorobenzene	ug/m3	ND	1.5	03/25/14 16:24	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/25/14 16:24	
1,2-Dichloroethane	ug/m3	ND	0.41	03/25/14 16:24	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/25/14 16:24	
Benzene	ug/m3	ND	0.32	03/25/14 16:24	
Carbon tetrachloride	ug/m3	ND	0.64	03/25/14 16:24	
Chlorodifluoromethane	ug/m3	ND	0.72	03/25/14 16:24	
Chloroform	ug/m3	ND	0.99	03/25/14 16:24	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/25/14 16:24	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/25/14 16:24	
Ethylbenzene	ug/m3	ND	0.88	03/25/14 16:24	
m&p-Xylene	ug/m3	ND	1.8	03/25/14 16:24	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/25/14 16:24	
Methylene Chloride	ug/m3	ND	0.71	03/25/14 16:24	
Naphthalene	ug/m3	ND	1.1	03/25/14 16:24	
o-Xylene	ug/m3	ND	0.88	03/25/14 16:24	
Tetrachloroethene	ug/m3	ND	0.69	03/25/14 16:24	
Toluene	ug/m3	ND	0.77	03/25/14 16:24	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/25/14 16:24	
Trichloroethene	ug/m3	ND	0.55	03/25/14 16:24	
Vinyl chloride	ug/m3	ND	0.26	03/25/14 16:24	

LABORATORY CONTROL SAMPLE: 1644402

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	60.2	109	72-128	
1,1,2-Trichloroethane	ug/m3	55.5	61.4	111	72-130	
1,1-Dichloroethane	ug/m3	41.2	43.0	105	68-128	
1,1-Dichloroethene	ug/m3	40.3	45.0	111	68-130	
1,2,3-Trimethylbenzene	ug/m3	50	46.7	93	60-140	
1,2,4-Trichlorobenzene	ug/m3	75.5	69.7	92	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	54.1	108	71-140	
1,2-Dichloroethane	ug/m3	41.2	44.5	108	71-132	
1,3,5-Trimethylbenzene	ug/m3	50	55.1	110	73-136	
Benzene	ug/m3	32.5	35.5	109	69-134	
Carbon tetrachloride	ug/m3	64	69.9	109	66-134	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

LABORATORY CONTROL SAMPLE: 1644402

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorodifluoromethane	ug/m3	36	38.9	108	60-140	
Chloroform	ug/m3	49.7	54.7	110	72-127	
cis-1,2-Dichloroethene	ug/m3	40.3	47.3	117	71-135	
Dichlorodifluoromethane	ug/m3	50.3	55.6	111	69-125	
Ethylbenzene	ug/m3	44.2	46.8	106	73-139	
m&p-Xylene	ug/m3	44.2	47.4	107	73-139	
Methyl-tert-butyl ether	ug/m3	36.7	36.5	99	72-132	
Methylene Chloride	ug/m3	35.3	35.6	101	64-134	
Naphthalene	ug/m3	53.3	55.0	103	61-150	
o-Xylene	ug/m3	44.2	48.1	109	71-138	
Tetrachloroethene	ug/m3	69	70.8	103	69-136	
Toluene	ug/m3	38.3	41.8	109	67-133	
trans-1,2-Dichloroethene	ug/m3	40.3	39.3	98	70-131	
Trichloroethene	ug/m3	54.6	58.7	107	70-135	
Vinyl chloride	ug/m3	26	28.8	111	69-132	

SAMPLE DUPLICATE: 1645107

Parameter	Units	92193694002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,3-Trimethylbenzene	ug/m3	ND	ND		25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	2.4	2.5	1	25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	.74J		25	
Benzene	ug/m3	0.63	0.63	.6	25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorodifluoromethane	ug/m3	6.8	5.7	17	25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	1.8	1.6	13	25	
Ethylbenzene	ug/m3	ND	.91J		25	
m&p-Xylene	ug/m3	3.4	3.3	1	25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	2.7	2.5	9	25	
Naphthalene	ug/m3	ND	.94J		25	
o-Xylene	ug/m3	1.6	ND		25	
Tetrachloroethene	ug/m3	1.2	1.2	1	25	
Toluene	ug/m3	5.1	5.5	8	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Data File: \\192.168.10.12\chem\10airD.i\032414.b\08331.d
Report Date: 25-Mar-2014 09:12

