

April 12, 2018

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
February 2018 Semi-Annual Monitoring
Retail Complex, Active Sub-Slab Depressurization System
Former Gorham Manufacturing Facility
333 Adelaide Avenue, Providence, Rhode Island
AMEC Project No. 3651180075**

Dear Mr. Martella:

This letter report presents the results of semi-annual compliance sampling and analysis conducted by Amec Foster Wheeler Environment and Infrastructure, Inc. (Amec Foster Wheeler) at the retail complex located at the Former Gorham Manufacturing Facility, 333 Adelaide Avenue, Providence, Rhode Island (Site). The reporting period is from October 2017 through February 2018 and includes one semi-annual compliance sampling event conducted on February 28, 2018.

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 February 28, 2018. This is the fourth 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 February 28, 2018. 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 (18B1182) associated with the February 28, 2018 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 north 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 February 28, 2018 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 for the February 28, 2018 semi-annual sampling event in the small retail spaces (sample locations IA-5 through IA-7) were in compliance with action levels.

The eastern small retail space (indoor air sample location IA-5) was intermittently occupied as storage/staging area for the consignment shop 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 in the center small retail space 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 February 28, 2018. **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 February 28, 2018. 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 (18B1182) associated with the February 28, 2018 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 north of the property upwind of the retail building. The sub-slab vacuum monitoring (pressure differential measurements) was conducted on February 28, 2018 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 two samples exceeded the TAC (0.50 ug/m^3): sample IA-2 at 2.4 ug/m^3 and IA-4 1.9 ug/m^3 . Both samples are located in 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 as a health fitness club, and it is possible that some volatile compounds are being introduced into the indoor air by common custodial materials (e.g., cleaning and disinfectant products). 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. There were no system shutdowns during the reporting period. Vacuum monitoring conducted at the time of the February 28, 2018 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 March 2018 through September 2018. The report will be prepared and submitted to the Rhode Island Department of Environmental Management in October 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 Maggione
Environmental Scientist



Herb Colby, P.G.
Senior Project Manager

Textron, Inc.
Former Gorham Manufacturing Facility, Providence, RI
Retail Complex, Active Sub-Slab Depressurization System
February 2018 Semi-Annual Air Monitoring Report
April 2018
Project No.: 3651180075

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)
Knight Memorial Library Repository
Shane Brackett, Paolino Properties (including tenants)
AMEC Project File

P:\BOS\Textron\3651180075 - Textron Gorham Annual Rpt. and ASD\8.0 Proj Deliverables\8.1 Reports\2018 February Semi-Annual Air Monitoring

TABLES

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

Parameter (ug/m ³)	Extraction Well - Eastern Small Retail Space														Extraction Well - Center Small Retail Space																							
	EW-5-060713 6/7/2013	EW-5-090613 9/6/2013	EW-5-121313 12/13/2013	EW-5-030714 3/7/2014	EW-5-061314 6/13/2014	EW-5-091214 9/12/2014	EW-5-121914 12/19/2014	EW-5-032715 3/27/2015	EW-5-061115 6/11/2015	EW-5-091615 9/16/2015	EW-5-121815 12/18/2015	EW-5-021816 2/18/2016	EW-5-080516 8/5/2016	EW-5-021017 2/10/2017	EW-5-090717 9/7/2017	EW-5-022818 2/28/2018	EW-6-020309 2/3/2009	EW-6-021109 2/11/2009	EW-6-021809 2/18/2009	EW-6-022609 2/26/2009	EW-6-030609 3/6/2009	EW-6-041409 4/14/2009	EW-6-051509 5/15/2009	EW-6-061109 6/11/2009	EW-6-091709 9/17/2009	EW-6-122909 12/29/2009	EW-6-070110 7/1/2010	EW-6-091610 9/16/2010	EW-6-120710 12/7/2010	EW-6-021711 2/17/2011	EW-6-060211 6/2/2011	EW-6-091511 9/15/2011	EW-6-120811 12/8/2011	EW-6-030812 3/8/2012	EW-6-061412 6/14/2012	EW-6-0913412 9/13/2012	EW-6-010313 1/3/2013	
1,1,1-Trichloroethane	59	180	40	68	54	74	25	14	0.19 J	55	32	15	68	7.4	42	17	69000	32000	21000	16000	16000	5600	8200	5700	5400	1100	430	390	130	0.55 U	80	230	33	0.27 U	75	0.55 U	0.55 U	
1,1,1,2-Tetrachloroethane	1.2 U	0.39 J	1.2 U	1.2 U	1.2 U	2.5 U	1.2 U	1.2 U	1.2 U	2.5 U	2.5 U	2.5 U	2.5 U	1.2 U	2.5 U	12 U																						
1,1,2,2-Tetrachloroethane	0.69 U	0.32 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	3.4 U	1.4 U	1.4 U	6.9 U	0.69 U	1.4 U	6.9 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	68 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	6.8 U	0.69 U	0.69 U	6.9 U	14 U	3.4 U	0.34 U	0.69 U	0.69 U	0.69 U	
1,1,2-Trichloroethane	0.55 U	0.26 U	0.55 U	0.55 U	0.55 U	1.1 U	0.55 U	0.55 U	0.55 U	2.7 U	1.1 U	1.1 U	5.5 U	0.55 U	1.1 U	5.5 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	54 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	5.4 U	0.55 U	0.55 U	5.5 U	11 U	2.7 U	0.27 U	0.55 U	0.55 U	0.55 U	
1,1-Dichloroethane	6.4	20	4.8	7	7.4	9.3	4.2	2.9	0.4 U	6.9	4.4	2.8	7.5	1.8	6.2	2.3 J	5200	2500	2100	2200	1600	780	1200	1100	930	580	47	38	21	0.40 U	12	27	6.4	0.20 U	9.6	0.40 U	0.40 U	
1,1-Dichloroethene	1.7	4.7	1.5	1.8	2	2.4	1	0.9	0.4 U	1.5 J	1.1	0.84	4 U	0.4	1.3	4 U	850	210	100	110	55	74	87	83	80	6.4	3.5	4.0 U	0.40 U	4.0 U	7.9 U	2.0 U	0.20 U	0.84	0.40 U	0.40 U		
1,2,4-Trichlorobenzene	0.74 U	0.35 U	0.74 U	0.74 U	0.74 U	1.5 U	0.74 U	0.74 U	0.74 U	3.7 U	1.5 U	1.5 U	7.4 U	0.74 U	1.5 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	74 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	7.4 U	0.74 U	0.74 U	7.4 U	30 U	7.4 U	1.5 U	1.5 U	1.5 U	1.5 U	
1,2,4-Trimethylbenzene	0.49 U	0.37	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.16 J	0.22 J	2.5 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	4.9 U	5.0 U	5.0 U	5.0 U	16	6.2	50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	0.49 U	0.49 U	4.9 U	9.8 U	2.5 U	0.49 U	0.26	0.6	0.49 U	
1,2-Dibromoethane (EDB)	0.77 U	0.36 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	3.8 U	1.5 U	1.5 U	7.6 U	0.77 U	1.5 U	7.7 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	76 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	7.6 U	0.77 U	0.77 U	7.7 U	15 U	3.8 U	0.38 U	0.77 U	0.77 U	0.77 U	
1,2-Dichlorobenzene	0.60 U	0.28 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	3 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	6 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	60 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	6.0 U	0.60 U	0.60 U	6.0 U	12 U	3.0 U	0.60 U	0.60 U	0.60 U	0.60 U	
1,2-Dichloroethene	0.40 U	0.19 U	0.40 U	0.40 U	0.40 U	0.4 U	0.4 U	0.4 U	0.4 U	2 U	0.81 U	0.81 U	4 U	0.4 U	0.81 U	4 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	40 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	0.40 U	0.40 U	4.0 U	8.1 U	2.0 U	0.20 U	0.40 U	0.40 U	0.40 U	
1,2-Dichloropropane	0.46 U	0.22 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	2.3 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	46 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	4.6 U	0.46 U	0.46 U	4.6 U	9.2 U	2.3 U	0.23 U	0.46 U	0.46 U	0.46 U	
1,2-Dichlorotetrafluoroethane																	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	70 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	7.0 U										
1,3,5-Trimethylbenzene	0.49 U	0.23 U	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.11 J	2.5 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	4.9 U	5.0 U	5.0 U	5.0 U	7.3	5.0 U	50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	0.49 U	0.49 U	4.9 U	9.8 U	2.5 U	0.49 U	0.49 U	0.49 U	0.49 U	
1,3-Butadiene	0.22 U	0.10 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	0.22 U	0.22 U	1.1 U	0.44 U	0.44 U	2.2 U	0.22 U	0.44 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	22 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.2 U	0.22 U	0.22 U	2.2 U	4.4 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	
1,3-Dichlorobenzene	0.60 U	0.28 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	3 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	6 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	60 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	6.0 U	0.60 U	0.60 U	6.0 U	12 U	3.0 U	0.60 U	0.60 U	0.60 U	0.60 U	
1,4-Dichlorobenzene	0.60 U	0.28 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	3 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	6 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	60 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	6.0 U	0.60 U	0.60 U	6.0 U	12 U	3.0 U	0.60 U	0.60 U	0.60 U	0.60 U	
1,4-Dioxane																																						
2-Butanone	1900	31000	680	1200	2100	3800	260	91	9.1 J	1700 E	410	130	4800	29	4500	750	120	280	300	130	97	160	37	65	8.7	23	1800	110	20	1.9 B	59 U	240 U	13	2.1	200	3.7	0.84	
2-Hexanone	0.41 U	0.49	0.41 U	0.53	0.41 U	0.82 U	0.41 U	0.16 J	0.34 J	2 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	4.1 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	40 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	0.41 U	0.41 U	4.1 U	8.2 U	2.0 U	0.41 U	0.7	0.52	0.41 U	
4-Ethyltoluene	0.49 U	0.23 U	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	2.5 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	4.9 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	0.49 U	0.49 U	4.9 U	9.8 U	2.5 U	0.49 U	0.49 U	0.49 U	0.49 U	
4-Methyl-2-pentanone	0.41 U	0.56	0.41 U	0.41 U	0.46	0.82 U	0.41 U	0.41 U	0.41 U	2 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	4.1 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	40 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	0.41 U	0.41 U	4.1 U	8.2 U	2.0 U	0.41 U	0.35	0.41 U	0.41 U	
Acetone	610	6800	210	380	610	500	98	49	21	550	120	58	570	11	700	320	580	64	81	33	22	410	16	20	48 U	27	490	70	15 B	15 B	48 U	190 U	21	9.9	36	25	6.4	
Benzene	1.0	7.1	2.4	3.8	3.0	2.7	3.4	3.1	0.4	2.9	5.0	2.8	4.0	0.4	2.7	2 J	5.2	5.2	4.1	3.2 U	3.2 U	32 U	1.7	1.6 U	1.6 U	1.6 U	1.6 U	3.2 U	0.9	1.1	3.2 U	6.4 U	1.6 U	0.3	1.2	0.8	0.4	
Benzyl chloride	0.52 U	0.24 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	2.6 U	1 U	1 U	5.2 U	0.52 U	1 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	52 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	5.2 U	0.52 U	0.52 U	5.2 U	10 U	2.6 U	0.52 U	0.52 U	0.52 U	0.52 U	
Bromodichloromethane	0.67 U	0.31 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	3.4 U	1.3 U	1.3 U	6.7 U	0.67 U	1.3 U	6.7 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	66 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	6.6 U	0.67 U	0.67 U	6.7 U	13 U	3.4 U	0.34 U	0.67 U	0.67 U	0.67 U	
Bromoform	1.0 U	0.48 U	1.0 U	1.0 U	1.0 U	2.1 U	1 U	1 U	1 U	5.2 U	2.1 U	2.1 U	10 U	1 U	2.1 U	10 U	11 U	11 U	11 U	11 U	11 U	110 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	11 U	1.0 U	1.0 U	10 U	21 U	5.2 U	1.0 U	1.0 U	1.0 U	1.0 U	
Bromomethane	0.39 U	0.18 U	0.39 U	0.39 U	0.39 U	0.78 U	0.39 U	0.39 U	0.39 U	1.9 U	0.78 U	0.78 U	3.9 U	0.39 U	0.78 U	3.9 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	38 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	3.8 U	0.39 U	0.39 U	3.9 U	7.8 U	1.9 U	0.39 U	0.39 U	0.39 U	0.39 U	
Carbon disulfide	19	77	8.9	26	35	46	13	7.4	0.98 J	56	19	6.1 J	100	1.2 J	120	62	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	32 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	3.2 U	0.66	0.31 U	11	62 U	7.1	3.1 U	29	3.1 U	3.1 U	
Carbon tetrachloride	0.63 U	0.47	0.63 U	0.63 U	0.63 U	0.63 U	0.33 J	0.31 J	0.33 J	3.1 U	1.3 U	1.3 U	6.3 U	0.63 U	1.3 U	6.3 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	62 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	6										

