

# Amec Foster Wheeler E&I, Inc.

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## Transmittal Letter

To: Joe Martella	Date: September 27, 2017
Rhode Island Dept Environmental Management	Client: Textron, Inc
Office of Waste Management	Project: Former Gorham Manufacturing Facility
235 Promenade Street	Providence, RI
Providence, RI 02908-5767	AMEC Project No.: 3652-15-0005.0000.****
Tel: 401.222.2797 ext 7109	Delivery: US Mail

<input checked="" type="checkbox"/> information	<input type="checkbox"/> purchasing	REMARKS: Enclosed please find one hard copy of the September 2017 Semi-Annual Indoor Air Monitoring Report for the Retail Building, Parcel A of the former Gorham Manufacturing Site, Providence, RI. The electronic pdf file has been emailed to you to upload to the Project website supporting the public outreach activities for the Site. All other recipients are receiving one hard copy report.  Please contact me or Greg Simpson if you have any questions regarding the enclosed documents.  Prepared By: David E. Heislein
<input type="checkbox"/> estimating	<input type="checkbox"/> construction	
<input type="checkbox"/> comments and/or approval	<input type="checkbox"/> see remarks	

Number	Revision No.	No. of Copies	Title or Description
1	-	1	September 2017 Semi-Annual Air Monitoring Report, Active Sub-slab Depressurization System, Former Gorham Manufacturing Facility, 333 Adelaide Avenue, Providence, Rhode Island, dated September 27, 2017

Distribution: T = Transmittal Letter; C = Copy of Document

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September 27, 2017

Mr. Joseph T. Martella II, Senior Engineer  
Rhode Island Department of Environmental Management  
Office of Waste Management  
Site Remediation Program  
235 Promenade Street  
Providence, Rhode Island 02908



**RE: Air Monitoring Report  
September 2017 Semi-Annual Monitoring  
Retail Complex, Active Sub-Slab Depressurization System  
Former Gorham Manufacturing Facility  
333 Adelaide Avenue, Providence, Rhode Island  
AMEC Project No. 3652150005**

Dear Mr. Martella:

This letter report presents the results of semi-annual compliance sampling and analysis conducted by Amec Foster Wheeler (formerly AMEC) at the retail complex located at the Former Gorham Manufacturing Facility, 333 Adelaide Avenue, Providence, Rhode Island (Site). The reporting period is from February 2017 through September 2017 and includes one semi-annual compliance sampling event conducted on September 6, 2017.

The sampling, analysis and reporting are being conducted consistent with the Rhode Island Department of Environmental Management (RIDEM) Short Term Response Action Order of Approval, dated July 24, 2008 and the Addendum to the Order of Approval dated August 7, 2008 (collectively referred to as the Orders of Approval).

### **Background**

The active sub-slab depressurization (ASD) system, also called a vapor mitigation system, in the large retail space consists of four extraction wells connected to a 3 hp Rotron regenerative blower. The blower is located in an enclosure located at the north, or rear, of the large retail space (Figure 1).

The small retail spaces consist of the eastern, central, and western retail spaces (Figure 1). The mitigation systems in the central and western small retail spaces consist of one extraction well in each space connected to an individual radon-type fan, located at the north, or rear, of the small retail spaces. The eastern small retail space extraction well is located along the wall of the large retail space (EW-5) and is part of the ASD system described above.

### **Small Retail Spaces**

The indoor air monitoring of the three small retail spaces, consistent with the requirements of the Orders of Approval, was completed on September 6, 2017. This is the third semi-annual monitoring event since the change from quarterly monitoring after February 2016, based on the historical indoor air data and performance of the existing vapor mitigation system.

Table 1 summarizes the analytical results at the small retail spaces for the baseline indoor air sampling event conducted prior to system start-up in February 2009 and all subsequent sampling events conducted after system start-up through September 6, 2017. Results of the indoor air samples were compared to the Draft Connecticut Industrial/Commercial Indoor Target Air Concentrations (TAC), which were identified as action levels in the Orders of Approval. The laboratory report (17I0332) associated with the September 6, 2017 semi-annual sampling event is provided in Appendix A of this letter report. The analytical laboratory's detection limits are provided in Appendix B.

The sampling event included an indoor air sample from each of the small retail spaces (locations IA-5, IA-6, and IA-7), one outdoor air reference sample (location AA-1), and one air sample collected from each of the three vapor extraction wells (EW-5, EW-6, and EW-7). The sampling locations are shown in Figure 1. The outdoor reference air sample (AA-1) was located south of the property, upwind of the retail building. The sub-slab vacuum monitoring (pressure differential measurements) was conducted at locations VMW-5, VMW-6, and VMW-7 on September 6, 2017 in conjunction with the semi-annual air sampling program. The vacuum monitoring results are tabulated in Table 2.

The following conclusions are based on Site observations and the data from Table 1.

- ▶ Indoor air sample results are in compliance with action levels for the semi-annual sampling event in the small retail space (sample locations IA-5 through IA-7) except for chloroform. The concentration of chloroform in sample from IA-5 was slightly above the TAC (0.84 ug/m<sup>3</sup> vs. 0.50 ug/m<sup>3</sup>) located in the eastern most section of the small retail spaces, adjacent to the former Stop & Stop. As communicated to RIDEM in previous reports, Chloroform is not a constituent of concern for the site and is therefore not one of the compounds for which the vapor mitigation system was designed to address. There has been more activity in the small retail space in 2017, and it is possible that some volatile compounds are being introduced into the indoor air by the activity through cleaning fluids. The chloroform appears to be unrelated to the vapor intrusion pathway and the concentrations of chloroform above the action level do not constitute a violation of the action levels contained in the Orders of Approval. The mitigation system is functioning as designed and is achieving desired results with respect to indoor air quality in the large retail space
- ▶ The eastern small retail space (indoor air sample location IA-5) was occupied as a church during this sampling event.
- ▶ The center small retail space (sample location IA-6) was occupied as a consignment shop during this sampling event.
- ▶ The western small retail space (sample location IA-7) is intermittently occupied for church functions.
- ▶ The mitigation systems are functioning as designed.

### **Large Retail Space**

The indoor air monitoring event for the large retail space, consistent with the requirements of the Orders of Approval, was completed on September 6, 2017. Table 3 summarizes the analytical results for the large retail space for the baseline sampling event conducted prior to 2009 system start-up and all subsequent sampling events conducted after system start-up through September 6, 2017. Results of the indoor air samples were compared to the Draft Connecticut Industrial/Commercial Indoor TAC, which were identified as action levels in the Orders of Approval. The laboratory report (17I0322) associated with the September 6, 2017 semi-annual sampling

event is provided in Appendix A of this letter report. The analytical laboratory's detection limits are provided in Appendix B.

The sampling event included collection of samples from each of the indoor air sampling points in the large retail space (locations IA-1 through IA-4), one outdoor air reference sample (location AA-1), and one air sample collected from the manifold where air from the four vapor extraction wells is collected (EW-Combined). The sampling locations are shown in Figure 1. The outdoor reference air sample (AA-1) was located south of the property upwind of the retail building. The sub-slab vacuum monitoring (pressure differential measurements) was conducted on September 6, 2017 at locations VMW-1 through VMW-4 in conjunction with the air sampling program. The vacuum monitoring results for the large retail space are tabulated in Table 4.

The following conclusions are based on Site observations and the data from Table 3.

- ▶ Indoor air sample results are in compliance with action levels for the semi-annual sampling event in the large retail space (sample locations IA-1 through IA-4) except for chloroform. The concentration of chloroform in sample from IA-2 was slightly above the TAC (0.68 ug/m<sup>3</sup> vs. 0.50 ug/m<sup>3</sup>) and IA-4 at (0.69 ug/m<sup>3</sup> vs. 0.50 ug/m<sup>3</sup>) both on the eastern section of the large retail space. As communicated to RIDEM in previous reports, Chloroform is not a constituent of concern for the site and is therefore not one of the compounds for which the vapor mitigation system was designed to address. There has been continuous activity in this section of the large retail space for use a health fitness club, and it is possible that some volatile compounds are being introduced into the indoor air by the activity through cleaning fluids. The chloroform appears to be unrelated to the vapor intrusion pathway and the concentrations of chloroform above the action level do not constitute a violation of the action levels contained in the Orders of Approval. The mitigation system is functioning as designed and is achieving desired results with respect to indoor air quality in the large retail space.
- ▶ The mitigation system is functioning as designed and is achieving desired results with respect to indoor air quality in the large retail space.
- ▶ The large retail space has been subdivided into two spaces. The eastern section is currently occupied by a health fitness club which opened in January of 2013. This space was recently updated to change the name of the gym to "Blast" as part of a nationwide revision. This space includes indoor air sample locations IA-2 and IA-4 and sub-slab vacuum monitoring well VMW-2.
- ▶ The western side of the large retail space remains vacant and includes indoor air sample locations IA-1 and IA-3, vapor extraction well EW-5 and sub-slab vacuum monitoring locations VMW-1, VMW-3, and VMW-4.

### **ASD System Monitoring/Maintenance**

The ASD system performance is monitored monthly by Clean Harbors Environmental Services. Over the last six months the system shut down briefly May 9 and June 21. Both system shut downs were due to power interruptions and the system was back on line within hours. There were no other system shutdowns during the reporting period. Vacuum monitoring conducted at the time of the September 2017 indoor air monitoring event indicated that the desired negative pressure condition existed at the various sub-slab monitoring points.

### **Next Reporting Period**

The next Semi-Annual report will cover the monitoring period from October 2017 through February 2018. The report will be prepared and submitted to the Rhode Island Department of Environmental Management in March 2018.

Please contact the undersigned at (978) 692-9090 if we can provide additional information or answer any questions concerning these monitoring events and system adjustments.

Sincerely,

**Amec Foster Wheeler Environment & Infrastructure, Inc.**



Mark Maggiore  
Environmental Scientist



David E. Heislein  
Senior Project Manager

- Enclosures:
- Table 1. Summary of Analytical Results – Air Sampling for Small Retail Spaces
  - Table 2. Vacuum Monitoring Results – Small Retail Spaces
  - Table 3. Summary of Analytical Results – Air Sampling for Large Retail Space
  - Table 4. Vacuum Monitoring Results – Large Retail Space

Figure 1 Vapor Mitigation Sample Locations

Appendix A – Laboratory Reports

Appendix B – Analytical Laboratory Detection Limits

cc: Robert Azar, Deputy Director - Providence Planning & Development  
G. Simpson, Textron, Inc. (Electronic)  
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Shane Brackett, Paolino Properties (including tenants)  
AMEC Project File

P:\BOS\Textron\3652150005 - Textron Gorham ASD System\8.0 Proj Deliverables\8.1 Reports\September 2017\_Semiannual\Gorham\_September\_2017 Final 092717.docx

## **TABLES**

















**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Western Small Retail Space										
	IA-7-061314 6/13/2014	IA-7-091214 9/12/2014	IA-7-121914 12/19/2014	IA-7-032715 3/27/2015	IA-7-061115 6/11/2015	IA-7-091615 9/16/2015	IA-7-121815 12/18/2015	IA-7-021816 2/18/2016	IA-7-080516 8/5/2016	IA-7-021017 2/10/2017	IA-7-090717 9/7/2017
1,1,1-Trichloroethane	0.19 U	0.055 U	0.19 U	0.19 U	0.19 U	0.19 U	0.054 J	0.19 U	0.19 U	0.19 U	0.19 U
1,1,1,2-Tetrachloroethane	0.44 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U		0.44 U		0.44 U	0.44 U
1,1,2,2-Tetrachloroethane	0.24 U	0.069 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2-Trichloroethane	0.19 U	0.11 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,1-Dichloroethane	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,1-Dichloroethene	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,2,4-Trichlorobenzene	0.26 U	0.15 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
1,2,4-Trimethylbenzene	0.31	0.37	0.052 J	0.33	0.21	0.15 J	0.28	0.17 U	0.23	0.17 U	0.21
1,2-Dibromoethane (EDB)	0.27 U	0.077 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dichlorobenzene	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	0.14 U	0.15	0.14 U	0.065 J	0.19	0.18	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,2-Dichloropropane	0.16 U	0.085	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
1,2-Dichlorotetrafluoroethane							0.25 U		0.25 U		
1,3,5-Trimethylbenzene	0.17 U	0.057 J	0.17 U	0.083 J	0.083 J	0.048 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,3-Butadiene	0.078 U	0.044 U	0.078 U	0.078 U	0.078 U	0.078 U	0.14	0.078 U	0.078 U	0.078 U	0.078 U
1,3-Dichlorobenzene	0.21 U	0.06 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,4-Dichlorobenzene	0.21 U	0.12 U	0.21 U	0.16 J	0.15 J	0.055 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,4-Dioxane							1.3 U		1.3 U		
2-Butanone	3	2.2 J	0.75 J	1.4 J	1.7 J	1.7 J	2.1	0.59 J	1.9 J	0.81 J	2.4 J
2-Hexanone	0.35	0.41	0.14 U	0.43	0.17	0.14 U	0.28	0.14 U	0.36	0.14 U	0.43
4-Ethyltoluene	0.17 U	0.065 J	0.17 U	0.09 J	0.069 J	0.055 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
4-Methyl-2-pentanone	0.34	0.18	0.14 U	0.18	0.15	0.14 U	0.18	0.14 U	0.14 U	0.14 U	0.28
Acetone	30	41	12	16	24	39	15	9.1	33	7.5	37
Benzene	0.57	0.36	0.4	0.57	0.27	0.91	0.97	0.43	0.27	0.47	0.47
Benzyl chloride	0.18 U	0.052 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromodichloromethane	0.24 U	0.067 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Bromoform	0.36 U	0.21 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Bromomethane	0.14 U	0.056 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Carbon disulfide	0.15	0.11 J	1.1 U	0.042 J	0.1 J	0.15 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbon tetrachloride	0.45	0.46	0.33	0.34	0.36	0.39	0.51	0.37	0.45	0.42	0.4
Chlorobenzene	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chloroethane	0.093 U	0.053 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.19 U
Chloroform	0.18	0.12	0.096 J	0.079 J	0.19	0.23	0.17 U	0.17 U	0.2	0.15 J	0.31
Chloromethane	1.4	0.76	0.86	1	1.3	1.3	1.4	1	1.4	1.2	1.5
cis-1,2-Dichloroethene	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.086 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
cis-1,3-Dichloropropene	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	0.12 U	0.069 U	0.12 U	0.12 U	0.12 U	0.12 U	0.46	0.12 U	0.12 U	0.12 U	0.12 U
Dibromochloromethane	0.30 U	0.085 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	2.1	2.2	1.8	1.3	1.9	1.8	2.3	1.6	0.57	0.88	1.4
Ethanol	79	96	39	110	110	440 E	33	13	23	15	95
Ethyl acetate	0.41	0.37	0.13 U	0.64	0.39	1.1	0.31	0.32	1.4	3.5	1.7
Ethylbenzene	0.35	0.2	0.085 J	0.58	0.19	0.3	0.25	0.15 U	0.31	0.15 U	0.29
Hexachlorobutadiene	0.37 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Hexane	0.9	0.37 J	0.35 J	4.9 J	0.36 J	0.67 J	0.52 J	0.28 J	1.9 J	0.36 J	0.65 J
Isopropyl alcohol	11.0	2 U	1.4 J	30.0	11	30	3.4 U	4.8	3.4 U	8.5	3.4 U
m,p-Xylene	1.1	0.54	0.29 J	0.67	0.48	0.64	0.84	0.27 J	0.93	0.16 J	0.82
Methyl methacrylate	0.14 U	0.082 U	0.14 U	0.14 U		0.14 U		0.14 U		0.14 U	0.14 U
Methylene chloride	0.74	0.63 J	0.39 J	0.6 J	0.58 J	0.54 J	1.2 J	0.4 J	1.1 J	0.49 J	0.59 J
Methyl-t-butyl ether	0.13 U	0.072 U	0.13 U	0.13 U	0.13 U	0.063 J	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
n-Heptane	4.6	1.9	4.3	0.19	0.14 J	0.25	0.28	0.14 U	0.29	0.14 U	0.29
o-Xylene	0.39	0.19	0.088 J	0.26	0.19	0.23	0.3	0.15 U	0.34	0.15 U	0.29
Propylene (Propene)	1.5	1.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	0.78 J	2.4 U
Styrene	0.29	0.24	0.15 U	0.096 J	0.29	0.27	0.18	0.15 U	0.41	0.15 U	0.59
Tetrachloroethane	0.34	0.13	0.13 J	0.23 J	0.25	0.23 J	0.36	0.24 U	0.38	0.24 U	0.34
Tetrahydrofuran	0.14	0.13	0.1 U	0.11	0.15	0.11	0.1 U	0.1 U	0.1 U	0.1 U	0.21 U
Toluene	2.2	1.3	0.72	1.1	1	2.1	1.6	0.59	1.8	0.51	1.8
trans-1,2-Dichloroethene	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
trans-1,3-Dichloropropene	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Trichloroethane	0.19 U	0.077	0.19 U	0.1 J	0.19 U	0.31	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Trichlorofluoromethane	1.4	1.3	1.4	1.2	1.5	1.3	1.7	1.1	1.1	1.4	1.2
Trichlorotrifluoroethane	0.52	0.58	0.63	0.64 J	0.65 J	0.59 J	0.6 J	0.46 J	0.48 J	0.58 J	0.46 J
Vinyl acetate	2.5 U	1.4 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.6 J
Vinyl chloride	0.090 U	0.026 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U

Notes:

[a] Benzene and carbon tetrachloride are above the target air concentration, but are not compliance violations as indoor air concentrations are consistent with outdoor air concentrations that were sampled on the same day.

Prepared by / Date: AKN 9/20/17  
 Checked by / Date: MAM 09/22/17

NA - not available  
 U - Not detected, value is the detection limit  
 B - Compounds detected in method blank as well as field sample  
 J - Indicates compound was detected at an estimated value.  
 D - Result from diluted analyses  
 ug/m<sup>3</sup> - micrograms per cubic meter

**Table 2.**  
**Vacuum Monitoring Results - Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Date	Pressure Differential (inches of water)		
	VMW-5	VMW-6	VMW-7
2/3/2009	-0.25	-0.17	0.00
2/18/2009	-0.212	-0.155	-0.011
2/26/2009	-0.230	-0.120	-0.025
3/6/2009	-0.200	-0.086	-0.012
4/14/2009	-0.108	-0.054	-0.014
5/15/2009	-0.081	-0.073	-0.016
6/11/2009	-0.090	-0.076	-0.098
9/17/2009	-0.110	-0.102	+0.074
12/29/2009**	-0.011	-0.010	-0.061
3/26/2010	-0.245	-0.142	-0.018
7/1/2010	-0.542	-0.114	-0.176
9/16/2010	-0.247	-0.874	-0.013
12/7/2010	-0.044	-0.028	+0.022
2/17/2011	-0.212	-0.599	-0.337
6/2/2011	-0.277	-0.236	-0.138**
9/15/2011	-0.234	-0.212	-0.010
12/8/2011	-0.609	-0.115	-0.009
3/8/2012	-0.003	-0.246	-0.114
6/14/2012	-0.237	-0.103	-0.132
9/13/2012	-0.243	-0.119	-0.210
1/3/2013	-0.150	-0.060	-0.052
3/15/2013	-0.228	-0.354	-0.002
6/7/2013	-0.226	-0.123	-0.011
9/6/2013	-0.232	-0.829	-0.007
10/3/2013	NM	NM	-0.006
12/13/2013	-0.215	-0.002	-0.002
3/7/2014	-0.177	-0.002	-0.002
6/13/2014	-0.185	-0.010	-0.011
9/12/2014	-0.258	-0.256	-0.014
12/19/2014	-0.222	-0.100	-0.001
3/27/2015	-0.301	-0.097	-0.036
6/11/2015	-0.23***	-0.1***	NM***
9/16/2015	-0.246	-0.050	-0.013
12/18/2015	-0.378	-0.177	-0.005
2/18/2016	-0.228	-0.987	-0.009
8/5/2016	-0.243	-0.095	-0.088
2/13/2017	-0.0195	-0.08	-0.107
9/6/2017	-0.242	-0.045	-0.003

\*\* ASD system offline.