A-Effluent

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 08331.d
Lab Smp Id: 10260309003
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
Misc Info: 19758

Calibration Date: 24-MAR-2014
Calibration Time: 12:16

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	733615	440169	1027061	828315	12.91
61 Chlorobenzene - d	376768	226061	527475	422184	12.05

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	0.05
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\032414.b\08335.d
Report Date: 25-Mar-2014 08:33

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

A-Influent
1.68X

Instrument ID: 10airD.i

Lab File ID: 08335.d

Lab Smp Id: 10260309001

Analysis Type: VOA

Quant Type: ISTD

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m

Misc Info: 19758

Calibration Date: 24-MAR-2014

Calibration Time: 12:16

Level: LOW

Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	733615	440169	1027061	938958	27.99
61 Chlorobenzene - d	376768	226061	527475	463652	23.06

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.09	0.00

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

RT UPPER LIMIT = + 0.33 minutes of internal standard RT.

RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\032614.b\08508.d
Report Date: 26-Mar-2014 14:18

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

A-Influent
105.5X

Instrument ID: 10airD.i
Lab File ID: 08508.d
Lab Smp Id: 10260309001
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\032614.b\TO15_084-14.m
Misc Info: 19758

Calibration Date: 26-MAR-2014
Calibration Time: 10:51

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	795942	477565	1114319	532947	-33.04
61 Chlorobenzene - d	392996	235798	550194	280771	-28.56

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	-0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\032514.b\08433.d
 Report Date: 26-Mar-2014 08:58

A-MID GAC

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i
 Lab File ID: 08433.d
 Lab Smp Id: 10260309002
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: DR1
 Method File: \\192.168.10.12\chem\10airD.i\032514.b\TO15_084-14.m
 Misc Info: 19764

Calibration Date: 25-MAR-2014
 Calibration Time: 11:09

Level: LOW
 Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	795942	477565	1114319	669670	-15.86
61 Chlorobenzene - d	392996	235798	550194	339357	-13.65

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	-0.05
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\032414.b\08334.d
 Report Date: 25-Mar-2014 09:14

Pace Analytical Services, Inc.

C- Effluent

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: 10airD.i
 Lab File ID: 08334.d
 Lab Smp Id: 10260309006
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: DR1
 Method File: \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
 Misc Info: 19758

Calibration Date: 24-MAR-2014
 Calibration Time: 12:16

Level: LOW
 Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
 If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	733615	440169	1027061	900357	22.73
61 Chlorobenzene - d	376768	226061	527475	459301	21.91

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	0.05
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
 AREA LOWER LIMIT = - 40% of internal standard area.
 RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\032414.b\08332.d
Report Date: 25-Mar-2014 09:12

C-Influent

Pace Analytical Services, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 08332.d
Lab Smp Id: 10260309004
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
Misc Info: 19758

Calibration Date: 24-MAR-2014
Calibration Time: 12:16

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	733615	440169	1027061	903560	23.17
61 Chlorobenzene - d	376768	226061	527475	447011	18.64

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	0.10
61 Chlorobenzene - d	10.09	9.76	10.42	10.09	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: \\192.168.10.12\chem\10airD.i\032414.b\08333.d
Report Date: 25-Mar-2014 09:13

Pace Analytical Services, Inc.

C-Mid GAC

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 10airD.i
Lab File ID: 08333.d
Lab Smp Id: 10260309005
Analysis Type: VOA
Quant Type: ISTD
Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\032414.b\TO15_083-14.m
Misc Info: 19758

Calibration Date: 24-MAR-2014
Calibration Time: 12:16

Level: LOW
Sample Type: AIR

Test Mode:

Use Initial Calibration Level 4.
If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	733615	440169	1027061	885489	20.70
61 Chlorobenzene - d	376768	226061	527475	449811	19.39

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
43 1,4-Difluorobenze	6.41	6.08	6.74	6.41	0.00
61 Chlorobenzene - d	10.09	9.76	10.42	10.08	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

