



VIA OVERNIGHT MAIL

December 16, 2011

Mr. Chris Ralston
Maryland Department of the Environment
Remediation and State-Lead Division Chief
Oil Control Program
1800 Washington Boulevard
Suite 620
Baltimore MD 21230-1719

Re: Indoor Air Sampling and Risk Assessment for
1630 Yakona Road, Towson, Maryland

Dear Mr. Ralston:

On behalf of Hess Corporation, WSP Environment & Energy (WSP) conducted indoor air sampling at 1630 Yakona Road on October 31 and November 1, 2011. The samples were collected in accordance with the Site Investigation Work Plan (WSP September 2010) and the Site Investigation Summary Report and Risk Assessment (WSP August 2011) submitted to the Maryland Department of the Environment (MDE) for the evaluation of potential human health risks via all appropriate pathways as they relate to the extent of potential releases from the Hess station located on Joppa Road in Towson, Maryland.

Sampling Methodology

Sections 2.4, 2.4.1, and 2.4.2 of the Site Investigation Summary Report and Risk Assessment report described the procedures and methods used for the collection of indoor air samples for the Yakona Road Properties project in detail. The same methods and procedures were followed during the October/November sampling.

On October 31, 2011, WSP set up sample collection media at 1630 Yakona Road for the analysis of volatile organic compounds (VOCs) and diesel fuel range total petroleum hydrocarbons (TPH-DRO) in the indoor air of the home. For VOCs, 6-liter SUMMA canisters equipped with mass flow regulators set to collect a sample over a 24-hour period were used. Canisters were set up in the basement near the groundwater collection sump and in the living room area of the first floor. WSP recorded the unique canister and regulator number and recorded the level of vacuum in the canister. When WSP returned to the home the following day, the level of vacuum remaining in the containers was recorded, the mass flow regulators were closed, and the SUMMA canisters were prepared for shipment and sent to an offsite laboratory for VOC analysis by EPA Method TO-15.

In order to assess background conditions and potential ambient effects to indoor air, an outdoor ambient air sample was collected from approximately 4 feet above the ground in the backyard of 1630 Yakona Road. The SUMMA canister was placed on and secured to a portable stepladder as was done during the initial sampling event described in the Site Investigation Summary Report and Risk Assessment. Additionally, an in-line moisture filter was installed on the ambient air sample canister to prevent moisture from entering the sample port, which could lead to biased sample results.

Samples for TPH-DRO in air were collected using the same procedure and method as described in section 2.4.1 of the Site Investigation Summary Report and Risk Assessment. SKC, Incorporated model number 222-3 personal air sampling pumps were pre-calibrated and connected to multi-bed Carbotrap 300 tubes. These sampling tubes were constructed of stainless steel and packed by the laboratory with Carbopack C (a weak sorbent), Carbopack B (a medium sorbent), and Carbosieve SIII (a strong sorbent) (Air Toxics, 2011). As required by EPA Method TO-17, the TPH-DRO samples were collected at approximately 70 milliliters per minute for approximately 60 minutes. After the collection period expired, the sample tubes were sealed with laboratory-provided caps and placed on ice for shipment.

Sample Results

Table 1 shows the analytical results for the indoor air samples collected for VOC analysis from 1630 Yakona Road in November 2011. VOCs detected above the laboratory reporting limit include 1,2,4-trimethylbenzene (1,2,4-TMB), 1,3,5-trimethylbenzene, 2-butanon (MEK), 4-methyl-2-pentanone (MIBK), acetone, benzene, carbon disulfide, carbon tetrachloride, chloroform, chloromethane, cyclohexane, dichlorodifluoromethane, ethyl acetate, xylenes, methylene chloride, n-hexane, toluene, trichloroethene (TCE), and trichlorofluoromethane. The laboratory report sheets are enclosed.

The current (November 2010) US EPA RSL for the residential air exposure scenario was used as the comparative criteria to evaluate the indoor and ambient air data from the site investigation. These risk-based numerical values reflect toxicity and chemical-specific exposure to contaminants of concern- (COC-) containing air for the residential air scenario. Comparison of the RSLs with concentrations in air can be used to determine if potentially significant levels of petroleum-derived constituents are present in the air of a residential property. Therefore, the risk assessment for 1630 Yakona Road focused on the petroleum-related COCs above the screening criteria.

The samples collected in November contained one petroleum-related compound above the RSL. Benzene was detected in the first floor sample at a concentration of 1.1 $\mu\text{g}/\text{m}^3$ basement sample at a concentration of 1 $\mu\text{g}/\text{m}^3$, which is just above the EPA RSL of 0.31 $\mu\text{g}/\text{m}^3$.

Table 1 includes the analytical results for the indoor air samples collected for TPH-DRO analysis from the basement and first floor. All sample results for TPH-DRO were below laboratory reporting limits. It should be noted that the samples were received at the analytical laboratory containing water from melted ice. This may have affected the sample results and biased the TPH-DRO concentrations low. However, there is no EPA or MDE RSL for TPH-DRO in air.

Risk Assessment of Sample Results

The risk assessment summarized in the August 4, 2011 Site Investigation Summary Report and Risk Assessment identified the complete conceptual site model (CSM), discussed the selection of media-specific chemicals of potential concern (COPCs), identified current and future potential receptors, characterized potentially complete exposure pathways, presented the sources of toxicological criteria for the identified COPCs, and characterized potential risks to receptors identified in the CSM for each residence included in the investigation. Although no samples were collected at 1630 Yakona road during the initial sampling effort, all of the risk criteria from the August 4 assessment are applicable and were used to determine potential risk to the indoor

air environment at 1630 Yakona Road. For this summary, COPCs are those petroleum-related compounds that may represent a risk to residents by way of indoor air, groundwater, or sump water. Details of the process for each of these steps were described in Section 4 of the Site Investigation Summary Report and Risk Assessment.

Benzene is considered a carcinogenic chemical and 1,2,4-TMB is a non-carcinogen. Benzene and 1,2,4-TMB (non-carcinogenic) were the drivers for the risk calculations for the home. The total (cumulative) excess lifetime cancer risks estimated for the residential adult (2.8×10^{-6}) does not exceed the MDE acceptable levels of risk (1×10^{-5}); the excess lifetime cancer risk estimated for the residential child (4.2×10^{-6}) does not exceed the MDE acceptable level (1×10^{-5}). Additionally, the non-carcinogenic hazard indices for residential adult (0.72) and residential child (0.72) are below the MDE acceptable level (1.0). Table 2 shows a summary of the risk calculations. Based on the analytical results and the risk calculations, there is no unacceptable indoor air risk at the home.

Next Steps

Although no unacceptable risk was identified, Hess has offered to install a vapor mitigation system in 1630 Yakona Road similar to the systems proposed to be installed in 1620, 1622, and 1636 Yakona Road. That system was described in separate correspondence to Ms. Jenny Herman.

If you have any questions or would like to discuss any aspect of this report, please contact me or officials at Hess Corporation.