NM = Not Measured

\*\*\* Due to Digital Manometer reading high range only at the time of measurement, readings are in tenths of inches of water. VMW-7 was not measured due to the low range of the vacuum.

Prepared by/Date: MAM 09/6/17

Checked by/Date: DEH 09/25/17



















**Table 4.  
Vacuum Monitoring Results - Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Date	Pressure Differential (inches of water)			
	VMW-1	VMW-2	VMW-3	VMW-4
2/3/2009	-0.20	-0.62	-0.15	-0.12
2/18/2009	-0.509	-0.738	-0.650	-0.253
2/26/2009	-0.511	-0.710	-0.665	-0.273
3/6/2009	-0.507	-0.610	-0.715	-0.251
3/6/2009*	-0.120	-0.195	-0.230	-0.028
3/31/2009	-0.148	-0.221	-0.244	-0.072
4/14/2009	-0.140	-0.210	-0.215	-0.081
5/15/2009	-0.133	-0.193	-0.208	-0.087
9/17/2009	-0.132	-0.172	-0.209	-0.087
9/24/2009	-0.146	-0.189	-0.254	-0.094
10/1/2009	-0.181	-0.232	-0.233	-0.097
10/8/2009	-0.197	-0.212	-0.255	-0.087
12/29/2009**	-0.021	-0.020	-0.160	-0.023
1/28/2010	-0.947	-0.642	-0.709	-0.237
2/5/2010	-0.497	-0.714	-0.510	-0.258
2/12/2010	-0.509	-0.706	-0.537	-0.261
2/19/2010	-0.526	-0.733	-0.667	-0.242
3/26/2010	-0.636	-0.860	-0.671	-0.331
4/30/2010	-0.519	-0.713	-0.378	-0.287
5/28/2010	-0.546	-0.727	+1.371	-0.279
7/1/2010	-0.505	-0.678	+1.568	-0.272
9/16/2010	-0.496	-0.654	+0.980	-0.272
12/7/2010	-0.126	-0.202	-0.155	-0.052
2/17/2011	-0.491	-0.683	-0.737	-0.263
6/2/2011	-0.561	-0.767	-0.393	-0.290
9/15/2011	-0.517	-0.710	+1.071	-0.260
12/8/2011	-0.609	-0.826	+1.502	-0.313
3/8/2012	-0.422	-0.680	+0.329	-0.288
6/14/2012	-0.372	-0.767	+2.389	-0.280
9/13/2012	-0.543	-1.021	-0.665	-0.283
1/3/2013	-0.495	-0.628	-1.141	-0.674
3/15/2013	-0.539	-0.636	-0.754	-0.254
6/7/2013	-0.121	-0.681	-0.787	-0.223
9/6/2013	-0.421	-0.743	-0.766	-0.265
12/13/2013	-0.435	-0.580	-0.031	-0.190
3/7/2014	-0.311	-0.541	-0.741	-0.157
6/13/2014	-0.538	-0.627	-0.010	-0.058
9/12/2014	-0.549	-0.528	-0.295	-0.002
12/19/2014	-0.492	-0.427	-0.002	-0.143
3/27/2015	-0.433	-0.655	-0.011	-0.108
6/11/2015	-0.49***	-0.66***	-0.5***	-0.15***
9/16/2015	-0.535	-0.409	-0.611	-0.123
12/18/2015	-0.436	-0.495	-0.692	-0.181
2/20/2016	-0.49	-0.592	-0.804	-0.0225
8/5/2016	-0.542	-0.503	-0.746	-0.165
2/13/2017	-0.39	-0.602	-0.494	-0.206
9/6/2017	-0.593	-0.649	-0.031	-0.29

\* vacuum reduced at extraction wells

\*\* ASD system offline

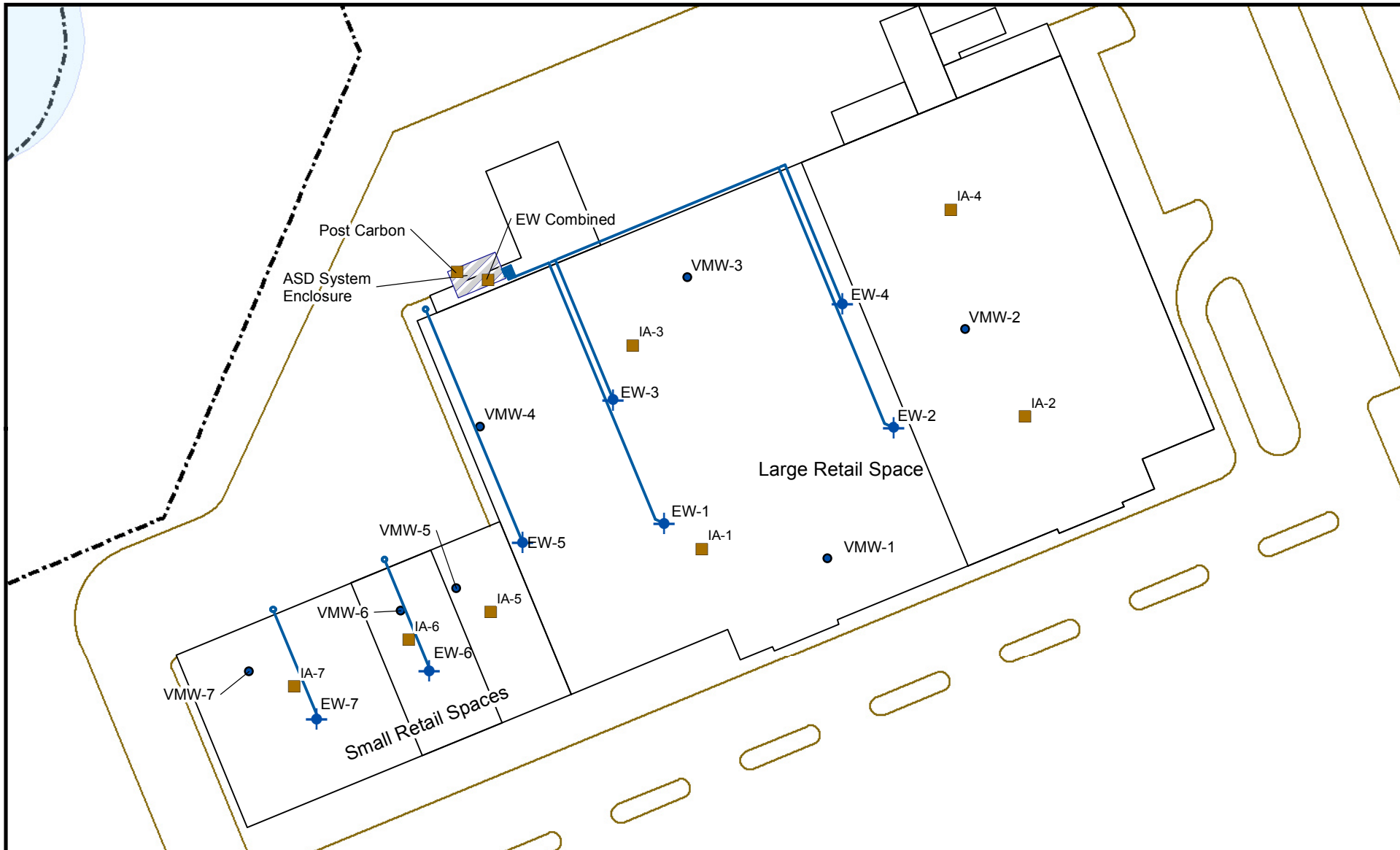
\*\*\* Due to Digital Manometer reading high range only at the time of measurement, readings are in tenths of inches of water.

Prepared by/Date: MAM 09/6/17

Checked by/Date: DEH 09/25/17



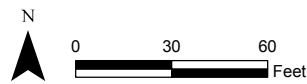
**FIGURE 1**



All locations are approximate

**Legend**

- Air Sample Location
- Vacuum Monitoring Well
- ◆ Extraction Well
- Extraction Well Piping
- Current Building
- Pavement Outline
- Effluent Location



Prepared/Date: BJR 04/15/13 | Checked/Date: MAM 04/15/13

**Figure 1**  
Vapor Mitigation  
Sample Locations

Former Gorham Manufacturing Facility  
333 Adelaide Avenue  
Providence, Rhode Island

## **APPENDIX A**

September 19, 2017

Dave Heislein  
AMEC E&I, Inc.  
271 Mill Road, 3rd Floor  
Chelmsford, MA 01824

Project Location: Providence, RI  
Client Job Number:  
Project Number: 3652150005  
Laboratory Work Order Number: 17I0332

Enclosed are results of analyses for samples received by the laboratory on September 8, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kerry K. McGee  
Project Manager

AMEC E&I, Inc.  
 271 Mill Road, 3rd Floor  
 Chelmsford, MA 01824  
 ATTN: Dave Heislein

REPORT DATE: 9/19/2017

PURCHASE ORDER NUMBER: C012206368

PROJECT NUMBER: 3652150005

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 1710332

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Providence, RI

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
IA-1-090717	1710332-01	Indoor air		-	
				EPA TO-15	
IA-2-090717	1710332-02	Indoor air		-	
				EPA TO-15	
IA-3-090717	1710332-03	Indoor air		EPA TO-15	
IA-4-090717	1710332-04	Indoor air		EPA TO-15	
IA-5-090717	1710332-05	Indoor air		EPA TO-15	
IA-6-090717	1710332-06	Indoor air		EPA TO-15	
IA-7-090717	1710332-07	Indoor air		EPA TO-15	
AA-1-090717	1710332-08	Ambient Air		EPA TO-15	
EW-5-090717	1710332-09	Sub Slab		EPA TO-15	
EW-6-090717	1710332-10	Sub Slab		EPA TO-15	
EW-7-090717	1710332-11	Sub Slab		EPA TO-15	
EW-Combined-090717	1710332-12	Sub Slab		EPA TO-15	
Can #1828	1710332-13	Sub Slab		-	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**EPA TO-15**

**Qualifications:**

---

Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

**Analyte & Samples(s) Qualified:**

**1,2,4-Trichlorobenzene**

B186540-BS1

---

Compound fails the method requirement of 70-130% recovery for the LCS. Is classified by the lab as a difficult compound and passes the in house limits of 50-150%.

**Analyte & Samples(s) Qualified:**

**Isopropanol**

1710332-01[IA-1-090717], 1710332-02[IA-2-090717], 1710332-03[IA-3-090717], 1710332-04[IA-4-090717], 1710332-05[IA-5-090717], 1710332-06[IA-6-090717], 1710332-07[IA-7-090717], 1710332-08[AA-1-090717], 1710332-09[EW-5-090717], 1710332-10[EW-6-090717], 1710332-11[EW-7-090717], 1710332-12[EW-Combined-090717], B186540-BLK1, B186540-BS1, B186540-DUP1

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The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington  
Project Manager

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-1-090717**  
**Sample ID: 1710332-01**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:32

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1944  
 Canister Size: 6 liter  
 Flow Controller ID: 4292  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -2  
 Receipt Vacuum(in Hg): -3.8  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL	MDL		Results	RL			
Acetone	5.9	1.4	0.49		14	3.3	0.702	9/14/17 16:54	CMR
Benzene	0.16	0.035	0.022		0.50	0.11	0.702	9/14/17 16:54	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17 16:54	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17 16:54	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17 16:54	CMR
Bromomethane	0.034	0.035	0.028	J	0.13	0.14	0.702	9/14/17 16:54	CMR
1,3-Butadiene	ND	0.035	0.027		ND	0.078	0.702	9/14/17 16:54	CMR
2-Butanone (MEK)	0.70	1.4	0.026	J	2.1	4.1	0.702	9/14/17 16:54	CMR
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.702	9/14/17 16:54	CMR
Carbon Tetrachloride	0.063	0.035	0.025		0.40	0.22	0.702	9/14/17 16:54	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17 16:54	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17 16:54	CMR
Chloroform	0.032	0.035	0.026	J	0.16	0.17	0.702	9/14/17 16:54	CMR
Chloromethane	0.57	0.070	0.029		1.2	0.14	0.702	9/14/17 16:54	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17 16:54	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17 16:54	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17 16:54	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17 16:54	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17 16:54	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17 16:54	CMR
Dichlorodifluoromethane (Freon 12)	0.30	0.035	0.027		1.5	0.17	0.702	9/14/17 16:54	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 16:54	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 16:54	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 16:54	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17 16:54	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 16:54	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17 16:54	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17 16:54	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17 16:54	CMR
Ethanol	8.0	1.4	0.63		15	2.6	0.702	9/14/17 16:54	CMR
Ethyl Acetate	0.11	0.070	0.030		0.38	0.25	0.702	9/14/17 16:54	CMR
Ethylbenzene	0.055	0.035	0.023		0.24	0.15	0.702	9/14/17 16:54	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 16:54	CMR
Heptane	0.039	0.035	0.023		0.16	0.14	0.702	9/14/17 16:54	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17 16:54	CMR
Hexane	0.086	1.4	0.062	J	0.30	4.9	0.702	9/14/17 16:54	CMR
2-Hexanone (MBK)	0.079	0.035	0.021		0.32	0.14	0.702	9/14/17 16:54	CMR
Isopropanol	0.99	1.4	0.043	Z-01, J	2.4	3.4	0.702	9/14/17 16:54	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-1-090717**  
**Sample ID: 1710332-01**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:32

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1944  
 Canister Size: 6 liter  
 Flow Controller ID: 4292  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -2  
 Receipt Vacuum(in Hg): -3.8  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
		RL	MDL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 16:54	CMR
Methylene Chloride	0.084	0.35	0.043	J	0.29	1.2	0.702	9/14/17 16:54	CMR
Methyl methacrylate	0.055	0.035	0.026		0.23	0.14	0.702	9/14/17 16:54	CMR
4-Methyl-2-pentanone (MIBK)	0.079	0.035	0.030		0.32	0.14	0.702	9/14/17 16:54	CMR
Propene	0.61	1.4	0.11	J	1.0	2.4	0.702	9/14/17 16:54	CMR
Styrene	ND	0.035	0.023		ND	0.15	0.702	9/14/17 16:54	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 16:54	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 16:54	CMR
Tetrachloroethylene	0.050	0.035	0.021		0.34	0.24	0.702	9/14/17 16:54	CMR
Tetrahydrofuran	0.028	0.070	0.024	J	0.083	0.21	0.702	9/14/17 16:54	CMR
Toluene	0.34	0.035	0.022		1.3	0.13	0.702	9/14/17 16:54	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 16:54	CMR
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 16:54	CMR
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 16:54	CMR
Trichloroethylene	0.049	0.035	0.022		0.26	0.19	0.702	9/14/17 16:54	CMR
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.029		1.2	0.79	0.702	9/14/17 16:54	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.060	0.14	0.024	J	0.46	1.1	0.702	9/14/17 16:54	CMR
1,2,4-Trimethylbenzene	0.045	0.035	0.023		0.22	0.17	0.702	9/14/17 16:54	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 16:54	CMR
Vinyl Acetate	ND	0.70	0.021		ND	2.5	0.702	9/14/17 16:54	CMR
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 16:54	CMR
m&p-Xylene	0.21	0.070	0.045		0.92	0.30	0.702	9/14/17 16:54	CMR
o-Xylene	0.075	0.035	0.022		0.33	0.15	0.702	9/14/17 16:54	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	105	70-130	9/14/17 16:54
4-Bromofluorobenzene (2)	123	70-130	9/14/17 16:54



**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-2-090717**  
**Sample ID: 1710332-02**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:01

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1309  
 Canister Size: 6 liter  
 Flow Controller ID: 4304  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Date/Time		Analyst
	Results	RL	MDL		Results	RL	Dilution	Analyzed	
Acetone	13	1.4	0.49		31	3.3	0.702	9/14/17 17:38	CMR
Benzene	0.17	0.035	0.022		0.55	0.11	0.702	9/14/17 17:38	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17 17:38	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17 17:38	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17 17:38	CMR
Bromomethane	ND	0.035	0.028		ND	0.14	0.702	9/14/17 17:38	CMR
1,3-Butadiene	ND	0.035	0.027		ND	0.078	0.702	9/14/17 17:38	CMR
2-Butanone (MEK)	0.74	1.4	0.026	J	2.2	4.1	0.702	9/14/17 17:38	CMR
Carbon Disulfide	0.11	0.35	0.024	J	0.34	1.1	0.702	9/14/17 17:38	CMR
Carbon Tetrachloride	0.065	0.035	0.025		0.41	0.22	0.702	9/14/17 17:38	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17 17:38	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17 17:38	CMR
Chloroform	0.14	0.035	0.026		0.68	0.17	0.702	9/14/17 17:38	CMR
Chloromethane	0.69	0.070	0.029		1.4	0.14	0.702	9/14/17 17:38	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17 17:38	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17 17:38	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17 17:38	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17 17:38	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17 17:38	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17 17:38	CMR
Dichlorodifluoromethane (Freon 12)	0.29	0.035	0.027		1.4	0.17	0.702	9/14/17 17:38	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 17:38	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 17:38	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 17:38	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17 17:38	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 17:38	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17 17:38	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17 17:38	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17 17:38	CMR
Ethanol	170	8.0	3.6		320	15	4	9/15/17 22:25	CMR
Ethyl Acetate	0.44	0.070	0.030		1.6	0.25	0.702	9/14/17 17:38	CMR
Ethylbenzene	0.044	0.035	0.023		0.19	0.15	0.702	9/14/17 17:38	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 17:38	CMR
Heptane	0.062	0.035	0.023		0.26	0.14	0.702	9/14/17 17:38	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17 17:38	CMR
Hexane	0.11	1.4	0.062	J	0.39	4.9	0.702	9/14/17 17:38	CMR
2-Hexanone (MBK)	0.091	0.035	0.021		0.37	0.14	0.702	9/14/17 17:38	CMR
Isopropanol	5.8	1.4	0.043	Z-01	14	3.4	0.702	9/14/17 17:38	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-2-090717**  
**Sample ID: 1710332-02**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:01