ANALYTICAL RESULTS

Sample Calculation

Project: 117-0507599.20 SSD O&M
Pace Project No.: 10260309

Sample: A-Influent		Lab ID: 10260309001	Collected: 03/12/14 12:56	Received: 03/14/14 08:54	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Benzene	ND	ug/m3	0.55	1.68		03/25/14 02:38	71-43-2	
Carbon tetrachloride	ND	ug/m3	1.1	1.68		03/25/14 02:38	56-23-5	
Chlorodifluoromethane	2.4	ug/m3	0.34	1.68		03/25/14 02:38	75-45-6	
Chloroform	ND	ug/m3	1.7	1.68		03/25/14 02:38	67-66-3	
Dichlorodifluoromethane	2.0	ug/m3	1.7	1.68		03/25/14 02:38	75-71-8	L1
1,1-Dichloroethane	29.3	ug/m3	1.4	1.68		03/25/14 02:38	75-34-3	L1
1,2-Dichloroethane	36.4	ug/m3	0.69	1.68		03/25/14 02:38	107-06-2	
1,1-Dichloroethene	130	ug/m3	1.4	1.68		03/25/14 02:38	75-35-4	L1
cis-1,2-Dichloroethene	176	ug/m3	1.4	1.68		03/25/14 02:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.68		03/25/14 02:38	156-60-5	
Ethylbenzene	ND	ug/m3	1.5	1.68		03/25/14 02:38	100-41-4	
Methylene Chloride	ND	ug/m3	5.9	1.68		03/25/14 02:38	75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	1.2	1.68		03/25/14 02:38	1634-04-4	
Naphthalene	ND	ug/m3	8.9	1.68		03/25/14 02:38	91-20-3	
Tetrachloroethene	3.6	ug/m3	1.2	1.68		03/25/14 02:38	127-18-4	
Toluene	9.1	ug/m3	1.3	1.68		03/25/14 02:38	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	12.7	1.68		03/25/14 02:38	120-82-1	
1,1,1-Trichloroethane	1310	ug/m3	117	105.5		03/26/14 13:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.92	1.68		03/25/14 02:38	79-00-5	
Trichloroethene	2100	ug/m3	58.0	105.5		03/26/14 13:57	79-01-6	
1,2,3-Trimethylbenzene	ND	ug/m3	0.34	1.68		03/25/14 02:38	526-73-8	
1,2,4-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/25/14 02:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.7	1.68		03/25/14 02:38	108-67-8	
Vinyl chloride	ND	ug/m3	0.44	1.68		03/25/14 02:38	75-01-4	
m&p-Xylene	3.0	ug/m3	3.0	1.68		03/25/14 02:38	179601-23-1	
o-Xylene	ND	ug/m3	1.5	1.68		03/25/14 02:38	95-47-6	

$$\frac{72214}{532947} * 10 \text{ ppbv} * 105.5 * 2.68354 = 383.6 \text{ ppbv}$$

$$383.6 \text{ ppbv} * \frac{131.4 \text{ g/mole}}{24.454 \text{ g/mole}} = 2061.6 \text{ ug/m}^3$$

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Sample Calculation

Data File: \\192.168.10.12\chem\10airD.i\032614.b\08508.d
Report Date: 26-Mar-2014 14:18

A-Influent

Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10airD.i\032614.b\08508.d
Lab Smp Id: 10260309001
Inj Date : 26-MAR-2014 13:57
Operator : DR1
Smp Info :
Misc Info : 19758
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10airD.i\032614.b\TO15 084-14.m
Meth Date : 26-Mar-2014 11:13 drandall Quant Type: ISTD
Cal Date : 25-MAR-2014 13:55 Cal File: 08409.d
Als bottle: 6
Dil Factor: 105.50000
Integrator: HP RTE
Target Version: 4.14
Processing Host: 10MNCREINDL