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

Parameter (ug/m ³)	Extraction Well - Center Small Retail Space																Extraction Well - Western Small Retail Space																					
	EW-6-031513 3/15/2013	EW-6-060713 6/7/2013	EW-6-090613 9/6/2013	EW-6-121313 12/13/2013	EW-6-030714 3/7/2014	EW-6-061314 6/13/2014	EW-6-091214 9/12/2014	EW-6-121914 12/19/2014	EW-06-032715 3/27/2015	EW-6-061115 6/11/2015	EW-6-091615 9/16/2015	EW-6-121815 12/18/2015	EW-6-021816 2/18/2016	EW-6-080516 8/5/2016	EW-6-021017 2/10/2017	EW-6-090717 9/7/2017	EW-6-022818 2/28/2018	EW-7-020309 2/3/2009	EW-7-021109 2/11/2009	EW-7-021809 2/18/2009	EW-7-022609 2/26/2009	EW-7-030609 3/6/2009	EW-7-041409 4/14/2009	EW-7-051509 5/15/2009	EW-7-061109 6/11/2009	EW-7-091709 9/17/2009	EW-7-122909 12/29/2009	EW-7-032610 3/26/2010	EW-7-070110 7/1/2010	EW-7-091610 9/16/2010	EW-7-120710 12/7/2010	EW-7-021711 2/17/2011	EW-7-060211 6/2/2011	EW-7-091511 9/15/2011	EW-7-120811 12/8/2011	EW-7-030812 3/8/2012	EW-7-061412 6/14/2012	
1,1,1-Trichloroethane	0.55 U	4.3	71	18	13	26	58	19	14	13	5.9	27	10	180	4	3.9	2.6	5600	8500	7800	8200	8100	1600	3600	2600	1400	340	51	250	290	160	110	5.5 U	110	66	11	47	
1,1,1,2-Tetrachloroethane	1.2 U	1.2 U	0.44 U	1.2 U	1.2 U	1.2 U	2.5 U	1.2 U	1.2 U	1.2 U	2.5 U	2.5 U	2.5 U	1.2 U	2.5 U	2.5 U	2.5 U	6.8 U	1.4 U	1.7 U	1.7 U	1.7 U	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U	0.68 U	0.68 U	0.68 U	0.69 U	0.69 U	0.69 U	6.9 U	1.4 U	0.69 U	3.4 U	0.69 U
1,1,2-Trichloroethane	0.69 U	0.69 U	0.24 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	1.4 U	1.4 U	1.4 U	6.9 U	0.69 U	1.4 U	1.4 U	6.8 U	1.4 U	1.7 U	1.7 U	1.7 U	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U	0.68 U	0.68 U	0.68 U	0.69 U	0.69 U	0.69 U	6.9 U	1.4 U	0.69 U	3.4 U	0.69 U
1,1,2-Trichloroethane	0.55 U	0.55 U	0.19 U	0.55 U	0.55 U	0.55 U	1.1 U	0.55 U	0.55 U	0.55 U	1.1 U	1.1 U	1.1 U	5.5 U	0.55 U	1.1 U	1.1 U	5.4 U	1.1 U	1.4 U	1.4 U	1.4 U	5.4 U	2.7 U	2.7 U	2.7 U	2.7 U	0.54 U	0.54 U	0.55 U	0.55 U	0.55 U	5.5 U	1.1 U	0.55 U	2.7 U	0.55 U	
1,1-Dichloroethane	0.40 U	0.78	13	2.7	2.2	4.7	8.2	3.5	2.8	2.5	1.1	3.1	1.7	24	0.88	0.58 J	0.45 J	1700	1800	1600	2100	1700	590	1000	1100	970	470	85	320	340	220	150	45	150	80	6.4	42	
1,1-Dichloroethane	0.40 U	0.40 U	1.1	0.40 U	0.40 U	0.40 U	0.52	0.4 U	0.4 U	0.4 U	0.79 U	0.79 U	0.79 U	4 U	0.4 U	0.79 U	0.79 U	14	15	8.5	9.4	6.6	4.0 U	4.2	4.2	4.5	2.0 U	0.40 U	0.81	0.94	0.63	0.40 U	4.0 U	0.79 U	0.13	2.0 U	0.40 U	
1,2,4-Trichlorobenzene	1.5 U	0.74 U	0.26 U	0.74 U	0.74 U	0.74 U	1.5 U	0.74 U	0.74 U	0.74 U	1.5 U	1.5 U	1.5 U	7.4 U	0.74 U	1.5 U	1.5 U	7.4 U	1.5 U	1.9 U	1.9 U	1.9 U	7.4 U	3.7 U	3.7 U	3.7 U	7.5 U	1.5 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	7.4 U	3.0 U	1.5 U	15 U	1.5 U
1,2,4-Trimethylbenzene	0.49 U	0.49 U	0.59	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.2 J	0.24 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	5.0 U	1.0 U	1.3 U	1.3 U	1.3 U	5.0 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	0.50 U	0.50 U	0.49 U	0.49 U	0.49 U	4.9 U	0.98 U	0.32	4.9 U	0.32
1,2-Dibromoethane (EDB)	0.77 U	0.77 U	0.27 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	1.5 U	1.5 U	1.5 U	7.7 U	0.77 U	1.5 U	1.5 U	7.6 U	1.6 U	1.9 U	1.9 U	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U	0.76 U	0.76 U	0.76 U	0.77 U	0.77 U	0.77 U	7.7 U	1.5 U	0.77 U	3.8 U	0.77 U
1,2-Dichlorobenzene	0.60 U	0.60 U	0.21 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	6.0 U	1.2 U	1.5 U	1.5 U	1.5 U	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	6.0 U	1.2 U	0.60 U	6.0 U	0.60 U	
1,2-Dichloroethane	0.40 U	0.40 U	0.14 U	0.40 U	0.40 U	0.40 U	0.4 U	0.4 U	0.4 U	0.4 U	0.81 U	0.81 U	0.81 U	4 U	0.4 U	0.81 U	0.81 U	4.0 U	0.80 U	1.0 U	1.0 U	1.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	4.0 U	0.81 U	0.40 U	2.0 U	0.40 U	
1,2-Dichloropropane	0.46 U	0.46 U	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	0.92 U	4.6 U	0.92 U	1.2 U	1.2 U	1.2 U	4.6 U	2.3 U	2.3 U	2.3 U	2.3 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	4.6 U	0.92 U	0.46 U	2.3 U	0.46 U	
1,2-Dichlorotetrafluoroethane																		7.0 U	1.4 U	1.8 U	1.8 U	1.8 U	7.0 U	3.5 U	3.5 U	3.5 U	3.5 U	0.70 U	0.70 U	0.70 U								
1,3,5-Trimethylbenzene	0.49 U	0.49 U	0.3	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	5.0 U	1.0 U	1.3 U	1.3 U	1.3 U	5.0 U	2.5 U	2.5 U	2.5 U	2.5 U	1.1	0.50 U	0.50 U	0.49 U	0.49 U	4.9 U	0.98 U	0.49 U	4.9 U	0.98 U	
1,3-Butadiene	0.22 U	0.22 U	0.078 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	0.22 U	0.22 U	0.44 U	0.44 U	0.44 U	2.2 U	0.22 U	0.44 U	0.44 U	2.2 U	0.44 U	0.55 U	0.55 U	0.55 U	2.2 U	1.1 U	1.1 U	2.3 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	2.2 U	0.44 U	0.22 U	2.2 U	0.22 U	
1,3-Dichlorobenzene	0.60 U	0.60 U	0.21 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	6.0 U	1.2 U	1.5 U	1.5 U	1.5 U	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	6.0 U	1.2 U	0.60 U	6.0 U	0.60 U	
1,4-Dichlorobenzene	0.60 U	0.60 U	0.21 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	6.0 U	1.2 U	1.5 U	1.5 U	1.5 U	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	6.0 U	1.2 U	0.60 U	6.0 U	0.60 U	
1,4-Dioxane																																						
2-Butanone	1.9	120	95	4	4	6.8	11 J	5.2 J	11 J	13	7 J	2.2 J	6.1 J	79 J	3.1 J	120	57	8.7	12	7.3	8.5	5.5	4.5	7.1	16	4.9	3.5	31	3.8	1.8	4.1	5.3 B	59 U	24 U	6.2	100	14	
2-Hexanone	0.41 U	0.41 U	0.38	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.32 J	0.18 J	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	4.0 U	0.80 U	1.0 U	1.0 U	1.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.40 U	0.40 U	0.41 U	0.41 U	0.41 U	82 U	0.82 U	0.14	4.1 U	0.28	
4-Ethyltoluene	0.49 U	0.49 U	0.17 U	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	5.0 U	1.0 U	1.3 U	1.3 U	1.3 U	5.0 U	2.5 U	2.5 U	2.5 U	2.5 U	0.50 U	0.50 U	0.49 U	0.49 U	4.9 U	0.98 U	0.49 U	4.9 U	0.98 U		
4-Methyl-2-pentanone	0.41 U	0.41 U	0.14 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.13 J	0.41 U	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	4.0 U	0.80 U	1.0 U	1.0 U	1.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.40 U	0.40 U	0.41 U	0.41 U	0.41 U	4.1 U	0.82 U	0.13	4.1 U	1.6	
Acetone	6.3	42	35	17	16	27	36	35	39	35	44	17 J	33	210	25	26	17 J	580	38	58	30	24	15	24	24	7.9	49	26	25	12	42 B	35 B	48 U	23	12	46	31	
Benzene	0.4	0.32 U	1.2	0.4	1.0	0.7	1.1	0.7	0.7	0.6	0.56 J	0.64 U	0.64 U	9.6	1.3	0.46 J	0.58 J	3.2 U	3.9	4.5	1.9	2.3	3.2 U	2.6	2.8	3.0	2.2	1.5	1.7	2.1	1.4	1.6	3.2 U	2.5	1.6	3.2 U	1.5	
Benzyl chloride	0.52 U	0.52 U	0.18 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	1 U	1 U	1 U	5.2 U	0.52 U	1 U	1 U	5.2 U	1.1 U	1.3 U	1.3 U	1.3 U	5.2 U	2.6 U	2.6 U	2.6 U	2.6 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	5.2 U	1.0 U	0.52 U	5.2 U	0.52 U	
Bromodichloromethane	0.67 U	0.67 U	0.24 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	1.3 U	1.3 U	1.3 U	6.7 U	0.67 U	1.3 U	1.3 U	6.6 U	1.3 U	1.7 U	1.7 U	1.7 U	6.6 U	3.3 U	3.3 U	3.3 U	3.3 U	0.66 U	0.66 U	0.66 U	0.67 U	0.67 U	6.7 U	1.3 U	0.67 U	3.4 U	3.2	
Bromoform	1.0 U	1.0 U	0.36 U	1.0 U	1.0 U	1.0 U	2.1 U	1 U	1 U	1 U	2.1 U	2.1 U	2.1 U	10 U	1 U	2.1 U	2.1 U	11 U	2.1 U	2.6 U	2.6 U	2.6 U	11 U	5.1 U	5.1 U	5.1 U	5.1 U	1.1 U	1.1 U	1.1 U	1.0 U	1.0 U	10 U	2.1 U	1.0 U	10 U	1.0 U	
Bromomethane	0.39 U	0.39 U	0.14	0.39 U	0.39 U	0.39 U	0.78 U	0.39 U	0.39 U	0.39 U	0.78 U	0.78 U	0.78 U	3.9 U	0.39 U	0.78 U	0.78 U	3.8 U	0.76 U	0.95 U	0.95 U	0.95 U	3.8 U	1.9 U	1.9 U	1.9 U	1.9 U	0.38 U	0.38 U	0.38 U	0.39 U	0.39 U	3.9 U	0.78 U	0.39 U	3.9 U	0.39 U	
Carbon disulfide	3.1 U	0.35	74	5.6	6.3	31	71	8	15	14	19	6.2 U	6 J	420	3.6	2.3 J	2 J	5.7	3.4	2.7	3.7	3.3	3.2 U	3.2	2.7	2.1	1.6 U	1.5	0.93	0.9	0.78	0.31 U	3.1 U	6.2 U	3.1 U	31 U	0.41	
Carbon tetrachloride	0.23																																					

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

Parameter (ug/m ³)	Extraction Well - Western Small Retail Space												CT IACTIND 2003 (ug/m ³)	Indoor Air - Eas																						
	EW-7-091312	EW-7-010313	EW-7-031513	EW-7-060713	EW-7-090613	EW-7-100313	EW-7-121313	EW-7-030714	EW-7-061314	EW-7-091214	EW-7-121914	EW-7-032715		EW-7-061115	EW-7-091615	EW-7-121815	EW-7-021816	EW-7-080516	EW-7-021017	EW-7-090717	EW-7-022818	IA-5-011609	IA-5-020309	IA-5-021109	IA-5-021809	IA-5-022609	IA-5-030609	IA-5-041409	IA-5-051509	IA-5-061109	IA-5-091709	IA-5-122909	IA-5-032610	IA-5-070110	IA-5-091610	IA-5-120810
1,1,1-Trichloroethane	95	55 U	3.1	15	76	52	41	30	15	52	6.1	25	14	63	40	1.1 U	160	30	1.2	20	500	48	0.92	0.27 U	0.27 U	0.27 U	0.27 U	0.98	0.27 U	0.27 U	0.27 U	0.27 U	0.38	0.27 U	0.27 U	0.27 U
1,1,1,2-Tetrachloroethane	1.2 U	1.2 U	1.2 U	1.2 U	0.44 U	1.2 U	1.2 U	1.2 U	1.2 U	2.5 U	1.2 U	1.2 U	1.2 U	2.5 U	2.5 U	1.2 U	2.5 U	2.5 U	2.5 U	2.5 U	1.1	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2,2-Tetrachloroethane	0.69 U	0.69 U	0.69 U	0.69 U	0.24 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	1.4 U	1.4 U	6.9 U	0.69 U	1.4 U	1.4 U	1.4 U	0.14	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	0.55 U	0.55 U	0.55 U	0.55 U	0.19 U	0.55 U	0.55 U	0.55 U	0.55 U	1.1 U	0.55 U	0.55 U	0.55 U	1.1 U	1.1 U	5.5 U	0.55 U	1.1 U	1.1 U	1.1 U	12	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.19 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
1,1-Dichloroethane	100	0.40 U	2	7	51	25	12	6.9	5.4	20	1.8	4.9	3.7	16	6.5	0.81 U	30	6.3	0.81 U	2.2	430	1.8	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.14 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	
1,1-Dichloroethene	0.40 U	0.40 U	0.40 U	0.40 U	0.14 U	0.40 U	0.40 U	0.40 U	0.40 U	0.4 U	0.4 U	0.4 U	0.4 U	0.79 U	0.79 U	0.79 U	4 U	0.4 U	0.79 U	0.79 U	20	0.58	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.14 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	
1,2,4-Trichlorobenzene	1.5 U	1.5 U	1.5 U	0.74 U	0.26 U	0.74 U	0.74 U	0.74 U	0.74 U	1.5 U	0.74 U	0.74 U	0.74 U	1.5 U	1.5 U	7.4 U	0.74 U	1.5 U	1.5 U	1.5 U	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.26 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	
1,2,4-Trimethylbenzene	0.97	0.92	0.3	0.49 U	0.5	0.77	0.58	0.49 U	0.49 U	0.98 U	0.49 U	1.4	0.44 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	52	0.25 U	0.32	0.33	0.36	0.25 U	0.25 U	0.20	0.25 U	0.35	0.25 U	0.25 U	0.25 U	0.73	0.25 U	
1,2-Dibromoethane (EDB)	0.77 U	0.77 U	0.77 U	0.77 U	0.27 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	1.5 U	1.5 U	7.7 U	0.77 U	1.5 U	1.5 U	1.5 U	0.038	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	
1,2-Dichlorobenzene	0.60 U	0.60 U	0.60 U	0.60 U	0.21 U	0.60 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	410	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.21 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	
1,2-Dichloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.14 U	0.40 U	0.40 U	0.40 U	0.40 U	0.4 U	0.4 U	0.4 U	0.16 J	0.81 U	0.81 U	0.81 U	4 U	0.4 U	0.81 U	0.81 U	0.31	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.14 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U		
1,2-Dichloropropane	0.46 U	0.46 U	0.46 U	0.46 U	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	0.92 U	0.42	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U		
1,2-Dichlorotetrafluoroethane																					NA	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.25 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U		
1,3,5-Trimethylbenzene	0.5	0.49 U	0.49 U	0.49 U	0.24	0.32	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.69	0.23 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	52	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		
1,3-Butadiene	0.22 U	0.22 U	0.22 U	0.22 U	0.078 U	0.22 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	0.22 U	0.22 U	0.44 U	0.44 U	2.2 U	0.22 U	0.44 U	0.44 U	0.44 U	NA	0.11 U	0.11 U	0.11 U	0.25	0.11 U	0.11 U	0.080 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U		
1,3-Dichlorobenzene	0.60 U	0.60 U	0.60 U	0.60 U	0.21 U	0.60 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	410	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.21 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U		
1,4-Dichlorobenzene	0.60 U	0.60 U	0.60 U	0.60 U	0.21 U	0.60 U	0.60 U	0.60 U	0.60 U	1.2 U	0.6 U	0.6 U	0.17 J	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	24	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.21 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U		
1,4-Dioxane																					NA															
2-Butanone	3.6	18	210	99	12	8.5	5.9	3.8	9.3	7.2 J	35	9.7 J	8.3 J	5 J	4.6 J	67	35 J	6 J	180	17 J	500	7.2	2.4	2.7	2.6	0.75	0.45	3.8	1.9	5.3	2.1	0.79	1.5	2.1	1.4	
2-Hexanone	0.64	0.41 U	0.39	0.41 U	0.51	0.41 U	0.41 U	0.41 U	0.49	0.82 U	0.41 U	1	0.38 J	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	NA	0.20 U	0.48	0.38	0.27	0.20 U	0.20 U	0.47	0.45	1.1	0.48	0.20 U	0.23	0.44	0.20 U	
4-Ethyltoluene	0.21	0.49 U	0.49 U	0.49 U	0.17 U	0.27	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.33 J	0.12 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		
4-Methyl-2-pentanone	0.31	0.55	0.41 U	0.41 U	0.14 U	0.41 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.46	0.41 U	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	200	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.18	0.20 U	0.68	0.23	0.20 U	0.20 U	0.20 U	1.1		
Acetone	17	23	55	28	24	35	14	6.9	19	18 J	9.4 J	13	7.4 J	8.2 J	19 U	29	81 J	25	51	10 J	500	32	11	21	20	9.5	6.5	14	14	46	16	15	11	18	17	
Benzene	1.2	0.9	0.5	0.6	1.9	1.9	0.9	1.3	1.1	0.59 J	0.5	2.1	2.3	2.3	1.3	1.2	3.2 U	0.4	0.42 J	0.7	3.3	0.79	0.60	0.99	1.6	0.41	0.55	0.62	0.49	0.53	0.35	0.45	0.65	0.16 U		
Benzyl chloride	0.52 U	0.52 U	0.52 U	0.52 U	0.18 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	1 U	1 U	1 U	5.2 U	0.52 U	1 U	1 U	NA	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U		
Bromodichloromethane	0.67 U	0.67 U	0.67 U	0.67 U	0.24 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	1.3 U	3.9	1.3 U	6.7 U	0.67 U	1.3 U	1.3 U	0.46	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U		
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	0.36 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1 U	1 U	1 U	1 U	2.1 U	2.1 U	2.1 U	10 U	1 U	2.1 U	2.1 U	7.3	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U		
Bromomethane	0.39 U	0.39 U	0.39 U	0.39 U	0.14 U	0.39 U	0.39 U	0.39 U	0.39 U	0.78 U	0.39 U	0.39 U	0.39 U	0.78 U	0.78 U	0.78 U	3.9 U	0.39 U	0.78 U	0.78 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.14 U	0.23	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U			
Carbon disulfide	3.1 U	3.1 U	0.57	7.4	0.42	3.1 U	4.6	7.4	12	6.2 U	3.7	10	16	6.2 U	6.2 U	6.2 U	31 U	3.1 U	1.9 J	17	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.12 U	0.16 U	0.27	0.16 U	0.16 U	0.16 U	0.16 U			
Carbon tetrachloride	0.33	0.78	0.47	0.63 U	0.38	0.4	0.63 U	0.63 U	0.63 U	0.63 U	0.36 J	0.21 J	0.33 J	0.38 J	1.3 U	1.3 U	6.3 U	0.63 U	1.3 U	1.3 U	0.54	0.33	0.44	0.50	0.55 [a]	0.47	0.61 [a]	0.44	0.64 [a]	0.46	0.39	0.41	0.48	0.53		
Chlorobenzene	0.46 U	0.46 U	0.46 U	0.46 U	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	0.92 U	200	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U			
Chloroethane	0.26 U	0.26 U	0.26 U	0.92	0.093 U	0.61	0.63	1.6	1.4	0.53 U	0.26 U	0.97	1.3	0.45 J	0.53 U	0.53 U	2.6 U																			

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

Parameter (ug/m ³)	Indoor Air - Western Small Retail Space																	Indoor Air - Western Small Retail Space																
	IA-7-091709	IA-7-122909	IA-7-032610	IA-7-070110	IA-7-091610	IA-7-120710	IA-7-021711	IA-7-060211	IA-7-091511	IA-7-120811	IA-7-030812	IA-7-061412	IA-7-091312	IA-7-010313	IA-7-031513	IA-7-060713	IA-7-090613	IA-7-100313	IA-7-121313	IA-7-030714	IA-7-061314	IA-7-091214	IA-7-121914	IA-7-032715	IA-7-061115	IA-7-091615	IA-7-121815	IA-7-021816	IA-7-080516	IA-7-021017	IA-7-090717	IA-7-022818		
1,1,1-Trichloroethane	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	0.069	0.082 U	0.088	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 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	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	
1,1,1,2-Tetrachloroethane	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.21 U	0.10 U	0.21 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 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	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	
1,1,2-Trichloroethane	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	0.16 U	0.082 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 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	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	
1,1-Dichloroethane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.12 U	0.061 U	0.12 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	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	0.14 U	0.14 U	0.14 U	
1,1-Dichloroethene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.12 U	0.059 U	0.12 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	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	0.14 U	0.14 U	0.14 U	
1,2,4-Trichlorobenzene	0.37 U	0.75 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	0.45 U	0.45 U	0.17	0.52 U	0.52 U	0.52 U	0.26 U	0.26 U	0.25 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	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	
1,2,4-Trimethylbenzene	0.39	0.25 U	0.35	0.36	0.36	0.25 U	0.25 U	0.56	0.41	0.32	0.36	0.21	0.46	0.17 U	0.10	0.58	0.40	0.70	0.25	0.38	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	0.17 U		
1,2-Dibromoethane (EDB)	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.23 U	0.12 U	0.23 U	0.27 U	0.27 U	0.27 U	0.27 U	0.26 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	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U		
1,2-Dichlorobenzene	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.20 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	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	
1,2-Dichloroethane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.070	0.061 U	0.051	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.11	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.19	0.18	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	
1,2-Dichloropropane	0.23 U	0.23 U	0.23 U	0.30	0.23 U	0.23 U	0.23 U	0.63	0.23 U	0.14 U	0.069 U	0.14 U	0.094	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	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		
1,2-Dichlorotetrafluoroethane	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.10	0.15	0.083	0.26	0.17 U	0.17 U	0.17 U	0.17 U	0.23	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	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		
1,3,5-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.10	0.15	0.083	0.26	0.17 U	0.17 U	0.17 U	0.17 U	0.23	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	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		
1,3-Butadiene	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	0.066 U	0.066 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.075 U	0.078 U	0.48	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	0.078 U		
1,3-Dichlorobenzene	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.20 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	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	
1,4-Dichlorobenzene	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.18 U	0.18 U	0.065	0.063	0.21 U	0.21 U	0.21 U	0.21 U	0.086	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	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		
1,4-Dioxane										0.18 U																								
2-Butanone	2.2	0.49	2.1	4.3	1.8	0.42	1.7 B	4.7	5.9 U	2.1	0.97	1.1	2.8	1.9	1.9	1.7	1.6	3.8	0.69	1.5	3	2.2 J	0.75 J	1.4 J	1.7 J	1.7 J	1.7 J	2 J	0.59 J	1.9 J	0.81 J	2.4 J	1.9 J	
2-Hexanone	0.53	0.20 U	0.20 U	0.82	0.55	0.20 U	0.20 U	1.4 J	0.73	0.12 U	0.081	0.23	0.41	0.20	0.35	0.14 U	0.15	1.1	0.14 U	0.37	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	0.37		
4-Ethyltoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.074	0.097	0.065	0.16	0.17 U	0.17 U	0.17 U	0.17 U	0.20	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.09 J	0.069 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U		
4-Methyl-2-pentanone	0.24	0.20 U	0.20 U	0.43	0.61	0.20 U	0.20 U	0.53	0.36	0.15	0.13	1.4	0.29	0.18	0.14 U	0.21	0.20	0.44	0.14 U	0.14 U	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	0.14 U	0.28	0.1 J	
Acetone	22	31	12	41	27	12 B	15 B	48 B	38	17	13	18	24	14	15	49	46	46	20	15	30	41	12	16	24	39	15	9.1	33	7.5	37	14		
Benzene	0.43	0.52	0.53	0.27	0.56	0.45	1.1	0.41	0.34	0.44	0.36	0.20	0.49	0.58	0.87	0.32	0.43	1.8	0.54	1.9	0.57	0.36	0.4	0.57	0.27	0.91	0.97	0.43	0.27	0.47	0.47	0.53		
Benzyl chloride	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	0.16 U	0.16 U	0.16 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	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	0.18 U	0.18 U		
Bromodichloromethane	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.20 U	0.10 U	0.20 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.20	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	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U		
Bromoform	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.31 U	0.31 U	0.31 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.35 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	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U		
Bromomethane	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	0.12 U	0.12 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 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	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U		
Carbon disulfide	0.26	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.27	1.6 U	0.93 U	0.93 U	0.93 U	0.090	1.1 U	1.1 U	0.16	0.60	0.14	1.1 U	1.1 U	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	1.1 U		
Carbon tetrachloride	0.42	0.44	0.43	0.50	0.47	0.45	0.56 [a]	0.69 [a]	0.50	0.45	0.46	0.43	0.38	0.51	0.39	0.55 [a]	0.46	0.45	0.49	0.42	0.45	0.46	0.33	0.34	0.36	0.39	0.51	0.37	0.45	0.42	0.4	0.37		
Chlorobenzene	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.14 U	0.14 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	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	0.16 U	0.16 U		
Chloroethane	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	0.079 U	0.079 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.089 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	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U		
Chloroform	0.24 U	0.24 U	0.24 U	0.24 U	0.38	0.24 U	0.24 U	0.24 U	0.34	0.12	0.073 U	0.13	0.20	0.17 U	0.082	0.21	0.47	0.17	0.24	0.17 U	0.24	0.17 U	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		
Chloromethane	1.2	2.1	1.2	1.3	1.4	0.99	1.0	1.6	1.6	1.3	1.6	1.2	1.3	1.1	1.4	1.5	1.3	1.2	1.2	1.4	1.4	0.76	0.86	1	1.3	1.3	1.4	1	1.4	1.2	1.5	1.3		
cis-1,2-Dichloroethene	0.20 U	0.27	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.064	0.059 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 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	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U		
cis-1,3-Dichloropropene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.068 U	0.14 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	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	0.16 U	0.16 U		
Cyclohexane	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.10 U	0.10 U	0.10 U	0.23	0.12 U																				