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1309  
 Canister Size: 6 liter  
 Flow Controller ID: 4304  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
		RL	MDL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 17:38	CMR
Methylene Chloride	0.088	0.35	0.043	J	0.30	1.2	0.702	9/14/17 17:38	CMR
Methyl methacrylate	ND	0.035	0.026		ND	0.14	0.702	9/14/17 17:38	CMR
4-Methyl-2-pentanone (MIBK)	0.48	0.035	0.030		2.0	0.14	0.702	9/14/17 17:38	CMR
Propene	ND	1.4	0.11		ND	2.4	0.702	9/14/17 17:38	CMR
Styrene	0.081	0.035	0.023		0.34	0.15	0.702	9/14/17 17:38	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 17:38	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 17:38	CMR
Tetrachloroethylene	0.069	0.035	0.021		0.47	0.24	0.702	9/14/17 17:38	CMR
Tetrahydrofuran	0.042	0.070	0.024	J	0.12	0.21	0.702	9/14/17 17:38	CMR
Toluene	0.49	0.035	0.022		1.8	0.13	0.702	9/14/17 17:38	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 17:38	CMR
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 17:38	CMR
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 17:38	CMR
Trichloroethylene	ND	0.035	0.022		ND	0.19	0.702	9/14/17 17:38	CMR
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.029		1.2	0.79	0.702	9/14/17 17:38	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.060	0.14	0.024	J	0.46	1.1	0.702	9/14/17 17:38	CMR
1,2,4-Trimethylbenzene	0.035	0.035	0.023		0.17	0.17	0.702	9/14/17 17:38	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 17:38	CMR
Vinyl Acetate	ND	0.70	0.021		ND	2.5	0.702	9/14/17 17:38	CMR
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 17:38	CMR
m&p-Xylene	0.16	0.070	0.045		0.69	0.30	0.702	9/14/17 17:38	CMR
o-Xylene	0.056	0.035	0.022		0.24	0.15	0.702	9/14/17 17:38	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	9/15/17 22:25
4-Bromofluorobenzene (1)	105	70-130	9/14/17 17:38
4-Bromofluorobenzene (2)	122	70-130	9/14/17 17:38

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-3-090717**  
**Sample ID: 1710332-03**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:33

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1038  
 Canister Size: 6 liter  
 Flow Controller ID: 4293  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -4.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL	MDL		Results	RL			
Acetone	5.7	1.4	0.49		14	3.3	0.702	9/14/17 18:23	CMR
Benzene	0.16	0.035	0.022		0.50	0.11	0.702	9/14/17 18:23	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17 18:23	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17 18:23	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17 18:23	CMR
Bromomethane	0.036	0.035	0.028		0.14	0.14	0.702	9/14/17 18:23	CMR
1,3-Butadiene	ND	0.035	0.027		ND	0.078	0.702	9/14/17 18:23	CMR
2-Butanone (MEK)	0.83	1.4	0.026	J	2.5	4.1	0.702	9/14/17 18:23	CMR
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.702	9/14/17 18:23	CMR
Carbon Tetrachloride	0.062	0.035	0.025		0.39	0.22	0.702	9/14/17 18:23	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17 18:23	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17 18:23	CMR
Chloroform	0.033	0.035	0.026	J	0.16	0.17	0.702	9/14/17 18:23	CMR
Chloromethane	0.60	0.070	0.029		1.2	0.14	0.702	9/14/17 18:23	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17 18:23	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17 18:23	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17 18:23	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17 18:23	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17 18:23	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17 18:23	CMR
Dichlorodifluoromethane (Freon 12)	0.28	0.035	0.027		1.4	0.17	0.702	9/14/17 18:23	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 18:23	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 18:23	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 18:23	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17 18:23	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 18:23	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17 18:23	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17 18:23	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17 18:23	CMR
Ethanol	8.2	1.4	0.63		16	2.6	0.702	9/14/17 18:23	CMR
Ethyl Acetate	0.061	0.070	0.030	J	0.22	0.25	0.702	9/14/17 18:23	CMR
Ethylbenzene	0.051	0.035	0.023		0.22	0.15	0.702	9/14/17 18:23	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 18:23	CMR
Heptane	0.11	0.035	0.023		0.44	0.14	0.702	9/14/17 18:23	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17 18:23	CMR
Hexane	0.18	1.4	0.062	J	0.64	4.9	0.702	9/14/17 18:23	CMR
2-Hexanone (MBK)	0.076	0.035	0.021		0.31	0.14	0.702	9/14/17 18:23	CMR
Isopropanol	1.0	1.4	0.043	Z-01, J	2.5	3.4	0.702	9/14/17 18:23	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-3-090717**  
**Sample ID: 1710332-03**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:33

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1038  
 Canister Size: 6 liter  
 Flow Controller ID: 4293  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -4.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
		RL	MDL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 18:23	CMR
Methylene Chloride	0.084	0.35	0.043	J	0.29	1.2	0.702	9/14/17 18:23	CMR
Methyl methacrylate	0.063	0.035	0.026		0.26	0.14	0.702	9/14/17 18:23	CMR
4-Methyl-2-pentanone (MIBK)	0.095	0.035	0.030		0.39	0.14	0.702	9/14/17 18:23	CMR
Propene	0.62	1.4	0.11	J	1.1	2.4	0.702	9/14/17 18:23	CMR
Styrene	ND	0.035	0.023		ND	0.15	0.702	9/14/17 18:23	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 18:23	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 18:23	CMR
Tetrachloroethylene	0.044	0.035	0.021		0.30	0.24	0.702	9/14/17 18:23	CMR
Tetrahydrofuran	0.025	0.070	0.024	J	0.075	0.21	0.702	9/14/17 18:23	CMR
Toluene	0.34	0.035	0.022		1.3	0.13	0.702	9/14/17 18:23	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 18:23	CMR
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 18:23	CMR
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 18:23	CMR
Trichloroethylene	0.045	0.035	0.022		0.24	0.19	0.702	9/14/17 18:23	CMR
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.029		1.1	0.79	0.702	9/14/17 18:23	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.057	0.14	0.024	J	0.44	1.1	0.702	9/14/17 18:23	CMR
1,2,4-Trimethylbenzene	0.044	0.035	0.023		0.21	0.17	0.702	9/14/17 18:23	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 18:23	CMR
Vinyl Acetate	0.28	0.70	0.021	J	0.98	2.5	0.702	9/14/17 18:23	CMR
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 18:23	CMR
m&p-Xylene	0.21	0.070	0.045		0.90	0.30	0.702	9/14/17 18:23	CMR
o-Xylene	0.067	0.035	0.022		0.29	0.15	0.702	9/14/17 18:23	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	104	70-130	9/14/17 18:23
4-Bromofluorobenzene (2)	121	70-130	9/14/17 18:23

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-4-090717**  
**Sample ID: 1710332-04**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:03

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1750  
 Canister Size: 6 liter  
 Flow Controller ID: 4305  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -3.9  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL	MDL		Results	RL			
Acetone	13	1.4	0.49		31	3.3	0.702	9/14/17 19:07	CMR
Benzene	0.18	0.035	0.022		0.58	0.11	0.702	9/14/17 19:07	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17 19:07	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17 19:07	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17 19:07	CMR
Bromomethane	ND	0.035	0.028		ND	0.14	0.702	9/14/17 19:07	CMR
1,3-Butadiene	ND	0.035	0.027		ND	0.078	0.702	9/14/17 19:07	CMR
2-Butanone (MEK)	0.65	1.4	0.026	J	1.9	4.1	0.702	9/14/17 19:07	CMR
Carbon Disulfide	0.11	0.35	0.024	J	0.34	1.1	0.702	9/14/17 19:07	CMR
Carbon Tetrachloride	0.060	0.035	0.025		0.38	0.22	0.702	9/14/17 19:07	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17 19:07	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17 19:07	CMR
Chloroform	0.14	0.035	0.026		0.69	0.17	0.702	9/14/17 19:07	CMR
Chloromethane	0.66	0.070	0.029		1.4	0.14	0.702	9/14/17 19:07	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17 19:07	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17 19:07	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17 19:07	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17 19:07	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17 19:07	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17 19:07	CMR
Dichlorodifluoromethane (Freon 12)	0.30	0.035	0.027		1.5	0.17	0.702	9/14/17 19:07	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 19:07	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 19:07	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 19:07	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17 19:07	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 19:07	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17 19:07	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17 19:07	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17 19:07	CMR
Ethanol	150	8.0	3.6		290	15	4	9/15/17 23:07	CMR
Ethyl Acetate	0.40	0.070	0.030		1.5	0.25	0.702	9/14/17 19:07	CMR
Ethylbenzene	0.039	0.035	0.023		0.17	0.15	0.702	9/14/17 19:07	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 19:07	CMR
Heptane	0.055	0.035	0.023		0.22	0.14	0.702	9/14/17 19:07	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17 19:07	CMR
Hexane	0.10	1.4	0.062	J	0.35	4.9	0.702	9/14/17 19:07	CMR
2-Hexanone (MBK)	0.085	0.035	0.021		0.35	0.14	0.702	9/14/17 19:07	CMR
Isopropanol	5.3	1.4	0.043	Z-01	13	3.4	0.702	9/14/17 19:07	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-4-090717**  
**Sample ID: 1710332-04**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 08:03

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1750  
 Canister Size: 6 liter  
 Flow Controller ID: 4305  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -3.9  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
		RL	MDL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 19:07	CMR	
Methylene Chloride	0.089	0.35	0.043	J	0.31	1.2	0.702	9/14/17 19:07	CMR	
Methyl methacrylate	ND	0.035	0.026		ND	0.14	0.702	9/14/17 19:07	CMR	
4-Methyl-2-pentanone (MIBK)	0.50	0.035	0.030		2.1	0.14	0.702	9/14/17 19:07	CMR	
Propene	ND	1.4	0.11		ND	2.4	0.702	9/14/17 19:07	CMR	
Styrene	0.091	0.035	0.023		0.39	0.15	0.702	9/14/17 19:07	CMR	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 19:07	CMR	
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 19:07	CMR	
Tetrachloroethylene	0.069	0.035	0.021		0.47	0.24	0.702	9/14/17 19:07	CMR	
Tetrahydrofuran	0.034	0.070	0.024	J	0.10	0.21	0.702	9/14/17 19:07	CMR	
Toluene	0.47	0.035	0.022		1.8	0.13	0.702	9/14/17 19:07	CMR	
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 19:07	CMR	
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 19:07	CMR	
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 19:07	CMR	
Trichloroethylene	ND	0.035	0.022		ND	0.19	0.702	9/14/17 19:07	CMR	
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.029		1.2	0.79	0.702	9/14/17 19:07	CMR	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.060	0.14	0.024	J	0.46	1.1	0.702	9/14/17 19:07	CMR	
1,2,4-Trimethylbenzene	0.036	0.035	0.023		0.18	0.17	0.702	9/14/17 19:07	CMR	
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 19:07	CMR	
Vinyl Acetate	ND	0.70	0.021		ND	2.5	0.702	9/14/17 19:07	CMR	
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 19:07	CMR	
m&p-Xylene	0.15	0.070	0.045		0.64	0.30	0.702	9/14/17 19:07	CMR	
o-Xylene	0.051	0.035	0.022		0.22	0.15	0.702	9/14/17 19:07	CMR	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	9/15/17 23:07
4-Bromofluorobenzene (1)	105	70-130	9/14/17 19:07
4-Bromofluorobenzene (2)	123	70-130	9/14/17 19:07

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-5-090717**  
**Sample ID: 1710332-05**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 11:45

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1936  
 Canister Size: 6 liter  
 Flow Controller ID: 4213  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analyzed		
Acetone	10	1.4	0.49		24	3.3	0.702	9/14/17	19:52	CMR
Benzene	0.17	0.035	0.022		0.53	0.11	0.702	9/14/17	19:52	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17	19:52	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17	19:52	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17	19:52	CMR
Bromomethane	ND	0.035	0.028		ND	0.14	0.702	9/14/17	19:52	CMR
1,3-Butadiene	ND	0.035	0.027		ND	0.078	0.702	9/14/17	19:52	CMR
2-Butanone (MEK)	0.99	1.4	0.026	J	2.9	4.1	0.702	9/14/17	19:52	CMR
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.702	9/14/17	19:52	CMR
Carbon Tetrachloride	0.065	0.035	0.025		0.41	0.22	0.702	9/14/17	19:52	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17	19:52	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17	19:52	CMR
Chloroform	0.17	0.035	0.026		0.84	0.17	0.702	9/14/17	19:52	CMR
Chloromethane	1.1	0.070	0.029		2.4	0.14	0.702	9/14/17	19:52	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17	19:52	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17	19:52	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17	19:52	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17	19:52	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17	19:52	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17	19:52	CMR
Dichlorodifluoromethane (Freon 12)	0.27	0.035	0.027		1.3	0.17	0.702	9/14/17	19:52	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17	19:52	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17	19:52	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17	19:52	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17	19:52	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17	19:52	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17	19:52	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17	19:52	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17	19:52	CMR
Ethanol	72	4.0	1.8		130	7.5	2	9/16/17	0:31	CMR
Ethyl Acetate	0.11	0.070	0.030		0.40	0.25	0.702	9/14/17	19:52	CMR
Ethylbenzene	0.098	0.035	0.023		0.43	0.15	0.702	9/14/17	19:52	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17	19:52	CMR
Heptane	0.091	0.035	0.023		0.37	0.14	0.702	9/14/17	19:52	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17	19:52	CMR
Hexane	0.12	1.4	0.062	J	0.43	4.9	0.702	9/14/17	19:52	CMR
2-Hexanone (MBK)	0.14	0.035	0.021		0.57	0.14	0.702	9/14/17	19:52	CMR
Isopropanol	2.5	1.4	0.043	Z-01	6.2	3.4	0.702	9/14/17	19:52	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-5-090717**  
**Sample ID: 1710332-05**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 11:45

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1936  
 Canister Size: 6 liter  
 Flow Controller ID: 4213  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
		RL	MDL		Results	RL		Analized		
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 19:52	CMR	
Methylene Chloride	0.10	0.35	0.043	J	0.36	1.2	0.702	9/14/17 19:52	CMR	
Methyl methacrylate	ND	0.035	0.026		ND	0.14	0.702	9/14/17 19:52	CMR	
4-Methyl-2-pentanone (MIBK)	0.089	0.035	0.030		0.37	0.14	0.702	9/14/17 19:52	CMR	
Propene	0.94	1.4	0.11	J	1.6	2.4	0.702	9/14/17 19:52	CMR	
Styrene	0.073	0.035	0.023		0.31	0.15	0.702	9/14/17 19:52	CMR	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 19:52	CMR	
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 19:52	CMR	
Tetrachloroethylene	0.065	0.035	0.021		0.44	0.24	0.702	9/14/17 19:52	CMR	
Tetrahydrofuran	0.044	0.070	0.024	J	0.13	0.21	0.702	9/14/17 19:52	CMR	
Toluene	0.58	0.035	0.022		2.2	0.13	0.702	9/14/17 19:52	CMR	
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 19:52	CMR	
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 19:52	CMR	
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 19:52	CMR	
Trichloroethylene	ND	0.035	0.022		ND	0.19	0.702	9/14/17 19:52	CMR	
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.029		1.1	0.79	0.702	9/14/17 19:52	CMR	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.058	0.14	0.024	J	0.44	1.1	0.702	9/14/17 19:52	CMR	
1,2,4-Trimethylbenzene	0.039	0.035	0.023		0.19	0.17	0.702	9/14/17 19:52	CMR	
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 19:52	CMR	
Vinyl Acetate	0.32	0.70	0.021	J	1.1	2.5	0.702	9/14/17 19:52	CMR	
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 19:52	CMR	
m&p-Xylene	0.26	0.070	0.045		1.1	0.30	0.702	9/14/17 19:52	CMR	
o-Xylene	0.091	0.035	0.022		0.40	0.15	0.702	9/14/17 19:52	CMR	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	108	70-130	9/16/17 0:31
4-Bromofluorobenzene (1)	105	70-130	9/14/17 19:52
4-Bromofluorobenzene (2)	123	70-130	9/14/17 19:52



**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-6-090717**  
**Sample ID: 1710332-06**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 12:31

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1196  
 Canister Size: 6 liter  
 Flow Controller ID: 4314  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -8  
 Receipt Vacuum(in Hg): -8.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL	MDL		Results	RL			
Acetone	16	1.4	0.49		38	3.3	0.702	9/14/17 20:40	CMR
Benzene	0.16	0.035	0.022		0.50	0.11	0.702	9/14/17 20:40	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17 20:40	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17 20:40	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17 20:40	CMR
Bromomethane	ND	0.035	0.028		ND	0.14	0.702	9/14/17 20:40	CMR
1,3-Butadiene	ND	0.035	0.027		ND	0.078	0.702	9/14/17 20:40	CMR
2-Butanone (MEK)	1.3	1.4	0.026	J	3.7	4.1	0.702	9/14/17 20:40	CMR
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.702	9/14/17 20:40	CMR
Carbon Tetrachloride	0.065	0.035	0.025		0.41	0.22	0.702	9/14/17 20:40	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17 20:40	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17 20:40	CMR
Chloroform	0.041	0.035	0.026		0.20	0.17	0.702	9/14/17 20:40	CMR
Chloromethane	0.65	0.070	0.029		1.3	0.14	0.702	9/14/17 20:40	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17 20:40	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17 20:40	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17 20:40	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17 20:40	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17 20:40	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17 20:40	CMR
Dichlorodifluoromethane (Freon 12)	0.28	0.035	0.027		1.4	0.17	0.702	9/14/17 20:40	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 20:40	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 20:40	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 20:40	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17 20:40	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 20:40	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17 20:40	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17 20:40	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17 20:40	CMR
Ethanol	11	1.4	0.63		21	2.6	0.702	9/14/17 20:40	CMR
Ethyl Acetate	0.52	0.070	0.030		1.9	0.25	0.702	9/14/17 20:40	CMR
Ethylbenzene	0.061	0.035	0.023		0.27	0.15	0.702	9/14/17 20:40	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 20:40	CMR
Heptane	0.057	0.035	0.023		0.23	0.14	0.702	9/14/17 20:40	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17 20:40	CMR
Hexane	0.21	1.4	0.062	J	0.75	4.9	0.702	9/14/17 20:40	CMR
2-Hexanone (MBK)	0.054	0.035	0.021		0.22	0.14	0.702	9/14/17 20:40	CMR
Isopropanol	1.4	1.4	0.043	Z-01, J	3.4	3.4	0.702	9/14/17 20:40	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-6-090717**  
**Sample ID: 1710332-06**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 12:31