Inst ID: 10airD.i

Compound Sublist: all.sub

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	105.500	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv)	FINAL (ppbv)
1 Chlorodifluoromethane	51	Compound Not Detected.					
2 Propylene	41	Compound Not Detected.					
3 Dichlorodifluoromethane	85	Compound Not Detected.					
4 Dichlorotetrafluoroethane	85	Compound Not Detected.					
5 Chloromethane	50	Compound Not Detected.					
6 Vinyl chloride	62	Compound Not Detected.					
7 1,3-Butadiene	54	Compound Not Detected.					
8 Bromomethane	94	Compound Not Detected.					
9 Chloroethane	64	Compound Not Detected.					
10 Ethanol	31	Compound Not Detected.					
11 Vinyl Bromide	106	Compound Not Detected.					
12 Isopentane	43	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
14 Acrolein	56	Compound Not Detected.					
15 Acetone	43	3.954	3.957 (0.617)		51742	1.89498	200
16 Isopropyl Alcohol	45	4.036	4.010 (0.630)		7423	0.38913	41.0(QM)
17 1,1-Dichloroethene	61	4.213	4.210 (0.658)		12549	0.55826	58.9
18 Tert Butyl Alcohol	59	Compound Not Detected.					
19 Acrylonitrile	53	Compound Not Detected.					
20 Freon 113	101	Compound Not Detected.					
21 Methylene chloride	49	Compound Not Detected.					
22 Allyl Chloride	76	Compound Not Detected.					
23 Carbon Disulfide	76	4.475	4.472 (0.699)		15108	0.35330	37.3(M)
24 trans-1,2-dichloroethene	96	Compound Not Detected.					

Data File: \\192.168.10.12\chem\10airD.i\032614.b\08508.d
Report Date: 26-Mar-2014 14:18

Compounds	QUANT SIG MASS	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv)	FINAL (ppbv)
25 Methyl Tert Butyl Ether	73	Compound Not Detected.					
26 Vinyl Acetate	43	Compound Not Detected.					
27 1,1-Dichloroethane	63	4.846	4.843 (0.775)		2968	0.11410	12.0 (MH)
\$ 28 Hexane-d14 (S)	66	4.961	4.961 (0.774)		208346	10.7213	10.7
29 Methyl Ethyl Ketone	72	5.066	5.053 (0.791)		1711	0.27824	29.4 (Q)
30 n-Hexane	57	Compound Not Detected.					
31 Di-isopropyl Ether	45	Compound Not Detected.					
32 cis-1,2-Dichloroethene	96	5.256	5.256 (0.820)		9712	0.63885	67.4 (Q)
33 Ethyl Acetate	43	Compound Not Detected.					
34 Chloroform	83	Compound Not Detected.					
35 Ethyl Tert-Butyl Ether	59	Compound Not Detected.					
36 Tetrahydrofuran	42	Compound Not Detected.					
37 1,1,1-Trichloroethane	97	5.899	5.899 (0.921)		98701	2.24116	236
38 1,2-Dichloroethane	62	Compound Not Detected.					
39 Benzene	78	Compound Not Detected.					
40 Carbon tetrachloride	117	Compound Not Detected.					
41 Cyclohexane	56	Compound Not Detected.					
42 Tert Amyl Methyl Ether	73	Compound Not Detected.					
* 43 1,4-Difluorobenzene	114	6.407	6.407 (1.000)		532947	10.0000	
44 2,2,4-Trimethylpentane	57	Compound Not Detected.					
45 Heptane	43	Compound Not Detected.					
46 1,2-Dichloropropane	63	Compound Not Detected.					
47 Trichloroethene	130	6.859	6.859 (1.071)		72214	3.63618	384
48 Bromodichloromethane	83	Compound Not Detected.					
49 1,4-Dioxane	88	Compound Not Detected.					
50 Methylcyclohexane	98	Compound Not Detected.					
51 Methyl Isobutyl Ketone	43	Compound Not Detected.					
52 cis-1,3-Dichloropropene	75	Compound Not Detected.					
53 trans-1,3-Dichloropropene	75	Compound Not Detected.					
\$ 54 Toluene-d8 (S)	98	8.204	8.207 (1.280)		475456	10.6417	10.6
55 Toluene	91	Compound Not Detected.					
56 1,1,2-Trichloroethane	97	Compound Not Detected.					
57 Methyl Butyl Ketone	43	Compound Not Detected.					
58 Dibromochloromethane	129	Compound Not Detected.					
59 1,2-Dibromoethane	107	Compound Not Detected.					
60 Tetrachloroethene	166	Compound Not Detected.					
* 61 Chlorobenzene - d5	117	10.083	10.083 (1.000)		280771	10.0000	
62 Chlorobenzene	112	Compound Not Detected.					
63 Ethyl Benzene	91	Compound Not Detected.					
64 m&p-Xylene	91	Compound Not Detected.					
65 Bromoform	173	Compound Not Detected.					
66 Styrene	104	Compound Not Detected.					
67 o-Xylene	91	Compound Not Detected.					
68 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
69 Isopropylbenzene	105	Compound Not Detected.					
70 N-Propylbenzene	91	Compound Not Detected.					
71 4-Ethyltoluene	105	Compound Not Detected.					
72 1,3,5-Trimethylbenzene	105	Compound Not Detected.					
73 Tert-Butyl Benzene	119	Compound Not Detected.					
74 1,2,4-Trimethylbenzene	105	Compound Not Detected.					
75 1,3-Dichlorobenzene	146	Compound Not Detected.					
76 Sec- Butylbenzene	105	Compound Not Detected.					
\$ 77 1,4-dichlorobenzene-d4 (S)	150	13.874	13.877 (1.376)		116423	8.56483	8.56
78 Benzyl Chloride	91	Compound Not Detected.					