Sincerely yours,



Keith E. Green, CIH CSP
Senior Project Director

K:\Baker Botts, LLP\Hess Towson\6_Reporting\Reports\Follow Up Sampling Letters\1630 Report (Final).docx

KEG:arb:keg

Enclosures

cc: Ms. Jenny Herman, MDE
John Schenkewitz, Hess Corporation
Donald Bull, Hess Corporation
Scott Clearwater, Hess Corporation
Steve Leifer, Baker Botts LLP

Tables

Table 1
Summary of Indoor Air Sample Results For 1630 Yakona Road
Yakona Road Properties
Towson, Maryland (a)

<u>Parameters</u>	<u>EPA RSL (c)</u>	Sample Location: 1630-A	1630-B	1630-AA
		Sample Date: <u>10/31/2011</u>	<u>10/31/11</u>	<u>10/31/11</u> (b) <u>10/31/2011</u>
Volatile Organic Compounds (µg/m³)				
1,1,1-Trichloroethane	520 n	1.5 U	1.5 U	1.5 U
1,1,2,2-Tetrachloroethane	0.042 c	0.96 U	0.94 U	0.94 U
1,1,2-Trichloroethane	0.15 c	0.76 U	0.74 U	0.74 U
1,1,2-Trichlorotrifluoroethane	3,100 n	2.2 U	2.1 U	2.1 U
1,1-Dichloroethane	1.5 c	1.1 U	1.1 U	1.1 U
1,1-Dichloroethene	21 n	1.1 U	1.1 U	1.1 U
1,2,4-Trichlorobenzene	2.1 n	1.4 U	1.3 U	1.3 U
1,2,4-Trimethylbenzene	7.3 n	4.7	3.7	3.7
1,2-Dibromoethane (EDB)	0.0041 c	2.2 U	2.1 U	2.1 U
1,2-Dichlorobenzene	21 n	1.7 U	1.6 U	1.6 U
1,2-Dichloroethane	0.094 c	0.57 U	0.55 U	0.55 U
1,2-Dichloropropane	0.24 c*	1.3 U	1.3 U	1.3 U
1,3,5-Trimethylbenzene	-	1.4 U	1.6	1.6
1,3-Butadiene	0.081 c*	0.62 U	0.6 U	0.6 U
1,3-Dichlorobenzene	-	1.7 U	1.6 U	1.6 U
1,4-Dichlorobenzene	0.22 c	1.7 U	1.6 U	1.6 U
2-Butanone (MEK)	520 n	2.1	0.8 U	9.5
2-Hexanone	3.1 n	0.98 U	1.1 U	1.1 U
4-Ethyltoluene	-	3.4 U	3.4 U	3.4 U
4-Methyl-2-pentanone (MIBK)	310 n	1.1 U	1.1 U	11.6
Acetone	3,200 n	41.5 SS	25.7 SS	66.5 SS
Benzene	0.31 c	1.1	1	2.8
Bromodichloromethane	0.066 c	1.9 U	1.9 U	1.9 U
Bromoform	2.2 c	2.9 U	2.8 U	2.8 U
Bromomethane	0.52 n	1.1 U	1.1 U	1.1 U
Carbon disulfide	73 n	0.87 U	0.84 U	53
Carbon tetrachloride	0.41 c	0.88 U	0.86 U	1
Chlorobenzene	5.2 n	1.3 U	1.3 U	1.3 U
Chloroethane	1,000 n	0.75 U	0.72 U	0.72 U
Chloroform	0.11 c	2.7	1.5	1.3 U
Chloromethane	9.4 n	0.58 U	1.4	0.56 U
cis-1,2-Dichloroethene	-	1.1 U	1.1 U	1.1 U
cis-1,3-Dichloropropene	-	1.3 U	1.2 U	1.2 U
Cyclohexane	630 n	1.6	3.6	2.9
Dibromochloromethane	0.09 c	2.3 U	2.3 U	2.3 U
Dichlorodifluoromethane	21 n	3.3	3.1	4.5
Dichlorotetrafluoroethane	-	1.9 U	1.9 U	1.9 U
Ethyl acetate	-	1 U	0.98 U	19.6
Ethylbenzene	0.97 c	1.2 U	1.2 U	1.2
Hexachloro-1,3-butadiene	0.11 c	3 U	2.9 U	2.9 U
m&p-Xylene	73 (e)	2.4 U	2.4 U	3.4
Methylene Chloride	5.2 c	1.4	1.6	305 E
Methyl-tert-butyl ether	9.4 c	1 U	0.98 U	0.98 U
Naphthalene	0.072 n	3.7 U	3.6 U	3.6 U
n-Heptane	-	1.1 U	1.1 U	1.1 U

Table 1
Summary of Indoor Air Sample Results For 1630 Yakona Road
Yakona Road Properties
Towson, Maryland (a)

<u>Parameters</u>	<u>EPA RSL (c)</u>	Sample Location: 1630-A	1630-B	1630-AA	
		Sample Date: <u>10/31/2011</u>	<u>10/31/11</u>	<u>10/31/11</u> (b) <u>10/31/2011</u>	
Volatile Organic Compounds ($\mu\text{g}/\text{m}^3$)					
n-Hexane	73 n	2.9	4.4	47.3	2.6
o-Xylene	73 n	1.2 U	1.2 U	1.2 U	1.2 U
Propylene	310 n	0.48 U	0.47 U	0.47 U	0.47 U
Styrene	100 n	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	0.41 c	0.95 U	0.92 U	0.92 U	0.92 U
Tetrahydrofuran	-	0.83 U	0.8 U	71.4 SS	0.8 U
Toluene	520 n	5	4.5	19.3	2.6
trans-1,2-Dichloroethene	6.3 n	1.3 U	1.1 U	1.1 U	1.1 U
trans-1,3-Dichloropropene	-	1.3 U	1.2 U	1.2 U	1.2 U
Trichloroethene	0.43 c	17.6	0.74 U	11.5	0.74 U
Trichlorofluoromethane	73 n	1.7	1.7	2.4	1.5 U
Vinyl acetate	21 n	0.98 U	0.95 U	0.95 U	0.95 U
Vinyl chloride	0.16 c	0.36 U	0.35 U	0.35 U	0.35 U
TPH (Diesel Range) ($\mu\text{g}/\text{m}^3$)	-	230 U	220 U	240 U	-

Shaded value indicates concentration above the RSL

a/ NS = No sample EPA = U.S. Environmental Protection Agency; RSL = Regional Screening Level; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; n = noncancer; c = cancer; * = noncancer screening level < 10 x cancer screening level.

b/ Duplicate sample

c/ EPA RSLs (November 2010) for residential soil exposure scenario. RSLs based on non-carcinogenic toxicity divided by 10 per Maryland Department of the Environment Guidance. Available online at:

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm

d/ Data Qualifiers:

U = constituent not detected at reported limit

L = reported value may be biased low.

J = reported value is estimated.

E = analyte concentration exceeded the calibration range. The reported result is estimated

SS = The analyte did not meet secondary source verification criteria for the initial calibration.

The reported result should be considered an estimated value

e/ RSL for p-xylene reported.