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1196  
 Canister Size: 6 liter  
 Flow Controller ID: 4314  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -8  
 Receipt Vacuum(in Hg): -8.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
		RL	MDL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 20:40	CMR
Methylene Chloride	0.15	0.35	0.043	J	0.52	1.2	0.702	9/14/17 20:40	CMR
Methyl methacrylate	ND	0.035	0.026		ND	0.14	0.702	9/14/17 20:40	CMR
4-Methyl-2-pentanone (MIBK)	0.090	0.035	0.030		0.37	0.14	0.702	9/14/17 20:40	CMR
Propene	ND	1.4	0.11		ND	2.4	0.702	9/14/17 20:40	CMR
Styrene	0.038	0.035	0.023		0.16	0.15	0.702	9/14/17 20:40	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 20:40	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 20:40	CMR
Tetrachloroethylene	0.031	0.035	0.021	J	0.21	0.24	0.702	9/14/17 20:40	CMR
Tetrahydrofuran	0.056	0.070	0.024	J	0.17	0.21	0.702	9/14/17 20:40	CMR
Toluene	0.46	0.035	0.022		1.7	0.13	0.702	9/14/17 20:40	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 20:40	CMR
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 20:40	CMR
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 20:40	CMR
Trichloroethylene	ND	0.035	0.022		ND	0.19	0.702	9/14/17 20:40	CMR
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.029		1.2	0.79	0.702	9/14/17 20:40	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.058	0.14	0.024	J	0.45	1.1	0.702	9/14/17 20:40	CMR
1,2,4-Trimethylbenzene	0.031	0.035	0.023	J	0.15	0.17	0.702	9/14/17 20:40	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 20:40	CMR
Vinyl Acetate	ND	0.70	0.021		ND	2.5	0.702	9/14/17 20:40	CMR
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 20:40	CMR
m&p-Xylene	0.19	0.070	0.045		0.81	0.30	0.702	9/14/17 20:40	CMR
o-Xylene	0.064	0.035	0.022		0.28	0.15	0.702	9/14/17 20:40	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	105	70-130	9/14/17 20:40
4-Bromofluorobenzene (2)	121	70-130	9/14/17 20:40

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-7-090717**  
**Sample ID: 1710332-07**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 11:50

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1959  
 Canister Size: 6 liter  
 Flow Controller ID: 4308  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -6.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Date/Time		Analyst
	Results	RL	MDL		Results	RL	Dilution	Analyzed	
Acetone	16	1.4	0.49		37	3.3	0.702	9/14/17 21:25	CMR
Benzene	0.15	0.035	0.022		0.47	0.11	0.702	9/14/17 21:25	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17 21:25	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17 21:25	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17 21:25	CMR
Bromomethane	ND	0.035	0.028		ND	0.14	0.702	9/14/17 21:25	CMR
1,3-Butadiene	ND	0.035	0.027		ND	0.078	0.702	9/14/17 21:25	CMR
2-Butanone (MEK)	0.81	1.4	0.026	J	2.4	4.1	0.702	9/14/17 21:25	CMR
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.702	9/14/17 21:25	CMR
Carbon Tetrachloride	0.063	0.035	0.025		0.40	0.22	0.702	9/14/17 21:25	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17 21:25	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17 21:25	CMR
Chloroform	0.063	0.035	0.026		0.31	0.17	0.702	9/14/17 21:25	CMR
Chloromethane	0.72	0.070	0.029		1.5	0.14	0.702	9/14/17 21:25	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17 21:25	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17 21:25	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17 21:25	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17 21:25	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17 21:25	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17 21:25	CMR
Dichlorodifluoromethane (Freon 12)	0.29	0.035	0.027		1.4	0.17	0.702	9/14/17 21:25	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 21:25	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 21:25	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 21:25	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17 21:25	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 21:25	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17 21:25	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17 21:25	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17 21:25	CMR
Ethanol	51	4.0	1.8		95	7.5	2	9/16/17 1:15	CMR
Ethyl Acetate	0.49	0.070	0.030		1.7	0.25	0.702	9/14/17 21:25	CMR
Ethylbenzene	0.067	0.035	0.023		0.29	0.15	0.702	9/14/17 21:25	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 21:25	CMR
Heptane	0.072	0.035	0.023		0.29	0.14	0.702	9/14/17 21:25	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17 21:25	CMR
Hexane	0.18	1.4	0.062	J	0.65	4.9	0.702	9/14/17 21:25	CMR
2-Hexanone (MBK)	0.10	0.035	0.021		0.43	0.14	0.702	9/14/17 21:25	CMR
Isopropanol	ND	1.4	0.043	Z-01	ND	3.4	0.702	9/14/17 21:25	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: IA-7-090717**  
**Sample ID: 1710332-07**  
 Sample Matrix: Indoor air  
 Sampled: 9/7/2017 11:50

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1959  
 Canister Size: 6 liter  
 Flow Controller ID: 4308  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -6.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
		RL	MDL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 21:25	CMR
Methylene Chloride	0.17	0.35	0.043	J	0.59	1.2	0.702	9/14/17 21:25	CMR
Methyl methacrylate	ND	0.035	0.026		ND	0.14	0.702	9/14/17 21:25	CMR
4-Methyl-2-pentanone (MIBK)	0.068	0.035	0.030		0.28	0.14	0.702	9/14/17 21:25	CMR
Propene	ND	1.4	0.11		ND	2.4	0.702	9/14/17 21:25	CMR
Styrene	0.14	0.035	0.023		0.59	0.15	0.702	9/14/17 21:25	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 21:25	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 21:25	CMR
Tetrachloroethylene	0.051	0.035	0.021		0.34	0.24	0.702	9/14/17 21:25	CMR
Tetrahydrofuran	ND	0.070	0.024		ND	0.21	0.702	9/14/17 21:25	CMR
Toluene	0.48	0.035	0.022		1.8	0.13	0.702	9/14/17 21:25	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 21:25	CMR
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 21:25	CMR
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 21:25	CMR
Trichloroethylene	ND	0.035	0.022		ND	0.19	0.702	9/14/17 21:25	CMR
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.029		1.2	0.79	0.702	9/14/17 21:25	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.060	0.14	0.024	J	0.46	1.1	0.702	9/14/17 21:25	CMR
1,2,4-Trimethylbenzene	0.042	0.035	0.023		0.21	0.17	0.702	9/14/17 21:25	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 21:25	CMR
Vinyl Acetate	0.46	0.70	0.021	J	1.6	2.5	0.702	9/14/17 21:25	CMR
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 21:25	CMR
m&p-Xylene	0.19	0.070	0.045		0.82	0.30	0.702	9/14/17 21:25	CMR
o-Xylene	0.067	0.035	0.022		0.29	0.15	0.702	9/14/17 21:25	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	108	70-130	9/16/17 1:15
4-Bromofluorobenzene (1)	105	70-130	9/14/17 21:25
4-Bromofluorobenzene (2)	121	70-130	9/14/17 21:25

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: AA-1-090717**  
**Sample ID: 1710332-08**  
 Sample Matrix: Ambient Air  
 Sampled: 9/7/2017 10:06

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1012  
 Canister Size: 6 liter  
 Flow Controller ID: 4171  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -2  
 Receipt Vacuum(in Hg): -3.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL	MDL		Results	RL			
Acetone	6.7	1.4	0.49		16	3.3	0.702	9/14/17 22:10	CMR
Benzene	0.67	0.035	0.022		2.2	0.11	0.702	9/14/17 22:10	CMR
Benzyl chloride	ND	0.035	0.016		ND	0.18	0.702	9/14/17 22:10	CMR
Bromodichloromethane	ND	0.035	0.023		ND	0.24	0.702	9/14/17 22:10	CMR
Bromoform	ND	0.035	0.021		ND	0.36	0.702	9/14/17 22:10	CMR
Bromomethane	ND	0.035	0.028		ND	0.14	0.702	9/14/17 22:10	CMR
1,3-Butadiene	0.41	0.035	0.027		0.90	0.078	0.702	9/14/17 22:10	CMR
2-Butanone (MEK)	0.81	1.4	0.026	J	2.4	4.1	0.702	9/14/17 22:10	CMR
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.702	9/14/17 22:10	CMR
Carbon Tetrachloride	0.064	0.035	0.025		0.40	0.22	0.702	9/14/17 22:10	CMR
Chlorobenzene	ND	0.035	0.022		ND	0.16	0.702	9/14/17 22:10	CMR
Chloroethane	ND	0.070	0.029		ND	0.19	0.702	9/14/17 22:10	CMR
Chloroform	ND	0.035	0.026		ND	0.17	0.702	9/14/17 22:10	CMR
Chloromethane	0.59	0.070	0.029		1.2	0.14	0.702	9/14/17 22:10	CMR
Cyclohexane	ND	0.035	0.020		ND	0.12	0.702	9/14/17 22:10	CMR
Dibromochloromethane	ND	0.035	0.023		ND	0.30	0.702	9/14/17 22:10	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.023		ND	0.27	0.702	9/14/17 22:10	CMR
1,2-Dichlorobenzene	ND	0.035	0.023		ND	0.21	0.702	9/14/17 22:10	CMR
1,3-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	9/14/17 22:10	CMR
1,4-Dichlorobenzene	ND	0.035	0.024		ND	0.21	0.702	9/14/17 22:10	CMR
Dichlorodifluoromethane (Freon 12)	0.30	0.035	0.027		1.5	0.17	0.702	9/14/17 22:10	CMR
1,1-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 22:10	CMR
1,2-Dichloroethane	ND	0.035	0.025		ND	0.14	0.702	9/14/17 22:10	CMR
1,1-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 22:10	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.024		ND	0.14	0.702	9/14/17 22:10	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.026		ND	0.14	0.702	9/14/17 22:10	CMR
1,2-Dichloropropane	ND	0.035	0.024		ND	0.16	0.702	9/14/17 22:10	CMR
cis-1,3-Dichloropropene	ND	0.035	0.030		ND	0.16	0.702	9/14/17 22:10	CMR
trans-1,3-Dichloropropene	ND	0.035	0.021		ND	0.16	0.702	9/14/17 22:10	CMR
Ethanol	1.2	1.4	0.63	J	2.2	2.6	0.702	9/14/17 22:10	CMR
Ethyl Acetate	ND	0.070	0.030		ND	0.25	0.702	9/14/17 22:10	CMR
Ethylbenzene	0.15	0.035	0.023		0.67	0.15	0.702	9/14/17 22:10	CMR
4-Ethyltoluene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 22:10	CMR
Heptane	0.12	0.035	0.023		0.47	0.14	0.702	9/14/17 22:10	CMR
Hexachlorobutadiene	ND	0.035	0.027		ND	0.37	0.702	9/14/17 22:10	CMR
Hexane	0.11	1.4	0.062	J	0.40	4.9	0.702	9/14/17 22:10	CMR
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.702	9/14/17 22:10	CMR
Isopropanol	0.21	1.4	0.043	Z-01, J	0.52	3.4	0.702	9/14/17 22:10	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
 Field Sample #: AA-1-090717  
 Sample ID: 1710332-08  
 Sample Matrix: Ambient Air  
 Sampled: 9/7/2017 10:06

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1012  
 Canister Size: 6 liter  
 Flow Controller ID: 4171  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -2  
 Receipt Vacuum(in Hg): -3.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
		RL	MDL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.024		ND	0.13	0.702	9/14/17 22:10	CMR
Methylene Chloride	0.074	0.35	0.043	J	0.26	1.2	0.702	9/14/17 22:10	CMR
Methyl methacrylate	ND	0.035	0.026		ND	0.14	0.702	9/14/17 22:10	CMR
4-Methyl-2-pentanone (MIBK)	0.073	0.035	0.030		0.30	0.14	0.702	9/14/17 22:10	CMR
Propene	ND	1.4	0.11		ND	2.4	0.702	9/14/17 22:10	CMR
Styrene	0.11	0.035	0.023		0.46	0.15	0.702	9/14/17 22:10	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	9/14/17 22:10	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.022		ND	0.24	0.702	9/14/17 22:10	CMR
Tetrachloroethylene	ND	0.035	0.021		ND	0.24	0.702	9/14/17 22:10	CMR
Tetrahydrofuran	ND	0.070	0.024		ND	0.21	0.702	9/14/17 22:10	CMR
Toluene	0.58	0.035	0.022		2.2	0.13	0.702	9/14/17 22:10	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.026		ND	0.26	0.702	9/14/17 22:10	CMR
1,1,1-Trichloroethane	ND	0.035	0.024		ND	0.19	0.702	9/14/17 22:10	CMR
1,1,2-Trichloroethane	ND	0.035	0.022		ND	0.19	0.702	9/14/17 22:10	CMR
Trichloroethylene	ND	0.035	0.022		ND	0.19	0.702	9/14/17 22:10	CMR
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.029		1.1	0.79	0.702	9/14/17 22:10	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.060	0.14	0.024	J	0.46	1.1	0.702	9/14/17 22:10	CMR
1,2,4-Trimethylbenzene	ND	0.035	0.023		ND	0.17	0.702	9/14/17 22:10	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.024		ND	0.17	0.702	9/14/17 22:10	CMR
Vinyl Acetate	ND	0.70	0.021		ND	2.5	0.702	9/14/17 22:10	CMR
Vinyl Chloride	ND	0.035	0.026		ND	0.090	0.702	9/14/17 22:10	CMR
m&p-Xylene	0.55	0.070	0.045		2.4	0.30	0.702	9/14/17 22:10	CMR
o-Xylene	0.15	0.035	0.022		0.67	0.15	0.702	9/14/17 22:10	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	105	70-130	9/14/17 22:10
4-Bromofluorobenzene (2)	122	70-130	9/14/17 22:10

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-5-090717**  
**Sample ID: 1710332-09**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 09:21

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1926  
 Canister Size: 6 liter  
 Flow Controller ID: 4180  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -5.9  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

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Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL	MDL		Results	RL			
Acetone	300	80	28		700	190	40	9/14/17 23:24	CMR
Benzene	0.86	0.20	0.13		2.7	0.64	4	9/14/17 22:47	CMR
Benzyl chloride	ND	0.20	0.090		ND	1.0	4	9/14/17 22:47	CMR
Bromodichloromethane	ND	0.20	0.13		ND	1.3	4	9/14/17 22:47	CMR
Bromoform	ND	0.20	0.12		ND	2.1	4	9/14/17 22:47	CMR
Bromomethane	ND	0.20	0.16		ND	0.78	4	9/14/17 22:47	CMR
1,3-Butadiene	ND	0.20	0.15		ND	0.44	4	9/14/17 22:47	CMR
2-Butanone (MEK)	1500	80	1.5		4500	240	40	9/14/17 23:24	CMR
Carbon Disulfide	38	2.0	0.14		120	6.2	4	9/14/17 22:47	CMR
Carbon Tetrachloride	ND	0.20	0.14		ND	1.3	4	9/14/17 22:47	CMR
Chlorobenzene	ND	0.20	0.13		ND	0.92	4	9/14/17 22:47	CMR
Chloroethane	0.48	0.40	0.16		1.3	1.1	4	9/14/17 22:47	CMR
Chloroform	0.21	0.20	0.15		1.0	0.98	4	9/14/17 22:47	CMR
Chloromethane	37	0.40	0.17		76	0.83	4	9/14/17 22:47	CMR
Cyclohexane	ND	0.20	0.12		ND	0.69	4	9/14/17 22:47	CMR
Dibromochloromethane	ND	0.20	0.13		ND	1.7	4	9/14/17 22:47	CMR
1,2-Dibromoethane (EDB)	ND	0.20	0.13		ND	1.5	4	9/14/17 22:47	CMR
1,2-Dichlorobenzene	ND	0.20	0.13		ND	1.2	4	9/14/17 22:47	CMR
1,3-Dichlorobenzene	ND	0.20	0.12		ND	1.2	4	9/14/17 22:47	CMR
1,4-Dichlorobenzene	ND	0.20	0.14		ND	1.2	4	9/14/17 22:47	CMR
Dichlorodifluoromethane (Freon 12)	0.45	0.20	0.15		2.2	0.99	4	9/14/17 22:47	CMR
1,1-Dichloroethane	1.5	0.20	0.14		6.2	0.81	4	9/14/17 22:47	CMR
1,2-Dichloroethane	ND	0.20	0.14		ND	0.81	4	9/14/17 22:47	CMR
1,1-Dichloroethylene	0.33	0.20	0.15		1.3	0.79	4	9/14/17 22:47	CMR
cis-1,2-Dichloroethylene	0.70	0.20	0.14		2.8	0.79	4	9/14/17 22:47	CMR
trans-1,2-Dichloroethylene	ND	0.20	0.15		ND	0.79	4	9/14/17 22:47	CMR
1,2-Dichloropropane	ND	0.20	0.14		ND	0.92	4	9/14/17 22:47	CMR
cis-1,3-Dichloropropene	ND	0.20	0.17		ND	0.91	4	9/14/17 22:47	CMR
trans-1,3-Dichloropropene	ND	0.20	0.12		ND	0.91	4	9/14/17 22:47	CMR
Ethanol	6.7	8.0	3.6	J	13	15	4	9/14/17 22:47	CMR
Ethyl Acetate	1.4	0.40	0.17		5.2	1.4	4	9/14/17 22:47	CMR
Ethylbenzene	ND	0.20	0.13		ND	0.87	4	9/14/17 22:47	CMR
4-Ethyltoluene	ND	0.20	0.13		ND	0.98	4	9/14/17 22:47	CMR
Heptane	ND	0.20	0.13		ND	0.82	4	9/14/17 22:47	CMR
Hexachlorobutadiene	ND	0.20	0.15		ND	2.1	4	9/14/17 22:47	CMR
Hexane	ND	8.0	0.35		ND	28	4	9/14/17 22:47	CMR
2-Hexanone (MBK)	ND	0.20	0.12		ND	0.82	4	9/14/17 22:47	CMR
Isopropanol	ND	8.0	0.25	Z-01	ND	20	4	9/14/17 22:47	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-5-090717**  
**Sample ID: 1710332-09**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 09:21

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1926  
 Canister Size: 6 liter  
 Flow Controller ID: 4180  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -5.9  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
		RL	MDL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.20	0.14		ND	0.72	4	9/14/17 22:47	CMR
Methylene Chloride	ND	2.0	0.24		ND	6.9	4	9/14/17 22:47	CMR
Methyl methacrylate	ND	0.20	0.15		ND	0.82	4	9/14/17 22:47	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20	0.17		ND	0.82	4	9/14/17 22:47	CMR
Propene	ND	8.0	0.61		ND	14	4	9/14/17 22:47	CMR
Styrene	ND	0.20	0.13		ND	0.85	4	9/14/17 22:47	CMR
1,1,1,2-Tetrachloroethane	ND	0.36	0.13		ND	2.5	4	9/14/17 22:47	CMR
1,1,2,2-Tetrachloroethane	ND	0.20	0.12		ND	1.4	4	9/14/17 22:47	CMR
Tetrachloroethylene	ND	0.20	0.12		ND	1.4	4	9/14/17 22:47	CMR
Tetrahydrofuran	1800	4.0	1.4		5300	12	40	9/14/17 23:24	CMR
Toluene	0.22	0.20	0.13		0.83	0.75	4	9/14/17 22:47	CMR
1,2,4-Trichlorobenzene	ND	0.20	0.15		ND	1.5	4	9/14/17 22:47	CMR
1,1,1-Trichloroethane	7.6	0.20	0.14		42	1.1	4	9/14/17 22:47	CMR
1,1,2-Trichloroethane	ND	0.20	0.13		ND	1.1	4	9/14/17 22:47	CMR
Trichloroethylene	28	0.20	0.13		150	1.1	4	9/14/17 22:47	CMR
Trichlorofluoromethane (Freon 11)	0.50	0.80	0.17	J	2.8	4.5	4	9/14/17 22:47	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	0.14		ND	6.1	4	9/14/17 22:47	CMR
1,2,4-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	9/14/17 22:47	CMR
1,3,5-Trimethylbenzene	ND	0.20	0.14		ND	0.98	4	9/14/17 22:47	CMR
Vinyl Acetate	ND	4.0	0.12		ND	14	4	9/14/17 22:47	CMR
Vinyl Chloride	0.48	0.20	0.15		1.2	0.51	4	9/14/17 22:47	CMR
m&p-Xylene	ND	0.40	0.26		ND	1.7	4	9/14/17 22:47	CMR
o-Xylene	ND	0.20	0.12		ND	0.87	4	9/14/17 22:47	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	109	70-130	9/14/17 23:24
4-Bromofluorobenzene (1)	106	70-130	9/14/17 22:47
4-Bromofluorobenzene (2)	126	70-130	9/14/17 22:47