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
2/28/2108	-0.227	-0.100	-0.010

** 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 03/02/18

Checked by/Date: HWC/ 4/11/18

Table 3.
Summary of Analytical Results - Air Sampling for Large Retail Space
Former Gorham Manufacturing Site
Providence, Rhode Island

Parameter (ug/m ³)	Indoor Air - Large Retail Space																LRAIR01 5/15/2009	LRAIR02 5/15/2009	LRAIR03 5/15/2009	LRAIR04 5/15/2009	LRAIR05 5/15/2009	LRAIR06 5/15/2009	LRAIR07 5/15/2009	LRAIR08 5/15/2009	LRAIR09 5/15/2009	LRAIR10 5/15/2009
	IA-4- 090613 9/6/2013	IA-4- 121313 12/13/13	IA-4- 030714 03/07/14	IA-4- 061314 6/13/2014	IA-4- 091214 9/12/2014	IA-4- 121914 12/19/2014	IA-4- 032715 3/27/2015	IA-4- 061115 6/11/2015	IA-4- 091615 9/16/2015	IA-4- 121815 12/18/2015	IA-4- 021816 2/18/2016	IA-4- 4080516 8/5/2016	IA-4- 021017 2/10/2017	IA-4- 090717 9/7/2017	IA-4- 022818 2/28/2018											
1,1,1-Trichloroethane	0.19 U	0.19 U	0.19 U	0.19 U	0.055 U	0.28	0.19 U	0.19 U	0.054 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.14 J	0.45	0.52	0.65	0.57	0.51	0.44	0.69	0.50	0.49	0.53	
1,1,1,2-Tetrachloroethane	0.44 U	0.44 U	0.44 U	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	0.44 U	0.44 U	0.44 U	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
1,1,2,2-Tetrachloroethane	0.24 U	0.24 U	0.24 U	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	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1-Trichloroethane	0.19 U	0.19 U	0.19 U	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	0.19 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	0.27 U	0.27 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	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	0.14 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,1-Dichloroethene	0.14 U	0.14 U	0.14 U	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	0.14 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,2,4-Trichlorobenzene	0.26 U	0.26 U	0.26 U	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	0.26 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	0.37 U	0.37 U
1,2,4-Trimethylbenzene	0.20	0.17 U	0.56	0.26	0.17	0.14 J	0.25	0.2	0.22	0.45	0.24	0.2	0.17 U	0.18	0.36	0.25 U	0.25 U	0.25 U	0.29	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	0.27 U	0.27 U	0.27 U	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	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	0.21 U	0.21 U	0.21 U	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	0.21 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1,2-Dichloroethane	0.14 U	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.051 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,2-Dichloropropane	0.16 U	0.16 U	0.16 U	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	0.16 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane										0.25 U	0.25 U				0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	0.17 U	0.17 U	0.17 U	0.17 U	0.098 U	0.17 U	0.066 J	0.066 J	0.066 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	0.078 U	0.078 U	0.47	0.11	0.044 U	0.078 U	0.078 U	0.078 U	0.16	0.1	0.078 U	0.078 U	0.093	0.078 U	0.078 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
1,3-Dichlorobenzene	0.21 U	0.21 U	0.21 U	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	0.21 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1,4-Dichlorobenzene	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.08 J	0.063 J	0.12 J	0.084 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1,4-Dioxane										1.3 U	1.3 U															
2-Butanone	0.95	1.2	1.1	2.9	4.6	1.1 J	1.9 J	1.9 J	1.8 J	2.5 J	1.1 J	1.6 J	0.98 J	1.9 J	2.1 J	3.3	3.4	2.1	2.6	2.0	1.6	3.1	2.5	2.6	1.4	
2-Hexanone	0.14 U	0.14 U	0.15	0.36	0.2	0.14 U	0.25	0.14 U	0.14 U	0.22	0.14 U	0.14 U	0.14 U	0.35	0.69	0.73	0.66	0.38	0.51	0.37	0.38	0.61	0.48	0.43	0.29	
4-Ethyltoluene	0.17 U	0.17 U	0.18	0.17 U	0.098 U	0.055 J	0.069 J	0.041 J	0.076 J	0.17 U	0.17 U	0.18	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Methyl-2-pentanone	0.47	0.16	0.48	1.3	1	0.34	0.89	0.97	1.6	1.5	0.52	0.14 U	0.13 J	2.1	0.6	0.42	0.39	0.32	0.36	0.54	0.27	0.32	0.30	0.61	0.23	
Acetone	18	29	29	37	38	27	42	28	170 E	28	31	38	11	31	36	12	13	10	11	8.5	7.7	13	11	9.8	6.9	
Benzene	0.47	0.56	2.2	0.68	0.39	0.47	0.69	0.36	0.79	1.1	0.54	0.25	0.48	0.58	0.56	0.54	0.60	0.67	0.55	0.56	0.51	0.53	0.60	0.51	0.57	
Benzyl chloride	0.18 U	0.18 U	0.18 U	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	0.18 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	0.26 U	0.26 U
Bromodichloromethane	0.24 U	0.24 U	0.24 U	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	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bromoform	0.36 U	0.36 U	0.36 U	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	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
Bromomethane	0.14 U	0.14 U	0.14 U	0.14 U	0.078 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	0.14 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	0.19 U	0.19 U
Carbon disulfide	0.39	0.15	0.19	0.62	0.46 J	0.27 J	0.31 J	0.35 J	0.44 J	0.31 J	0.14 J	0.3 J	1.1 U	0.34 J	0.14 J	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	0.16 U	0.16 U
Carbon tetrachloride	0.45	0.46	0.45	0.40	0.39	0.37	0.35	0.31	0.41	0.54	0.36	0.44	0.43	0.38	0.41	0.7 [a]	0.68 [a]	0.71 [a]	0.68 [a]	0.68 [a]	0.63 [a]	0.68 [a]	0.7 [a]	0.64 [a]	0.66 [a]	
Chlorobenzene	0.16 U	0.16 U	0.16 U	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	0.16 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	0.093 U	0.093 U	0.093 U	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	0.093 U	0.093 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	0.27	0.44	0.46	0.84	1.2	0.69	0.39	1.2	0.28	0.34	0.24	0.74	0.17 U	0.69	1.9	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	0.24 U	0.24 U
Chloromethane	1.0	1.1	1.4	1.2	0.89	0.97	1.2	1.8	1.2	1.3	1.2	1.3	1.2	1.4	1.3	1.0	0.98	1.0	0.95	1.0	1.0	0.92	1.1	0.91	1.2	
cis-1,2-Dichloroethene	0.18	0.14 U	0.14 U	0.14 U	0.04 U	0.87	0.14 U	0.14 U	0.053 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,3-Dichloropropene	0.16 U	0.16 U	0.16 U	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	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Cyclohexane	0.12 U	0.12 U	0.33	0.12 U	0.069 U	0.12 U	0.12 U	0.12 U	0.12 U	1.3	0.12 U	0.12 U	0.12 U	0.12 U	0.26	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	0.30 U	0.30 U	0.30 U	0.3 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	0.3 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	1.8	2.7	1.3	2.1	2.1	1.7	1.4	2.1	1.7	2.2	1.6	0.61	0.91	1.5	2.4	2.5	2.3	2.6	2.4	2.7	2.4	2.4	2.8	2.3	2.7	
Ethanol	71	91	83	240	150	260	190	330	57	69	120	2.6 U	47	290	550	65	9.0	6.5</								

**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
2/28/2018	-0.489	-0.677	-0.779	-0.241

* vacuum reduced at extraction wells

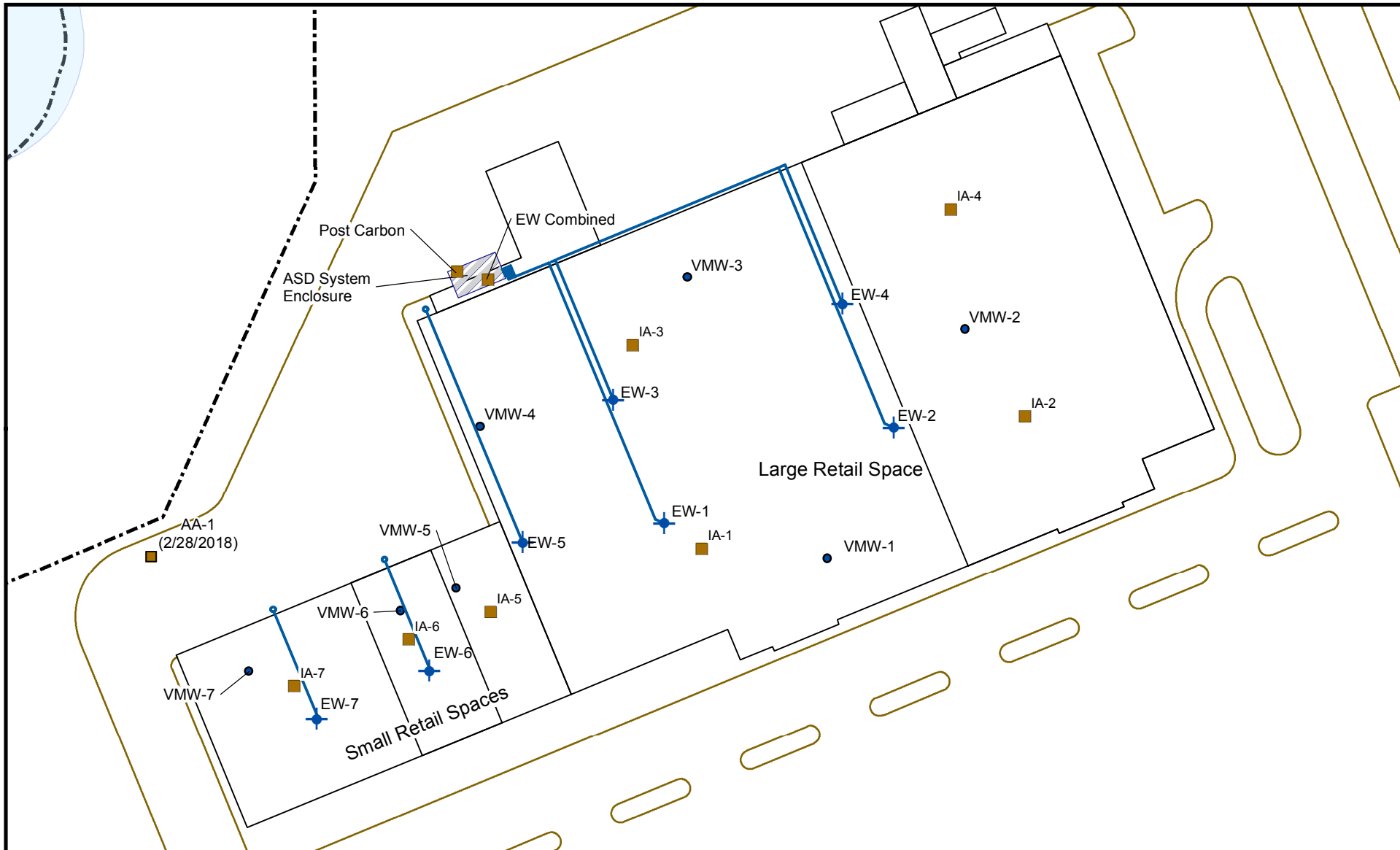
** ASD system offline

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


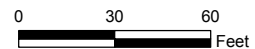
Prepared by/Date: MAM 03/02/18

Checked by/Date: HWC/ 4/11/18

FIGURES



All locations are approximate

Prepared/Date: EFG 04/12/18 | Checked/Date: HWC 04/12/18

Legend








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

Figure 1
Vapor Mitigation
Sample Locations

Former Gorham Manufacturing Facility
 333 Adelaide Avenue
 Providence, Rhode Island

APPENDIX A
Laboratory Report

March 26, 2018

Herb Colby
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: 18B1182

Enclosed are results of analyses for samples received by the laboratory on February 28, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Kerry K. McGee". The signature is written in a cursive, flowing style.

Kerry K. McGee
Project Manager



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

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

REPORT DATE: 3/26/2018

PURCHASE ORDER NUMBER: C012206368

PROJECT NUMBER: 3652150005

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 18B1182

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-1-022818	18B1182-01	Indoor air		EPA TO-15	
IA-2-022818	18B1182-02	Indoor air		EPA TO-15	
IA-3-022818	18B1182-03	Indoor air		EPA TO-15	
IA-4-022818	18B1182-04	Indoor air		EPA TO-15	
IA-5-022818	18B1182-05	Indoor air		EPA TO-15	
IA-6-022818	18B1182-06	Indoor air		EPA TO-15	
IA-7-022818	18B1182-07	Indoor air		EPA TO-15	
AA-1-022818	18B1182-08	Ambient Air		EPA TO-15	
EW-5-022818	18B1182-09	Sub Slab		EPA TO-15	
EW-6-022818	18B1182-10	Sub Slab		EPA TO-15	
EW-7-022818	18B1182-11	Sub Slab		EPA TO-15	
EW-Combined-022818	18B1182-12	Sub Slab		EPA TO-15	

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:

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

18B1182-09[EW-5-022818]

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Benzyl chloride
B199525-BS1

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: 2/28/2018
Field Sample #: IA-1-022818
Sample ID: 18B1182-01
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 07:59

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1955
 Canister Size: 6 liter
 Flow Controller ID: 4300
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.2
 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	4.1	1.4	0.49		9.8	3.3	0.702	3/24/18	3:54	CMR
Benzene	0.15	0.035	0.014		0.48	0.11	0.702	3/24/18	3:54	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18	3:54	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18	3:54	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18	3:54	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18	3:54	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18	3:54	CMR
2-Butanone (MEK)	0.47	1.4	0.026	J	1.4	4.1	0.702	3/24/18	3:54	CMR
Carbon Disulfide	ND	0.35	0.012		ND	1.1	0.702	3/24/18	3:54	CMR
Carbon Tetrachloride	0.062	0.035	0.010		0.39	0.22	0.702	3/24/18	3:54	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18	3:54	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18	3:54	CMR
Chloroform	0.028	0.035	0.013	J	0.14	0.17	0.702	3/24/18	3:54	CMR
Chloromethane	0.56	0.070	0.024		1.1	0.14	0.702	3/24/18	3:54	CMR
Cyclohexane	ND	0.035	0.025		ND	0.12	0.702	3/24/18	3:54	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18	3:54	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18	3:54	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18	3:54	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18	3:54	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18	3:54	CMR
Dichlorodifluoromethane (Freon 12)	0.45	0.035	0.015		2.2	0.17	0.702	3/24/18	3:54	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18	3:54	CMR
1,2-Dichloroethane	0.015	0.035	0.013	J	0.060	0.14	0.702	3/24/18	3:54	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	3:54	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	3:54	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	3:54	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18	3:54	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18	3:54	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18	3:54	CMR
Ethanol	50	8.0	3.6		94	15	4	3/25/18	13:43	CMR
Ethyl Acetate	0.028	0.035	0.026	J	0.10	0.13	0.702	3/24/18	3:54	CMR
Ethylbenzene	ND	0.035	0.020		ND	0.15	0.702	3/24/18	3:54	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18	3:54	CMR
Heptane	0.039	0.035	0.021		0.16	0.14	0.702	3/24/18	3:54	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18	3:54	CMR
Hexane	0.086	1.4	0.062	J	0.30	4.9	0.702	3/24/18	3:54	CMR
2-Hexanone (MBK)	0.11	0.035	0.021		0.44	0.14	0.702	3/24/18	3:54	CMR
Isopropanol	0.80	1.4	0.043	J	2.0	3.4	0.702	3/24/18	3:54	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-1-022818
Sample ID: 18B1182-01
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 07:59