Table 2
 Risk Summary
 Current/Future Scenario
 1630 Yakona Road
 Yakona Road Properties
 Towson, Maryland

Receptor	Exposure Medium	Exposure Point	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
			Ingestion	Inhalation	Dermal	Exposure Route Total	Exposure Medium Total	Ingestion	Inhalation	Dermal	Exposure Route Total	Exposure Medium Total
Residential Adult	Air	Indoor Air		2.8E-06		2.8E-06	2.8E-06		0.72		0.72	0.72
						Receptor Total	2.8E-06				Receptor Total	0.72
Residential Child	Air	Indoor Air		7.1E-07		7.1E-07	7.1E-07		0.72		0.72	0.72
						Receptor Total	7.1E-07				Receptor Total	0.72

Laboratory Report Sheets

November 16, 2011

Keith Green
WSP Environment and Energy
11190 Sunrise Valley Dr.
Reston, VA 20191

RE: Project: 4184/6 TOWSON, MD
Pace Project No.: 10174688

Dear Keith Green:

Enclosed are the analytical results for sample(s) received by the laboratory on November 03, 2011. 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,



Carolynne Trout

carolynne.trout@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alaska Certification #: UST-078

Alaska Certification #MN00064

Arizona Certification #: AZ-0014

Arkansas Certification #: 88-0680

California Certification #: 01155CA

EPA Region 8 Certification #: Pace

Florida/NELAP Certification #: E87605

Georgia Certification #: 959

Idaho Certification #: MN00064

Illinois Certification #: 200011

Iowa Certification #: 368

Kansas Certification #: E-10167

Louisiana Certification #: 03086

Louisiana Certification #: LA080009

Maine Certification #: 2007029

Maryland Certification #: 322

Michigan DEQ Certification #: 9909

Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace

Montana Certification #: MT CERT0092

Nevada Certification #: MN_00064

Nebraska Certification #: Pace

New Jersey Certification #: MN-002

New Mexico Certification #: Pace

New York Certification #: 11647

North Carolina Certification #: 530

North Dakota Certification #: R-036

North Dakota Certification #: R-036A

Ohio VAP Certification #: CL101

Oklahoma Certification #: D9921

Oklahoma Certification #: 9507

Oregon Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification

Tennessee Certification #: 02818

Texas Certification #: T104704192

Washington Certification #: C754

Wisconsin Certification #: 999407970

REPORT OF LABORATORY ANALYSIS

Page 2 of 17

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SAMPLE SUMMARY

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10174688001	1630-B-103111	Air	11/01/11 15:05	11/03/11 10:05
10174688002	1630-BD-103111	Air	11/01/11 15:05	11/03/11 10:05
10174688003	1630-A-103111	Air	11/01/11 15:10	11/03/11 10:05
10174688004	1630-AA-103111	Air	11/01/11 15:15	11/03/11 10:05

REPORT OF LABORATORY ANALYSIS

Page 3 of 17

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SAMPLE ANALYTE COUNT

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10174688001	1630-B-103111	TO-15	DR1	58
10174688002	1630-BD-103111	TO-15	DR1	58
10174688003	1630-A-103111	TO-15	DR1	58
10174688004	1630-AA-103111	TO-15	DR1	58

REPORT OF LABORATORY ANALYSIS

Page 4 of 17

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ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-B-103111	Lab ID: 10174688001	Collected: 11/01/11 15:05	Received: 11/03/11 10:05	Matrix: Air				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Acetone	25.7 ug/m3		0.64	1.34		11/11/11 19:53	67-64-1	SS
Benzene	1.0 ug/m3		0.44	1.34		11/11/11 19:53	71-43-2	
Bromodichloromethane	ND ug/m3		1.9	1.34		11/11/11 19:53	75-27-4	
Bromoform	ND ug/m3		2.8	1.34		11/11/11 19:53	75-25-2	
Bromomethane	ND ug/m3		1.1	1.34		11/11/11 19:53	74-83-9	
1,3-Butadiene	ND ug/m3		0.60	1.34		11/11/11 19:53	106-99-0	
2-Butanone (MEK)	ND ug/m3		0.80	1.34		11/11/11 19:53	78-93-3	
Carbon disulfide	ND ug/m3		0.84	1.34		11/11/11 19:53	75-15-0	
Carbon tetrachloride	ND ug/m3		0.86	1.34		11/11/11 19:53	56-23-5	
Chlorobenzene	ND ug/m3		1.3	1.34		11/11/11 19:53	108-90-7	
Chloroethane	ND ug/m3		0.72	1.34		11/11/11 19:53	75-00-3	
Chloroform	1.5 ug/m3		1.3	1.34		11/11/11 19:53	67-66-3	
Chloromethane	1.4 ug/m3		0.56	1.34		11/11/11 19:53	74-87-3	
Cyclohexane	3.6 ug/m3		0.91	1.34		11/11/11 19:53	110-82-7	
Dibromochloromethane	ND ug/m3		2.3	1.34		11/11/11 19:53	124-48-1	
1,2-Dibromoethane (EDB)	ND ug/m3		2.1	1.34		11/11/11 19:53	106-93-4	
1,2-Dichlorobenzene	ND ug/m3		1.6	1.34		11/11/11 19:53	95-50-1	
1,3-Dichlorobenzene	ND ug/m3		1.6	1.34		11/11/11 19:53	541-73-1	
1,4-Dichlorobenzene	ND ug/m3		1.6	1.34		11/11/11 19:53	106-46-7	
Dichlorodifluoromethane	3.1 ug/m3		1.3	1.34		11/11/11 19:53	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.1	1.34		11/11/11 19:53	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.55	1.34		11/11/11 19:53	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.1	1.34		11/11/11 19:53	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.1	1.34		11/11/11 19:53	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.1	1.34		11/11/11 19:53	156-60-5	
1,2-Dichloropropane	ND ug/m3		1.3	1.34		11/11/11 19:53	78-87-5	
cis-1,3-Dichloropropene	ND ug/m3		1.2	1.34		11/11/11 19:53	10061-01-5	
trans-1,3-Dichloropropene	ND ug/m3		1.2	1.34		11/11/11 19:53	10061-02-6	
Dichlorotetrafluoroethane	ND ug/m3		1.9	1.34		11/11/11 19:53	76-14-2	
Ethyl acetate	ND ug/m3		0.98	1.34		11/11/11 19:53	141-78-6	
Ethylbenzene	ND ug/m3		1.2	1.34		11/11/11 19:53	100-41-4	
4-Ethyltoluene	ND ug/m3		3.4	1.34		11/11/11 19:53	622-96-8	
n-Heptane	ND ug/m3		1.1	1.34		11/11/11 19:53	142-82-5	
Hexachloro-1,3-butadiene	ND ug/m3		2.9	1.34		11/11/11 19:53	87-68-3	
n-Hexane	4.4 ug/m3		0.96	1.34		11/11/11 19:53	110-54-3	
2-Hexanone	ND ug/m3		1.1	1.34		11/11/11 19:53	591-78-6	
Methylene Chloride	1.6 ug/m3		0.95	1.34		11/11/11 19:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND ug/m3		1.1	1.34		11/11/11 19:53	108-10-1	
Methyl-tert-butyl ether	ND ug/m3		0.98	1.34		11/11/11 19:53	1634-04-4	
Naphthalene	ND ug/m3		3.6	1.34		11/11/11 19:53	91-20-3	
Propylene	ND ug/m3		0.47	1.34		11/11/11 19:53	115-07-1	
Styrene	ND ug/m3		1.2	1.34		11/11/11 19:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND ug/m3		0.94	1.34		11/11/11 19:53	79-34-5	
Tetrachloroethene	ND ug/m3		0.92	1.34		11/11/11 19:53	127-18-4	
Tetrahydrofuran	ND ug/m3		0.80	1.34		11/11/11 19:53	109-99-9	
Toluene	4.5 ug/m3		1.0	1.34		11/11/11 19:53	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		1.3	1.34		11/11/11 19:53	120-82-1	