**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-6-090717**  
**Sample ID: 1710332-10**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 12:27

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1488  
 Canister Size: 6 liter  
 Flow Controller ID: 4315  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -3.9  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analized		
Acetone	11	8.0	2.8		26	19	4	9/15/17	0:01	CMR
Benzene	0.14	0.20	0.13	J	0.46	0.64	4	9/15/17	0:01	CMR
Benzyl chloride	ND	0.20	0.090		ND	1.0	4	9/15/17	0:01	CMR
Bromodichloromethane	ND	0.20	0.13		ND	1.3	4	9/15/17	0:01	CMR
Bromoform	ND	0.20	0.12		ND	2.1	4	9/15/17	0:01	CMR
Bromomethane	ND	0.20	0.16		ND	0.78	4	9/15/17	0:01	CMR
1,3-Butadiene	ND	0.20	0.15		ND	0.44	4	9/15/17	0:01	CMR
2-Butanone (MEK)	40	8.0	0.15		120	24	4	9/15/17	0:01	CMR
Carbon Disulfide	0.73	2.0	0.14	J	2.3	6.2	4	9/15/17	0:01	CMR
Carbon Tetrachloride	ND	0.20	0.14		ND	1.3	4	9/15/17	0:01	CMR
Chlorobenzene	ND	0.20	0.13		ND	0.92	4	9/15/17	0:01	CMR
Chloroethane	ND	0.40	0.16		ND	1.1	4	9/15/17	0:01	CMR
Chloroform	ND	0.20	0.15		ND	0.98	4	9/15/17	0:01	CMR
Chloromethane	1.7	0.40	0.17		3.5	0.83	4	9/15/17	0:01	CMR
Cyclohexane	ND	0.20	0.12		ND	0.69	4	9/15/17	0:01	CMR
Dibromochloromethane	ND	0.20	0.13		ND	1.7	4	9/15/17	0:01	CMR
1,2-Dibromoethane (EDB)	ND	0.20	0.13		ND	1.5	4	9/15/17	0:01	CMR
1,2-Dichlorobenzene	ND	0.20	0.13		ND	1.2	4	9/15/17	0:01	CMR
1,3-Dichlorobenzene	ND	0.20	0.12		ND	1.2	4	9/15/17	0:01	CMR
1,4-Dichlorobenzene	ND	0.20	0.14		ND	1.2	4	9/15/17	0:01	CMR
Dichlorodifluoromethane (Freon 12)	0.45	0.20	0.15		2.2	0.99	4	9/15/17	0:01	CMR
1,1-Dichloroethane	0.14	0.20	0.14	J	0.58	0.81	4	9/15/17	0:01	CMR
1,2-Dichloroethane	ND	0.20	0.14		ND	0.81	4	9/15/17	0:01	CMR
1,1-Dichloroethylene	ND	0.20	0.15		ND	0.79	4	9/15/17	0:01	CMR
cis-1,2-Dichloroethylene	ND	0.20	0.14		ND	0.79	4	9/15/17	0:01	CMR
trans-1,2-Dichloroethylene	ND	0.20	0.15		ND	0.79	4	9/15/17	0:01	CMR
1,2-Dichloropropane	ND	0.20	0.14		ND	0.92	4	9/15/17	0:01	CMR
cis-1,3-Dichloropropene	ND	0.20	0.17		ND	0.91	4	9/15/17	0:01	CMR
trans-1,3-Dichloropropene	ND	0.20	0.12		ND	0.91	4	9/15/17	0:01	CMR
Ethanol	8.2	8.0	3.6		15	15	4	9/15/17	0:01	CMR
Ethyl Acetate	1.6	0.40	0.17		5.9	1.4	4	9/15/17	0:01	CMR
Ethylbenzene	ND	0.20	0.13		ND	0.87	4	9/15/17	0:01	CMR
4-Ethyltoluene	ND	0.20	0.13		ND	0.98	4	9/15/17	0:01	CMR
Heptane	ND	0.20	0.13		ND	0.82	4	9/15/17	0:01	CMR
Hexachlorobutadiene	ND	0.20	0.15		ND	2.1	4	9/15/17	0:01	CMR
Hexane	ND	8.0	0.35		ND	28	4	9/15/17	0:01	CMR
2-Hexanone (MBK)	ND	0.20	0.12		ND	0.82	4	9/15/17	0:01	CMR
Isopropanol	1.4	8.0	0.25	Z-01, J	3.3	20	4	9/15/17	0:01	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-6-090717**  
**Sample ID: 1710332-10**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 12:27

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1488  
 Canister Size: 6 liter  
 Flow Controller ID: 4315  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -3.9  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
		RL	MDL		Results	RL		Analized		
Methyl tert-Butyl Ether (MTBE)	ND	0.20	0.14		ND	0.72	4	9/15/17 0:01	CMR	
Methylene Chloride	0.34	2.0	0.24	J	1.2	6.9	4	9/15/17 0:01	CMR	
Methyl methacrylate	ND	0.20	0.15		ND	0.82	4	9/15/17 0:01	CMR	
4-Methyl-2-pentanone (MIBK)	ND	0.20	0.17		ND	0.82	4	9/15/17 0:01	CMR	
Propene	ND	8.0	0.61		ND	14	4	9/15/17 0:01	CMR	
Styrene	ND	0.20	0.13		ND	0.85	4	9/15/17 0:01	CMR	
1,1,1,2-Tetrachloroethane	ND	0.36	0.13		ND	2.5	4	9/15/17 0:01	CMR	
1,1,2,2-Tetrachloroethane	ND	0.20	0.12		ND	1.4	4	9/15/17 0:01	CMR	
Tetrachloroethylene	ND	0.20	0.12		ND	1.4	4	9/15/17 0:01	CMR	
Tetrahydrofuran	22	0.40	0.14		65	1.2	4	9/15/17 0:01	CMR	
Toluene	0.46	0.20	0.13		1.7	0.75	4	9/15/17 0:01	CMR	
1,2,4-Trichlorobenzene	ND	0.20	0.15		ND	1.5	4	9/15/17 0:01	CMR	
1,1,1-Trichloroethane	0.71	0.20	0.14		3.9	1.1	4	9/15/17 0:01	CMR	
1,1,2-Trichloroethane	ND	0.20	0.13		ND	1.1	4	9/15/17 0:01	CMR	
Trichloroethylene	1.2	0.20	0.13		6.4	1.1	4	9/15/17 0:01	CMR	
Trichlorofluoromethane (Freon 11)	0.82	0.80	0.17		4.6	4.5	4	9/15/17 0:01	CMR	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	0.14		ND	6.1	4	9/15/17 0:01	CMR	
1,2,4-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	9/15/17 0:01	CMR	
1,3,5-Trimethylbenzene	ND	0.20	0.14		ND	0.98	4	9/15/17 0:01	CMR	
Vinyl Acetate	ND	4.0	0.12		ND	14	4	9/15/17 0:01	CMR	
Vinyl Chloride	ND	0.20	0.15		ND	0.51	4	9/15/17 0:01	CMR	
m&p-Xylene	ND	0.40	0.26		ND	1.7	4	9/15/17 0:01	CMR	
o-Xylene	ND	0.20	0.12		ND	0.87	4	9/15/17 0:01	CMR	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	9/15/17 0:01
4-Bromofluorobenzene (2)	128	70-130	9/15/17 0:01

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-7-090717**  
**Sample ID: 1710332-11**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 11:55

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1933  
 Canister Size: 6 liter  
 Flow Controller ID: 4309  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -7  
 Receipt Vacuum(in Hg): -7.4  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analized		
Acetone	22	8.0	2.8		51	19	4	9/15/17	1:17	CMR
Benzene	0.13	0.20	0.13	J	0.42	0.64	4	9/15/17	1:17	CMR
Benzyl chloride	ND	0.20	0.090		ND	1.0	4	9/15/17	1:17	CMR
Bromodichloromethane	ND	0.20	0.13		ND	1.3	4	9/15/17	1:17	CMR
Bromoform	ND	0.20	0.12		ND	2.1	4	9/15/17	1:17	CMR
Bromomethane	ND	0.20	0.16		ND	0.78	4	9/15/17	1:17	CMR
1,3-Butadiene	ND	0.20	0.15		ND	0.44	4	9/15/17	1:17	CMR
2-Butanone (MEK)	60	8.0	0.15		180	24	4	9/15/17	1:17	CMR
Carbon Disulfide	0.61	2.0	0.14	J	1.9	6.2	4	9/15/17	1:17	CMR
Carbon Tetrachloride	ND	0.20	0.14		ND	1.3	4	9/15/17	1:17	CMR
Chlorobenzene	ND	0.20	0.13		ND	0.92	4	9/15/17	1:17	CMR
Chloroethane	ND	0.40	0.16		ND	1.1	4	9/15/17	1:17	CMR
Chloroform	ND	0.20	0.15		ND	0.98	4	9/15/17	1:17	CMR
Chloromethane	ND	0.40	0.17		ND	0.83	4	9/15/17	1:17	CMR
Cyclohexane	ND	0.20	0.12		ND	0.69	4	9/15/17	1:17	CMR
Dibromochloromethane	ND	0.20	0.13		ND	1.7	4	9/15/17	1:17	CMR
1,2-Dibromoethane (EDB)	ND	0.20	0.13		ND	1.5	4	9/15/17	1:17	CMR
1,2-Dichlorobenzene	ND	0.20	0.13		ND	1.2	4	9/15/17	1:17	CMR
1,3-Dichlorobenzene	ND	0.20	0.12		ND	1.2	4	9/15/17	1:17	CMR
1,4-Dichlorobenzene	ND	0.20	0.14		ND	1.2	4	9/15/17	1:17	CMR
Dichlorodifluoromethane (Freon 12)	0.45	0.20	0.15		2.2	0.99	4	9/15/17	1:17	CMR
1,1-Dichloroethane	ND	0.20	0.14		ND	0.81	4	9/15/17	1:17	CMR
1,2-Dichloroethane	ND	0.20	0.14		ND	0.81	4	9/15/17	1:17	CMR
1,1-Dichloroethylene	ND	0.20	0.15		ND	0.79	4	9/15/17	1:17	CMR
cis-1,2-Dichloroethylene	ND	0.20	0.14		ND	0.79	4	9/15/17	1:17	CMR
trans-1,2-Dichloroethylene	ND	0.20	0.15		ND	0.79	4	9/15/17	1:17	CMR
1,2-Dichloropropane	ND	0.20	0.14		ND	0.92	4	9/15/17	1:17	CMR
cis-1,3-Dichloropropene	ND	0.20	0.17		ND	0.91	4	9/15/17	1:17	CMR
trans-1,3-Dichloropropene	ND	0.20	0.12		ND	0.91	4	9/15/17	1:17	CMR
Ethanol	34	8.0	3.6		65	15	4	9/15/17	1:17	CMR
Ethyl Acetate	0.20	0.40	0.17	J	0.74	1.4	4	9/15/17	1:17	CMR
Ethylbenzene	ND	0.20	0.13		ND	0.87	4	9/15/17	1:17	CMR
4-Ethyltoluene	ND	0.20	0.13		ND	0.98	4	9/15/17	1:17	CMR
Heptane	ND	0.20	0.13		ND	0.82	4	9/15/17	1:17	CMR
Hexachlorobutadiene	ND	0.20	0.15		ND	2.1	4	9/15/17	1:17	CMR
Hexane	ND	8.0	0.35		ND	28	4	9/15/17	1:17	CMR
2-Hexanone (MBK)	ND	0.20	0.12		ND	0.82	4	9/15/17	1:17	CMR
Isopropanol	4.5	8.0	0.25	Z-01, J	11	20	4	9/15/17	1:17	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-7-090717**  
**Sample ID: 1710332-11**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 11:55

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1933  
 Canister Size: 6 liter  
 Flow Controller ID: 4309  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -7  
 Receipt Vacuum(in Hg): -7.4  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
		RL	MDL		Results	RL		Analized		
Methyl tert-Butyl Ether (MTBE)	ND	0.20	0.14		ND	0.72	4	9/15/17	1:17	CMR
Methylene Chloride	ND	2.0	0.24		ND	6.9	4	9/15/17	1:17	CMR
Methyl methacrylate	ND	0.20	0.15		ND	0.82	4	9/15/17	1:17	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20	0.17		ND	0.82	4	9/15/17	1:17	CMR
Propene	ND	8.0	0.61		ND	14	4	9/15/17	1:17	CMR
Styrene	ND	0.20	0.13		ND	0.85	4	9/15/17	1:17	CMR
1,1,1,2-Tetrachloroethane	ND	0.36	0.13		ND	2.5	4	9/15/17	1:17	CMR
1,1,2,2-Tetrachloroethane	ND	0.20	0.12		ND	1.4	4	9/15/17	1:17	CMR
Tetrachloroethylene	0.73	0.20	0.12		5.0	1.4	4	9/15/17	1:17	CMR
Tetrahydrofuran	45	0.40	0.14		130	1.2	4	9/15/17	1:17	CMR
Toluene	0.31	0.20	0.13		1.2	0.75	4	9/15/17	1:17	CMR
1,2,4-Trichlorobenzene	ND	0.20	0.15		ND	1.5	4	9/15/17	1:17	CMR
1,1,1-Trichloroethane	0.22	0.20	0.14		1.2	1.1	4	9/15/17	1:17	CMR
1,1,2-Trichloroethane	ND	0.20	0.13		ND	1.1	4	9/15/17	1:17	CMR
Trichloroethylene	2.9	0.20	0.13		15	1.1	4	9/15/17	1:17	CMR
Trichlorofluoromethane (Freon 11)	4.1	0.80	0.17		23	4.5	4	9/15/17	1:17	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	0.14		ND	6.1	4	9/15/17	1:17	CMR
1,2,4-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	9/15/17	1:17	CMR
1,3,5-Trimethylbenzene	ND	0.20	0.14		ND	0.98	4	9/15/17	1:17	CMR
Vinyl Acetate	ND	4.0	0.12		ND	14	4	9/15/17	1:17	CMR
Vinyl Chloride	ND	0.20	0.15		ND	0.51	4	9/15/17	1:17	CMR
m&p-Xylene	ND	0.40	0.26		ND	1.7	4	9/15/17	1:17	CMR
o-Xylene	ND	0.20	0.12		ND	0.87	4	9/15/17	1:17	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	108	70-130	9/15/17 1:17
4-Bromofluorobenzene (2)	129	70-130	9/15/17 1:17

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-Combined-090717**  
**Sample ID: 1710332-12**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 09:27

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1457  
 Canister Size: 6 liter  
 Flow Controller ID: 4181  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analized		
Acetone	3.7	8.0	2.8	J	8.7	19	4	9/15/17	2:31	CMR
Benzene	0.16	0.20	0.13	J	0.51	0.64	4	9/15/17	2:31	CMR
Benzyl chloride	ND	0.20	0.090		ND	1.0	4	9/15/17	2:31	CMR
Bromodichloromethane	ND	0.20	0.13		ND	1.3	4	9/15/17	2:31	CMR
Bromoform	ND	0.20	0.12		ND	2.1	4	9/15/17	2:31	CMR
Bromomethane	ND	0.20	0.16		ND	0.78	4	9/15/17	2:31	CMR
1,3-Butadiene	ND	0.20	0.15		ND	0.44	4	9/15/17	2:31	CMR
2-Butanone (MEK)	0.84	8.0	0.15	J	2.5	24	4	9/15/17	2:31	CMR
Carbon Disulfide	ND	2.0	0.14		ND	6.2	4	9/15/17	2:31	CMR
Carbon Tetrachloride	ND	0.20	0.14		ND	1.3	4	9/15/17	2:31	CMR
Chlorobenzene	ND	0.20	0.13		ND	0.92	4	9/15/17	2:31	CMR
Chloroethane	0.50	0.40	0.16		1.3	1.1	4	9/15/17	2:31	CMR
Chloroform	0.84	0.20	0.15		4.1	0.98	4	9/15/17	2:31	CMR
Chloromethane	ND	0.40	0.17		ND	0.83	4	9/15/17	2:31	CMR
Cyclohexane	ND	0.20	0.12		ND	0.69	4	9/15/17	2:31	CMR
Dibromochloromethane	ND	0.20	0.13		ND	1.7	4	9/15/17	2:31	CMR
1,2-Dibromoethane (EDB)	ND	0.20	0.13		ND	1.5	4	9/15/17	2:31	CMR
1,2-Dichlorobenzene	ND	0.20	0.13		ND	1.2	4	9/15/17	2:31	CMR
1,3-Dichlorobenzene	ND	0.20	0.12		ND	1.2	4	9/15/17	2:31	CMR
1,4-Dichlorobenzene	ND	0.20	0.14		ND	1.2	4	9/15/17	2:31	CMR
Dichlorodifluoromethane (Freon 12)	0.45	0.20	0.15		2.2	0.99	4	9/15/17	2:31	CMR
1,1-Dichloroethane	17	0.20	0.14		67	0.81	4	9/15/17	2:31	CMR
1,2-Dichloroethane	ND	0.20	0.14		ND	0.81	4	9/15/17	2:31	CMR
1,1-Dichloroethylene	6.1	0.20	0.15		24	0.79	4	9/15/17	2:31	CMR
cis-1,2-Dichloroethylene	10	0.20	0.14		41	0.79	4	9/15/17	2:31	CMR
trans-1,2-Dichloroethylene	0.20	0.20	0.15		0.81	0.79	4	9/15/17	2:31	CMR
1,2-Dichloropropane	ND	0.20	0.14		ND	0.92	4	9/15/17	2:31	CMR
cis-1,3-Dichloropropene	ND	0.20	0.17		ND	0.91	4	9/15/17	2:31	CMR
trans-1,3-Dichloropropene	ND	0.20	0.12		ND	0.91	4	9/15/17	2:31	CMR
Ethanol	8.4	8.0	3.6		16	15	4	9/15/17	2:31	CMR
Ethyl Acetate	0.68	0.40	0.17		2.5	1.4	4	9/15/17	2:31	CMR
Ethylbenzene	ND	0.20	0.13		ND	0.87	4	9/15/17	2:31	CMR
4-Ethyltoluene	ND	0.20	0.13		ND	0.98	4	9/15/17	2:31	CMR
Heptane	ND	0.20	0.13		ND	0.82	4	9/15/17	2:31	CMR
Hexachlorobutadiene	ND	0.20	0.15		ND	2.1	4	9/15/17	2:31	CMR
Hexane	ND	8.0	0.35		ND	28	4	9/15/17	2:31	CMR
2-Hexanone (MBK)	ND	0.20	0.12		ND	0.82	4	9/15/17	2:31	CMR
Isopropanol	0.64	8.0	0.25	Z-01, J	1.6	20	4	9/15/17	2:31	CMR