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1955
 Canister Size: 6 liter
 Flow Controller ID: 4300
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.2
 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	0.018		ND	0.13	0.702	3/24/18	3:54	CMR
Methylene Chloride	0.11	0.35	0.043	J	0.38	1.2	0.702	3/24/18	3:54	CMR
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.702	3/24/18	3:54	CMR
4-Methyl-2-pentanone (MIBK)	0.020	0.035	0.017	J	0.083	0.14	0.702	3/24/18	3:54	CMR
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18	3:54	CMR
Styrene	ND	0.035	0.022		ND	0.15	0.702	3/24/18	3:54	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18	3:54	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18	3:54	CMR
Tetrachloroethylene	0.022	0.035	0.020	J	0.15	0.24	0.702	3/24/18	3:54	CMR
Tetrahydrofuran	ND	0.035	0.022		ND	0.10	0.702	3/24/18	3:54	CMR
Toluene	0.14	0.035	0.018		0.53	0.13	0.702	3/24/18	3:54	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18	3:54	CMR
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.702	3/24/18	3:54	CMR
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18	3:54	CMR
Trichloroethylene	ND	0.035	0.014		ND	0.19	0.702	3/24/18	3:54	CMR
Trichlorofluoromethane (Freon 11)	0.19	0.14	0.020		1.1	0.79	0.702	3/24/18	3:54	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.064	0.14	0.014	J	0.49	1.1	0.702	3/24/18	3:54	CMR
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	3:54	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	3:54	CMR
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.702	3/24/18	3:54	CMR
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18	3:54	CMR
m&p-Xylene	0.055	0.070	0.040	J	0.24	0.30	0.702	3/24/18	3:54	CMR
o-Xylene	0.025	0.035	0.022	J	0.11	0.15	0.702	3/24/18	3:54	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	109	70-130	3/25/18 13:43
4-Bromofluorobenzene (1)	110	70-130	3/24/18 3:54
4-Bromofluorobenzene (2)	115	70-130	3/25/18 13:43
4-Bromofluorobenzene (2)	117	70-130	3/24/18 3:54

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-2-022818
Sample ID: 18B1182-02
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 10:40

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1948
 Canister Size: 6 liter
 Flow Controller ID: 4290
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -28
 Final Vacuum(in Hg): -3
 Receipt Vacuum(in Hg): -4.4
 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		Analyzed		
Acetone	18	1.4	0.49		43	3.3	0.702	3/24/18	4:53	CMR
Benzene	0.18	0.035	0.014		0.57	0.11	0.702	3/24/18	4:53	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18	4:53	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18	4:53	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18	4:53	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18	4:53	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18	4:53	CMR
2-Butanone (MEK)	0.83	1.4	0.026	J	2.4	4.1	0.702	3/24/18	4:53	CMR
Carbon Disulfide	0.052	0.35	0.012	J	0.16	1.1	0.702	3/24/18	4:53	CMR
Carbon Tetrachloride	0.063	0.035	0.010		0.40	0.22	0.702	3/24/18	4:53	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18	4:53	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18	4:53	CMR
Chloroform	0.50	0.035	0.013		2.4	0.17	0.702	3/24/18	4:53	CMR
Chloromethane	0.62	0.070	0.024		1.3	0.14	0.702	3/24/18	4:53	CMR
Cyclohexane	0.086	0.035	0.025		0.30	0.12	0.702	3/24/18	4:53	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18	4:53	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18	4:53	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18	4:53	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18	4:53	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18	4:53	CMR
Dichlorodifluoromethane (Freon 12)	0.45	0.035	0.015		2.2	0.17	0.702	3/24/18	4:53	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18	4:53	CMR
1,2-Dichloroethane	0.015	0.035	0.013	J	0.062	0.14	0.702	3/24/18	4:53	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	4:53	CMR
cis-1,2-Dichloroethylene	0.12	0.035	0.014		0.48	0.14	0.702	3/24/18	4:53	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	4:53	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18	4:53	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18	4:53	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18	4:53	CMR
Ethanol	520	40	18		990	75	20	3/25/18	14:28	CMR
Ethyl Acetate	0.11	0.035	0.026		0.39	0.13	0.702	3/24/18	4:53	CMR
Ethylbenzene	0.034	0.035	0.020	J	0.15	0.15	0.702	3/24/18	4:53	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18	4:53	CMR
Heptane	0.11	0.035	0.021		0.43	0.14	0.702	3/24/18	4:53	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18	4:53	CMR
Hexane	0.11	1.4	0.062	J	0.40	4.9	0.702	3/24/18	4:53	CMR
2-Hexanone (MBK)	0.18	0.035	0.021		0.72	0.14	0.702	3/24/18	4:53	CMR
Isopropanol	20	1.4	0.043		49	3.4	0.702	3/24/18	4:53	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-2-022818
Sample ID: 18B1182-02
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 10:40

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1948
 Canister Size: 6 liter
 Flow Controller ID: 4290
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -28
 Final Vacuum(in Hg): -3
 Receipt Vacuum(in Hg): -4.4
 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		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.702	3/24/18	4:53	CMR
Methylene Chloride	0.14	0.35	0.043	J	0.47	1.2	0.702	3/24/18	4:53	CMR
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.702	3/24/18	4:53	CMR
4-Methyl-2-pentanone (MIBK)	0.18	0.035	0.017		0.73	0.14	0.702	3/24/18	4:53	CMR
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18	4:53	CMR
Styrene	0.031	0.035	0.022	J	0.13	0.15	0.702	3/24/18	4:53	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18	4:53	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18	4:53	CMR
Tetrachloroethylene	0.25	0.035	0.020		1.7	0.24	0.702	3/24/18	4:53	CMR
Tetrahydrofuran	0.041	0.035	0.022		0.12	0.10	0.702	3/24/18	4:53	CMR
Toluene	0.29	0.035	0.018		1.1	0.13	0.702	3/24/18	4:53	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18	4:53	CMR
1,1,1-Trichloroethane	0.018	0.035	0.013	J	0.100	0.19	0.702	3/24/18	4:53	CMR
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18	4:53	CMR
Trichloroethylene	0.091	0.035	0.014		0.49	0.19	0.702	3/24/18	4:53	CMR
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.020		1.1	0.79	0.702	3/24/18	4:53	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.065	0.14	0.014	J	0.50	1.1	0.702	3/24/18	4:53	CMR
1,2,4-Trimethylbenzene	0.086	0.035	0.022		0.42	0.17	0.702	3/24/18	4:53	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	4:53	CMR
Vinyl Acetate	0.66	0.70	0.017	J	2.3	2.5	0.702	3/24/18	4:53	CMR
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18	4:53	CMR
m&p-Xylene	0.095	0.070	0.040		0.41	0.30	0.702	3/24/18	4:53	CMR
o-Xylene	0.040	0.035	0.022		0.17	0.15	0.702	3/24/18	4:53	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	3/25/18 14:28
4-Bromofluorobenzene (1)	108	70-130	3/24/18 4:53
4-Bromofluorobenzene (2)	114	70-130	3/25/18 14:28
4-Bromofluorobenzene (2)	115	70-130	3/24/18 4:53

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-3-022818
Sample ID: 18B1182-03
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 08:00

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1831
 Canister Size: 6 liter
 Flow Controller ID: 4288
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.2
 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	3.3	1.4	0.49		7.9	3.3	0.702	3/24/18	5:53	CMR
Benzene	0.16	0.035	0.014		0.51	0.11	0.702	3/24/18	5:53	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18	5:53	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18	5:53	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18	5:53	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18	5:53	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18	5:53	CMR
2-Butanone (MEK)	0.42	1.4	0.026	J	1.2	4.1	0.702	3/24/18	5:53	CMR
Carbon Disulfide	ND	0.35	0.012		ND	1.1	0.702	3/24/18	5:53	CMR
Carbon Tetrachloride	0.063	0.035	0.010		0.40	0.22	0.702	3/24/18	5:53	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18	5:53	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18	5:53	CMR
Chloroform	0.029	0.035	0.013	J	0.14	0.17	0.702	3/24/18	5:53	CMR
Chloromethane	0.57	0.070	0.024		1.2	0.14	0.702	3/24/18	5:53	CMR
Cyclohexane	ND	0.035	0.025		ND	0.12	0.702	3/24/18	5:53	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18	5:53	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18	5:53	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18	5:53	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18	5:53	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18	5:53	CMR
Dichlorodifluoromethane (Freon 12)	0.47	0.035	0.015		2.3	0.17	0.702	3/24/18	5:53	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18	5:53	CMR
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.702	3/24/18	5:53	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	5:53	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	5:53	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	5:53	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18	5:53	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18	5:53	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18	5:53	CMR
Ethanol	50	8.0	3.6		94	15	4	3/25/18	15:14	CMR
Ethyl Acetate	0.041	0.035	0.026		0.15	0.13	0.702	3/24/18	5:53	CMR
Ethylbenzene	0.020	0.035	0.020	J	0.088	0.15	0.702	3/24/18	5:53	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18	5:53	CMR
Heptane	0.031	0.035	0.021	J	0.13	0.14	0.702	3/24/18	5:53	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18	5:53	CMR
Hexane	0.079	1.4	0.062	J	0.28	4.9	0.702	3/24/18	5:53	CMR
2-Hexanone (MBK)	0.068	0.035	0.021		0.28	0.14	0.702	3/24/18	5:53	CMR
Isopropanol	0.84	1.4	0.043	J	2.1	3.4	0.702	3/24/18	5:53	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-3-022818
Sample ID: 18B1182-03
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 08:00

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1831
 Canister Size: 6 liter
 Flow Controller ID: 4288
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.2
 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	0.018		ND	0.13	0.702	3/24/18	5:53	CMR
Methylene Chloride	0.12	0.35	0.043	J	0.43	1.2	0.702	3/24/18	5:53	CMR
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.702	3/24/18	5:53	CMR
4-Methyl-2-pentanone (MIBK)	0.021	0.035	0.017	J	0.086	0.14	0.702	3/24/18	5:53	CMR
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18	5:53	CMR
Styrene	ND	0.035	0.022		ND	0.15	0.702	3/24/18	5:53	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18	5:53	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18	5:53	CMR
Tetrachloroethylene	0.023	0.035	0.020	J	0.16	0.24	0.702	3/24/18	5:53	CMR
Tetrahydrofuran	ND	0.035	0.022		ND	0.10	0.702	3/24/18	5:53	CMR
Toluene	0.15	0.035	0.018		0.57	0.13	0.702	3/24/18	5:53	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18	5:53	CMR
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.702	3/24/18	5:53	CMR
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18	5:53	CMR
Trichloroethylene	ND	0.035	0.014		ND	0.19	0.702	3/24/18	5:53	CMR
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.020		1.1	0.79	0.702	3/24/18	5:53	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.063	0.14	0.014	J	0.48	1.1	0.702	3/24/18	5:53	CMR
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	5:53	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	5:53	CMR
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.702	3/24/18	5:53	CMR
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18	5:53	CMR
m&p-Xylene	0.059	0.070	0.040	J	0.26	0.30	0.702	3/24/18	5:53	CMR
o-Xylene	0.026	0.035	0.022	J	0.11	0.15	0.702	3/24/18	5:53	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	109	70-130	3/25/18 15:14
4-Bromofluorobenzene (1)	109	70-130	3/24/18 5:53
4-Bromofluorobenzene (2)	115	70-130	3/25/18 15:14
4-Bromofluorobenzene (2)	115	70-130	3/24/18 5:53

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-4-022818
Sample ID: 18B1182-04
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 10:43

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1928
 Canister Size: 6 liter
 Flow Controller ID: 4200
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -5.5
 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	15	1.4	0.49		36	3.3	0.702	3/24/18 6:52	CMR
Benzene	0.18	0.035	0.014		0.56	0.11	0.702	3/24/18 6:52	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18 6:52	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18 6:52	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18 6:52	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18 6:52	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18 6:52	CMR
2-Butanone (MEK)	0.72	1.4	0.026	J	2.1	4.1	0.702	3/24/18 6:52	CMR
Carbon Disulfide	0.046	0.35	0.012	J	0.14	1.1	0.702	3/24/18 6:52	CMR
Carbon Tetrachloride	0.065	0.035	0.010		0.41	0.22	0.702	3/24/18 6:52	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18 6:52	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18 6:52	CMR
Chloroform	0.38	0.035	0.013		1.9	0.17	0.702	3/24/18 6:52	CMR
Chloromethane	0.64	0.070	0.024		1.3	0.14	0.702	3/24/18 6:52	CMR
Cyclohexane	0.076	0.035	0.025		0.26	0.12	0.702	3/24/18 6:52	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18 6:52	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18 6:52	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18 6:52	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18 6:52	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18 6:52	CMR
Dichlorodifluoromethane (Freon 12)	0.48	0.035	0.015		2.4	0.17	0.702	3/24/18 6:52	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18 6:52	CMR
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.702	3/24/18 6:52	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18 6:52	CMR
cis-1,2-Dichloroethylene	0.16	0.035	0.014		0.63	0.14	0.702	3/24/18 6:52	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18 6:52	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18 6:52	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18 6:52	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18 6:52	CMR
Ethanol	290	40	18		550	75	20	3/25/18 16:00	CMR
Ethyl Acetate	0.11	0.035	0.026		0.41	0.13	0.702	3/24/18 6:52	CMR
Ethylbenzene	0.034	0.035	0.020	J	0.15	0.15	0.702	3/24/18 6:52	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18 6:52	CMR
Heptane	0.082	0.035	0.021		0.34	0.14	0.702	3/24/18 6:52	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18 6:52	CMR
Hexane	0.10	1.4	0.062	J	0.36	4.9	0.702	3/24/18 6:52	CMR
2-Hexanone (MBK)	0.17	0.035	0.021		0.69	0.14	0.702	3/24/18 6:52	CMR
Isopropanol	11	1.4	0.043		27	3.4	0.702	3/24/18 6:52	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-4-022818
Sample ID: 18B1182-04
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 10:43

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1928
 Canister Size: 6 liter
 Flow Controller ID: 4200
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -5.5
 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	0.018		ND	0.13	0.702	3/24/18	6:52	CMR
Methylene Chloride	0.13	0.35	0.043	J	0.45	1.2	0.702	3/24/18	6:52	CMR
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.702	3/24/18	6:52	CMR
4-Methyl-2-pentanone (MIBK)	0.15	0.035	0.017		0.60	0.14	0.702	3/24/18	6:52	CMR
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18	6:52	CMR
Styrene	0.039	0.035	0.022		0.17	0.15	0.702	3/24/18	6:52	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18	6:52	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18	6:52	CMR
Tetrachloroethylene	0.31	0.035	0.020		2.1	0.24	0.702	3/24/18	6:52	CMR
Tetrahydrofuran	0.029	0.035	0.022	J	0.085	0.10	0.702	3/24/18	6:52	CMR
Toluene	0.27	0.035	0.018		1.0	0.13	0.702	3/24/18	6:52	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18	6:52	CMR
1,1,1-Trichloroethane	0.025	0.035	0.013	J	0.14	0.19	0.702	3/24/18	6:52	CMR
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18	6:52	CMR
Trichloroethylene	0.12	0.035	0.014		0.64	0.19	0.702	3/24/18	6:52	CMR
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.020		1.1	0.79	0.702	3/24/18	6:52	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.065	0.14	0.014	J	0.50	1.1	0.702	3/24/18	6:52	CMR
1,2,4-Trimethylbenzene	0.072	0.035	0.022		0.36	0.17	0.702	3/24/18	6:52	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	6:52	CMR
Vinyl Acetate	0.49	0.70	0.017	J	1.7	2.5	0.702	3/24/18	6:52	CMR
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18	6:52	CMR
m&p-Xylene	0.10	0.070	0.040		0.43	0.30	0.702	3/24/18	6:52	CMR
o-Xylene	0.042	0.035	0.022		0.18	0.15	0.702	3/24/18	6:52	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	106	70-130	3/25/18 16:00
4-Bromofluorobenzene (1)	107	70-130	3/24/18 6:52
4-Bromofluorobenzene (2)	112	70-130	3/25/18 16:00
4-Bromofluorobenzene (2)	113	70-130	3/24/18 6:52

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-5-022818
Sample ID: 18B1182-05
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 09:24

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1309
 Canister Size: 6 liter
 Flow Controller ID: 4196
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -27
 Final Vacuum(in Hg): -3
 Receipt Vacuum(in Hg): -3.0
 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	4.3	1.4	0.49		10	3.3	0.702	3/24/18	7:52	CMR
Benzene	0.18	0.035	0.014		0.57	0.11	0.702	3/24/18	7:52	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18	7:52	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18	7:52	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18	7:52	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18	7:52	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18	7:52	CMR
2-Butanone (MEK)	0.42	1.4	0.026	J	1.2	4.1	0.702	3/24/18	7:52	CMR
Carbon Disulfide	0.020	0.35	0.012	J	0.063	1.1	0.702	3/24/18	7:52	CMR
Carbon Tetrachloride	0.062	0.035	0.010		0.39	0.22	0.702	3/24/18	7:52	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18	7:52	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18	7:52	CMR
Chloroform	0.022	0.035	0.013	J	0.11	0.17	0.702	3/24/18	7:52	CMR
Chloromethane	0.58	0.070	0.024		1.2	0.14	0.702	3/24/18	7:52	CMR
Cyclohexane	ND	0.035	0.025		ND	0.12	0.702	3/24/18	7:52	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18	7:52	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18	7:52	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18	7:52	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18	7:52	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18	7:52	CMR
Dichlorodifluoromethane (Freon 12)	0.35	0.035	0.015		1.7	0.17	0.702	3/24/18	7:52	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18	7:52	CMR
1,2-Dichloroethane	0.014	0.035	0.013	J	0.057	0.14	0.702	3/24/18	7:52	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	7:52	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	7:52	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	7:52	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18	7:52	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18	7:52	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18	7:52	CMR
Ethanol	9.9	1.4	0.63		19	2.6	0.702	3/24/18	7:52	CMR
Ethyl Acetate	0.044	0.035	0.026		0.16	0.13	0.702	3/24/18	7:52	CMR
Ethylbenzene	0.022	0.035	0.020	J	0.098	0.15	0.702	3/24/18	7:52	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18	7:52	CMR
Heptane	0.044	0.035	0.021		0.18	0.14	0.702	3/24/18	7:52	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18	7:52	CMR
Hexane	0.095	1.4	0.062	J	0.33	4.9	0.702	3/24/18	7:52	CMR
2-Hexanone (MBK)	0.064	0.035	0.021		0.26	0.14	0.702	3/24/18	7:52	CMR
Isopropanol	0.93	1.4	0.043	J	2.3	3.4	0.702	3/24/18	7:52	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-5-022818
Sample ID: 18B1182-05
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 09:24