Date: 11/16/2011 01:03 PM

REPORT OF LABORATORY ANALYSIS

Page 5 of 17

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ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-B-103111		Lab ID: 10174688001		Collected: 11/01/11 15:05	Received: 11/03/11 10:05	Matrix: Air		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1,1-Trichloroethane	ND	ug/m3	1.5	1.34		11/11/11 19:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.74	1.34		11/11/11 19:53	79-00-5	
Trichloroethene	ND	ug/m3	0.74	1.34		11/11/11 19:53	79-01-6	
Trichlorofluoromethane	1.7	ug/m3	1.5	1.34		11/11/11 19:53	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.1	1.34		11/11/11 19:53	76-13-1	
1,2,4-Trimethylbenzene	3.7	ug/m3	1.3	1.34		11/11/11 19:53	95-63-6	
1,3,5-Trimethylbenzene	1.6	ug/m3	1.3	1.34		11/11/11 19:53	108-67-8	
Vinyl acetate	ND	ug/m3	0.95	1.34		11/11/11 19:53	108-05-4	
Vinyl chloride	ND	ug/m3	0.35	1.34		11/11/11 19:53	75-01-4	
m&p-Xylene	ND	ug/m3	2.4	1.34		11/11/11 19:53	179601-23-1	
o-Xylene	ND	ug/m3	1.2	1.34		11/11/11 19:53	95-47-6	

ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-BD-103111	Lab ID: 10174688002	Collected: 11/01/11 15:05	Received: 11/03/11 10:05	Matrix: Air				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Acetone	66.5	ug/m3	0.64	1.34		11/11/11 20:22	67-64-1	SS
Benzene	2.8	ug/m3	0.44	1.34		11/11/11 20:22	71-43-2	
Bromodichloromethane	ND	ug/m3	1.9	1.34		11/11/11 20:22	75-27-4	
Bromoform	ND	ug/m3	2.8	1.34		11/11/11 20:22	75-25-2	
Bromomethane	ND	ug/m3	1.1	1.34		11/11/11 20:22	74-83-9	
1,3-Butadiene	ND	ug/m3	0.60	1.34		11/11/11 20:22	106-99-0	
2-Butanone (MEK)	9.5	ug/m3	0.80	1.34		11/11/11 20:22	78-93-3	
Carbon disulfide	53.0	ug/m3	0.84	1.34		11/11/11 20:22	75-15-0	
Carbon tetrachloride	1.0	ug/m3	0.86	1.34		11/11/11 20:22	56-23-5	
Chlorobenzene	ND	ug/m3	1.3	1.34		11/11/11 20:22	108-90-7	
Chloroethane	ND	ug/m3	0.72	1.34		11/11/11 20:22	75-00-3	
Chloroform	ND	ug/m3	1.3	1.34		11/11/11 20:22	67-66-3	
Chloromethane	ND	ug/m3	0.56	1.34		11/11/11 20:22	74-87-3	
Cyclohexane	2.9	ug/m3	0.91	1.34		11/11/11 20:22	110-82-7	
Dibromochloromethane	ND	ug/m3	2.3	1.34		11/11/11 20:22	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.1	1.34		11/11/11 20:22	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	1.6	1.34		11/11/11 20:22	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	1.6	1.34		11/11/11 20:22	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	1.6	1.34		11/11/11 20:22	106-46-7	
Dichlorodifluoromethane	4.5	ug/m3	1.3	1.34		11/11/11 20:22	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.1	1.34		11/11/11 20:22	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.55	1.34		11/11/11 20:22	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.1	1.34		11/11/11 20:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.1	1.34		11/11/11 20:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.1	1.34		11/11/11 20:22	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.3	1.34		11/11/11 20:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.2	1.34		11/11/11 20:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.2	1.34		11/11/11 20:22	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	1.9	1.34		11/11/11 20:22	76-14-2	
Ethyl acetate	19.6	ug/m3	0.98	1.34		11/11/11 20:22	141-78-6	
Ethylbenzene	1.2	ug/m3	1.2	1.34		11/11/11 20:22	100-41-4	
4-Ethyltoluene	ND	ug/m3	3.4	1.34		11/11/11 20:22	622-96-8	
n-Heptane	ND	ug/m3	1.1	1.34		11/11/11 20:22	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	2.9	1.34		11/11/11 20:22	87-68-3	
n-Hexane	47.3	ug/m3	0.96	1.34		11/11/11 20:22	110-54-3	
2-Hexanone	ND	ug/m3	1.1	1.34		11/11/11 20:22	591-78-6	
Methylene Chloride	305	ug/m3	0.95	1.34		11/11/11 20:22	75-09-2	E
4-Methyl-2-pentanone (MIBK)	11.6	ug/m3	1.1	1.34		11/11/11 20:22	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	0.98	1.34		11/11/11 20:22	1634-04-4	
Naphthalene	ND	ug/m3	3.6	1.34		11/11/11 20:22	91-20-3	
Propylene	ND	ug/m3	0.47	1.34		11/11/11 20:22	115-07-1	
Styrene	ND	ug/m3	1.2	1.34		11/11/11 20:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	0.94	1.34		11/11/11 20:22	79-34-5	
Tetrachloroethene	ND	ug/m3	0.92	1.34		11/11/11 20:22	127-18-4	
Tetrahydrofuran	71.4	ug/m3	0.80	1.34		11/11/11 20:22	109-99-9	SS
Toluene	19.3	ug/m3	1.0	1.34		11/11/11 20:22	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.3	1.34		11/11/11 20:22	120-82-1	

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REPORT OF LABORATORY ANALYSIS

Page 7 of 17

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ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-BD-103111		Lab ID: 10174688002	Collected: 11/01/11 15:05	Received: 11/03/11 10:05	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1,1-Trichloroethane	ND	ug/m3	1.5	1.34		11/11/11 20:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.74	1.34		11/11/11 20:22	79-00-5	
Trichloroethene	11.5	ug/m3	0.74	1.34		11/11/11 20:22	79-01-6	
Trichlorofluoromethane	2.4	ug/m3	1.5	1.34		11/11/11 20:22	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.1	1.34		11/11/11 20:22	76-13-1	
1,2,4-Trimethylbenzene	3.7	ug/m3	1.3	1.34		11/11/11 20:22	95-63-6	
1,3,5-Trimethylbenzene	1.6	ug/m3	1.3	1.34		11/11/11 20:22	108-67-8	
Vinyl acetate	ND	ug/m3	0.95	1.34		11/11/11 20:22	108-05-4	
Vinyl chloride	ND	ug/m3	0.35	1.34		11/11/11 20:22	75-01-4	
m&p-Xylene	3.4	ug/m3	2.4	1.34		11/11/11 20:22	179601-23-1	
o-Xylene	ND	ug/m3	1.2	1.34		11/11/11 20:22	95-47-6	

ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-A-103111	Lab ID: 10174688003	Collected: 11/01/11 15:10	Received: 11/03/11 10:05	Matrix: Air				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Acetone	41.5 ug/m3		0.66	1.38		11/11/11 20:51	67-64-1	SS
Benzene	1.1 ug/m3		0.45	1.38		11/11/11 20:51	71-43-2	
Bromodichloromethane	ND ug/m3		1.9	1.38		11/11/11 20:51	75-27-4	
Bromoform	ND ug/m3		2.9	1.38		11/11/11 20:51	75-25-2	
Bromomethane	ND ug/m3		1.1	1.38		11/11/11 20:51	74-83-9	
1,3-Butadiene	ND ug/m3		0.62	1.38		11/11/11 20:51	106-99-0	
2-Butanone (MEK)	2.1 ug/m3		0.83	1.38		11/11/11 20:51	78-93-3	
Carbon disulfide	ND ug/m3		0.87	1.38		11/11/11 20:51	75-15-0	
Carbon tetrachloride	ND ug/m3		0.88	1.38		11/11/11 20:51	56-23-5	
Chlorobenzene	ND ug/m3		1.3	1.38		11/11/11 20:51	108-90-7	
Chloroethane	ND ug/m3		0.75	1.38		11/11/11 20:51	75-00-3	
Chloroform	2.7 ug/m3		1.4	1.38		11/11/11 20:51	67-66-3	
Chloromethane	ND ug/m3		0.58	1.38		11/11/11 20:51	74-87-3	
Cyclohexane	1.6 ug/m3		0.94	1.38		11/11/11 20:51	110-82-7	
Dibromochloromethane	ND ug/m3		2.3	1.38		11/11/11 20:51	124-48-1	
1,2-Dibromoethane (EDB)	ND ug/m3		2.2	1.38		11/11/11 20:51	106-93-4	
1,2-Dichlorobenzene	ND ug/m3		1.7	1.38		11/11/11 20:51	95-50-1	
1,3-Dichlorobenzene	ND ug/m3		1.7	1.38		11/11/11 20:51	541-73-1	
1,4-Dichlorobenzene	ND ug/m3		1.7	1.38		11/11/11 20:51	106-46-7	
Dichlorodifluoromethane	3.3 ug/m3		1.4	1.38		11/11/11 20:51	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.1	1.38		11/11/11 20:51	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.57	1.38		11/11/11 20:51	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.1	1.38		11/11/11 20:51	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.1	1.38		11/11/11 20:51	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.1	1.38		11/11/11 20:51	156-60-5	
1,2-Dichloropropane	ND ug/m3		1.3	1.38		11/11/11 20:51	78-87-5	
cis-1,3-Dichloropropene	ND ug/m3		1.3	1.38		11/11/11 20:51	10061-01-5	
trans-1,3-Dichloropropene	ND ug/m3		1.3	1.38		11/11/11 20:51	10061-02-6	
Dichlorotetrafluoroethane	ND ug/m3		1.9	1.38		11/11/11 20:51	76-14-2	
Ethyl acetate	ND ug/m3		1.0	1.38		11/11/11 20:51	141-78-6	
Ethylbenzene	ND ug/m3		1.2	1.38		11/11/11 20:51	100-41-4	
4-Ethyltoluene	ND ug/m3		3.4	1.38		11/11/11 20:51	622-96-8	
n-Heptane	ND ug/m3		1.1	1.38		11/11/11 20:51	142-82-5	
Hexachloro-1,3-butadiene	ND ug/m3		3.0	1.38		11/11/11 20:51	87-68-3	
n-Hexane	2.9 ug/m3		0.99	1.38		11/11/11 20:51	110-54-3	
2-Hexanone	ND ug/m3		1.1	1.38		11/11/11 20:51	591-78-6	
Methylene Chloride	1.4 ug/m3		0.98	1.38		11/11/11 20:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND ug/m3		1.1	1.38		11/11/11 20:51	108-10-1	
Methyl-tert-butyl ether	ND ug/m3		1.0	1.38		11/11/11 20:51	1634-04-4	
Naphthalene	ND ug/m3		3.7	1.38		11/11/11 20:51	91-20-3	
Propylene	ND ug/m3		0.48	1.38		11/11/11 20:51	115-07-1	
Styrene	ND ug/m3		1.2	1.38		11/11/11 20:51	100-42-5	
1,1,1,2-Tetrachloroethane	ND ug/m3		0.96	1.38		11/11/11 20:51	79-34-5	
Tetrachloroethene	ND ug/m3		0.95	1.38		11/11/11 20:51	127-18-4	
Tetrahydrofuran	ND ug/m3		0.83	1.38		11/11/11 20:51	109-99-9	
Toluene	5.0 ug/m3		1.1	1.38		11/11/11 20:51	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		1.4	1.38		11/11/11 20:51	120-82-1	

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REPORT OF LABORATORY ANALYSIS

Page 9 of 17

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ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-A-103111		Lab ID: 10174688003		Collected: 11/01/11 15:10		Received: 11/03/11 10:05		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	1.5	1.38		11/11/11 20:51	71-55-6		
1,1,2-Trichloroethane	ND	ug/m3	0.76	1.38		11/11/11 20:51	79-00-5		
Trichloroethene	17.6	ug/m3	0.76	1.38		11/11/11 20:51	79-01-6		
Trichlorofluoromethane	1.7	ug/m3	1.5	1.38		11/11/11 20:51	75-69-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.2	1.38		11/11/11 20:51	76-13-1		
1,2,4-Trimethylbenzene	4.7	ug/m3	1.4	1.38		11/11/11 20:51	95-63-6		
1,3,5-Trimethylbenzene	ND	ug/m3	1.4	1.38		11/11/11 20:51	108-67-8		
Vinyl acetate	ND	ug/m3	0.98	1.38		11/11/11 20:51	108-05-4		
Vinyl chloride	ND	ug/m3	0.36	1.38		11/11/11 20:51	75-01-4		
m&p-Xylene	ND	ug/m3	2.4	1.38		11/11/11 20:51	179601-23-1		
o-Xylene	ND	ug/m3	1.2	1.38		11/11/11 20:51	95-47-6		

ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-AA-103111	Lab ID: 10174688004	Collected: 11/01/11 15:15	Received: 11/03/11 10:05	Matrix: Air				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
Acetone	4.7 ug/m3		0.64	1.34		11/11/11 21:19	67-64-1	SS
Benzene	1.1 ug/m3		0.44	1.34		11/11/11 21:19	71-43-2	
Bromodichloromethane	ND ug/m3		1.9	1.34		11/11/11 21:19	75-27-4	
Bromoform	ND ug/m3		2.8	1.34		11/11/11 21:19	75-25-2	
Bromomethane	ND ug/m3		1.1	1.34		11/11/11 21:19	74-83-9	
1,3-Butadiene	ND ug/m3		0.60	1.34		11/11/11 21:19	106-99-0	
2-Butanone (MEK)	63.8 ug/m3		0.80	1.34		11/11/11 21:19	78-93-3	
Carbon disulfide	ND ug/m3		0.84	1.34		11/11/11 21:19	75-15-0	
Carbon tetrachloride	ND ug/m3		0.86	1.34		11/11/11 21:19	56-23-5	
Chlorobenzene	ND ug/m3		1.3	1.34		11/11/11 21:19	108-90-7	
Chloroethane	ND ug/m3		0.72	1.34		11/11/11 21:19	75-00-3	
Chloroform	ND ug/m3		1.3	1.34		11/11/11 21:19	67-66-3	
Chloromethane	0.97 ug/m3		0.56	1.34		11/11/11 21:19	74-87-3	
Cyclohexane	0.95 ug/m3		0.91	1.34		11/11/11 21:19	110-82-7	
Dibromochloromethane	ND ug/m3		2.3	1.34		11/11/11 21:19	124-48-1	
1,2-Dibromoethane (EDB)	ND ug/m3		2.1	1.34		11/11/11 21:19	106-93-4	
1,2-Dichlorobenzene	ND ug/m3		1.6	1.34		11/11/11 21:19	95-50-1	
1,3-Dichlorobenzene	ND ug/m3		1.6	1.34		11/11/11 21:19	541-73-1	
1,4-Dichlorobenzene	ND ug/m3		1.6	1.34		11/11/11 21:19	106-46-7	
Dichlorodifluoromethane	3.1 ug/m3		1.3	1.34		11/11/11 21:19	75-71-8	
1,1-Dichloroethane	ND ug/m3		1.1	1.34		11/11/11 21:19	75-34-3	
1,2-Dichloroethane	ND ug/m3		0.55	1.34		11/11/11 21:19	107-06-2	
1,1-Dichloroethene	ND ug/m3		1.1	1.34		11/11/11 21:19	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3		1.1	1.34		11/11/11 21:19	156-59-2	
trans-1,2-Dichloroethene	ND ug/m3		1.1	1.34		11/11/11 21:19	156-60-5	
1,2-Dichloropropane	ND ug/m3		1.3	1.34		11/11/11 21:19	78-87-5	
cis-1,3-Dichloropropene	ND ug/m3		1.2	1.34		11/11/11 21:19	10061-01-5	
trans-1,3-Dichloropropene	ND ug/m3		1.2	1.34		11/11/11 21:19	10061-02-6	
Dichlorotetrafluoroethane	ND ug/m3		1.9	1.34		11/11/11 21:19	76-14-2	
Ethyl acetate	ND ug/m3		0.98	1.34		11/11/11 21:19	141-78-6	
Ethylbenzene	ND ug/m3		1.2	1.34		11/11/11 21:19	100-41-4	
4-Ethyltoluene	3.5 ug/m3		3.4	1.34		11/11/11 21:19	622-96-8	
n-Heptane	ND ug/m3		1.1	1.34		11/11/11 21:19	142-82-5	
Hexachloro-1,3-butadiene	ND ug/m3		2.9	1.34		11/11/11 21:19	87-68-3	
n-Hexane	2.6 ug/m3		0.96	1.34		11/11/11 21:19	110-54-3	
2-Hexanone	ND ug/m3		1.1	1.34		11/11/11 21:19	591-78-6	
Methylene Chloride	2.4 ug/m3		0.95	1.34		11/11/11 21:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND ug/m3		1.1	1.34		11/11/11 21:19	108-10-1	
Methyl-tert-butyl ether	ND ug/m3		0.98	1.34		11/11/11 21:19	1634-04-4	
Naphthalene	ND ug/m3		3.6	1.34		11/11/11 21:19	91-20-3	
Propylene	ND ug/m3		0.47	1.34		11/11/11 21:19	115-07-1	
Styrene	ND ug/m3		1.2	1.34		11/11/11 21:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND ug/m3		0.94	1.34		11/11/11 21:19	79-34-5	
Tetrachloroethene	ND ug/m3		0.92	1.34		11/11/11 21:19	127-18-4	
Tetrahydrofuran	ND ug/m3		0.80	1.34		11/11/11 21:19	109-99-9	
Toluene	2.6 ug/m3		1.0	1.34		11/11/11 21:19	108-88-3	
1,2,4-Trichlorobenzene	ND ug/m3		1.3	1.34		11/11/11 21:19	120-82-1	

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REPORT OF LABORATORY ANALYSIS

Page 11 of 17

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ANALYTICAL RESULTS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Sample: 1630-AA-103111		Lab ID: 10174688004		Collected: 11/01/11 15:15	Received: 11/03/11 10:05	Matrix: Air		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1,1-Trichloroethane	ND	ug/m3	1.5	1.34		11/11/11 21:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.74	1.34		11/11/11 21:19	79-00-5	
Trichloroethene	ND	ug/m3	0.74	1.34		11/11/11 21:19	79-01-6	
Trichlorofluoromethane	ND	ug/m3	1.5	1.34		11/11/11 21:19	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.1	1.34		11/11/11 21:19	76-13-1	
1,2,4-Trimethylbenzene	5.0	ug/m3	1.3	1.34		11/11/11 21:19	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.3	1.34		11/11/11 21:19	108-67-8	
Vinyl acetate	ND	ug/m3	0.95	1.34		11/11/11 21:19	108-05-4	
Vinyl chloride	ND	ug/m3	0.35	1.34		11/11/11 21:19	75-01-4	
m&p-Xylene	ND	ug/m3	2.4	1.34		11/11/11 21:19	179601-23-1	
o-Xylene	ND	ug/m3	1.2	1.34		11/11/11 21:19	95-47-6	

QUALITY CONTROL DATA

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

QC Batch: AIR/13602 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10174688001, 10174688002, 10174688003, 10174688004