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/8/2017  
**Field Sample #: EW-Combined-090717**  
**Sample ID: 1710332-12**  
 Sample Matrix: Sub Slab  
 Sampled: 9/7/2017 09:27

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1457  
 Canister Size: 6 liter  
 Flow Controller ID: 4181  
 Sample Type: 30 min

**Work Order: 1710332**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	Results	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
		RL	MDL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.20	0.14		ND	0.72	4	9/15/17	2:31	CMR
Methylene Chloride	ND	2.0	0.24		ND	6.9	4	9/15/17	2:31	CMR
Methyl methacrylate	ND	0.20	0.15		ND	0.82	4	9/15/17	2:31	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20	0.17		ND	0.82	4	9/15/17	2:31	CMR
Propene	ND	8.0	0.61		ND	14	4	9/15/17	2:31	CMR
Styrene	ND	0.20	0.13		ND	0.85	4	9/15/17	2:31	CMR
1,1,1,2-Tetrachloroethane	ND	0.36	0.13		ND	2.5	4	9/15/17	2:31	CMR
1,1,2,2-Tetrachloroethane	ND	0.20	0.12		ND	1.4	4	9/15/17	2:31	CMR
Tetrachloroethylene	38	0.20	0.12		260	1.4	4	9/15/17	2:31	CMR
Tetrahydrofuran	ND	0.40	0.14		ND	1.2	4	9/15/17	2:31	CMR
Toluene	0.34	0.20	0.13		1.3	0.75	4	9/15/17	2:31	CMR
1,2,4-Trichlorobenzene	ND	0.20	0.15		ND	1.5	4	9/15/17	2:31	CMR
1,1,1-Trichloroethane	97	0.20	0.14		530	1.1	4	9/15/17	2:31	CMR
1,1,2-Trichloroethane	ND	0.20	0.13		ND	1.1	4	9/15/17	2:31	CMR
Trichloroethylene	120	0.20	0.13		670	1.1	4	9/15/17	2:31	CMR
Trichlorofluoromethane (Freon 11)	40	0.80	0.17		220	4.5	4	9/15/17	2:31	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	0.14		ND	6.1	4	9/15/17	2:31	CMR
1,2,4-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	9/15/17	2:31	CMR
1,3,5-Trimethylbenzene	ND	0.20	0.14		ND	0.98	4	9/15/17	2:31	CMR
Vinyl Acetate	ND	4.0	0.12		ND	14	4	9/15/17	2:31	CMR
Vinyl Chloride	ND	0.20	0.15		ND	0.51	4	9/15/17	2:31	CMR
m&p-Xylene	ND	0.40	0.26		ND	1.7	4	9/15/17	2:31	CMR
o-Xylene	ND	0.20	0.12		ND	0.87	4	9/15/17	2:31	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	9/15/17 2:31
4-Bromofluorobenzene (2)	128	70-130	9/15/17 2:31

**Sample Extraction Data**

**Prep Method: TO-15 Prep-EPA TO-15**

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
17I0332-01 [IA-1-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-02 [IA-2-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-03 [IA-3-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-04 [IA-4-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-05 [IA-5-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-06 [IA-6-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-07 [IA-7-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-08 [AA-1-090717]	B186540	1.5	1	N/A	1000	400	855	09/14/17
17I0332-09 [EW-5-090717]	B186540	1.5	1	N/A	1000	400	150	09/14/17
17I0332-09RE1 [EW-5-090717]	B186540	1.5	1	N/A	1000	400	15	09/14/17
17I0332-10 [EW-6-090717]	B186540	1.5	1	N/A	1000	400	150	09/14/17
17I0332-11 [EW-7-090717]	B186540	1.5	1	N/A	1000	400	150	09/14/17
17I0332-12 [EW-Combined-090717]	B186540	1.5	1	N/A	1000	400	150	09/14/17

**Prep Method: TO-15 Prep-EPA TO-15**

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
17I0332-02RE1 [IA-2-090717]	B186546	1.5	1	N/A	1000	400	150	09/15/17
17I0332-04RE1 [IA-4-090717]	B186546	1.5	1	N/A	1000	400	150	09/15/17
17I0332-05RE1 [IA-5-090717]	B186546	1.5	1	N/A	1000	400	300	09/15/17
17I0332-07RE1 [IA-7-090717]	B186546	1.5	1	N/A	1000	400	300	09/15/17

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	RPD	RPD Limit	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	RPD		

Batch B186540 - TO-15 Prep

Blank (B186540-BLK1)

Prepared & Analyzed: 09/14/17

Acetone	ND	1.4
Benzene	ND	0.035
Benzyl chloride	ND	0.035
Bromodichloromethane	ND	0.035
Bromoform	ND	0.035
Bromomethane	ND	0.035
1,3-Butadiene	ND	0.035
2-Butanone (MEK)	ND	1.4
Carbon Disulfide	ND	0.35
Carbon Tetrachloride	ND	0.035
Chlorobenzene	ND	0.035
Chloroethane	ND	0.035
Chloroform	ND	0.035
Chloromethane	ND	0.070
Cyclohexane	ND	0.035
Dibromochloromethane	ND	0.035
1,2-Dibromoethane (EDB)	ND	0.035
1,2-Dichlorobenzene	ND	0.035
1,3-Dichlorobenzene	ND	0.035
1,4-Dichlorobenzene	ND	0.035
Dichlorodifluoromethane (Freon 12)	ND	0.035
1,1-Dichloroethane	ND	0.035
1,2-Dichloroethane	ND	0.035
1,1-Dichloroethylene	ND	0.035
cis-1,2-Dichloroethylene	ND	0.035
trans-1,2-Dichloroethylene	ND	0.035
1,2-Dichloropropane	ND	0.035
cis-1,3-Dichloropropene	ND	0.035
trans-1,3-Dichloropropene	ND	0.035
Ethanol	ND	1.4
Ethyl Acetate	ND	0.035
Ethylbenzene	ND	0.035
4-Ethyltoluene	ND	0.035
Heptane	ND	0.035
Hexachlorobutadiene	ND	0.035
Hexane	ND	1.4
2-Hexanone (MBK)	ND	0.035
Isopropanol	ND	1.4
Methyl tert-Butyl Ether (MTBE)	ND	0.035
Methylene Chloride	ND	0.35
Methyl methacrylate	ND	0.035
4-Methyl-2-pentanone (MIBK)	ND	0.035
Propene	ND	1.4
Styrene	ND	0.035
1,1,1,2-Tetrachloroethane	ND	0.064
1,1,2,2-Tetrachloroethane	ND	0.035

Z-01



**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		

**Batch B186540 - TO-15 Prep**

**Blank (B186540-BLK1)**

Prepared & Analyzed: 09/14/17

Tetrachloroethylene	ND	0.035									
Tetrahydrofuran	ND	0.035									
Toluene	ND	0.035									
1,2,4-Trichlorobenzene	ND	0.035									
1,1,1-Trichloroethane	ND	0.035									
1,1,2-Trichloroethane	ND	0.035									
Trichloroethylene	ND	0.035									
Trichlorofluoromethane (Freon 11)	ND	0.14									
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14									
1,2,4-Trimethylbenzene	ND	0.035									
1,3,5-Trimethylbenzene	ND	0.035									
Vinyl Acetate	ND	0.70									
Vinyl Chloride	ND	0.035									
m&p-Xylene	ND	0.070									
o-Xylene	ND	0.035									
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.52</i>				<i>8.00</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	<i>10.1</i>				<i>8.00</i>		<i>127</i>	<i>70-130</i>			

**LCS (B186540-BS1)**

Prepared & Analyzed: 09/14/17

Acetone	3.85				5.00		76.9	70-130			
Benzene	4.94				5.00		98.8	70-130			
Benzyl chloride	6.25				5.00		125	70-130			
Bromodichloromethane	4.66				5.00		93.2	70-130			
Bromoform	5.52				5.00		110	70-130			
Bromomethane	4.78				5.00		95.7	70-130			
1,3-Butadiene	4.82				5.00		96.5	70-130			
2-Butanone (MEK)	4.63				5.00		92.6	70-130			
Carbon Disulfide	4.41				5.00		88.2	70-130			
Carbon Tetrachloride	4.22				5.00		84.5	70-130			
Chlorobenzene	5.35				5.00		107	70-130			
Chloroethane	4.75				5.00		94.9	70-130			
Chloroform	4.61				5.00		92.2	70-130			
Chloromethane	4.81				5.00		96.2	70-130			
Cyclohexane	4.63				5.00		92.6	70-130			
Dibromochloromethane	5.07				5.00		101	70-130			
1,2-Dibromoethane (EDB)	5.12				5.00		102	70-130			
1,2-Dichlorobenzene	5.56				5.00		111	70-130			
1,3-Dichlorobenzene	5.65				5.00		113	70-130			
1,4-Dichlorobenzene	6.05				5.00		121	70-130			
Dichlorodifluoromethane (Freon 12)	4.64				5.00		92.7	70-130			
1,1-Dichloroethane	4.95				5.00		98.9	70-130			
1,2-Dichloroethane	4.40				5.00		87.9	70-130			
1,1-Dichloroethylene	4.47				5.00		89.4	70-130			
cis-1,2-Dichloroethylene	5.07				5.00		101	70-130			
trans-1,2-Dichloroethylene	5.02				5.00		100	70-130			
1,2-Dichloropropane	4.96				5.00		99.2	70-130			

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B186540 - TO-15 Prep</b>											
<b>LCS (B186540-BS1)</b>											
						Prepared & Analyzed: 09/14/17					
cis-1,3-Dichloropropene	5.02				5.00		100	70-130			
trans-1,3-Dichloropropene	4.99				5.00		99.9	70-130			
Ethanol	3.63				5.00		72.5	70-130			
Ethyl Acetate	5.21				5.00		104	70-130			
Ethylbenzene	5.12				5.00		102	70-130			
4-Ethyltoluene	5.51				5.00		110	70-130			
Heptane	5.34				5.00		107	70-130			
Hexachlorobutadiene	5.30				5.00		106	70-130			
Hexane	4.60				5.00		92.1	70-130			
2-Hexanone (MBK)	4.83				5.00		96.5	70-130			
Isopropanol	3.50				5.00		<b>69.9</b> *	70-130			Z-01
Methyl tert-Butyl Ether (MTBE)	4.12				5.00		82.5	70-130			
Methylene Chloride	3.79				5.00		75.8	70-130			
Methyl methacrylate	5.23				5.00		105	70-130			
4-Methyl-2-pentanone (MIBK)	4.94				5.00		98.8	70-130			
Propene	5.13				5.00		103	70-130			
Styrene	5.80				5.00		116	70-130			
1,1,1,2-Tetrachloroethane	0.815				0.910		89.6	70-130			
1,1,2,2-Tetrachloroethane	5.48				5.00		110	70-130			
Tetrachloroethylene	5.36				5.00		107	70-130			
Tetrahydrofuran	5.00				5.00		100	70-130			
Toluene	5.29				5.00		106	70-130			
1,2,4-Trichlorobenzene	6.84				5.00		<b>137</b> *	70-130			L-01
1,1,1-Trichloroethane	3.94				5.00		78.8	70-130			
1,1,2-Trichloroethane	4.87				5.00		97.4	70-130			
Trichloroethylene	4.78				5.00		95.7	70-130			
Trichlorofluoromethane (Freon 11)	4.29				5.00		85.8	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	4.24				5.00		84.7	70-130			
1,2,4-Trimethylbenzene	5.66				5.00		113	70-130			
1,3,5-Trimethylbenzene	5.43				5.00		109	70-130			
Vinyl Acetate	4.27				5.00		85.4	70-130			
Vinyl Chloride	4.79				5.00		95.8	70-130			
m&p-Xylene	10.5				10.0		105	70-130			
o-Xylene	5.34				5.00		107	70-130			
Surrogate: 4-Bromofluorobenzene (1)	8.52				8.00		107	70-130			
Surrogate: 4-Bromofluorobenzene (2)	10.1				8.00		126	70-130			

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC Limits	RPD	RPD Limit	Flag
	Results	RL	Results	RL						
<b>Batch B186540 - TO-15 Prep</b>										
<b>Duplicate (B186540-DUP1)</b>		<b>Source: 1710332-10</b>				<b>Prepared: 09/14/17 Analyzed: 09/15/17</b>				
Acetone	11	8.0	25	19		11		1.57	25	
Benzene	0.15	0.20	0.47	0.64		0.14		2.74	25	J
Benzyl chloride	ND	0.20	ND	1.0		ND			25	
Bromodichloromethane	ND	0.20	ND	1.3		ND			25	
Bromoform	ND	0.20	ND	2.1		ND			25	
Bromomethane	ND	0.20	ND	0.78		ND			25	
1,3-Butadiene	ND	0.20	ND	0.44		ND			25	
2-Butanone (MEK)	39	8.0	110	24		40		2.47	25	
Carbon Disulfide	0.72	2.0	2.3	6.2		0.73		1.10	25	J
Carbon Tetrachloride	ND	0.20	ND	1.3		ND			25	
Chlorobenzene	ND	0.20	ND	0.92		ND			25	
Chloroethane	ND	0.20	ND	0.53		ND			25	
Chloroform	ND	0.20	ND	0.98		ND			25	
Chloromethane	1.6	0.40	3.4	0.83		1.7		3.59	25	
Cyclohexane	ND	0.20	ND	0.69		ND			25	
Dibromochloromethane	ND	0.20	ND	1.7		ND			25	
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5		ND			25	
1,2-Dichlorobenzene	ND	0.20	ND	1.2		ND			25	
1,3-Dichlorobenzene	ND	0.20	ND	1.2		ND			25	
1,4-Dichlorobenzene	ND	0.20	ND	1.2		ND			25	
Dichlorodifluoromethane (Freon 12)	0.46	0.20	2.3	0.99		0.45		2.62	25	
1,1-Dichloroethane	0.14	0.20	0.58	0.81		0.14		0.00	25	J
1,2-Dichloroethane	ND	0.20	ND	0.81		ND			25	
1,1-Dichloroethylene	ND	0.20	ND	0.79		ND			25	
cis-1,2-Dichloroethylene	ND	0.20	ND	0.79		ND			25	
trans-1,2-Dichloroethylene	ND	0.20	ND	0.79		ND			25	
1,2-Dichloropropane	ND	0.20	ND	0.92		ND			25	
cis-1,3-Dichloropropene	ND	0.20	ND	0.91		ND			25	
trans-1,3-Dichloropropene	ND	0.20	ND	0.91		ND			25	
Ethanol	8.1	8.0	15	15		8.2		1.58	25	
Ethyl Acetate	1.6	0.20	5.8	0.72		1.6		0.493	25	
Ethylbenzene	ND	0.20	ND	0.87		ND			25	
4-Ethyltoluene	ND	0.20	ND	0.98		ND			25	
Heptane	ND	0.20	ND	0.82		ND			25	
Hexachlorobutadiene	ND	0.20	ND	2.1		ND			25	
Hexane	ND	8.0	ND	28		ND			25	
2-Hexanone (MBK)	ND	0.20	ND	0.82		ND			25	
Isopropanol	1.3	8.0	3.2	20		1.4		3.30	25	Z-01, J
Methyl tert-Butyl Ether (MTBE)	ND	0.20	ND	0.72		ND			25	
Methylene Chloride	0.35	2.0	1.2	6.9		0.34		2.30	25	J
Methyl methacrylate	ND	0.20	ND	0.82		ND			25	
4-Methyl-2-pentanone (MIBK)	ND	0.20	ND	0.82		ND			25	
Propene	ND	8.0	ND	14		ND			25	
Styrene	ND	0.20	ND	0.85		ND			25	
1,1,1,2-Tetrachloroethane	ND	0.36	ND	2.5		ND			25	
1,1,2,2-Tetrachloroethane	ND	0.20	ND	1.4		ND			25	

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	Limits	Limit	
<b>Batch B186540 - TO-15 Prep</b>										
<b>Duplicate (B186540-DUP1)</b>		<b>Source: 1710332-10</b>				Prepared: 09/14/17 Analyzed: 09/15/17				
Tetrachloroethylene	ND	0.20	ND	1.4		ND			25	
Tetrahydrofuran	22	0.20	64	0.59		22		1.57	25	
Toluene	0.47	0.20	1.8	0.75		0.46		1.72	25	
1,2,4-Trichlorobenzene	ND	0.20	ND	1.5		ND			25	
1,1,1-Trichloroethane	0.71	0.20	3.9	1.1		0.71		0.00	25	
1,1,2-Trichloroethane	ND	0.20	ND	1.1		ND			25	
Trichloroethylene	1.2	0.20	6.5	1.1		1.2		1.34	25	
Trichlorofluoromethane (Freon 11)	0.80	0.80	4.5	4.5		0.82		1.48	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	ND	6.1		ND			25	
1,2,4-Trimethylbenzene	ND	0.20	ND	0.98		ND			25	
1,3,5-Trimethylbenzene	ND	0.20	ND	0.98		ND			25	
Vinyl Acetate	ND	4.0	ND	14		ND			25	
Vinyl Chloride	ND	0.20	ND	0.51		ND			25	
m&p-Xylene	ND	0.40	ND	1.7		ND			25	
o-Xylene	ND	0.20	ND	0.87		ND			25	
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.53</i>				<i>8.00</i>		<i>107</i>	<i>70-130</i>		
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	<i>10.3</i>				<i>8.00</i>		<i>128</i>	<i>70-130</i>		

**Batch B186546 - TO-15 Prep**

<b>Blank (B186546-BLK1)</b>		Prepared & Analyzed: 09/15/17								
Acetone	ND	1.4								
Benzene	ND	0.035								
Benzyl chloride	ND	0.035								
Bromodichloromethane	ND	0.035								
Bromoform	ND	0.035								
Bromomethane	ND	0.035								
1,3-Butadiene	ND	0.035								
2-Butanone (MEK)	ND	1.4								
Carbon Disulfide	ND	0.35								
Carbon Tetrachloride	ND	0.035								
Chlorobenzene	ND	0.035								
Chloroethane	ND	0.035								
Chloroform	ND	0.035								
Chloromethane	ND	0.070								
Cyclohexane	ND	0.035								
Dibromochloromethane	ND	0.035								
1,2-Dibromoethane (EDB)	ND	0.035								
1,2-Dichlorobenzene	ND	0.035								
1,3-Dichlorobenzene	ND	0.035								
1,4-Dichlorobenzene	ND	0.035								
Dichlorodifluoromethane (Freon 12)	ND	0.035								
1,1-Dichloroethane	ND	0.035								
1,2-Dichloroethane	ND	0.035								
1,1-Dichloroethylene	ND	0.035								
cis-1,2-Dichloroethylene	ND	0.035								