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1309
 Canister Size: 6 liter
 Flow Controller ID: 4196
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -27
 Final Vacuum(in Hg): -3
 Receipt Vacuum(in Hg): -3.0
 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	0.018		ND	0.13	0.702	3/24/18	7:52	CMR
Methylene Chloride	0.12	0.35	0.043	J	0.43	1.2	0.702	3/24/18	7:52	CMR
Methyl methacrylate	0.037	0.035	0.020		0.15	0.14	0.702	3/24/18	7:52	CMR
4-Methyl-2-pentanone (MIBK)	0.019	0.035	0.017	J	0.078	0.14	0.702	3/24/18	7:52	CMR
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18	7:52	CMR
Styrene	ND	0.035	0.022		ND	0.15	0.702	3/24/18	7:52	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18	7:52	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18	7:52	CMR
Tetrachloroethylene	0.025	0.035	0.020	J	0.17	0.24	0.702	3/24/18	7:52	CMR
Tetrahydrofuran	ND	0.035	0.022		ND	0.10	0.702	3/24/18	7:52	CMR
Toluene	0.22	0.035	0.018		0.83	0.13	0.702	3/24/18	7:52	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18	7:52	CMR
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.702	3/24/18	7:52	CMR
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18	7:52	CMR
Trichloroethylene	ND	0.035	0.014		ND	0.19	0.702	3/24/18	7:52	CMR
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.020		1.1	0.79	0.702	3/24/18	7:52	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.062	0.14	0.014	J	0.48	1.1	0.702	3/24/18	7:52	CMR
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	7:52	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	7:52	CMR
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.702	3/24/18	7:52	CMR
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18	7:52	CMR
m&p-Xylene	0.062	0.070	0.040	J	0.27	0.30	0.702	3/24/18	7:52	CMR
o-Xylene	0.027	0.035	0.022	J	0.12	0.15	0.702	3/24/18	7:52	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	109	70-130	3/24/18 7:52
4-Bromofluorobenzene (2)	115	70-130	3/24/18 7:52

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-6-022818
Sample ID: 18B1182-06
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 09:28

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1299
 Canister Size: 6 liter
 Flow Controller ID: 4207
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.6
 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	3.3	1.4	0.49		7.8	3.3	0.702	3/24/18	8:52	CMR
Benzene	0.20	0.035	0.014		0.64	0.11	0.702	3/24/18	8:52	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18	8:52	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18	8:52	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18	8:52	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18	8:52	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18	8:52	CMR
2-Butanone (MEK)	0.31	1.4	0.026	J	0.91	4.1	0.702	3/24/18	8:52	CMR
Carbon Disulfide	ND	0.35	0.012		ND	1.1	0.702	3/24/18	8:52	CMR
Carbon Tetrachloride	0.060	0.035	0.010		0.38	0.22	0.702	3/24/18	8:52	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18	8:52	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18	8:52	CMR
Chloroform	0.021	0.035	0.013	J	0.10	0.17	0.702	3/24/18	8:52	CMR
Chloromethane	0.59	0.070	0.024		1.2	0.14	0.702	3/24/18	8:52	CMR
Cyclohexane	0.067	0.035	0.025		0.23	0.12	0.702	3/24/18	8:52	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18	8:52	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18	8:52	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18	8:52	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18	8:52	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18	8:52	CMR
Dichlorodifluoromethane (Freon 12)	0.34	0.035	0.015		1.7	0.17	0.702	3/24/18	8:52	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18	8:52	CMR
1,2-Dichloroethane	0.015	0.035	0.013	J	0.060	0.14	0.702	3/24/18	8:52	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	8:52	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	8:52	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	8:52	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18	8:52	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18	8:52	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18	8:52	CMR
Ethanol	15	1.4	0.63		29	2.6	0.702	3/24/18	8:52	CMR
Ethyl Acetate	0.036	0.035	0.026		0.13	0.13	0.702	3/24/18	8:52	CMR
Ethylbenzene	0.025	0.035	0.020	J	0.11	0.15	0.702	3/24/18	8:52	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18	8:52	CMR
Heptane	0.055	0.035	0.021		0.22	0.14	0.702	3/24/18	8:52	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18	8:52	CMR
Hexane	0.099	1.4	0.062	J	0.35	4.9	0.702	3/24/18	8:52	CMR
2-Hexanone (MBK)	0.039	0.035	0.021		0.16	0.14	0.702	3/24/18	8:52	CMR
Isopropanol	2.6	1.4	0.043		6.4	3.4	0.702	3/24/18	8:52	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
 Field Sample #: IA-6-022818
 Sample ID: 18B1182-06
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 09:28

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1299
 Canister Size: 6 liter
 Flow Controller ID: 4207
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -29
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.6
 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	0.018		ND	0.13	0.702	3/24/18	8:52	CMR
Methylene Chloride	0.13	0.35	0.043	J	0.45	1.2	0.702	3/24/18	8:52	CMR
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.702	3/24/18	8:52	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.035	0.017		ND	0.14	0.702	3/24/18	8:52	CMR
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18	8:52	CMR
Styrene	ND	0.035	0.022		ND	0.15	0.702	3/24/18	8:52	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18	8:52	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18	8:52	CMR
Tetrachloroethylene	0.030	0.035	0.020	J	0.20	0.24	0.702	3/24/18	8:52	CMR
Tetrahydrofuran	ND	0.035	0.022		ND	0.10	0.702	3/24/18	8:52	CMR
Toluene	0.25	0.035	0.018		0.95	0.13	0.702	3/24/18	8:52	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18	8:52	CMR
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.702	3/24/18	8:52	CMR
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18	8:52	CMR
Trichloroethylene	ND	0.035	0.014		ND	0.19	0.702	3/24/18	8:52	CMR
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.020		1.2	0.79	0.702	3/24/18	8:52	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.063	0.14	0.014	J	0.48	1.1	0.702	3/24/18	8:52	CMR
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	8:52	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	8:52	CMR
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.702	3/24/18	8:52	CMR
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18	8:52	CMR
m&p-Xylene	0.063	0.070	0.040	J	0.27	0.30	0.702	3/24/18	8:52	CMR
o-Xylene	0.027	0.035	0.022	J	0.12	0.15	0.702	3/24/18	8:52	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	110	70-130	3/24/18 8:52
4-Bromofluorobenzene (2)	116	70-130	3/24/18 8:52

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-7-022818
Sample ID: 18B1182-07
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 09:32

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1038
 Canister Size: 6 liter
 Flow Controller ID: 4314
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.5
 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	6.1	1.4	0.49		14	3.3	0.702	3/24/18	9:51	CMR
Benzene	0.17	0.035	0.014		0.53	0.11	0.702	3/24/18	9:51	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18	9:51	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18	9:51	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18	9:51	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18	9:51	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18	9:51	CMR
2-Butanone (MEK)	0.64	1.4	0.026	J	1.9	4.1	0.702	3/24/18	9:51	CMR
Carbon Disulfide	ND	0.35	0.012		ND	1.1	0.702	3/24/18	9:51	CMR
Carbon Tetrachloride	0.058	0.035	0.010		0.37	0.22	0.702	3/24/18	9:51	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18	9:51	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18	9:51	CMR
Chloroform	0.027	0.035	0.013	J	0.13	0.17	0.702	3/24/18	9:51	CMR
Chloromethane	0.63	0.070	0.024		1.3	0.14	0.702	3/24/18	9:51	CMR
Cyclohexane	ND	0.035	0.025		ND	0.12	0.702	3/24/18	9:51	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18	9:51	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18	9:51	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18	9:51	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18	9:51	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18	9:51	CMR
Dichlorodifluoromethane (Freon 12)	0.34	0.035	0.015		1.7	0.17	0.702	3/24/18	9:51	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18	9:51	CMR
1,2-Dichloroethane	0.015	0.035	0.013	J	0.062	0.14	0.702	3/24/18	9:51	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	9:51	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	9:51	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	9:51	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18	9:51	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18	9:51	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18	9:51	CMR
Ethanol	24	1.4	0.63		46	2.6	0.702	3/24/18	9:51	CMR
Ethyl Acetate	0.047	0.035	0.026		0.17	0.13	0.702	3/24/18	9:51	CMR
Ethylbenzene	0.032	0.035	0.020	J	0.14	0.15	0.702	3/24/18	9:51	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18	9:51	CMR
Heptane	0.041	0.035	0.021		0.17	0.14	0.702	3/24/18	9:51	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18	9:51	CMR
Hexane	0.082	1.4	0.062	J	0.29	4.9	0.702	3/24/18	9:51	CMR
2-Hexanone (MBK)	0.090	0.035	0.021		0.37	0.14	0.702	3/24/18	9:51	CMR
Isopropanol	1.5	1.4	0.043		3.8	3.4	0.702	3/24/18	9:51	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: IA-7-022818
Sample ID: 18B1182-07
 Sample Matrix: Indoor air
 Sampled: 2/28/2018 09:32

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1038
 Canister Size: 6 liter
 Flow Controller ID: 4314
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.5
 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	0.018		ND	0.13	0.702	3/24/18	9:51	CMR
Methylene Chloride	0.13	0.35	0.043	J	0.46	1.2	0.702	3/24/18	9:51	CMR
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.702	3/24/18	9:51	CMR
4-Methyl-2-pentanone (MIBK)	0.025	0.035	0.017	J	0.10	0.14	0.702	3/24/18	9:51	CMR
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18	9:51	CMR
Styrene	0.029	0.035	0.022	J	0.13	0.15	0.702	3/24/18	9:51	CMR
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18	9:51	CMR
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18	9:51	CMR
Tetrachloroethylene	ND	0.035	0.020		ND	0.24	0.702	3/24/18	9:51	CMR
Tetrahydrofuran	ND	0.035	0.022		ND	0.10	0.702	3/24/18	9:51	CMR
Toluene	0.25	0.035	0.018		0.95	0.13	0.702	3/24/18	9:51	CMR
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18	9:51	CMR
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.702	3/24/18	9:51	CMR
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18	9:51	CMR
Trichloroethylene	ND	0.035	0.014		ND	0.19	0.702	3/24/18	9:51	CMR
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.020		1.2	0.79	0.702	3/24/18	9:51	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.064	0.14	0.014	J	0.49	1.1	0.702	3/24/18	9:51	CMR
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	9:51	CMR
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18	9:51	CMR
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.702	3/24/18	9:51	CMR
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18	9:51	CMR
m&p-Xylene	0.069	0.070	0.040	J	0.30	0.30	0.702	3/24/18	9:51	CMR
o-Xylene	0.029	0.035	0.022	J	0.12	0.15	0.702	3/24/18	9:51	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	109	70-130	3/24/18 9:51
4-Bromofluorobenzene (2)	115	70-130	3/24/18 9:51

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: AA-1-022818
Sample ID: 18B1182-08
 Sample Matrix: Ambient Air
 Sampled: 2/28/2018 09:40

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1923
 Canister Size: 6 liter
 Flow Controller ID: 4298
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -3
 Receipt Vacuum(in Hg): -3.6
 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	9.9	1.4	0.49		24	3.3	0.702	3/24/18	10:50	CMR
Benzene	0.15	0.035	0.014		0.47	0.11	0.702	3/24/18	10:50	CMR
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.702	3/24/18	10:50	CMR
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.702	3/24/18	10:50	CMR
Bromoform	ND	0.035	0.016		ND	0.36	0.702	3/24/18	10:50	CMR
Bromomethane	ND	0.035	0.024		ND	0.14	0.702	3/24/18	10:50	CMR
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.702	3/24/18	10:50	CMR
2-Butanone (MEK)	0.62	1.4	0.026	J	1.8	4.1	0.702	3/24/18	10:50	CMR
Carbon Disulfide	ND	0.35	0.012		ND	1.1	0.702	3/24/18	10:50	CMR
Carbon Tetrachloride	0.062	0.035	0.010		0.39	0.22	0.702	3/24/18	10:50	CMR
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.702	3/24/18	10:50	CMR
Chloroethane	ND	0.035	0.021		ND	0.093	0.702	3/24/18	10:50	CMR
Chloroform	0.018	0.035	0.013	J	0.086	0.17	0.702	3/24/18	10:50	CMR
Chloromethane	0.59	0.070	0.024		1.2	0.14	0.702	3/24/18	10:50	CMR
Cyclohexane	ND	0.035	0.025		ND	0.12	0.702	3/24/18	10:50	CMR
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.702	3/24/18	10:50	CMR
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.702	3/24/18	10:50	CMR
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.702	3/24/18	10:50	CMR
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.702	3/24/18	10:50	CMR
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.702	3/24/18	10:50	CMR
Dichlorodifluoromethane (Freon 12)	0.35	0.035	0.015		1.7	0.17	0.702	3/24/18	10:50	CMR
1,1-Dichloroethane	ND	0.035	0.010		ND	0.14	0.702	3/24/18	10:50	CMR
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.702	3/24/18	10:50	CMR
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	10:50	CMR
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	10:50	CMR
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.702	3/24/18	10:50	CMR
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.702	3/24/18	10:50	CMR
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.702	3/24/18	10:50	CMR
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.702	3/24/18	10:50	CMR
Ethanol	3.5	1.4	0.63		6.7	2.6	0.702	3/24/18	10:50	CMR
Ethyl Acetate	0.048	0.035	0.026		0.17	0.13	0.702	3/24/18	10:50	CMR
Ethylbenzene	0.040	0.035	0.020		0.17	0.15	0.702	3/24/18	10:50	CMR
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.702	3/24/18	10:50	CMR
Heptane	0.044	0.035	0.021		0.18	0.14	0.702	3/24/18	10:50	CMR
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.702	3/24/18	10:50	CMR
Hexane	0.087	1.4	0.062	J	0.31	4.9	0.702	3/24/18	10:50	CMR
2-Hexanone (MBK)	0.11	0.035	0.021		0.43	0.14	0.702	3/24/18	10:50	CMR
Isopropanol	0.23	1.4	0.043	J	0.55	3.4	0.702	3/24/18	10:50	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: AA-1-022818
Sample ID: 18B1182-08
 Sample Matrix: Ambient Air
 Sampled: 2/28/2018 09:40

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1923
 Canister Size: 6 liter
 Flow Controller ID: 4298
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -3
 Receipt Vacuum(in Hg): -3.6
 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		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.702	3/24/18 10:50	CMR	
Methylene Chloride	0.11	0.35	0.043	J	0.39	1.2	0.702	3/24/18 10:50	CMR	
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.702	3/24/18 10:50	CMR	
4-Methyl-2-pentanone (MIBK)	0.018	0.035	0.017	J	0.072	0.14	0.702	3/24/18 10:50	CMR	
Propene	ND	1.4	0.035		ND	2.4	0.702	3/24/18 10:50	CMR	
Styrene	ND	0.035	0.022		ND	0.15	0.702	3/24/18 10:50	CMR	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.702	3/24/18 10:50	CMR	
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.702	3/24/18 10:50	CMR	
Tetrachloroethylene	ND	0.035	0.020		ND	0.24	0.702	3/24/18 10:50	CMR	
Tetrahydrofuran	ND	0.035	0.022		ND	0.10	0.702	3/24/18 10:50	CMR	
Toluene	0.20	0.035	0.018		0.77	0.13	0.702	3/24/18 10:50	CMR	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.702	3/24/18 10:50	CMR	
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.702	3/24/18 10:50	CMR	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.702	3/24/18 10:50	CMR	
Trichloroethylene	ND	0.035	0.014		ND	0.19	0.702	3/24/18 10:50	CMR	
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.020		1.2	0.79	0.702	3/24/18 10:50	CMR	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.063	0.14	0.014	J	0.48	1.1	0.702	3/24/18 10:50	CMR	
1,2,4-Trimethylbenzene	0.024	0.035	0.022	J	0.12	0.17	0.702	3/24/18 10:50	CMR	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.702	3/24/18 10:50	CMR	
Vinyl Acetate	0.28	0.70	0.017	J	0.99	2.5	0.702	3/24/18 10:50	CMR	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.702	3/24/18 10:50	CMR	
m&p-Xylene	0.13	0.070	0.040		0.56	0.30	0.702	3/24/18 10:50	CMR	
o-Xylene	0.048	0.035	0.022		0.21	0.15	0.702	3/24/18 10:50	CMR	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	108	70-130	3/24/18 10:50
4-Bromofluorobenzene (2)	114	70-130	3/24/18 10:50

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-5-022818
Sample ID: 18B1182-09
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 08:35

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1956
 Canister Size: 6 liter
 Flow Controller ID: 4299
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.9
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-11

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analyzed		
Acetone	130	40	14		320	95	20	3/24/18	11:36	CMR
Benzene	0.64	1.0	0.41	J	2.0	3.2	20	3/24/18	11:36	CMR
Benzyl chloride	ND	1.0	0.22		ND	5.2	20	3/24/18	11:36	CMR
Bromodichloromethane	ND	1.0	0.37		ND	6.7	20	3/24/18	11:36	CMR
Bromoform	ND	1.0	0.45		ND	10	20	3/24/18	11:36	CMR
Bromomethane	ND	1.0	0.69		ND	3.9	20	3/24/18	11:36	CMR
1,3-Butadiene	ND	1.0	0.63		ND	2.2	20	3/24/18	11:36	CMR
2-Butanone (MEK)	250	40	0.75		750	120	20	3/24/18	11:36	CMR
Carbon Disulfide	20	10	0.34		62	31	20	3/24/18	11:36	CMR
Carbon Tetrachloride	ND	1.0	0.30		ND	6.3	20	3/24/18	11:36	CMR
Chlorobenzene	ND	1.0	0.49		ND	4.6	20	3/24/18	11:36	CMR
Chloroethane	ND	1.0	0.61		ND	2.6	20	3/24/18	11:36	CMR
Chloroform	ND	1.0	0.37		ND	4.9	20	3/24/18	11:36	CMR
Chloromethane	ND	2.0	0.68		ND	4.1	20	3/24/18	11:36	CMR
Cyclohexane	ND	1.0	0.71		ND	3.4	20	3/24/18	11:36	CMR
Dibromochloromethane	ND	1.0	0.33		ND	8.5	20	3/24/18	11:36	CMR
1,2-Dibromoethane (EDB)	ND	1.0	0.39		ND	7.7	20	3/24/18	11:36	CMR
1,2-Dichlorobenzene	ND	1.0	0.48		ND	6.0	20	3/24/18	11:36	CMR
1,3-Dichlorobenzene	ND	1.0	0.52		ND	6.0	20	3/24/18	11:36	CMR
1,4-Dichlorobenzene	ND	1.0	0.61		ND	6.0	20	3/24/18	11:36	CMR
Dichlorodifluoromethane (Freon 12)	ND	1.0	0.43		ND	4.9	20	3/24/18	11:36	CMR
1,1-Dichloroethane	0.56	1.0	0.29	J	2.3	4.0	20	3/24/18	11:36	CMR
1,2-Dichloroethane	ND	1.0	0.38		ND	4.0	20	3/24/18	11:36	CMR
1,1-Dichloroethylene	ND	1.0	0.39		ND	4.0	20	3/24/18	11:36	CMR
cis-1,2-Dichloroethylene	ND	1.0	0.41		ND	4.0	20	3/24/18	11:36	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.40		ND	4.0	20	3/24/18	11:36	CMR
1,2-Dichloropropane	ND	1.0	0.35		ND	4.6	20	3/24/18	11:36	CMR
cis-1,3-Dichloropropene	ND	1.0	0.35		ND	4.5	20	3/24/18	11:36	CMR
trans-1,3-Dichloropropene	ND	1.0	0.36		ND	4.5	20	3/24/18	11:36	CMR
Ethanol	19	40	18	J	35	75	20	3/24/18	11:36	CMR
Ethyl Acetate	ND	1.0	0.75		ND	3.6	20	3/24/18	11:36	CMR
Ethylbenzene	ND	1.0	0.58		ND	4.3	20	3/24/18	11:36	CMR
4-Ethyltoluene	ND	1.0	0.61		ND	4.9	20	3/24/18	11:36	CMR
Heptane	ND	1.0	0.59		ND	4.1	20	3/24/18	11:36	CMR
Hexachlorobutadiene	ND	1.0	0.46		ND	11	20	3/24/18	11:36	CMR
Hexane	ND	40	1.8		ND	140	20	3/24/18	11:36	CMR
2-Hexanone (MBK)	ND	1.0	0.59		ND	4.1	20	3/24/18	11:36	CMR
Isopropanol	2.1	40	1.2	J	5.1	98	20	3/24/18	11:36	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-5-022818
Sample ID: 18B1182-09
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 08:35