Sample Calculation

Pace Analytical Services, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 25-MAR-2014 11:09
 End Cal Date : 25-MAR-2014 13:55
 Quant Method : ISTD
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\192.168.10.12\chem\10airD.i\032514.b\TO15_084-14.m
 Last Edit : 26-Mar-2014 10:03 drandall

Compound	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Curve	Coefficients			%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
38 1,2-Dichloroethane	1.70061	1.76079	2.04851	1.68409	1.71246	1.86670	AVRG	1.79553			7.82080
39 Benzene	1.00185	1.17508	1.38574	1.03207	1.01106	1.05359	AVRG	1.10990			13.42479
40 Carbon tetrachloride	1.07747	1.18218	1.38531	1.11252	1.17061	1.29486	AVRG	1.20382			9.62292
41 Cyclohexane	2.81361	3.15805	3.67819	2.77047	2.77256	2.88211	AVRG	3.01247			11.84966
42 Tert Amyl Methyl Ether	++++	0.67731	1.17126	1.10566	1.14307	1.08808	AVRG	1.03798			19.64175
44 2,2,4-Trimethylpentane	0.98714	0.97204	1.08393	0.87729	0.87219	0.87357	AVRG	0.92769			9.21892
45 Heptane	2.44997	3.13122	3.31544	2.59759	2.56520	2.53139	AVRG	2.76513			13.12794
46 1,2-Dichloropropane	2.91943	3.63799	4.00735	3.26142	3.20669	3.17308	AVRG	3.36766			11.56364
47 Trichloroethene	2.45292	2.79490	3.22222	2.58458	2.50100	2.54560	AVRG	2.68354			10.77327
48 Bromodichloromethane	1.02195	1.16823	1.36923	1.06900	1.09130	1.12357	AVRG	1.14054			10.73555
49 1,4-Dioxane	4.97318	6.07867	6.75187	5.63830	5.24110	5.42064	AVRG	5.68396			11.31730
50 Methylcyclohexane	4.76948	5.55259	6.38741	5.33019	4.75276	4.91133	AVRG	5.28396			11.90221
51 Methyl Isobutyl Ketone	1.61439	2.11860	2.42532	1.71376	1.73287	1.74430	AVRG	1.89154			16.57961
52 cis-1,3-Dichloropropene	1.64901	2.05860	2.42437	1.73035	1.70742	1.78846	AVRG	1.89303			15.69070
53 trans-1,3-Dichloropropene	1.56781	2.22603	2.42085	1.55932	1.54140	1.57492	AVRG	1.81505			21.96860
55 Toluene	0.70891	0.92923	1.08224	0.82014	0.83882	0.82424	AVRG	0.86726			14.58634
56 1,1,2-Trichloroethane	2.10078	2.59491	3.03726	2.26200	2.28318	2.25506	AVRG	2.42220			14.11392
57 Methyl Butyl Ketone	0.84345	1.05229	1.17996	0.86324	0.87720	0.85152	AVRG	0.94461			14.74903
58 Dibromochloromethane	0.57124	0.70860	0.80413	0.59659	0.61228	0.60722	AVRG	0.65001			13.67407
59 1,2-Dibromoethane	0.58047	0.77017	0.92909	0.67959	0.67656	0.66101	AVRG	0.71615			16.82792
60 Tetrachloroethene	0.69924	0.84502	0.96651	0.75210	0.75443	0.72375	AVRG	0.79018			12.59339
62 Chlorobenzene	0.44646	0.61597	0.75787	0.56230	0.56093	0.54691	AVRG	0.58174			17.61756