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	RPD	RPD Limit	Flag
	Results	RL	Results	RL	ppbv	Result	%REC Limits	RPD		

**Batch B186546 - TO-15 Prep**

**Blank (B186546-BLK1)**

Prepared & Analyzed: 09/15/17

trans-1,2-Dichloroethylene	ND	0.035
1,2-Dichloropropane	ND	0.035
cis-1,3-Dichloropropene	ND	0.035
trans-1,3-Dichloropropene	ND	0.035
Ethanol	ND	1.4
Ethyl Acetate	ND	0.035
Ethylbenzene	ND	0.035
4-Ethyltoluene	ND	0.035
Heptane	ND	0.035
Hexachlorobutadiene	ND	0.035
Hexane	ND	1.4
2-Hexanone (MBK)	ND	0.035
Isopropanol	ND	1.4
Methyl tert-Butyl Ether (MTBE)	ND	0.035
Methylene Chloride	ND	0.35
Methyl methacrylate	ND	0.035
4-Methyl-2-pentanone (MIBK)	ND	0.035
Propene	ND	1.4
Styrene	ND	0.035
1,1,1,2-Tetrachloroethane	ND	0.064
1,1,1,2,2-Tetrachloroethane	ND	0.035
Tetrachloroethylene	ND	0.035
Tetrahydrofuran	ND	0.035
Toluene	ND	0.035
1,2,4-Trichlorobenzene	ND	0.035
1,1,1-Trichloroethane	ND	0.035
1,1,2-Trichloroethane	ND	0.035
Trichloroethylene	ND	0.035
Trichlorofluoromethane (Freon 11)	ND	0.14
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14
1,2,4-Trimethylbenzene	ND	0.035
1,3,5-Trimethylbenzene	ND	0.035
Vinyl Acetate	ND	0.70
Vinyl Chloride	ND	0.035
m&p-Xylene	ND	0.070
o-Xylene	ND	0.035

Surrogate: 4-Bromofluorobenzene (1)	8.44	8.00	106	70-130
Surrogate: 4-Bromofluorobenzene (2)	0.00	8.00	*	70-130

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B186546 - TO-15 Prep</b>											
<b>LCS (B186546-BS1)</b>											
						Prepared & Analyzed: 09/15/17					
Acetone	4.38				5.00		87.7	70-130			
Benzene	3.66				5.00		73.1	70-130			
Benzyl chloride	5.91				5.00		118	70-130			
Bromodichloromethane	3.96				5.00		79.1	70-130			
Bromoform	4.98				5.00		99.6	70-130			
Bromomethane	5.80				5.00		116	70-130			
1,3-Butadiene	4.79				5.00		95.8	70-130			
2-Butanone (MEK)	3.84				5.00		76.9	70-130			
Carbon Disulfide	5.54				5.00		111	70-130			
Carbon Tetrachloride	4.02				5.00		80.4	70-130			
Chlorobenzene	4.73				5.00		94.7	70-130			
Chloroethane	5.01				5.00		100	70-130			
Chloroform	5.70				5.00		114	70-130			
Chloromethane	4.47				5.00		89.5	70-130			
Cyclohexane	3.39				5.00		<b>67.8</b> *	70-130			
Dibromochloromethane	4.50				5.00		89.9	70-130			
1,2-Dibromoethane (EDB)	4.36				5.00		87.2	70-130			
1,2-Dichlorobenzene	5.05				5.00		101	70-130			
1,3-Dichlorobenzene	5.47				5.00		109	70-130			
1,4-Dichlorobenzene	5.48				5.00		110	70-130			
Dichlorodifluoromethane (Freon 12)	5.63				5.00		113	70-130			
1,1-Dichloroethane	4.86				5.00		97.2	70-130			
1,2-Dichloroethane	5.24				5.00		105	70-130			
1,1-Dichloroethylene	4.56				5.00		91.2	70-130			
cis-1,2-Dichloroethylene	4.85				5.00		96.9	70-130			
trans-1,2-Dichloroethylene	4.71				5.00		94.2	70-130			
1,2-Dichloropropane	3.28				5.00		<b>65.7</b> *	70-130			
cis-1,3-Dichloropropene	3.94				5.00		78.8	70-130			
trans-1,3-Dichloropropene	4.11				5.00		82.1	70-130			
Ethanol	4.23				5.00		84.6	70-130			
Ethyl Acetate	4.90				5.00		98.0	70-130			
Ethylbenzene	4.04				5.00		80.8	70-130			
4-Ethyltoluene	4.62				5.00		92.4	70-130			
Heptane	3.18				5.00		<b>63.7</b> *	70-130			
Hexachlorobutadiene	4.71				5.00		94.2	70-130			
Hexane	4.39				5.00		87.7	70-130			
2-Hexanone (MBK)	3.27				5.00		<b>65.5</b> *	70-130			
Isopropanol	3.44				5.00		<b>68.9</b> *	70-130			
Methyl tert-Butyl Ether (MTBE)	4.99				5.00		99.7	70-130			
Methylene Chloride	3.99				5.00		79.8	70-130			
Methyl methacrylate	3.66				5.00		73.2	70-130			
4-Methyl-2-pentanone (MIBK)	3.53				5.00		70.6	70-130			
Propene	3.96				5.00		79.2	70-130			
Styrene	4.65				5.00		93.1	70-130			
1,1,1,2-Tetrachloroethane	ND	0.091		0.62				70-130			
1,1,2,2-Tetrachloroethane	4.31				5.00		86.2	70-130			

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		

**Batch B186546 - TO-15 Prep**

**LCS (B186546-BS1)**

Prepared & Analyzed: 09/15/17

Tetrachloroethylene	4.44				5.00		88.8	70-130			
Tetrahydrofuran	4.00				5.00		80.1	70-130			
Toluene	3.94				5.00		78.8	70-130			
1,2,4-Trichlorobenzene	5.51				5.00		110	70-130			
1,1,1-Trichloroethane	3.77				5.00		75.3	70-130			
1,1,2-Trichloroethane	4.14				5.00		82.8	70-130			
Trichloroethylene	4.23				5.00		84.6	70-130			
Trichlorofluoromethane (Freon 11)	5.68				5.00		114	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.89				5.00		118	70-130			
1,2,4-Trimethylbenzene	4.47				5.00		89.4	70-130			
1,3,5-Trimethylbenzene	4.35				5.00		87.1	70-130			
Vinyl Acetate	4.03				5.00		80.6	70-130			
Vinyl Chloride	4.94				5.00		98.7	70-130			
m&p-Xylene	8.52				10.0		85.2	70-130			
o-Xylene	4.45				5.00		89.1	70-130			
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	8.67				8.00		108	70-130			
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	0.00				8.00		*	70-130			

**Duplicate (B186546-DUP1)**

Source: 1710332-04RE1

Prepared & Analyzed: 09/15/17

Acetone	13	8.0	31	19		14		5.93	25		
Benzene	ND	0.20	ND	0.64		ND			25		
Benzyl chloride	ND	0.20	ND	1.0		ND			25		
Bromodichloromethane	ND	0.20	ND	1.3		ND			25		
Bromoform	ND	0.20	ND	2.1		ND			25		
Bromomethane	ND	0.20	ND	0.78		ND			25		
1,3-Butadiene	ND	0.20	ND	0.44		ND			25		
2-Butanone (MEK)	0.42	8.0	1.3	24		0.46		7.27	25		J
Carbon Disulfide	ND	2.0	ND	6.2		ND			25		
Carbon Tetrachloride	ND	0.20	ND	1.3		ND			25		
Chlorobenzene	ND	0.20	ND	0.92		ND			25		
Chloroethane	ND	0.20	ND	0.53		ND			25		
Chloroform	ND	0.20	ND	0.98		ND			25		
Chloromethane	0.55	0.40	1.1	0.83		0.54		0.733	25		
Cyclohexane	0.28	0.20	0.96	0.69		0.25		10.5	25		
Dibromochloromethane	ND	0.20	ND	1.7		ND			25		
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5		ND			25		
1,2-Dichlorobenzene	ND	0.20	ND	1.2		ND			25		
1,3-Dichlorobenzene	ND	0.20	ND	1.2		ND			25		
1,4-Dichlorobenzene	ND	0.20	ND	1.2		ND			25		
Dichlorodifluoromethane (Freon 12)	0.32	0.20	1.6	0.99		0.34		4.88	25		
1,1-Dichloroethane	ND	0.20	ND	0.81		ND			25		
1,2-Dichloroethane	ND	0.20	ND	0.81		ND			25		
1,1-Dichloroethylene	ND	0.20	ND	0.79		ND			25		
cis-1,2-Dichloroethylene	ND	0.20	ND	0.79		ND			25		
trans-1,2-Dichloroethylene	ND	0.20	ND	0.79		ND			25		
1,2-Dichloropropane	ND	0.20	ND	0.92		ND			25		

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC Limits	RPD	RPD Limit	Flag
	Results	RL	Results	RL						
<b>Batch B186546 - TO-15 Prep</b>										
<b>Duplicate (B186546-DUP1)</b>		<b>Source: 1710332-04RE1</b>				<b>Prepared &amp; Analyzed: 09/15/17</b>				
cis-1,3-Dichloropropene	ND	0.20	ND	0.91		ND			25	
trans-1,3-Dichloropropene	ND	0.20	ND	0.91		ND			25	
Ethanol	150	8.0	280	15		150		4.35	25	
Ethyl Acetate	0.30	0.20	1.1	0.72		0.20		38.1	25	
Ethylbenzene	ND	0.20	ND	0.87		ND			25	
4-Ethyltoluene	ND	0.20	ND	0.98		ND			25	
Heptane	ND	0.20	ND	0.82		ND			25	
Hexachlorobutadiene	ND	0.20	ND	2.1		ND			25	
Hexane	ND	8.0	ND	28		ND			25	
2-Hexanone (MBK)	ND	0.20	ND	0.82		ND			25	
Isopropanol	5.3	8.0	13	20		5.5		4.65	25	J
Methyl tert-Butyl Ether (MTBE)	ND	0.20	ND	0.72		ND			25	
Methylene Chloride	ND	2.0	ND	6.9		ND			25	
Methyl methacrylate	ND	0.20	ND	0.82		ND			25	
4-Methyl-2-pentanone (MIBK)	0.23	0.20	0.95	0.82		0.24		5.04	25	
Propene	1.5	8.0	2.5	14		1.5		3.49	25	J
Styrene	ND	0.20	ND	0.85		ND			25	
1,1,1,2-Tetrachloroethane	ND	0.36	ND	2.5		ND			25	
1,1,2,2-Tetrachloroethane	ND	0.20	ND	1.4		ND			25	
Tetrachloroethylene	ND	0.20	ND	1.4		ND			25	
Tetrahydrofuran	ND	0.20	ND	0.59		ND			25	
Toluene	0.24	0.20	0.92	0.75		0.24		1.65	25	
1,2,4-Trichlorobenzene	ND	0.20	ND	1.5		ND			25	
1,1,1-Trichloroethane	ND	0.20	ND	1.1		ND			25	
1,1,2-Trichloroethane	ND	0.20	ND	1.1		ND			25	
Trichloroethylene	ND	0.20	ND	1.1		ND			25	
Trichlorofluoromethane (Freon 11)	0.24	0.80	1.3	4.5		0.31		26.1	25	J
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	ND	6.1		ND			25	
1,2,4-Trimethylbenzene	ND	0.20	ND	0.98		ND			25	
1,3,5-Trimethylbenzene	ND	0.20	ND	0.98		ND			25	
Vinyl Acetate	0.30	4.0	1.0	14		0.30		2.67	25	J
Vinyl Chloride	ND	0.20	ND	0.51		ND			25	
m&p-Xylene	ND	0.40	ND	1.7		ND			25	
o-Xylene	ND	0.20	ND	0.87		ND			25	
Surrogate: 4-Bromofluorobenzene (1)	8.67				8.00		108	70-130		
Surrogate: 4-Bromofluorobenzene (2)	0.00				8.00		*	70-130		



**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
  - † Wide recovery limits established for difficult compound.
  - ‡ Wide RPD limits established for difficult compound.
  - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- J Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
  - L-01 Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
  - Z-01 Compound fails the method requirement of 70-130% recovery for the LCS. Is classified by the lab as a difficult compound and passes the in house limits of 50-150%.

INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>IA-1-090717 (1710332-01)</b>									
Lab File ID: G091411.D					Analyzed: 09/14/17 16:54				
Bromochloromethane (1)	152435	8.893				60 - 140	8.8930	+/-0.50	
1,4-Difluorobenzene (1)	357347	10.809				60 - 140	10.8090	+/-0.50	
Chlorobenzene-d5 (1)	305610	15.609				60 - 140	15.6090	+/-0.50	
1,4-Difluorobenzene (2)	357347	10.809				60 - 140	10.8090	+/-0.50	
Chlorobenzene-d5 (2)	67182	15.606				60 - 140	15.6060	+/-0.50	
<b>IA-2-090717 (1710332-02)</b>									
Lab File ID: G091412.D					Analyzed: 09/14/17 17:38				
Bromochloromethane (1)	151758	8.886				60 - 140	8.8860	+/-0.50	
1,4-Difluorobenzene (1)	350912	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (1)	293221	15.609				60 - 140	15.6090	+/-0.50	
1,4-Difluorobenzene (2)	350912	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (2)	64725	15.606				60 - 140	15.6060	+/-0.50	
<b>IA-3-090717 (1710332-03)</b>									
Lab File ID: G091413.D					Analyzed: 09/14/17 18:23				
Bromochloromethane (1)	156216	8.889				60 - 140	8.8890	+/-0.50	
1,4-Difluorobenzene (1)	351893	10.803				60 - 140	10.8030	+/-0.50	
Chlorobenzene-d5 (1)	303952	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	351893	10.803				60 - 140	10.8030	+/-0.50	
Chlorobenzene-d5 (2)	67195	15.603				60 - 140	15.6030	+/-0.50	
<b>IA-4-090717 (1710332-04)</b>									
Lab File ID: G091414.D					Analyzed: 09/14/17 19:07				
Bromochloromethane (1)	151098	8.889				60 - 140	8.8890	+/-0.50	
1,4-Difluorobenzene (1)	345711	10.802				60 - 140	10.8020	+/-0.50	
Chlorobenzene-d5 (1)	293667	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	345711	10.802				60 - 140	10.8020	+/-0.50	
Chlorobenzene-d5 (2)	64685	15.606				60 - 140	15.6060	+/-0.50	
<b>IA-5-090717 (1710332-05)</b>									
Lab File ID: G091415.D					Analyzed: 09/14/17 19:52				
Bromochloromethane (1)	157004	8.893				60 - 140	8.8930	+/-0.50	
1,4-Difluorobenzene (1)	361250	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (1)	307261	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	361250	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (2)	67877	15.606				60 - 140	15.6060	+/-0.50	
<b>IA-6-090717 (1710332-06)</b>									
Lab File ID: G091416.D					Analyzed: 09/14/17 20:40				
Bromochloromethane (1)	154321	8.889				60 - 140	8.8890	+/-0.50	
1,4-Difluorobenzene (1)	349816	10.803				60 - 140	10.8030	+/-0.50	
Chlorobenzene-d5 (1)	300453	15.603				60 - 140	15.6030	+/-0.50	
1,4-Difluorobenzene (2)	349816	10.803				60 - 140	10.8030	+/-0.50	
Chlorobenzene-d5 (2)	66847	15.603				60 - 140	15.6030	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>IA-7-090717 (1710332-07)</b>									
			Lab File ID: G091417.D			Analyzed: 09/14/17 21:25			
Bromochloromethane (1)	155827	8.889				60 - 140	8.8890	+/-0.50	
1,4-Difluorobenzene (1)	356067	10.803				60 - 140	10.8030	+/-0.50	
Chlorobenzene-d5 (1)	302922	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	356067	10.803				60 - 140	10.8030	+/-0.50	
Chlorobenzene-d5 (2)	67491	15.606				60 - 140	15.6060	+/-0.50	
<b>AA-1-090717 (1710332-08)</b>									
			Lab File ID: G091418.D			Analyzed: 09/14/17 22:10			
Bromochloromethane (1)	151144	8.893				60 - 140	8.8930	+/-0.50	
1,4-Difluorobenzene (1)	353488	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (1)	295966	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	353488	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (2)	65427	15.606				60 - 140	15.6060	+/-0.50	
<b>EW-5-090717 (1710332-09)</b>									
			Lab File ID: G091419.D			Analyzed: 09/14/17 22:47			
Bromochloromethane (1)	152272	8.896				60 - 140	8.8960	+/-0.50	
1,4-Difluorobenzene (1)	351238	10.809				60 - 140	10.8090	+/-0.50	
Chlorobenzene-d5 (1)	296689	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	351238	10.809				60 - 140	10.8090	+/-0.50	
Chlorobenzene-d5 (2)	64661	15.609				60 - 140	15.6090	+/-0.50	
<b>EW-5-090717 (1710332-09RE1)</b>									
			Lab File ID: G091420.D			Analyzed: 09/14/17 23:24			
Bromochloromethane (1)	151649	8.893				60 - 140	8.8930	+/-0.50	
1,4-Difluorobenzene (1)	357571	10.803				60 - 140	10.8030	+/-0.50	
Chlorobenzene-d5 (1)	304150	15.606				60 - 140	15.6060	+/-0.50	
<b>EW-6-090717 (1710332-10)</b>									
			Lab File ID: G091421.D			Analyzed: 09/15/17 00:01			
Bromochloromethane (1)	147123	8.892				60 - 140	8.8920	+/-0.50	
1,4-Difluorobenzene (1)	351573	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (1)	295063	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	351573	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (2)	63727	15.609				60 - 140	15.6090	+/-0.50	
<b>EW-7-090717 (1710332-11)</b>									
			Lab File ID: G091423.D			Analyzed: 09/15/17 01:17			
Bromochloromethane (1)	148790	8.896				60 - 140	8.8960	+/-0.50	
1,4-Difluorobenzene (1)	356002	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (1)	298626	15.609				60 - 140	15.6090	+/-0.50	
1,4-Difluorobenzene (2)	356002	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (2)	64343	15.606				60 - 140	15.6060	+/-0.50	

**INTERNAL STANDARD AREA AND RT SUMMARY**

**EPA TO-15**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>EW-Combined-090717 (17I0332-12)</b>									
			Lab File ID: G091425.D			Analyzed: 09/15/17 02:31			
Bromochloromethane (1)	147605	8.893				60 - 140	8.8930	+/-0.50	
1,4-Difluorobenzene (1)	355997	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (1)	296076	15.606				60 - 140	15.6060	+/-0.50	
1,4-Difluorobenzene (2)	355997	10.806				60 - 140	10.8060	+/-0.50	
Chlorobenzene-d5 (2)	63899	15.606				60 - 140	15.6060	+/-0.50	