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1956
 Canister Size: 6 liter
 Flow Controller ID: 4299
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -5
 Receipt Vacuum(in Hg): -4.9
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-11

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	1.0	0.50		ND	3.6	20	3/24/18	11:36	CMR
Methylene Chloride	ND	10	1.2		ND	35	20	3/24/18	11:36	CMR
Methyl methacrylate	ND	1.0	0.57		ND	4.1	20	3/24/18	11:36	CMR
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.48		ND	4.1	20	3/24/18	11:36	CMR
Propene	2.5	40	0.99	J	4.3	69	20	3/24/18	11:36	CMR
Styrene	ND	1.0	0.62		ND	4.3	20	3/24/18	11:36	CMR
1,1,1,2-Tetrachloroethane	ND	1.8	0.66		ND	12	20	3/24/18	11:36	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.44		ND	6.9	20	3/24/18	11:36	CMR
Tetrachloroethylene	ND	1.0	0.56		ND	6.8	20	3/24/18	11:36	CMR
Tetrahydrofuran	610	1.0	0.62		1800	2.9	20	3/24/18	11:36	CMR
Toluene	ND	1.0	0.52		ND	3.8	20	3/24/18	11:36	CMR
1,2,4-Trichlorobenzene	ND	1.0	0.69		ND	7.4	20	3/24/18	11:36	CMR
1,1,1-Trichloroethane	3.1	1.0	0.37		17	5.5	20	3/24/18	11:36	CMR
1,1,2-Trichloroethane	ND	1.0	0.41		ND	5.5	20	3/24/18	11:36	CMR
Trichloroethylene	8.1	1.0	0.40		44	5.4	20	3/24/18	11:36	CMR
Trichlorofluoromethane (Freon 11)	ND	4.0	0.58		ND	22	20	3/24/18	11:36	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	4.0	0.39		ND	31	20	3/24/18	11:36	CMR
1,2,4-Trimethylbenzene	ND	1.0	0.64		ND	4.9	20	3/24/18	11:36	CMR
1,3,5-Trimethylbenzene	ND	1.0	0.63		ND	4.9	20	3/24/18	11:36	CMR
Vinyl Acetate	ND	20	0.48		ND	70	20	3/24/18	11:36	CMR
Vinyl Chloride	ND	1.0	0.63		ND	2.6	20	3/24/18	11:36	CMR
m&p-Xylene	ND	2.0	1.2		ND	8.7	20	3/24/18	11:36	CMR
o-Xylene	ND	1.0	0.62		ND	4.3	20	3/24/18	11:36	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	3/24/18 11:36
4-Bromofluorobenzene (2)	113	70-130	3/24/18 11:36

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-6-022818
Sample ID: 18B1182-10
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 09:30

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1856
 Canister Size: 6 liter
 Flow Controller ID: 4174
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -7
 Receipt Vacuum(in Hg): -4.8
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analized		
Acetone	7.1	8.0	2.8	J	17	19	4	3/24/18	13:08	CMR
Benzene	0.18	0.20	0.082	J	0.58	0.64	4	3/24/18	13:08	CMR
Benzyl chloride	ND	0.20	0.044		ND	1.0	4	3/24/18	13:08	CMR
Bromodichloromethane	ND	0.20	0.074		ND	1.3	4	3/24/18	13:08	CMR
Bromoform	ND	0.20	0.090		ND	2.1	4	3/24/18	13:08	CMR
Bromomethane	ND	0.20	0.14		ND	0.78	4	3/24/18	13:08	CMR
1,3-Butadiene	ND	0.20	0.13		ND	0.44	4	3/24/18	13:08	CMR
2-Butanone (MEK)	19	8.0	0.15		57	24	4	3/24/18	13:08	CMR
Carbon Disulfide	0.66	2.0	0.069	J	2.0	6.2	4	3/24/18	13:08	CMR
Carbon Tetrachloride	ND	0.20	0.059		ND	1.3	4	3/24/18	13:08	CMR
Chlorobenzene	ND	0.20	0.098		ND	0.92	4	3/24/18	13:08	CMR
Chloroethane	ND	0.20	0.12		ND	0.53	4	3/24/18	13:08	CMR
Chloroform	ND	0.20	0.074		ND	0.98	4	3/24/18	13:08	CMR
Chloromethane	0.60	0.40	0.14		1.2	0.83	4	3/24/18	13:08	CMR
Cyclohexane	ND	0.20	0.14		ND	0.69	4	3/24/18	13:08	CMR
Dibromochloromethane	ND	0.20	0.066		ND	1.7	4	3/24/18	13:08	CMR
1,2-Dibromoethane (EDB)	ND	0.20	0.078		ND	1.5	4	3/24/18	13:08	CMR
1,2-Dichlorobenzene	ND	0.20	0.096		ND	1.2	4	3/24/18	13:08	CMR
1,3-Dichlorobenzene	ND	0.20	0.10		ND	1.2	4	3/24/18	13:08	CMR
1,4-Dichlorobenzene	ND	0.20	0.12		ND	1.2	4	3/24/18	13:08	CMR
Dichlorodifluoromethane (Freon 12)	0.44	0.20	0.087		2.2	0.99	4	3/24/18	13:08	CMR
1,1-Dichloroethane	0.11	0.20	0.058	J	0.45	0.81	4	3/24/18	13:08	CMR
1,2-Dichloroethane	ND	0.20	0.076		ND	0.81	4	3/24/18	13:08	CMR
1,1-Dichloroethylene	ND	0.20	0.079		ND	0.79	4	3/24/18	13:08	CMR
cis-1,2-Dichloroethylene	ND	0.20	0.082		ND	0.79	4	3/24/18	13:08	CMR
trans-1,2-Dichloroethylene	ND	0.20	0.080		ND	0.79	4	3/24/18	13:08	CMR
1,2-Dichloropropane	ND	0.20	0.071		ND	0.92	4	3/24/18	13:08	CMR
cis-1,3-Dichloropropene	ND	0.20	0.070		ND	0.91	4	3/24/18	13:08	CMR
trans-1,3-Dichloropropene	ND	0.20	0.073		ND	0.91	4	3/24/18	13:08	CMR
Ethanol	11	8.0	3.6		21	15	4	3/24/18	13:08	CMR
Ethyl Acetate	ND	0.20	0.15		ND	0.72	4	3/24/18	13:08	CMR
Ethylbenzene	ND	0.20	0.12		ND	0.87	4	3/24/18	13:08	CMR
4-Ethyltoluene	ND	0.20	0.12		ND	0.98	4	3/24/18	13:08	CMR
Heptane	ND	0.20	0.12		ND	0.82	4	3/24/18	13:08	CMR
Hexachlorobutadiene	ND	0.20	0.092		ND	2.1	4	3/24/18	13:08	CMR
Hexane	ND	8.0	0.35		ND	28	4	3/24/18	13:08	CMR
2-Hexanone (MBK)	ND	0.20	0.12		ND	0.82	4	3/24/18	13:08	CMR
Isopropanol	2.4	8.0	0.25	J	5.9	20	4	3/24/18	13:08	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-6-022818
Sample ID: 18B1182-10
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 09:30

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1856
 Canister Size: 6 liter
 Flow Controller ID: 4174
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -7
 Receipt Vacuum(in Hg): -4.8
 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		Analyst
		RL	MDL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.20	0.10		ND	0.72	4	3/24/18	13:08	CMR
Methylene Chloride	ND	2.0	0.24		ND	6.9	4	3/24/18	13:08	CMR
Methyl methacrylate	ND	0.20	0.11		ND	0.82	4	3/24/18	13:08	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20	0.096		ND	0.82	4	3/24/18	13:08	CMR
Propene	ND	8.0	0.20		ND	14	4	3/24/18	13:08	CMR
Styrene	ND	0.20	0.12		ND	0.85	4	3/24/18	13:08	CMR
1,1,1,2-Tetrachloroethane	ND	0.36	0.13		ND	2.5	4	3/24/18	13:08	CMR
1,1,2,2-Tetrachloroethane	ND	0.20	0.089		ND	1.4	4	3/24/18	13:08	CMR
Tetrachloroethylene	ND	0.20	0.11		ND	1.4	4	3/24/18	13:08	CMR
Tetrahydrofuran	9.2	0.20	0.12		27	0.59	4	3/24/18	13:08	CMR
Toluene	0.28	0.20	0.10		1.1	0.75	4	3/24/18	13:08	CMR
1,2,4-Trichlorobenzene	ND	0.20	0.14		ND	1.5	4	3/24/18	13:08	CMR
1,1,1-Trichloroethane	0.48	0.20	0.075		2.6	1.1	4	3/24/18	13:08	CMR
1,1,2-Trichloroethane	ND	0.20	0.082		ND	1.1	4	3/24/18	13:08	CMR
Trichloroethylene	0.96	0.20	0.081		5.1	1.1	4	3/24/18	13:08	CMR
Trichlorofluoromethane (Freon 11)	0.63	0.80	0.12	J	3.5	4.5	4	3/24/18	13:08	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	0.079		ND	6.1	4	3/24/18	13:08	CMR
1,2,4-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	3/24/18	13:08	CMR
1,3,5-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	3/24/18	13:08	CMR
Vinyl Acetate	0.22	4.0	0.095	J	0.77	14	4	3/24/18	13:08	CMR
Vinyl Chloride	ND	0.20	0.13		ND	0.51	4	3/24/18	13:08	CMR
m&p-Xylene	ND	0.40	0.23		ND	1.7	4	3/24/18	13:08	CMR
o-Xylene	ND	0.20	0.12		ND	0.87	4	3/24/18	13:08	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	110	70-130	3/24/18 13:08
4-Bromofluorobenzene (2)	116	70-130	3/24/18 13:08

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-7-022818
Sample ID: 18B1182-11
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 09:34

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1861
 Canister Size: 6 liter
 Flow Controller ID: 4315
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -28
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -5.2
 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	4.4	8.0	2.8	J	10	19	4	3/24/18	13:54	CMR
Benzene	0.23	0.20	0.082		0.74	0.64	4	3/24/18	13:54	CMR
Benzyl chloride	ND	0.20	0.044		ND	1.0	4	3/24/18	13:54	CMR
Bromodichloromethane	ND	0.20	0.074		ND	1.3	4	3/24/18	13:54	CMR
Bromoform	ND	0.20	0.090		ND	2.1	4	3/24/18	13:54	CMR
Bromomethane	ND	0.20	0.14		ND	0.78	4	3/24/18	13:54	CMR
1,3-Butadiene	ND	0.20	0.13		ND	0.44	4	3/24/18	13:54	CMR
2-Butanone (MEK)	5.8	8.0	0.15	J	17	24	4	3/24/18	13:54	CMR
Carbon Disulfide	5.5	2.0	0.069		17	6.2	4	3/24/18	13:54	CMR
Carbon Tetrachloride	ND	0.20	0.059		ND	1.3	4	3/24/18	13:54	CMR
Chlorobenzene	ND	0.20	0.098		ND	0.92	4	3/24/18	13:54	CMR
Chloroethane	ND	0.20	0.12		ND	0.53	4	3/24/18	13:54	CMR
Chloroform	0.30	0.20	0.074		1.5	0.98	4	3/24/18	13:54	CMR
Chloromethane	ND	0.40	0.14		ND	0.83	4	3/24/18	13:54	CMR
Cyclohexane	ND	0.20	0.14		ND	0.69	4	3/24/18	13:54	CMR
Dibromochloromethane	ND	0.20	0.066		ND	1.7	4	3/24/18	13:54	CMR
1,2-Dibromoethane (EDB)	ND	0.20	0.078		ND	1.5	4	3/24/18	13:54	CMR
1,2-Dichlorobenzene	ND	0.20	0.096		ND	1.2	4	3/24/18	13:54	CMR
1,3-Dichlorobenzene	ND	0.20	0.10		ND	1.2	4	3/24/18	13:54	CMR
1,4-Dichlorobenzene	ND	0.20	0.12		ND	1.2	4	3/24/18	13:54	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.20	0.087		ND	0.99	4	3/24/18	13:54	CMR
1,1-Dichloroethane	0.55	0.20	0.058		2.2	0.81	4	3/24/18	13:54	CMR
1,2-Dichloroethane	ND	0.20	0.076		ND	0.81	4	3/24/18	13:54	CMR
1,1-Dichloroethylene	ND	0.20	0.079		ND	0.79	4	3/24/18	13:54	CMR
cis-1,2-Dichloroethylene	0.34	0.20	0.082		1.3	0.79	4	3/24/18	13:54	CMR
trans-1,2-Dichloroethylene	0.65	0.20	0.080		2.6	0.79	4	3/24/18	13:54	CMR
1,2-Dichloropropane	ND	0.20	0.071		ND	0.92	4	3/24/18	13:54	CMR
cis-1,3-Dichloropropene	ND	0.20	0.070		ND	0.91	4	3/24/18	13:54	CMR
trans-1,3-Dichloropropene	ND	0.20	0.073		ND	0.91	4	3/24/18	13:54	CMR
Ethanol	4.6	8.0	3.6	J	8.6	15	4	3/24/18	13:54	CMR
Ethyl Acetate	ND	0.20	0.15		ND	0.72	4	3/24/18	13:54	CMR
Ethylbenzene	ND	0.20	0.12		ND	0.87	4	3/24/18	13:54	CMR
4-Ethyltoluene	ND	0.20	0.12		ND	0.98	4	3/24/18	13:54	CMR
Heptane	ND	0.20	0.12		ND	0.82	4	3/24/18	13:54	CMR
Hexachlorobutadiene	ND	0.20	0.092		ND	2.1	4	3/24/18	13:54	CMR
Hexane	ND	8.0	0.35		ND	28	4	3/24/18	13:54	CMR
2-Hexanone (MBK)	ND	0.20	0.12		ND	0.82	4	3/24/18	13:54	CMR
Isopropanol	1.6	8.0	0.25	J	3.9	20	4	3/24/18	13:54	CMR

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-7-022818
Sample ID: 18B1182-11
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 09:34

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1861
 Canister Size: 6 liter
 Flow Controller ID: 4315
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -28
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -5.2
 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	0.10		ND	0.72	4	3/24/18	13:54	CMR
Methylene Chloride	ND	2.0	0.24		ND	6.9	4	3/24/18	13:54	CMR
Methyl methacrylate	ND	0.20	0.11		ND	0.82	4	3/24/18	13:54	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20	0.096		ND	0.82	4	3/24/18	13:54	CMR
Propene	ND	8.0	0.20		ND	14	4	3/24/18	13:54	CMR
Styrene	ND	0.20	0.12		ND	0.85	4	3/24/18	13:54	CMR
1,1,1,2-Tetrachloroethane	ND	0.36	0.13		ND	2.5	4	3/24/18	13:54	CMR
1,1,2,2-Tetrachloroethane	ND	0.20	0.089		ND	1.4	4	3/24/18	13:54	CMR
Tetrachloroethylene	14	0.20	0.11		95	1.4	4	3/24/18	13:54	CMR
Tetrahydrofuran	300	1.0	0.62		880	2.9	20	3/25/18	16:46	CMR
Toluene	0.26	0.20	0.10		0.99	0.75	4	3/24/18	13:54	CMR
1,2,4-Trichlorobenzene	ND	0.20	0.14		ND	1.5	4	3/24/18	13:54	CMR
1,1,1-Trichloroethane	3.7	0.20	0.075		20	1.1	4	3/24/18	13:54	CMR
1,1,2-Trichloroethane	ND	0.20	0.082		ND	1.1	4	3/24/18	13:54	CMR
Trichloroethylene	32	0.20	0.081		170	1.1	4	3/24/18	13:54	CMR
Trichlorofluoromethane (Freon 11)	66	0.80	0.12		370	4.5	4	3/24/18	13:54	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	0.079		ND	6.1	4	3/24/18	13:54	CMR
1,2,4-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	3/24/18	13:54	CMR
1,3,5-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	3/24/18	13:54	CMR
Vinyl Acetate	ND	4.0	0.095		ND	14	4	3/24/18	13:54	CMR
Vinyl Chloride	ND	0.20	0.13		ND	0.51	4	3/24/18	13:54	CMR
m&p-Xylene	ND	0.40	0.23		ND	1.7	4	3/24/18	13:54	CMR
o-Xylene	ND	0.20	0.12		ND	0.87	4	3/24/18	13:54	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	3/25/18 16:46
4-Bromofluorobenzene (1)	110	70-130	3/24/18 13:54
4-Bromofluorobenzene (2)	113	70-130	3/25/18 16:46
4-Bromofluorobenzene (2)	116	70-130	3/24/18 13:54

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-Combined-022818
Sample ID: 18B1182-12
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 10:28