METHOD BLANK: 1097074 Matrix: Air
Associated Lab Samples: 10174688001, 10174688002, 10174688003, 10174688004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	11/11/11 09:50	
1,1,2,2-Tetrachloroethane	ug/m3	ND	0.70	11/11/11 09:50	
1,1,2-Trichloroethane	ug/m3	ND	0.55	11/11/11 09:50	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	11/11/11 09:50	
1,1-Dichloroethane	ug/m3	ND	0.82	11/11/11 09:50	
1,1-Dichloroethene	ug/m3	ND	0.81	11/11/11 09:50	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	11/11/11 09:50	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	11/11/11 09:50	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	11/11/11 09:50	
1,2-Dichlorobenzene	ug/m3	ND	1.2	11/11/11 09:50	
1,2-Dichloroethane	ug/m3	ND	0.41	11/11/11 09:50	
1,2-Dichloropropane	ug/m3	ND	0.94	11/11/11 09:50	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	11/11/11 09:50	
1,3-Butadiene	ug/m3	ND	0.45	11/11/11 09:50	
1,3-Dichlorobenzene	ug/m3	ND	1.2	11/11/11 09:50	
1,4-Dichlorobenzene	ug/m3	ND	1.2	11/11/11 09:50	
2-Butanone (MEK)	ug/m3	ND	0.60	11/11/11 09:50	
2-Hexanone	ug/m3	ND	0.83	11/11/11 09:50	
4-Ethyltoluene	ug/m3	ND	2.5	11/11/11 09:50	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	11/11/11 09:50	
Acetone	ug/m3	ND	0.48	11/11/11 09:50	
Benzene	ug/m3	ND	0.32	11/11/11 09:50	
Bromodichloromethane	ug/m3	ND	1.4	11/11/11 09:50	
Bromoform	ug/m3	ND	2.1	11/11/11 09:50	
Bromomethane	ug/m3	ND	0.79	11/11/11 09:50	
Carbon disulfide	ug/m3	ND	0.63	11/11/11 09:50	
Carbon tetrachloride	ug/m3	ND	0.64	11/11/11 09:50	
Chlorobenzene	ug/m3	ND	0.94	11/11/11 09:50	
Chloroethane	ug/m3	ND	0.54	11/11/11 09:50	
Chloroform	ug/m3	ND	0.99	11/11/11 09:50	
Chloromethane	ug/m3	ND	0.42	11/11/11 09:50	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	11/11/11 09:50	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	11/11/11 09:50	
Cyclohexane	ug/m3	ND	0.68	11/11/11 09:50	
Dibromochloromethane	ug/m3	ND	1.7	11/11/11 09:50	
Dichlorodifluoromethane	ug/m3	ND	1.0	11/11/11 09:50	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	11/11/11 09:50	
Ethyl acetate	ug/m3	ND	0.73	11/11/11 09:50	
Ethylbenzene	ug/m3	ND	0.88	11/11/11 09:50	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	11/11/11 09:50	
m&p-Xylene	ug/m3	ND	1.8	11/11/11 09:50	
Methyl-tert-butyl ether	ug/m3	ND	0.73	11/11/11 09:50	
Methylene Chloride	ug/m3	ND	0.71	11/11/11 09:50	

Date: 11/16/2011 01:03 PM

REPORT OF LABORATORY ANALYSIS

Page 13 of 17

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QUALITY CONTROL DATA

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

METHOD BLANK: 1097074

Matrix: Air

Associated Lab Samples: 10174688001, 10174688002, 10174688003, 10174688004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
n-Heptane	ug/m3	ND	0.83	11/11/11 09:50	
n-Hexane	ug/m3	ND	0.72	11/11/11 09:50	
Naphthalene	ug/m3	ND	2.7	11/11/11 09:50	
o-Xylene	ug/m3	ND	0.88	11/11/11 09:50	
Propylene	ug/m3	ND	0.35	11/11/11 09:50	
Styrene	ug/m3	ND	0.87	11/11/11 09:50	
Tetrachloroethene	ug/m3	ND	0.69	11/11/11 09:50	
Tetrahydrofuran	ug/m3	ND	0.60	11/11/11 09:50	
Toluene	ug/m3	ND	0.77	11/11/11 09:50	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	11/11/11 09:50	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	11/11/11 09:50	
Trichloroethene	ug/m3	ND	0.55	11/11/11 09:50	
Trichlorofluoromethane	ug/m3	ND	1.1	11/11/11 09:50	
Vinyl acetate	ug/m3	ND	0.71	11/11/11 09:50	
Vinyl chloride	ug/m3	ND	0.26	11/11/11 09:50	

LABORATORY CONTROL SAMPLE: 1097075

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	68.3	123	66-133	
1,1,2,2-Tetrachloroethane	ug/m3	69.8	85.0	122	70-140	
1,1,2-Trichloroethane	ug/m3	55.5	69.3	125	68-132	
1,1,2-Trichlorotrifluoroethane	ug/m3	77.9	86.7	111	60-137	
1,1-Dichloroethane	ug/m3	41.2	48.0	117	65-131	
1,1-Dichloroethene	ug/m3	40.3	45.2	112	65-132	
1,2,4-Trichlorobenzene	ug/m3	75.5	85.3	113	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	55.9	112	69-140	
1,2-Dibromoethane (EDB)	ug/m3	78.1	90.4	116	71-139	
1,2-Dichlorobenzene	ug/m3	61.2	67.6	111	68-139	
1,2-Dichloroethane	ug/m3	41.2	53.9	131	66-132	CH
1,2-Dichloropropane	ug/m3	47	56.6	120	69-130	
1,3,5-Trimethylbenzene	ug/m3	50	56.3	113	70-141	
1,3-Butadiene	ug/m3	22.5	24.0	107	68-128	
1,3-Dichlorobenzene	ug/m3	61.2	67.4	110	66-146	
1,4-Dichlorobenzene	ug/m3	61.2	67.6	111	66-142	
2-Butanone (MEK)	ug/m3	30	36.1	120	68-134	
2-Hexanone	ug/m3	41.7	43.9	105	70-144	
4-Ethyltoluene	ug/m3	50	55.9	112	65-145	
4-Methyl-2-pentanone (MIBK)	ug/m3	41.7	47.0	113	70-139	
Acetone	ug/m3	24.2	22.2	92	56-142	SS
Benzene	ug/m3	32.5	39.2	121	69-129	
Bromodichloromethane	ug/m3	68.2	91.9	135	70-130	CH,L3
Bromoform	ug/m3	105	122	116	67-147	
Bromomethane	ug/m3	39.5	43.3	110	67-127	SS
Carbon disulfide	ug/m3	31.7	34.3	108	65-131	

Date: 11/16/2011 01:03 PM

REPORT OF LABORATORY ANALYSIS

Page 14 of 17

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QUALITY CONTROL DATA

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

LABORATORY CONTROL SAMPLE: 1097075

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	64	79.7	124	62-137	
Chlorobenzene	ug/m3	46.8	53.6	114	72-133	
Chloroethane	ug/m3	26.8	29.4	110	66-127	
Chloroform	ug/m3	49.7	62.5	126	67-130	
Chloromethane	ug/m3	21	22.7	108	63-127	
cis-1,2-Dichloroethene	ug/m3	40.3	50.2	125	69-130	
cis-1,3-Dichloropropene	ug/m3	46.2	56.8	123	74-137	
Cyclohexane	ug/m3	35	41.3	118	69-137	
Dibromochloromethane	ug/m3	86.6	98.0	113	69-140	
Dichlorodifluoromethane	ug/m3	50.3	61.6	122	62-131	
Dichlorotetrafluoroethane	ug/m3	71.1	78.7	111	63-130	
Ethyl acetate	ug/m3	36.6	42.8	117	70-135	
Ethylbenzene	ug/m3	44.2	49.8	113	71-141	
Hexachloro-1,3-butadiene	ug/m3	108	154	142	30-150	CH
m&p-Xylene	ug/m3	88.3	103	116	68-144	
Methyl-tert-butyl ether	ug/m3	36.7	38.2	104	54-136	
Methylene Chloride	ug/m3	35.3	38.5	109	56-143	
n-Heptane	ug/m3	41.7	46.5	112	72-130	
n-Hexane	ug/m3	35.8	35.8	100	68-130	
Naphthalene	ug/m3	53.3	56.9	107	30-150	
o-Xylene	ug/m3	44.2	53.9	122	70-141	
Propylene	ug/m3	17.5	16.7	95	61-139	
Styrene	ug/m3	43.3	51.3	119	68-145	
Tetrachloroethene	ug/m3	69	75.5	109	64-142	
Tetrahydrofuran	ug/m3	30	28.8	96	70-134	SS
Toluene	ug/m3	38.3	47.6	124	69-133	
trans-1,2-Dichloroethene	ug/m3	40.3	45.8	114	64-132	
trans-1,3-Dichloropropene	ug/m3	46.2	55.3	120	71-140	
Trichloroethene	ug/m3	54.6	65.8	120	68-132	
Trichlorofluoromethane	ug/m3	57.1	67.6	118	59-136	
Vinyl acetate	ug/m3	35.8	40.2	112	70-142	
Vinyl chloride	ug/m3	26	28.0	108	64-129	