**INTERNAL STANDARD AREA AND RT SUMMARY**

**EPA TO-15**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>IA-2-090717 (17I0332-02RE1)</b>									
			Lab File ID: F091513.D			Analyzed: 09/15/17 22:25			
Bromochloromethane (1)	203057	8.425				60 - 140	8.4250	+/-0.50	
1,4-Difluorobenzene (1)	696532	10.16				60 - 140	10.1600	+/-0.50	
Chlorobenzene-d5 (1)	642741	14.504				60 - 140	14.5040	+/-0.50	
<b>IA-4-090717 (17I0332-04RE1)</b>									
			Lab File ID: F091514.D			Analyzed: 09/15/17 23:07			
Bromochloromethane (1)	202030	8.425				60 - 140	8.4250	+/-0.50	
1,4-Difluorobenzene (1)	701782	10.16				60 - 140	10.1600	+/-0.50	
Chlorobenzene-d5 (1)	637551	14.504				60 - 140	14.5040	+/-0.50	
<b>IA-5-090717 (17I0332-05RE1)</b>									
			Lab File ID: F091516.D			Analyzed: 09/16/17 00:31			
Bromochloromethane (1)	208419	8.425				60 - 140	8.4250	+/-0.50	
1,4-Difluorobenzene (1)	695998	10.16				60 - 140	10.1600	+/-0.50	
Chlorobenzene-d5 (1)	640957	14.503				60 - 140	14.5030	+/-0.50	
<b>IA-7-090717 (17I0332-07RE1)</b>									
			Lab File ID: F091517.D			Analyzed: 09/16/17 01:15			
Bromochloromethane (1)	203265	8.425				60 - 140	8.4250	+/-0.50	
1,4-Difluorobenzene (1)	683957	10.16				60 - 140	10.1600	+/-0.50	
Chlorobenzene-d5 (1)	634039	14.503				60 - 140	14.5030	+/-0.50	

CONTINUING CALIBRATION CHECK

COMPOUND	TYPE			RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Acetone	AIHA,NY,ME
Benzene	AIHA,FL,NJ,NY,VA,ME
Benzyl chloride	AIHA,FL,NJ,NY,VA,ME
Bromodichloromethane	AIHA,NJ,NY,VA,ME
Bromoform	AIHA,NJ,NY,VA,ME
Bromomethane	AIHA,FL,NJ,NY,ME
1,3-Butadiene	AIHA,NJ,NY,VA,ME
2-Butanone (MEK)	AIHA,FL,NJ,NY,VA,ME
Carbon Disulfide	AIHA,NJ,NY,VA,ME
Carbon Tetrachloride	AIHA,FL,NJ,NY,VA,ME
Chlorobenzene	AIHA,FL,NJ,NY,VA,ME
Chloroethane	AIHA,FL,NJ,NY,VA,ME
Chloroform	AIHA,FL,NJ,NY,VA,ME
Chloromethane	AIHA,FL,NJ,NY,VA,ME
Cyclohexane	AIHA,NJ,NY,VA,ME
Dibromochloromethane	AIHA,NY,ME
1,2-Dibromoethane (EDB)	AIHA,NJ,NY,ME
1,2-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
1,3-Dichlorobenzene	AIHA,NJ,NY,ME
1,4-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
Dichlorodifluoromethane (Freon 12)	AIHA,NY,ME
1,1-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,2-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1-Dichloroethylene	AIHA,FL,NJ,NY,VA,ME
cis-1,2-Dichloroethylene	AIHA,FL,NY,VA,ME
trans-1,2-Dichloroethylene	AIHA,NJ,NY,VA,ME
1,2-Dichloropropane	AIHA,FL,NJ,NY,VA,ME
cis-1,3-Dichloropropene	AIHA,FL,NJ,NY,VA,ME
trans-1,3-Dichloropropene	AIHA,NY,ME
Ethanol	AIHA
Ethyl Acetate	AIHA
Ethylbenzene	AIHA,FL,NJ,NY,VA,ME
4-Ethyltoluene	AIHA,NJ
Heptane	AIHA,NJ,NY,VA,ME
Hexachlorobutadiene	AIHA,NJ,NY,VA,ME
Hexane	AIHA,FL,NJ,NY,VA,ME
2-Hexanone (MBK)	AIHA
Isopropanol	AIHA,NY,ME
Methyl tert-Butyl Ether (MTBE)	AIHA,FL,NJ,NY,VA,ME
Methylene Chloride	AIHA,FL,NJ,NY,VA,ME
Methyl methacrylate	AIHA,NJ,NY,VA,ME
4-Methyl-2-pentanone (MIBK)	AIHA,FL,NJ,NY,ME
Propene	AIHA
Styrene	AIHA,FL,NJ,NY,VA,ME
1,1,2,2-Tetrachloroethane	AIHA,FL,NJ,NY,VA,ME
Tetrachloroethylene	AIHA,FL,NJ,NY,VA,ME
Tetrahydrofuran	AIHA

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Toluene	AIHA,FL,NJ,NY,VA,ME
1,2,4-Trichlorobenzene	AIHA,NJ,NY,VA,ME
1,1,1-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1,2-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
Trichloroethylene	AIHA,FL,NJ,NY,VA,ME
Trichlorofluoromethane (Freon 11)	AIHA,NY,ME
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	AIHA,NJ,NY,VA,ME
1,2,4-Trimethylbenzene	AIHA,NJ,NY,ME
1,3,5-Trimethylbenzene	AIHA,NJ,NY,ME
Vinyl Acetate	AIHA,FL,NJ,NY,VA,ME
Vinyl Chloride	AIHA,FL,NJ,NY,VA,ME
m&p-Xylene	AIHA,FL,NJ,NY,VA,ME
o-Xylene	AIHA,FL,NJ,NY,VA,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018



URL: www.contestlabs.com  
 CHAIN OF CUSTODY RECORD (AIR)  
 Phone: 413-525-2332  
 Fax: 413-525-6405  
 Email: info@contestlabs.com

Company Name: AME Foods Inc  
 Address: AME Foods Inc 271 M. Hill Rd, Westfield, MA 01096  
 Phone: 578-692-4070  
 Project Name: Peterborough  
 Project Location: Providence, RI  
 Project Number: 365215001  
 Project Manager: Dennis Healy  
 Con-Test Quote Name/Number: SOC 01K  
 Invoice Recipient:  
 Sampled By: M. Mays 339-927-5747

**ANALYSIS REQUESTED**

7-Day  10-Day   
 Due Date:  
 1-Day  3-Day   
 2-Day  4-Day   
 Format: PDF  EXCEL   
 Other:  
 CLP Like Data Pkg Required:   
 Email To: Andrew.Nelson@contestlabs.com  
 Fax To #:

Lab Use	Con-Test Work Order #	Client Sample ID / Description	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	Lab Receipt Pressure		Flow Controller ID
				Beginning Date/Time	Ending Date/Time					Initial Pressure	Final Pressure	
O1	IA-1-090717			9-7-17 807	9-7-17 832	25	200	IA	6	27.2	29.0	1914
O2	IA-2-090717			9-7-17 731	9-7-17 801	30	200	IA	6	28.5	29.5	1309
O3	IA-3-090717			9-7-17 808	9-7-17 833	25	200	IA	6	27.3	29.7	1038
O4	IA-4-090717			9-7-17 733	9-7-17 803	30	200	IA	6	28.3	29.9	1750
O5	IA-5-090717			9-7-17 1115	9-7-17 1145	30	200	IA	6	28.5	29.7	1750
O6	IA-6-090717			9-7-17 1201	9-7-17 1231	30	200	IA	6	28.0	29.0	1750
O7	IA-7-090717			9-7-17 1120	9-7-17 1150	30	200	IA	6	28.4	29.6	1959
O8	AA-1-090717			9-7-17 938	9-7-17 1008	28	200	AMB	6	28.0	29.0	1012
O9	Eu-5-090717			9-7-17 851	9-7-17 921	30	200	SO	6	27.4	29.0	1920

Comments: See table bleed 9-8-17

Relinquished by: (signature) [Signature] Date/Time: 12:20

Received by: (signature) [Signature] Date/Time: 12:20

Relinquished by: (signature) [Signature] Date/Time: 9/8/17

Received by: (signature) [Signature] Date/Time: 9/8/17

Relinquished by: (signature) [Signature] Date/Time: 9/8/17

Received by: (signature) [Signature] Date/Time: 9/8/17

Relinquished by: (signature) [Signature] Date/Time: 9/8/17

Received by: (signature) [Signature] Date/Time: 9/8/17

Matrix Codes:  
 SG = SOIL GAS  
 IA = INDOOR AIR  
 AMB = AMBIENT  
 SS = SUB SLAB  
 D = DUJ  
 BL = BLANK  
 O = Other

Special Requirements:  
 MA MCP Required   
 MCP Certification Form Required   
 CT RCP Required   
 RCP Certification Form Required

Project Entity:  
 Government  Federal  City   
 Municipality  21 J  Brownfield   
 MWRA  School  MBTA   
 WRTA   
 Other  Chromatogram  AIHA-LAP, LLC   
 PCB ONLY  Soxhlet  Non Soxhlet

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NELAP and AIHA-LAP TLD Accredited





Company Name: Ames Falls - Wheeler  
 Address: 27 Mill Rd. Chebster MA  
 Phone: 978-662-9090  
 Project Name: Texton Quarry  
 Project Location: Providence, RI  
 Project Number: 365215001  
 Project Manager: David Hershin  
 Con-Test Quote Name/Number: Soc Sud  
 Invoice Recipient:  
 Sampled By: M. McGinnis

Lab Use	Con-Test Work Order #	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume
			Beginning Date/Time	Ending Date/Time				
10		EW-6-090717	9-7-17 11:57	9-7-17 10:47	30	200	SS	6
11		EW-7-090717	9-7-17 11:57	9-7-17 11:57	30	200	SS	6
12		EW- (combined) EW- (combined) 090717	9-7-17 8:57	9-7-17 8:27	30	200	SS	6

Summa Can ID	Flow Controller ID	Lab Receipt Pressure	
		Initial Pressure	Final Pressure
1488	41315	-25.50	29
1433	41309	-27.50	24
1457	41181	-27.50	27

Relinquished by: (signature) [Signature] Date/Time: 12:00  
 Received by: (signature) [Signature] Date/Time: 12:00  
 Relinquished by: (signature) [Signature] Date/Time: 9/18/17  
 Received by: (signature) [Signature] Date/Time: 9/18/17  
 Relinquished by: (signature) [Signature] Date/Time: 9/18/17  
 Received by: (signature) [Signature] Date/Time: 9/18/17  
 Relinquished by: (signature) [Signature] Date/Time: 9/18/17  
 Received by: (signature) [Signature] Date/Time: 9/18/17

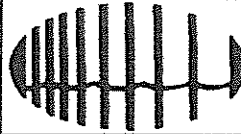
Matrix Codes:  
 SG = SOIL GAS  
 IA = INDOOR AIR  
 AMB = AMBIENT  
 SS = SUB SLAB  
 D = DUP  
 BL = BLANK  
 O = Other

Please use the following codes to indicate possible sample concentration within the Conc Code column above:  
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Special Requirements:  
 MA MCP Required   
 MCP Certification Form Required   
 CT RCP Required   
 RCP Certification Form Required

Project Entity:  
 Government   
 Federal   
 City   
 Municipality   
 21 J   
 Brownfield   
 MWRA   
 School   
 MBTA   
 WRTA   
 Chromatogram   
 AIHA-LAP, LLC   
 PCB ONLY   
 Soxhlet   
 Non Soxhlet

39 Spruce St.  
 East Longmeadow, MA. 01028  
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 F: 413-525-6405  
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 ANALYTICAL LABORATORY

Doc# 278 Rev 6 2017

**Air Media Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False**

Client AMEC

Received By PLF Date 9/8/17 Time 2000  
 How were the samples received? In Cooler \_\_\_\_\_ On Ice \_\_\_\_\_ No Ice \_\_\_\_\_  
 In Box T Ambient T Melted Ice \_\_\_\_\_  
 Were samples within Temperature Compliance? 2-6°C UA By Gun # \_\_\_\_\_ Actual Temp - \_\_\_\_\_  
 By Blank # \_\_\_\_\_ Actual Temp - \_\_\_\_\_  
 Was Custody Seal Intact? UA Were Samples Tampered with? UA  
 Was COC Relinquished? T Does Chain Agree With Samples? T  
 Are there any loose caps/valves on any samples? F  
 Is COC in ink/ Legible? T  
 Did COC Include all Client T Analysis T Sampler Name T  
 Pertinent Information? Project T ID's T Collection Dates/Times T  
 Are Sample Labels filled out and legible? T  
 Are there Rushes? F Who was notified? \_\_\_\_\_  
 Samples are received within holding time? T  
 Proper Media Used? T Individually Certified Cans? F  
 Are there Trip Blanks? F Is there enough Volume? T

Containers:	#	Size	Regulator	Duration	Accessories:		
Summa Cans	13	6L	13	30 min	Nut/Ferrule	4	IC Train
Tedlar Bags					Tubing	8/4	
TO-17 Tubes					T-Connector		Shipping Charges
Radiello					Syringe		
Pufs/TO-11s					Tedlar		

Can #'s	Reg #'s						
1959	4308						
1944	4292						
1309	4171						
1038	4304						
1750	4180						
1930	4293						
1190	4315						
	4305						
	4213						
	4181						
	4314						
Unused Media	Pufs/TO-17's						
1898	35.2	4212					

Comments:

## **APPENDIX B**

## Analytical Method Information

Analyte	MDL	Reporting	Surrogate	Duplicate	Matrix Spike		Blank Spike / LCS	
		Limit	%R	RPD	%R	RPD	%R	RPD
<b>TO-15 ppbv low level in Air (EPA TO-15)</b>								
Preservation: NA								
Container: SUMMA Canister								
Amount Required:								
Hold Time: 30 days								
Acetone	0.69	2.0 ppbv		25				70 - 130
Benzene	0.026	0.050 ppbv		25				70 - 130
Benzyl chloride	0.0097	0.050 ppbv		25				70 - 130
Bromodichloromethane	0.011	0.050 ppbv		25				70 - 130
Bromoform	0.0096	0.050 ppbv		25				70 - 130
Bromomethane	0.034	0.050 ppbv		25				70 - 130
1,3-Butadiene	0.026	0.050 ppbv		25				70 - 130
2-Butanone (MEK)	0.037	2.0 ppbv		25				70 - 130
Carbon Disulfide	0.017	0.50 ppbv		25				70 - 130
Carbon Tetrachloride	0.012	0.050 ppbv		25				70 - 130
Chlorobenzene	0.017	0.050 ppbv		25				70 - 130
Chloroethane	0.019	0.050 ppbv		25				70 - 130
Chloroform	0.012	0.050 ppbv		25				70 - 130
Chloromethane	0.022	0.10 ppbv		25				70 - 130
Cyclohexane	0.029	0.050 ppbv		25				70 - 130
Dibromochloromethane	0.013	0.050 ppbv		25				70 - 130
1,2-Dibromoethane (EDB)	0.011	0.050 ppbv		25				70 - 130
1,2-Dichlorobenzene	0.013	0.050 ppbv		25				70 - 130
1,3-Dichlorobenzene	0.011	0.050 ppbv		25				70 - 130
1,4-Dichlorobenzene	0.013	0.050 ppbv		25				70 - 130
Dichlorodifluoromethane (Freon 12)	0.022	0.050 ppbv		25				70 - 130
1,1-Dichloroethane	0.014	0.050 ppbv		25				70 - 130
1,2-Dichloroethane	0.014	0.050 ppbv		25				70 - 130
1,1-Dichloroethylene	0.012	0.050 ppbv		25				70 - 130
cis-1,2-Dichloroethylene	0.019	0.050 ppbv		25				70 - 130
trans-1,2-Dichloroethylene	0.013	0.050 ppbv		25				70 - 130
1,2-Dichloropropane	0.017	0.050 ppbv		25				70 - 130
cis-1,3-Dichloropropene	0.013	0.050 ppbv		25				70 - 130
trans-1,3-Dichloropropene	0.013	0.050 ppbv		25				70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Fr	0.012	0.050 ppbv		25				70 - 130
1,4-Dioxane	0.32	0.50 ppbv		25				70 - 130
Ethanol	0.89	2.0 ppbv		25				70 - 130
Ethyl Acetate	0.037	0.050 ppbv		25				70 - 130
Ethylbenzene	0.014	0.050 ppbv		25				70 - 130
4-Ethyltoluene	0.011	0.050 ppbv		25				70 - 130
Heptane	0.016	0.050 ppbv		25				70 - 130
Hexachlorobutadiene	0.019	0.050 ppbv		25				70 - 130
Hexane	0.088	2.0 ppbv		25				70 - 130
2-Hexanone (MBK)	0.013	0.050 ppbv		25				70 - 130
Isopropanol	0.061	2.0 ppbv		25				70 - 130
Methyl tert-Butyl Ether (MTBE)	0.015	0.050 ppbv		25				70 - 130
Methylene Chloride	0.061	0.50 ppbv		25				70 - 130
4-Methyl-2-pentanone (MIBK)	0.012	0.050 ppbv		25				70 - 130
Naphthalene	0.027	0.050 ppbv		25				70 - 130
Propene	0.15	2.0 ppbv		25				70 - 130
Styrene	0.0097	0.050 ppbv		25				70 - 130

Analytical Method Information

Analyte	MDL	Reporting Limit	Surrogate %R	Duplicate RPD	Matrix Spike		Blank Spike / LCS	
					%R	RPD	%R	RPD
1,1,2,2-Tetrachloroethane	0.012	0.050 ppbv		25			70 - 130	
Tetrachloroethylene	0.014	0.050 ppbv		25			70 - 130	
Tetrahydrofuran	0.021	0.050 ppbv		25			70 - 130	
Toluene	0.016	0.050 ppbv		25			70 - 130	
1,2,4-Trichlorobenzene	0.019	0.050 ppbv		25			70 - 130	
1,1,1-Trichloroethane	0.0090	0.050 ppbv		25			70 - 130	
1,1,2-Trichloroethane	0.015	0.050 ppbv		25			70 - 130	
Trichloroethylene	0.015	0.050 ppbv		25			70 - 130	
Trichlorofluoromethane (Freon 11)	0.017	0.050 ppbv		25			70 - 130	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.014	0.050 ppbv		25			70 - 130	
1,2,4-Trimethylbenzene	0.012	0.050 ppbv		25			70 - 130	
1,3,5-Trimethylbenzene	0.010	0.050 ppbv		25			70 - 130	
Vinyl Acetate	0.025	1.0 ppbv		25			70 - 130	
Vinyl Chloride	0.021	0.050 ppbv		25			70 - 130	
m&p-Xylene	0.025	0.10 ppbv		25			70 - 130	
o-Xylene	0.014	0.050 ppbv		25			70 - 130	
surr: 4-Bromofluorobenzene (1)			70 - 130					
Bromochloromethane (1)								
1,4-Difluorobenzene (1)								
Chlorobenzene-d5 (1)								