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1868
 Canister Size: 6 liter
 Flow Controller ID: 4090
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -27
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -4.1
 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		Analyst
		RL	MDL		Results	RL		Analyzed		
Acetone	ND	8.0	2.8		ND	19	4	3/24/18 14:40	CMR	
Benzene	0.12	0.20	0.082	J	0.40	0.64	4	3/24/18 14:40	CMR	
Benzyl chloride	ND	0.20	0.044		ND	1.0	4	3/24/18 14:40	CMR	
Bromodichloromethane	ND	0.20	0.074		ND	1.3	4	3/24/18 14:40	CMR	
Bromoform	ND	0.20	0.090		ND	2.1	4	3/24/18 14:40	CMR	
Bromomethane	ND	0.20	0.14		ND	0.78	4	3/24/18 14:40	CMR	
1,3-Butadiene	ND	0.20	0.13		ND	0.44	4	3/24/18 14:40	CMR	
2-Butanone (MEK)	0.44	8.0	0.15	J	1.3	24	4	3/24/18 14:40	CMR	
Carbon Disulfide	ND	2.0	0.069		ND	6.2	4	3/24/18 14:40	CMR	
Carbon Tetrachloride	ND	0.20	0.059		ND	1.3	4	3/24/18 14:40	CMR	
Chlorobenzene	ND	0.20	0.098		ND	0.92	4	3/24/18 14:40	CMR	
Chloroethane	ND	0.20	0.12		ND	0.53	4	3/24/18 14:40	CMR	
Chloroform	0.38	0.20	0.074		1.9	0.98	4	3/24/18 14:40	CMR	
Chloromethane	ND	0.40	0.14		ND	0.83	4	3/24/18 14:40	CMR	
Cyclohexane	ND	0.20	0.14		ND	0.69	4	3/24/18 14:40	CMR	
Dibromochloromethane	ND	0.20	0.066		ND	1.7	4	3/24/18 14:40	CMR	
1,2-Dibromoethane (EDB)	ND	0.20	0.078		ND	1.5	4	3/24/18 14:40	CMR	
1,2-Dichlorobenzene	ND	0.20	0.096		ND	1.2	4	3/24/18 14:40	CMR	
1,3-Dichlorobenzene	ND	0.20	0.10		ND	1.2	4	3/24/18 14:40	CMR	
1,4-Dichlorobenzene	ND	0.20	0.12		ND	1.2	4	3/24/18 14:40	CMR	
Dichlorodifluoromethane (Freon 12)	0.47	0.20	0.087		2.3	0.99	4	3/24/18 14:40	CMR	
1,1-Dichloroethane	4.7	0.20	0.058		19	0.81	4	3/24/18 14:40	CMR	
1,2-Dichloroethane	ND	0.20	0.076		ND	0.81	4	3/24/18 14:40	CMR	
1,1-Dichloroethylene	2.6	0.20	0.079		10	0.79	4	3/24/18 14:40	CMR	
cis-1,2-Dichloroethylene	2.4	0.20	0.082		9.5	0.79	4	3/24/18 14:40	CMR	
trans-1,2-Dichloroethylene	ND	0.20	0.080		ND	0.79	4	3/24/18 14:40	CMR	
1,2-Dichloropropane	ND	0.20	0.071		ND	0.92	4	3/24/18 14:40	CMR	
cis-1,3-Dichloropropene	ND	0.20	0.070		ND	0.91	4	3/24/18 14:40	CMR	
trans-1,3-Dichloropropene	ND	0.20	0.073		ND	0.91	4	3/24/18 14:40	CMR	
Ethanol	6.3	8.0	3.6	J	12	15	4	3/24/18 14:40	CMR	
Ethyl Acetate	ND	0.20	0.15		ND	0.72	4	3/24/18 14:40	CMR	
Ethylbenzene	ND	0.20	0.12		ND	0.87	4	3/24/18 14:40	CMR	
4-Ethyltoluene	ND	0.20	0.12		ND	0.98	4	3/24/18 14:40	CMR	
Heptane	ND	0.20	0.12		ND	0.82	4	3/24/18 14:40	CMR	
Hexachlorobutadiene	ND	0.20	0.092		ND	2.1	4	3/24/18 14:40	CMR	
Hexane	ND	8.0	0.35		ND	28	4	3/24/18 14:40	CMR	
2-Hexanone (MBK)	ND	0.20	0.12		ND	0.82	4	3/24/18 14:40	CMR	
Isopropanol	ND	8.0	0.25		ND	20	4	3/24/18 14:40	CMR	

ANALYTICAL RESULTS

Project Location: Providence, RI
 Date Received: 2/28/2018
Field Sample #: EW-Combined-022818
Sample ID: 18B1182-12
 Sample Matrix: Sub Slab
 Sampled: 2/28/2018 10:28

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1868
 Canister Size: 6 liter
 Flow Controller ID: 4090
 Sample Type: 30 min

Work Order: 18B1182
 Initial Vacuum(in Hg): -27
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -4.1
 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	0.20	0.10		ND	0.72	4	3/24/18 14:40	CMR
Methylene Chloride	ND	2.0	0.24		ND	6.9	4	3/24/18 14:40	CMR
Methyl methacrylate	ND	0.20	0.11		ND	0.82	4	3/24/18 14:40	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20	0.096		ND	0.82	4	3/24/18 14:40	CMR
Propene	0.86	8.0	0.20	J	1.5	14	4	3/24/18 14:40	CMR
Styrene	ND	0.20	0.12		ND	0.85	4	3/24/18 14:40	CMR
1,1,1,2-Tetrachloroethane	ND	0.36	0.13		ND	2.5	4	3/24/18 14:40	CMR
1,1,2,2-Tetrachloroethane	ND	0.20	0.089		ND	1.4	4	3/24/18 14:40	CMR
Tetrachloroethylene	9.7	0.20	0.11		66	1.4	4	3/24/18 14:40	CMR
Tetrahydrofuran	0.16	0.20	0.12	J	0.48	0.59	4	3/24/18 14:40	CMR
Toluene	0.19	0.20	0.10	J	0.72	0.75	4	3/24/18 14:40	CMR
1,2,4-Trichlorobenzene	ND	0.20	0.14		ND	1.5	4	3/24/18 14:40	CMR
1,1,1-Trichloroethane	27	0.20	0.075		150	1.1	4	3/24/18 14:40	CMR
1,1,2-Trichloroethane	ND	0.20	0.082		ND	1.1	4	3/24/18 14:40	CMR
Trichloroethylene	29	0.20	0.081		160	1.1	4	3/24/18 14:40	CMR
Trichlorofluoromethane (Freon 11)	12	0.80	0.12		67	4.5	4	3/24/18 14:40	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	0.079		ND	6.1	4	3/24/18 14:40	CMR
1,2,4-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	3/24/18 14:40	CMR
1,3,5-Trimethylbenzene	ND	0.20	0.13		ND	0.98	4	3/24/18 14:40	CMR
Vinyl Acetate	ND	4.0	0.095		ND	14	4	3/24/18 14:40	CMR
Vinyl Chloride	ND	0.20	0.13		ND	0.51	4	3/24/18 14:40	CMR
m&p-Xylene	ND	0.40	0.23		ND	1.7	4	3/24/18 14:40	CMR
o-Xylene	ND	0.20	0.12		ND	0.87	4	3/24/18 14:40	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	108	70-130	3/24/18 14:40
4-Bromofluorobenzene (2)	114	70-130	3/24/18 14:40

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
18B1182-01 [IA-1-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-02 [IA-2-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-03 [IA-3-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-04 [IA-4-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-05 [IA-5-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-06 [IA-6-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-07 [IA-7-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-08 [AA-1-022818]	B199525	1.5	1	N/A	1000	400	855	03/23/18
18B1182-09 [EW-5-022818]	B199525	1.5	1	N/A	1000	400	30	03/23/18
18B1182-10 [EW-6-022818]	B199525	1.5	1	N/A	1000	400	150	03/23/18
18B1182-11 [EW-7-022818]	B199525	1.5	1	N/A	1000	400	150	03/23/18
18B1182-12 [EW-Combined-022818]	B199525	1.5	1	N/A	1000	400	150	03/23/18

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
18B1182-01RE1 [IA-1-022818]	B199542	1.5	1	N/A	1000	400	150	03/24/18
18B1182-02RE1 [IA-2-022818]	B199542	1.5	1	N/A	1000	400	30	03/24/18
18B1182-03RE1 [IA-3-022818]	B199542	1.5	1	N/A	1000	400	150	03/24/18
18B1182-04RE1 [IA-4-022818]	B199542	1.5	1	N/A	1000	400	30	03/24/18
18B1182-11RE1 [EW-7-022818]	B199542	1.5	1	N/A	1000	400	30	03/24/18

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 B199525 - TO-15 Prep

Blank (B199525-BLK1)

Prepared: 03/23/18 Analyzed: 03/24/18

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)	0.046	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

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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 B199525 - TO-15 Prep

Blank (B199525-BLK1)

Prepared: 03/23/18 Analyzed: 03/24/18

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>8.80</i>				<i>8.00</i>		<i>110</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	<i>9.32</i>				<i>8.00</i>		<i>116</i>	<i>70-130</i>			

LCS (B199525-BS1)

Prepared & Analyzed: 03/23/18

Acetone	4.57				5.00		91.4	70-130			
Benzene	4.51				5.00		90.2	70-130			
Benzyl chloride	5.67				5.00		113	70-130			V-36
Bromodichloromethane	4.11				5.00		82.2	70-130			
Bromoform	5.04				5.00		101	70-130			
Bromomethane	4.62				5.00		92.4	70-130			
1,3-Butadiene	4.74				5.00		94.7	70-130			
2-Butanone (MEK)	4.00				5.00		80.0	70-130			
Carbon Disulfide	5.01				5.00		100	70-130			
Carbon Tetrachloride	3.94				5.00		78.7	70-130			
Chlorobenzene	4.88				5.00		97.7	70-130			
Chloroethane	4.87				5.00		97.4	70-130			
Chloroform	4.16				5.00		83.3	70-130			
Chloromethane	4.48				5.00		89.5	70-130			
Cyclohexane	3.86				5.00		77.3	70-130			
Dibromochloromethane	4.35				5.00		87.1	70-130			
1,2-Dibromoethane (EDB)	4.44				5.00		88.8	70-130			
1,2-Dichlorobenzene	4.92				5.00		98.3	70-130			
1,3-Dichlorobenzene	5.26				5.00		105	70-130			
1,4-Dichlorobenzene	5.55				5.00		111	70-130			
Dichlorodifluoromethane (Freon 12)	4.51				5.00		90.3	70-130			
1,1-Dichloroethane	4.39				5.00		87.9	70-130			
1,2-Dichloroethane	4.02				5.00		80.4	70-130			
1,1-Dichloroethylene	4.36				5.00		87.2	70-130			
cis-1,2-Dichloroethylene	4.24				5.00		84.9	70-130			
trans-1,2-Dichloroethylene	4.07				5.00		81.3	70-130			
1,2-Dichloropropane	4.28				5.00		85.6	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 B199525 - TO-15 Prep											
LCS (B199525-BS1)						Prepared & Analyzed: 03/23/18					
cis-1,3-Dichloropropene	4.36				5.00		87.1	70-130			
trans-1,3-Dichloropropene	4.22				5.00		84.5	70-130			
Ethanol	5.12				5.00		102	70-130			
Ethyl Acetate	4.70				5.00		94.0	70-130			
Ethylbenzene	4.78				5.00		95.5	70-130			
4-Ethyltoluene	5.03				5.00		101	70-130			
Heptane	4.44				5.00		88.8	70-130			
Hexachlorobutadiene	4.87				5.00		97.4	70-130			
Hexane	4.07				5.00		81.4	70-130			
2-Hexanone (MBK)	4.30				5.00		86.0	70-130			
Isopropanol	4.25				5.00		85.0	70-130			
Methyl tert-Butyl Ether (MTBE)	4.03				5.00		80.5	70-130			
Methylene Chloride	4.31				5.00		86.2	70-130			
Methyl methacrylate	4.43				5.00		88.7	70-130			
4-Methyl-2-pentanone (MIBK)	4.08				5.00		81.5	70-130			
Propene	4.15				5.00		83.0	70-130			
Styrene	5.06				5.00		101	70-130			
1,1,1,2-Tetrachloroethane	0.694				0.910		76.3	70-130			
1,1,2,2-Tetrachloroethane	4.82				5.00		96.5	70-130			
Tetrachloroethylene	4.45				5.00		88.9	70-130			
Tetrahydrofuran	4.40				5.00		88.1	70-130			
Toluene	4.78				5.00		95.7	70-130			
1,2,4-Trichlorobenzene	4.76				5.00		95.1	70-130			
1,1,1-Trichloroethane	3.81				5.00		76.1	70-130			
1,1,2-Trichloroethane	4.37				5.00		87.5	70-130			
Trichloroethylene	4.18				5.00		83.5	70-130			
Trichlorofluoromethane (Freon 11)	4.21				5.00		84.2	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	4.41				5.00		88.2	70-130			
1,2,4-Trimethylbenzene	5.07				5.00		101	70-130			
1,3,5-Trimethylbenzene	4.96				5.00		99.1	70-130			
Vinyl Acetate	3.56				5.00		71.2	70-130			
Vinyl Chloride	4.69				5.00		93.8	70-130			
m&p-Xylene	9.70				10.0		97.0	70-130			
o-Xylene	5.00				5.00		100	70-130			
Surrogate: 4-Bromofluorobenzene (1)	8.88				8.00		111	70-130			
Surrogate: 4-Bromofluorobenzene (2)	8.56				8.00		107	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						
Batch B199525 - TO-15 Prep										
Duplicate (B199525-DUP1)		Source: 18B1182-09				Prepared: 03/23/18 Analyzed: 03/24/18				
Acetone	130	40	310	95		130		3.09	25	
Benzene	0.58	1.0	1.9	3.2		0.64		9.84	25	J
Benzyl chloride	ND	1.0	ND	5.2		ND			25	
Bromodichloromethane	ND	1.0	ND	6.7		ND			25	
Bromoform	ND	1.0	ND	10		ND			25	
Bromomethane	ND	1.0	ND	3.9		ND			25	
1,3-Butadiene	ND	1.0	ND	2.2		ND			25	
2-Butanone (MEK)	250	40	740	120		250		1.76	25	
Carbon Disulfide	19	10	60	31		20		2.34	25	
Carbon Tetrachloride	ND	1.0	ND	6.3		ND			25	
Chlorobenzene	ND	1.0	ND	4.6		ND			25	
Chloroethane	ND	1.0	ND	2.6		ND			25	
Chloroform	ND	1.0	ND	4.9		ND			25	
Chloromethane	ND	2.0	ND	4.1		ND			25	
Cyclohexane	ND	1.0	ND	3.4		ND			25	
Dibromochloromethane	ND	1.0	ND	8.5		ND			25	
1,2-Dibromoethane (EDB)	ND	1.0	ND	7.7		ND			25	
1,2-Dichlorobenzene	ND	1.0	ND	6.0		ND			25	
1,3-Dichlorobenzene	ND	1.0	ND	6.0		ND			25	
1,4-Dichlorobenzene	ND	1.0	ND	6.0		ND			25	
Dichlorodifluoromethane (Freon 12)	ND	1.0	ND	4.9		ND			25	
1,1-Dichloroethane	0.52	1.0	2.1	4.0		0.56		7.41	25	J
1,2-Dichloroethane	ND	1.0	ND	4.0		ND			25	
1,1-Dichloroethylene	ND	1.0	ND	4.0		ND			25	
cis-1,2-Dichloroethylene	ND	1.0	ND	4.0		ND			25	
trans-1,2-Dichloroethylene	ND	1.0	ND	4.0		ND			25	
1,2-Dichloropropane	ND	1.0	ND	4.6		ND			25	
cis-1,3-Dichloropropene	ND	1.0	ND	4.5		ND			25	
trans-1,3-Dichloropropene	ND	1.0	ND	4.5		ND			25	
Ethanol	21	40	40	75		19		12.2	25	J
Ethyl Acetate	ND	1.0	ND	3.6		ND			25	
Ethylbenzene	ND	1.0	ND	4.3		ND			25	
4-Ethyltoluene	ND	1.0	ND	4.9		ND			25	
Heptane	ND	1.0	ND	4.1		ND			25	
Hexachlorobutadiene	ND	1.0	ND	11		ND			25	
Hexane	ND	40	ND	140		ND			25	
2-Hexanone (MBK)	ND	1.0	ND	4.1		ND			25	
Isopropanol	2.1	40	5.1	98		2.1		0.00	25	J
Methyl tert-Butyl Ether (MTBE)	ND	1.0	ND	3.6		ND			25	
Methylene Chloride	ND	10	ND	35		ND			25	
Methyl methacrylate	ND	1.0	ND	4.1		ND			25	
4-Methyl-2-pentanone (MIBK)	ND	1.0	ND	4.1		ND			25	
Propene	2.5	40	4.3	69		2.5		0.797	25	J
Styrene	ND	1.0	ND	4.3		ND			25	
1,1,1,2-Tetrachloroethane	ND	1.8	ND	12		ND			25	
1,1,2,2-Tetrachloroethane	ND	1.0	ND	6.9		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						
Batch B199525 - TO-15 Prep										
Duplicate (B199525-DUP1)		Source: 18B1182-09				Prepared: 03/23/18 Analyzed: 03/24/18				
Tetrachloroethylene	ND	1.0	ND	6.8		ND			25	
Tetrahydrofuran	590	1.0	1800	2.9		610		2.03	25	
Toluene	ND	1.0	ND	3.8		ND			25	
1,2,4-Trichlorobenzene	ND	1.0	ND	7.4		ND			25	
1,1,1-Trichloroethane	3.0	1.0	16	5.5		3.1		1.98	25	
1,1,2-Trichloroethane	ND	1.0	ND	5.5		ND			25	
Trichloroethylene	7.9	1.0	42	5.4		8.1		3.50	25	
Trichlorofluoromethane (Freon 11)	ND	4.0	ND	22		ND			25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	4.0	ND	31		ND			25	
1,2,4-Trimethylbenzene	ND	1.0	ND	4.9		ND			25	
1,3,5-Trimethylbenzene	ND	1.0	ND	4.9		ND			25	
Vinyl Acetate	ND	20	ND	70		ND			25	
Vinyl Chloride	ND	1.0	ND	2.6		ND			25	
m&p-Xylene	ND	2.0	ND	8.7		ND			25	
o-Xylene	ND	1.0	ND	4.3		ND			25	
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.70</i>					<i>8.00</i>		<i>109</i>	<i>70-130</i>	
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	<i>9.20</i>					<i>8.00</i>		<i>115</i>	<i>70-130</i>	

Batch B199542 - TO-15 Prep

Blank (B199542-BLK1)		Prepared: 03/24/18 Analyzed: 03/25/18								
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)	0.048	1.4								J
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 B199542 - TO-15 Prep

Blank (B199542-BLK1)

Prepared: 03/24/18 Analyzed: 03/25/18

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								
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.60</i>				<i>8.00</i>		<i>108</i>		<i>70-130</i>	
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	<i>9.10</i>				<i>8.00</i>		<i>114</i>		<i>70-130</i>	

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 B199542 - TO-15 Prep

LCS (B199542-BS1)

Prepared & Analyzed: 03/24/18

Acetone	4.83				5.00		96.6	70-130			
Benzene	4.82				5.00		96.3	70-130			
Benzyl chloride	6.45				5.00		129	70-130			
Bromodichloromethane	4.39				5.00		87.7	70-130			
Bromoform	5.48				5.00		110	70-130			
Bromomethane	4.76				5.00		95.2	70-130			
1,3-Butadiene	4.97				5.00		99.4	70-130			
2-Butanone (MEK)	4.24				5.00		84.8	70-130			
Carbon Disulfide	5.28				5.00		106	70-130			
Carbon Tetrachloride	4.13				5.00		82.6	70-130			
Chlorobenzene	5.25				5.00		105	70-130			
Chloroethane	5.19				5.00		104	70-130			
Chloroform	4.32				5.00		86.4	70-130			
Chloromethane	4.82				5.00		96.5	70-130			
Cyclohexane	4.18				5.00		83.6	70-130			
Dibromochloromethane	4.66				5.00		93.3	70-130			
1,2-Dibromoethane (EDB)	4.81				5.00		96.2	70-130			
1,2-Dichlorobenzene	5.43				5.00		109	70-130			
1,3-Dichlorobenzene	5.86				5.00		117	70-130			
1,4-Dichlorobenzene	6.20				5.00		124	70-130			
Dichlorodifluoromethane (Freon 12)	4.67				5.00		93.5	70-130			
1,1-Dichloroethane	4.62				5.00		92.5	70-130			
1,2-Dichloroethane	4.14				5.00		82.8	70-130			
1,1-Dichloroethylene	4.52				5.00		90.4	70-130			
cis-1,2-Dichloroethylene	4.36				5.00		87.2	70-130			
trans-1,2-Dichloroethylene	4.26				5.00		85.2	70-130			
1,2-Dichloropropane	4.67				5.00		93.3	70-130			
cis-1,3-Dichloropropene	4.64				5.00		92.8	70-130			
trans-1,3-Dichloropropene	4.53				5.00		90.5	70-130			
Ethanol	5.37				5.00		107	70-130			
Ethyl Acetate	5.00				5.00		100	70-130			
Ethylbenzene	5.14				5.00		103	70-130			
4-Ethyltoluene	5.44				5.00		109	70-130			
Heptane	4.89				5.00		97.9	70-130			
Hexachlorobutadiene	5.35				5.00		107	70-130			
Hexane	4.27				5.00		85.5	70-130			
2-Hexanone (MBK)	4.81				5.00		96.3	70-130			
Isopropanol	4.66				5.00		93.2	70-130			
Methyl tert-Butyl Ether (MTBE)	4.13				5.00		82.6	70-130			
Methylene Chloride	4.59				5.00		91.7	70-130			
Methyl methacrylate	4.74				5.00		94.8	70-130			
4-Methyl-2-pentanone (MIBK)	4.48				5.00		89.6	70-130			
Propene	4.40				5.00		88.0	70-130			
Styrene	5.41				5.00		108	70-130			
1,1,1,2-Tetrachloroethane	0.791				0.910		86.9	70-130			
1,1,2,2-Tetrachloroethane	5.34				5.00		107	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	%REC	Limits	RPD		
Batch B199542 - TO-15 Prep											
LCS (B199542-BS1)					Prepared & Analyzed: 03/24/18						
Tetrachloroethylene	4.74				5.00		94.7	70-130			
Tetrahydrofuran	4.60				5.00		92.0	70-130			
Toluene	5.19				5.00		104	70-130			
1,2,4-Trichlorobenzene	5.19				5.00		104	70-130			
1,1,1-Trichloroethane	4.02				5.00		80.4	70-130			
1,1,2-Trichloroethane	4.78				5.00		95.5	70-130			
Trichloroethylene	4.47				5.00		89.3	70-130			
Trichlorofluoromethane (Freon 11)	4.53				5.00		90.6	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	4.55				5.00		91.0	70-130			
1,2,4-Trimethylbenzene	5.50				5.00		110	70-130			
1,3,5-Trimethylbenzene	5.42				5.00		108	70-130			
Vinyl Acetate	3.69				5.00		73.8	70-130			
Vinyl Chloride	4.99				5.00		99.8	70-130			
m&p-Xylene	10.7				10.0		107	70-130			
o-Xylene	5.40				5.00		108	70-130			
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	8.88				8.00		111	70-130			
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	8.36				8.00		105	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).
- RL-11 Elevated reporting limit due to high concentration of target compounds.
- V-36 Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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
IA-1-022818 (18B1182-01)									
Lab File ID: H032315.D					Analyzed: 03/24/18 03:54				
Bromochloromethane (1)	250597	9.225				60 - 140	9.2250	+/-0.50	
1,4-Difluorobenzene (1)	721525	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (1)	411920	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	721525	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (2)	411920	15.913				60 - 140	15.9130	+/-0.50	
IA-2-022818 (18B1182-02)									
Lab File ID: H032316.D					Analyzed: 03/24/18 04:53				
Bromochloromethane (1)	253659	9.219				60 - 140	9.2190	+/-0.50	
1,4-Difluorobenzene (1)	727198	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (1)	420069	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	727198	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (2)	420069	15.913				60 - 140	15.9130	+/-0.50	
IA-3-022818 (18B1182-03)									
Lab File ID: H032317.D					Analyzed: 03/24/18 05:53				
Bromochloromethane (1)	255602	9.213				60 - 140	9.2130	+/-0.50	
1,4-Difluorobenzene (1)	730549	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (1)	413555	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	730549	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (2)	413555	15.913				60 - 140	15.9130	+/-0.50	
IA-4-022818 (18B1182-04)									
Lab File ID: H032318.D					Analyzed: 03/24/18 06:52				
Bromochloromethane (1)	249855	9.207				60 - 140	9.2070	+/-0.50	
1,4-Difluorobenzene (1)	714630	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (1)	416092	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	714630	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (2)	416092	15.913				60 - 140	15.9130	+/-0.50	
IA-5-022818 (18B1182-05)									
Lab File ID: H032319.D					Analyzed: 03/24/18 07:52				
Bromochloromethane (1)	253891	9.201				60 - 140	9.2010	+/-0.50	
1,4-Difluorobenzene (1)	726978	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (1)	410715	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	726978	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (2)	410715	15.913				60 - 140	15.9130	+/-0.50	
IA-6-022818 (18B1182-06)									
Lab File ID: H032320.D					Analyzed: 03/24/18 08:52				
Bromochloromethane (1)	247508	9.201				60 - 140	9.2010	+/-0.50	
1,4-Difluorobenzene (1)	708954	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (1)	397868	15.907				60 - 140	15.9070	+/-0.50	
1,4-Difluorobenzene (2)	709141	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (2)	397868	15.907				60 - 140	15.9070	+/-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
IA-7-022818 (18B1182-07)									
Lab File ID: H032321.D					Analyzed: 03/24/18 09:51				
Bromochloromethane (1)	246729	9.2				60 - 140	9.2000	+/-0.50	
1,4-Difluorobenzene (1)	708073	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (1)	401724	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	708217	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (2)	401724	15.913				60 - 140	15.9130	+/-0.50	
AA-1-022818 (18B1182-08)									
Lab File ID: H032322.D					Analyzed: 03/24/18 10:50				
Bromochloromethane (1)	248026	9.2				60 - 140	9.2000	+/-0.50	
1,4-Difluorobenzene (1)	709071	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (1)	404325	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	709167	11.109				60 - 140	11.1090	+/-0.50	
Chlorobenzene-d5 (2)	404325	15.913				60 - 140	15.9130	+/-0.50	
EW-5-022818 (18B1182-09)									
Lab File ID: H032323.D					Analyzed: 03/24/18 11:36				
Bromochloromethane (1)	247662	9.207				60 - 140	9.2070	+/-0.50	
1,4-Difluorobenzene (1)	700335	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (1)	388616	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	700335	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (2)	388616	15.913				60 - 140	15.9130	+/-0.50	
EW-6-022818 (18B1182-10)									
Lab File ID: H032325.D					Analyzed: 03/24/18 13:08				
Bromochloromethane (1)	248707	9.213				60 - 140	9.2130	+/-0.50	
1,4-Difluorobenzene (1)	700849	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (1)	390505	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	700849	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (2)	390505	15.913				60 - 140	15.9130	+/-0.50	
EW-7-022818 (18B1182-11)									
Lab File ID: H032326.D					Analyzed: 03/24/18 13:54				
Bromochloromethane (1)	246411	9.262				60 - 140	9.2620	+/-0.50	
1,4-Difluorobenzene (1)	697393	11.151				60 - 140	11.1510	+/-0.50	
Chlorobenzene-d5 (1)	385842	15.925				60 - 140	15.9250	+/-0.50	
1,4-Difluorobenzene (2)	697393	11.151				60 - 140	11.1510	+/-0.50	
Chlorobenzene-d5 (2)	385842	15.925				60 - 140	15.9250	+/-0.50	
EW-Combined-022818 (18B1182-12)									
Lab File ID: H032327.D					Analyzed: 03/24/18 14:40				
Bromochloromethane (1)	243684	9.207				60 - 140	9.2070	+/-0.50	
1,4-Difluorobenzene (1)	686029	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (1)	380702	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	686029	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (2)	380702	15.913				60 - 140	15.9130	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

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
IA-1-022818 (18B1182-01RE1)									
			Lab File ID: H032420.D			Analyzed: 03/25/18 13:43			
Bromochloromethane (1)	249253	9.2				60 - 140	9.2000	+/-0.50	
1,4-Difluorobenzene (1)	720040	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (1)	399232	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	720122	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (2)	399232	15.913				60 - 140	15.9130	+/-0.50	
IA-2-022818 (18B1182-02RE1)									
			Lab File ID: H032421.D			Analyzed: 03/25/18 14:28			
Bromochloromethane (1)	246862	9.207				60 - 140	9.2070	+/-0.50	
1,4-Difluorobenzene (1)	702509	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (1)	386865	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	702509	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (2)	386865	15.913				60 - 140	15.9130	+/-0.50	
IA-3-022818 (18B1182-03RE1)									
			Lab File ID: H032422.D			Analyzed: 03/25/18 15:14			
Bromochloromethane (1)	254694	9.219				60 - 140	9.2190	+/-0.50	
1,4-Difluorobenzene (1)	705603	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (1)	387045	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	705603	11.121				60 - 140	11.1210	+/-0.50	
Chlorobenzene-d5 (2)	387045	15.913				60 - 140	15.9130	+/-0.50	
IA-4-022818 (18B1182-04RE1)									
			Lab File ID: H032423.D			Analyzed: 03/25/18 16:00			
Bromochloromethane (1)	251489	9.207				60 - 140	9.2070	+/-0.50	
1,4-Difluorobenzene (1)	695147	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (1)	381498	15.913				60 - 140	15.9130	+/-0.50	
1,4-Difluorobenzene (2)	695147	11.115				60 - 140	11.1150	+/-0.50	
Chlorobenzene-d5 (2)	381498	15.913				60 - 140	15.9130	+/-0.50	
EW-7-022818 (18B1182-11RE1)									
			Lab File ID: H032424.D			Analyzed: 03/25/18 16:46			
Bromochloromethane (1)	238189	9.249				60 - 140	9.2490	+/-0.50	
1,4-Difluorobenzene (1)	689637	11.145				60 - 140	11.1450	+/-0.50	
Chlorobenzene-d5 (1)	380816	15.919				60 - 140	15.9190	+/-0.50	
1,4-Difluorobenzene (2)	689637	11.145				60 - 140	11.1450	+/-0.50	
Chlorobenzene-d5 (2)	380816	15.919				60 - 140	15.9190	+/-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	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2019
RI	Rhode Island Department of Health	LAO00112	12/30/2018
NC	North Carolina Div. of Water Quality	652	12/31/2018
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	12/14/2018
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2018
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD (AIR)

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Company Name: Aime Foster Wheeler
 Address: 271 Mill Rd. Chelmsford, MA
 Phone: 978 692-9990
 Project Name: Texton Center
 Project Location: Prudence, RI
 Project Number: 3651180015 0003
 Project Manager: Herb Colby
 Con-Test Quote Name/Number: See per
 Invoice Recipient:
 Sampled By: M. Messier

Request to Outsource Time
 7-Day 10-Day
 Due Date:
 Rush Approval Required
 1-Day 3-Day
 2-Day 4-Day
 Data Delivery
 Format: PDF EXCEL
 Other: END
 CLP Like Data Pkg Required:
 Email To: perse.king@wheeler.com
 Fax To #:

ANALYSIS REQUESTED

Initial Pressure	Final Pressure	Lab Receipt Pressure	"Hg	Summa Can ID	Flow Controller ID
				1955	4300
				1948	4290
				1831	4288
				1928	4260
				1309	4196
				1249	4207
				1038	4314
				1923	4298
				1956	4299

Please fill out completely, sign, date and retain the yellow copy for your records

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Lab Use	Con-Test Work Order #	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume
			Beginning Date/Time	Ending Date/Time				
1	IA-1-022818		2-28-18 0725	2-28-18 0759	30	200	IA	6
2	IA-2-022818		2-28-18 1010	2-28-18 1040	30	200	IA	6
3	IA-3-022818		2-28-18 0730	2-28-18 0800	30	200	IA	6
4	IA-4-022818		2-28-18 1013	2-28-18 1043	30	200	IA	6
5	IA-5-022818		2-28-18 0834	2-28-18 0904	30	200	IA	6
6	IA-6-022818		2-28-18 0858	2-28-18 0928	30	200	IA	6
7	IA-7-022818		2-28-18 0902	2-28-18 0932	30	200	IA	6
8	AA-1-022818		2-28-18 0940	2-28-18 0970	30	200	AA	6
9	EW-5-022818		2-28-18 0801	2-28-18 0831	30	200	SS	6

Comments:

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

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

Relinquished by (signature): [Signature] Date/Time: 2-28-18 13:00

Received by (signature): [Signature] Date/Time: 2-28-18 13:00

Relinquished by (signature): [Signature] Date/Time: 2-28-18 15:50

Received by (signature): [Signature] Date/Time: 2-28-18 16:30

Relinquished by (signature): [Signature] Date/Time: 2/28/18 18:00

Received by (signature): [Signature] Date/Time: 2/28/18

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

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

PCB ONLY:
 Soxhlet
 Non Soxhlet

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 ANALYTICAL LABORATORY
 www.contestlabs.com

NE, LA, and AIHA-LAP, LLC Accredited

http://www.contestlabs.com
 CHAIN OF CUSTODY RECORD (AIR)

18P1188
 Phone: 413-525-2332
 Fax: 413-525-6405
 Email: info@contestlabs.com
 Amer Foster Wheeler
 271 Mill Rd Chelmsford, MA
 978-692-9090
 Project Name: Texton Center
 Project Location: Providence, RI
 Project Number: 365118075.003
 Project Manager: Herb Colby
 Con-Test Quote Name/Number:
 Invoice Recipient:
 Sampled By: MMassucco

ANALYSIS REQUESTED

Requested Laboratory Time: 7-Day 10-Day Due Date:

Push Approval Required: 1-Day 3-Day 4-Day

Data Delivery: PDF EXCEL Other: EDP

CLP Like Data Pkg Required:

Email To: Denise.King@wheatohle.com

Fax To #:

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume
		Beginning Date/Time	Ending Date/Time				
Con-Test Work Order#	Client Sample ID / Description			Total Minutes Sampled	m ³ /min L/min	Code	Liters m ³
16	EW-6-022818	2-28-18 0900	2-28-18 0930	30	200	SS	6
11	EW-7-022818	2-28-18 0901	2-28-18 0934	30	200	SS	6
12	EW-Combined cassette	2-28-18 0958	2-28-18 1028	30	200	SS	6

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	Initial Pressure	Final Pressure	Lab Receipt Pressure
		Beginning Date/Time	Ending Date/Time							
Con-Test Work Order#	Client Sample ID / Description			Total Minutes Sampled	m ³ /min L/min	Code	Liters m ³	" Hg	" Hg	" Hg
16	EW-6-022818	2-28-18 0900	2-28-18 0930	30	200	SS	6	30	7.40	1856
11	EW-7-022818	2-28-18 0901	2-28-18 0934	30	200	SS	6	28	7.50	1861
12	EW-Combined cassette	2-28-18 0958	2-28-18 1028	30	200	SS	6	27	7.40	1869

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Summa Can ID: 1856, 1861, 1869
 Flow Controller ID: 5174, 4315, 4090

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

Relinquished by: (signature) Date/Time: 2-28-18 13:40
 Received by: (signature) Date/Time: 2-28-18 13:00
 Relinquished by: (signature) Date/Time: 2-28-18 15:50
 Received by: (signature) Date/Time: 2/28/18 16:50
 Relinquished by: (signature) Date/Time: 2/28/18 18:00
 Received by: (signature) Date/Time: 2/28/18

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

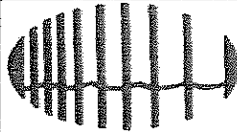
Project Entity: Government, Federal, City, Municipality, 21 J, Brownfield, MWRA, School, MBTA, WRTA, Chromatogram, AIHA-LAP, LLC

PCB ONLY: Soxhlet, Non Soxhlet

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 East Longmeadow, MA. 01028
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 F: 413-525-6405
 www.contestlabs.com



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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 Ameel Foster Wheeler

Received By VAP Date 2/28/18 Time 1500
 How were the samples received? In Cooler On Ice No Ice
 In Box T Ambient Melted Ice
 Were samples within Temperature Compliance? 2-6°C By Gun # Actual Temp -
 By Blank # Actual Temp -
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 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	12	6L	12	30 min	Nut/Ferrule		IC Train
Tedlar Bags					Tubing		
TO-17 Tubes					T-Connector		Shipping Charges
Radiello					Syringe		
Pufs/TO-11s					Tedlar		

Can #'s	Reg #'s						
1038	4314						
1955	4300						
1923	4298						
1948	4290						
1956	4299						
1831	4288						
1856	4174						
1928	4200						
1861	4315						
1309	4196						
1868	4090						
1299	4207						
Unused Media	Pufs/TO-17's						

Comments:
 Supplemental Documentation: 4 soil gas sampling kits.

APPENDIX B
Analytical Laboratory Detection Limits

Analytical Method Information

Analyte	MDL	Reporting	Surrogate	Duplicate	Matrix Spike		Blank Spike / LCS	
		Limit	%R	RPD	%R	RPD	%R	RPD
TO-15 ppbv low level in Air (EPA TO-15)								
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)								