QUALIFIERS

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

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.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| 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. |
| SS | This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value. |

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 4184/6 TOWSON, MD

Pace Project No.: 10174688

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10174688001	1630-B-103111	TO-15	AIR/13602		
10174688002	1630-BD-103111	TO-15	AIR/13602		
10174688003	1630-A-103111	TO-15	AIR/13602		
10174688004	1630-AA-103111	TO-15	AIR/13602		



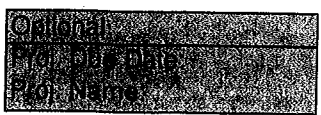
AIR Sample Condition Upon Receipt

Client Name: WSP Project # 10174680

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other: Formus



Tracking #: 7576 9207 3291

Date and Initials of person examining contents: 11-3-11 (AS)

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 & 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 (<72hr):	<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'S)</u>		11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received: 4 CANS 4 FC'S

Canisters		Flow Controllers		Stand Alone G		Tedlar Bags	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
<u>1630-B</u>	<u>1680</u>		<u>0323</u>				
<u>" - BD</u>	<u>0725</u>		<u>0400</u>				
<u>" - A</u>	<u>0590</u>		<u>0274</u>				
<u>" - AA</u>	<u>1693</u>		<u>0334</u>				

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: CMO Date: 11/3/11

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)
A106 Rev.01 (22May2009)

11/17/2011
Mr. Keith Green
WSP Environmental Strategies LLC
11190 Sunrise Valley Dr.
Suite 300
Reston VA 20191

Project Name: TOWSON, MD
Project #: 4184/6
Workorder #: 1111066

Dear Mr. Keith Green

The following report includes the data for the above referenced project for sample(s) received on 11/3/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

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

Regards,



Ausha Scott
Project Manager

WORK ORDER #: 1111066

Work Order Summary

CLIENT: Mr. Keith Green
WSP Environment & Energy, LLC
11190 Sunrise Valley Dr.
Suite 300
Reston, VA 20191

BILL TO: Mr. Keith Green
WSP Environment & Energy, LLC
11190 Sunrise Valley Dr.
Suite 300
Reston, VA 20191

PHONE: 703-709-6500

FAX:

DATE RECEIVED: 11/03/2011

DATE COMPLETED: 11/17/2011

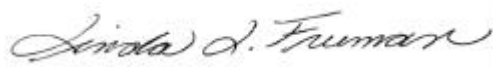
P.O. # 4184/6

PROJECT # 4184/6 TOWSON, MD

CONTACT: Ausha Scott

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	1630-B-103111	Modified TO-17 VI
02A	1630-BD-103111	Modified TO-17 VI
03A	1630-A-103111	Modified TO-17 VI
04A	Lab Blank	Modified TO-17 VI
05A	CCV	Modified TO-17 VI
06A	LCS	Modified TO-17 VI
06AA	LCSD	Modified TO-17 VI

CERTIFIED BY:



Laboratory Director

DATE: 11/17/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

**LABORATORY NARRATIVE
EPA Method TO-17
WSP Environmental Strategies LLC
Workorder# 1111066**

Three TO-17 VI Tube samples were received on November 03, 2011. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for further separation.

Receiving Notes

The ice in the transport cooler melted and water contaminated samples 1630-B-103111, 1630-BD-103111 and 1630-A-103111.

Analytical Notes

A sampling volume of 4.65 L was used to convert ng to ug/m³ for the associated Lab Blank.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: 1630-B-103111

Lab ID#: 1111066-01A

No Detections Were Found.

Client Sample ID: 1630-BD-103111

Lab ID#: 1111066-02A

No Detections Were Found.

Client Sample ID: 1630-A-103111

Lab ID#: 1111066-03A

No Detections Were Found.



Client Sample ID: 1630-B-103111

Lab ID#: 1111066-01A

EPA METHOD TO-17

File Name:	16110708	Date of Extraction: NA	Date of Collection: 10/31/11 4:36:00 PM
Dil. Factor:	1.00	Date of Analysis: 11/7/11 02:05 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
TPH (Diesel Range)	1000	220	Not Detected	Not Detected

Air Sample Volume(L): 4.65

Container Type: TO-17 VI Tube



Client Sample ID: 1630-BD-103111

Lab ID#: 1111066-02A

EPA METHOD TO-17

File Name:	16110706	Date of Extraction: NA	Date of Collection: 10/31/11 4:36:00 PM
Dil. Factor:	1.00		Date of Analysis: 11/7/11 12:49 PM

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
TPH (Diesel Range)	1000	240	Not Detected	Not Detected

Air Sample Volume(L): 4.15
Container Type: TO-17 VI Tube



Client Sample ID: 1630-A-103111

Lab ID#: 1111066-03A

EPA METHOD TO-17

File Name:	16110707	Date of Extraction: NA	Date of Collection: 10/31/11 4:41:00 PM
Dil. Factor:	1.00		Date of Analysis: 11/7/11 01:27 PM

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
TPH (Diesel Range)	1000	230	Not Detected	Not Detected

Air Sample Volume(L): 4.31
Container Type: TO-17 VI Tube

Client Sample ID: Lab Blank

Lab ID#: 1111066-04A

EPA METHOD TO-17

File Name:	16110705	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/7/11 11:25 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
TPH (Diesel Range)	1000	220	Not Detected	Not Detected

Air Sample Volume(L): 4.65

Container Type: NA - Not Applicable



Client Sample ID: CCV

Lab ID#: 1111066-05A

EPA METHOD TO-17

File Name:	16110702	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/7/11 08:56 AM	

Compound	%Recovery
TPH (Diesel Range)	105

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable



Client Sample ID: LCS

Lab ID#: 1111066-06A

EPA METHOD TO-17

File Name:	16110703	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/7/11 09:34 AM	

Compound	%Recovery
TPH (Diesel Range)	96

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable



Client Sample ID: LCSD

Lab ID#: 1111066-06AA

EPA METHOD TO-17

File Name:	16110704	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/7/11 10:44 AM	

Compound	%Recovery
TPH (Diesel Range)	81

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable