



EA Engineering, Science, and Technology, Inc.

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25 June 2009

Mr. Joseph T. Martella II, Senior Engineer  
RIDEM - Office of Waste Management  
Site Remediation Program  
235 Promenade Street  
Providence, RI 02908

RE: Quarterly O&M Status Report No. 7  
Alvarez High School, 333 Adelaide Avenue, Providence, Rhode Island  
Case No. 2005-029  
EA Project No. 14613.01

Dear Mr. Martella:

On behalf of the City of Providence School Department (City), EA Engineering, Science, and Technology, Inc. (EA) is providing this Quarterly Operations and Maintenance (O&M) Status Report in accordance with Provision 6(f) of the Order of Approval and amendments (Amended OA) for the referenced Alvarez High School site (the Site, formerly Adelaide Avenue High School). This O&M Report summarizes recently completed Site activities related to compliance sub-slab vapor and indoor air sampling from the period between December 2008 and February 2009. If you have any questions or require additional information, please contact me at 401-736-3440, Ext. 202.

Sincerely,

EA ENGINEERING, SCIENCE,  
AND TECHNOLOGY, INC.

Mark K. Speer, P.E.  
Senior Engineer

cc: M. Dunham, Prov. Dept. of Public Schools  
T. Deller, Prov. Redevelopment Agency  
J. Fernandez, City of Prov. Law Department  
J. Boehnert, Partridge, Snow, & Hahn  
T. Slater, Representative  
Knight Memorial Library Repository  
A. Sepe, Prov. Dept. of Public Property  
S. Fischbach, RI Legal Services  
J. Ryan, Partridge, Snow, & Hahn  
R. Dorr, Neighborhood Resident  
J. Pichardo, Senator  
Principal Torchon, Adelaide High School

## **Quarterly O&M Status Report No. 7**

### **Summarizing Sub-Slab Depressurization and Indoor Air Monitoring and Sampling Activities**

#### **Alvarez High School Site (Formerly Adelaide Avenue High School) Providence, Rhode Island**

*Prepared for*

City of Providence School Department  
797 Westminster Street  
Providence, Rhode Island 02903

*Prepared by*

EA Engineering, Science, and Technology, Inc.  
2350 Post Road  
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June 2009  
EA Project No. 14613.01

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## 1. INTRODUCTION AND BACKGROUND

On behalf of the City of Providence School Department (the City), EA Engineering, Science, and Technology, Inc. (EA) has prepared this Quarterly Operations and Maintenance (O&M) Status Report No. 7 for the Parcel B area of the former Gorham Manufacturing site in Providence, Rhode Island, formerly referred to as the Adelaide Avenue High School and now referred to as the Alvarez High School site (the Site). A Site Location Map is provided as Figure 1. This report has been prepared to satisfy provision 6(f) of the Rhode Island Department of Environmental Management (RIDEM) Order of Approval (OA) issued in June 2006, as amended in February and July 2007. For the purposes of this report, the original and the amended Orders of Approval will collectively be referred to as the Amended OA.

The Amended OA specifies the details of the approved remedy for the Site including, but not limited to, the installation of a sub-slab depressurization (SSD) system, installation of a continuous indoor air methane monitoring system, and implementation of an associated periodic monitoring and sampling program. In August 2007, the RIDEM-approved remedy for the Site was completed and a Remedial Action Closure Report (RACR) was submitted to RIDEM.

This report summarizes the O&M, monitoring, and sampling activities completed at the Site for the 3-month period from March 2009 through May 2009 (Quarterly Reporting Period No. 7), and also includes an overall evaluation of volatile organic compound (VOC) concentrations within soil gas as they pertain to a potential "rebound effect" at the Site. Please refer to the Quarterly O&M Status Reports No. 1 through No. 6 for information regarding monitoring and sampling at the Site during the previous quarters. The RACR and previously submitted monthly correspondence contain details regarding the results of the monitoring and sampling program for the period between March and August 2007.

## **2. SUMMARY OF SSD SYSTEM AND INDOOR METHANE MONITORING SYSTEM PERFORMANCE**

### **2.1 SSD SYSTEM**

During this reporting period, the following SSD System performance parameters were inspected and/or monitored at the frequencies indicated below in accordance with the Amended OA to evaluate system performance:

- Monthly sub-slab vacuum monitoring at 11 monitoring locations, as illustrated on the As-Built Sub-Slab Monitoring & Sampling Plan included in Appendix C
- Monthly inspections and monitoring of rooftop fans (air velocity and vacuum) to verify proper operation
- Continuous electronic monitoring (with automatic alarm notification via audible signal and phone notification) at each of three SSD System extraction fans to ensure continuous operation.

All vacuum measurements taken at each interior and perimeter sub-slab monitoring/sampling location were between -0.01 and -0.14 in. of water column, indicating continuous negative pressure values beneath the building slab.

Inspections and monitoring of all other system equipment revealed proper system operation; and no equipment shutdowns, failures, alarms, or interruptions of any type occurred during this reporting period. The continuous, verified zone of negative pressure beneath the school's concrete slab, along with the monthly inspections and continuous monitoring of both the indoor air monitoring system and the sub-slab depressurization system, confirms proper operation of the SSD System during this reporting period.

Copies of O&M field forms summarizing SSD System monitoring data collected during this reporting period are provided in Appendix A.

### **2.2 INDOOR METHANE MONITORING SYSTEM**

During this reporting period, indoor methane concentrations were continuously monitored by an indoor methane monitoring system (equipped with automatic alarm notification via audible signal and phone notification) within the school at eight RIDEM-approved locations (refer to the Indoor Air Sampling and Methane Monitoring System Diagram included in Appendix B). In addition, the methane monitoring system was inspected, and supplemental methane monitoring was completed by EA on a monthly basis to provide an additional layer of system verification. The indoor methane monitoring system operated continuously throughout this reporting period with no equipment shutdowns, failures, alarms, or interruptions of any type, and no methane was detected during any of the supplemental monthly indoor methane monitoring events.

In March 2008, filter discs at each of the eight continuous methane sensors were replaced in accordance with a quarterly frequency schedule. The next filter replacement is scheduled for July 2009.

No other maintenance or repairs to the methane monitoring system or components were performed or required during this reporting period.

## **2.3 AMBIENT OUTDOOR AND INDOOR AIR SAMPLING**

One outdoor ambient air sample and eight indoor air samples within the school at RIDEM-approved sampling locations were collected and analyzed for VOCs via Method TO-15 SIM (Selective Ion Monitoring) on 26 March 2009, and 29 April 2009. Sampling locations are shown on the Indoor Air Sampling and Methane Monitoring System Diagram provided in Appendix B. In accordance with the Amended OA, the indoor air sampling results were compared to the State of Connecticut's Draft Proposed Indoor Residential Targeted Air Concentrations (CT RTACs). The laboratory reporting limits (RLs) for several VOCs reported via TO-15 analysis, even though analyzed via the SIM procedure are greater than the respective CT RTACs. In accordance with the Amended OA, EA contacted the laboratory prior to sample analysis to verify that the RLs provided would be the lowest currently achievable limits. A RL verification letter from Alpha Analytical Laboratory is provided in Appendix D. A data summary table and copies of the laboratory data reports associated with these two sampling events are provided in Appendix B. As detailed below, one contaminant was detected above the CT RTACs in each month of this quarter.

Carbon tetrachloride, a documented background ambient compound present at the Site and typical in urban communities, has consistently been detected in ambient outdoor air and inside the school during every sampling event completed at the Site at concentrations ranging between 0.19 to 0.77 ug/m<sup>3</sup>. Similarly, during this reporting period the ambient outdoor and indoor air concentrations of carbon tetrachloride ranged between 0.515 and 0.622 ug/m<sup>3</sup>. Based upon discussions and guidance provided by the Rhode Island Department of Health and RIDEM Office of Waste Management and Office of Air Resources, these carbon tetrachloride results do not constitute Indoor Air Action Level exceedances for the Site since they are consistent with documented background concentrations.

### **2.3.1 Order Of Approval Amendment Request**

Pursuant to the Amended O&A, EA, on behalf of the City of Providence, has performed monthly indoor air and subsurface vapor sampling and analysis. In a letter dated 27 April 2009, EA requested a reduction of sampling frequency, reducing monthly sampling requirements to quarterly, or once every three months. In the Order of Approval Amendment Request, EA summarized the data collected since March 2007, which has consistently indicated that subsurface vapor intrusion is not occurring within the school. The Amendment Request was verbally approved, pending further review, by RIDEM through telephone conversations. Therefore, indoor air and subsurface vapor sampling and analysis was not conducted in May 2009. However, an indoor air quality survey, through the utilization of a photo-ionization detector with part-per-billion accuracy was conducted in each month, including May. Results of the survey indicate

compliance with indoor air quality standards. Please find the Order of Approval Amendment Request in Attachment E.

### 2.3.2 March Sampling Event

Analytical results of the March sampling indicated the presence of three contaminants in excess of the CT RTACs. In accordance with the Order of Approval and amendments (Amended OA) for this Site, your office was notified via telephone that three compounds, 1,2-Dichloroethane, Trichloroethylene, and Methylene Chloride, were detected within several samples collected from the Alvarez High School at concentrations that exceed the State of Connecticut's Draft Proposed Indoor Residential Targeted Air Concentrations. The detections are detailed below:

- **1,2-Dichloroethane**
  - Standard:  $0.07 \mu\text{g}/\text{m}^3$
  - Gymnasium:  $0.087 \mu\text{g}/\text{m}^3$
  - Cafeteria:  $0.084 \mu\text{g}/\text{m}^3$
  
- **Trichloroethylene**
  - Standard:  $1.00 \mu\text{g}/\text{m}^3$
  - Gymnasium:  $1.51 \mu\text{g}/\text{m}^3$
  - Kitchen Storage Room:  $4.00 \mu\text{g}/\text{m}^3$
  - Room 145:  $1.61 \mu\text{g}/\text{m}^3$
  - Room 110:  $1.18 \mu\text{g}/\text{m}^3$
  - Ambient Outdoor Air:  $6.87 \mu\text{g}/\text{m}^3$
  
- **Methylene Chloride**
  - Standard:  $3.0 \mu\text{g}/\text{m}^3$
  - Gymnasium:  $4.01 \mu\text{g}/\text{m}^3$
  - Kitchen Storage Room:  $7.54 \mu\text{g}/\text{m}^3$
  - Room 145:  $4.06 \mu\text{g}/\text{m}^3$
  - Room 110:  $3.23 \mu\text{g}/\text{m}^3$
  - Ambient Outdoor Air:  $11.6 \mu\text{g}/\text{m}^3$

Upon receipt of this data, EA referenced monitoring field notes and analytical results of subslab vapor sampling, which was conducted concurrently with the indoor air sampling. Monitoring notes indicate the SSD System continues to operate effectively in accordance with design. Analytical results from subslab vapor sampling indicate that Trichloroethylene was detected at the subslab vapor points at concentrations ranging from  $3.88$  to  $25.1 \mu\text{g}/\text{m}^3$ , methylene chloride was detected in the subslab at concentrations ranging from non-detectable concentrations to  $16.1 \mu\text{g}/\text{m}^3$ , and 1,2-Dichloroethane was detected in the subslab at concentrations ranging from non-detectable concentrations to  $0.133 \mu\text{g}/\text{m}^3$ .

Please note ambient air concentrations of Methylene Chloride and Trichloroethylene were detected at concentrations greater than those detected within the indoor air samples collected from within the school. The high indoor air concentrations are most likely directly attributable

to the “outside” ambient air concentrations, as the outside air is used to ventilate the school. EA has researched ambient air concentrations in the vicinity of the school as well as potential sources of the compounds and has not found a definitive direct source. The ambient air sample was taken from an upwind location (south) on the day of sampling.

EA has also noted a correlation between the detection of Methylene Chloride and Trichloroethylene as these compounds were detected in the same samples. The highest concentrations of Methylene Chloride and Trichloroethylene were both detected in the ambient air sample as well. Considering Methylene Chloride is not a site contaminant and is a common laboratory contaminant, EA has questioned the validity of the analytical results. However, the laboratory (Alpha Analytical Laboratory) insists the data is valid.

### 2.3.3 April Sampling Event

In accordance with the Order of Approval and amendments (Amended OA) for this Site, your office was notified via telephone that one compound, 1,2-Dichloroethane, was detected within a sample collected from Room 118 (Figure 1) at a concentration that exceeds the State of Connecticut’s Draft Proposed Indoor Residential Targeted Air Concentrations ( $0.089 \mu\text{g}/\text{m}^3$  vs. criteria of  $0.082 \mu\text{g}/\text{m}^3$ ).

Upon receipt of this detection, EA reviewed monitoring field notes and analytical results of subslab vapor sampling, which was conducted concurrently with the indoor air sampling. Analytical results indicate that 1,2-Dichloroethane was detected in two samples collected from subslab vapor sampling points, MP-3 and IMP-3 (Figure 2) at concentrations of  $0.319$  and  $0.089 \mu\text{g}/\text{m}^3$ , respectively.

1,2-Dichloroethane has historically been used in degreasing, paint removal, and carpet cleaning products. Room 118, which is the music classroom, is the only room with carpeting. Therefore, a carpet cleaning product may be the source of the detection, as well as a graffiti removal product. The compound is also used as a precursor in the production of PVC, which is the material the subslab sampling points are made from. This may also be a cause for the subslab detections.

## 2.4 SUB-SLAB VAPOR SAMPLING AND EVALUATION OF POTENTIAL “VOC REBOUND” EFFECT

A total of 12 RIDEM-approved sub-slab sampling locations exist at the Site. In accordance with the Amended OA, four sub-slab vapor samples were collected in accordance with a RIDEM-approved rotating sampling schedule and analyzed for VOCs via Method TO-15 SIM on 26 March 2009 and 29 April 2009. The sub-slab data is summarized in Appendix C, along with copies of the laboratory data reports associated with these sampling events.

In accordance with the Amended OA, the sub-slab data has been evaluated, and there is no evidence of increasing VOCs (i.e., VOC rebound) beneath the school.



## 2.5 SUMMARY OF ROOFTOP VOC EMISSIONS

The Amended OA requires that rooftop VOC sampling be completed on an annual basis. The most recent rooftop VOC sampling event was completed in June 2008 and was summarized in correspondence submitted to RIDEM in October 2008. Please refer to the previously submitted Quarterly Status Report No. 4 (dated October 2008) for more details regarding the rooftop VOC data. The next annual rooftop VOC sampling event was scheduled for June 2009, but will be conducted in July 2009, as air sampling and analysis will not be conducted in June.

## 2.6 CONCLUSIONS

Based upon the completed inspections, monitoring, and sampling performed during this reporting period, the following conclusions are made:

- RIDEM tentatively verbally approved an Order of Approval Amendment Request, requiring quarterly, rather than monthly, indoor air and subslab vapor sampling.
- Analytical results from indoor air sampling conducted this quarter indicate the presence of contaminants within indoor air, although sub-slab vapor sampling and analysis indicates that the contaminants are not due to sub-slab vapor intrusion.
- There is no evidence that soil vapor intrusion into the Alvarez High School is occurring.
- There is no evidence of "VOC rebound" in soil gas beneath the school.
- The continuous operation of the SSD System, with no equipment malfunctions or alarm conditions, and confirmation of continuous sub-slab vacuum beneath the school illustrates ongoing, effective operation of the SSD System and that no soil vapor intrusion pathway exists at the school while the SSD System is operational.
- The continuous operation of the indoor air methane monitoring system with no equipment malfunctions or alarm conditions illustrates ongoing, effective operation of the continuous indoor methane monitoring system.
- No SSD System modifications or other actions to address current site conditions are warranted or proposed at this time.

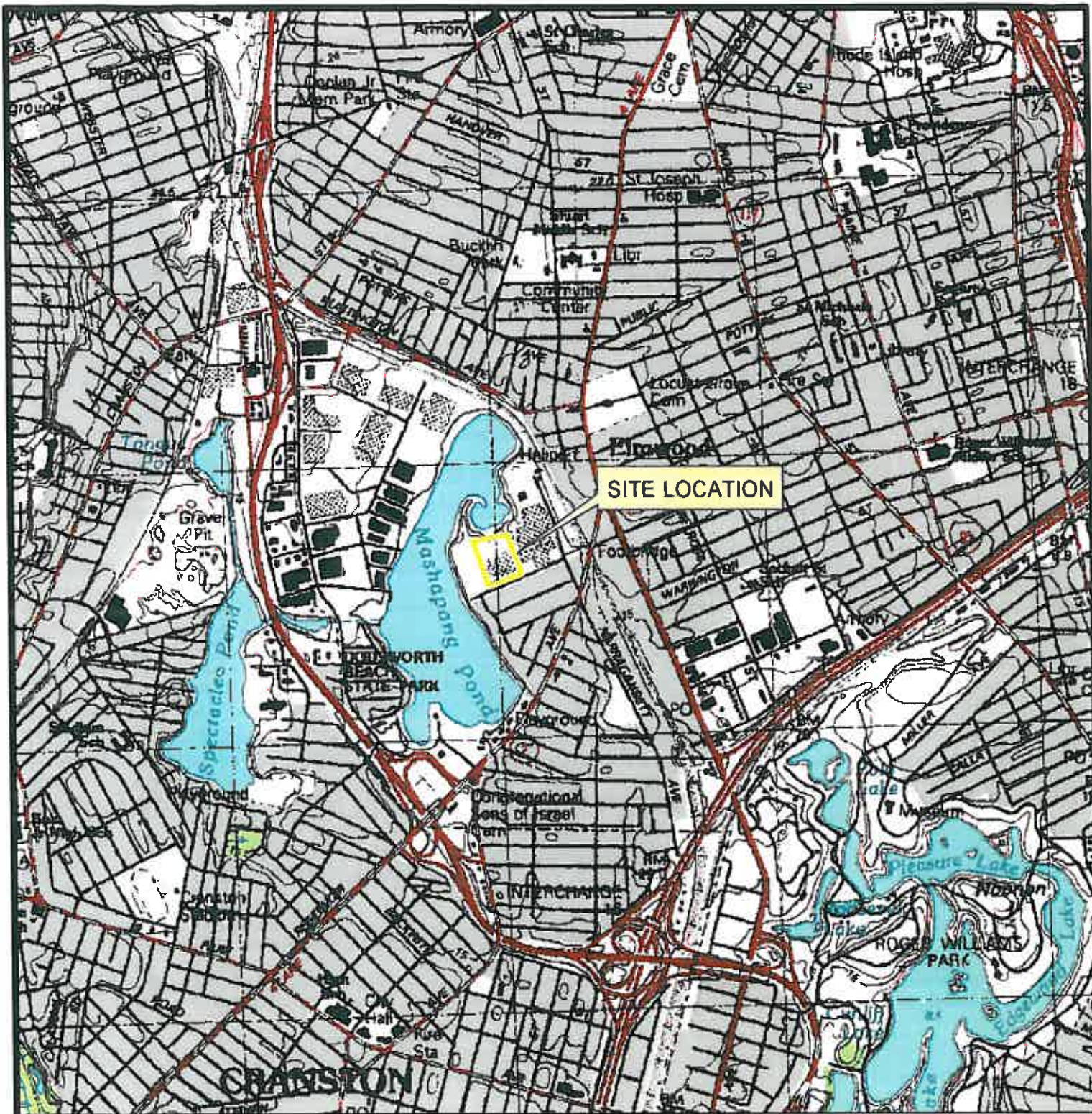
### 3. FUTURE ACTIVITIES AND NEXT QUARTERLY SUMMARY REPORT

During the next quarterly status reporting period ending 31 August 2009, the following activities will be completed in accordance with the Amended OA:

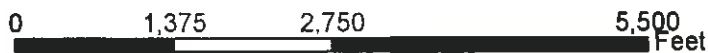
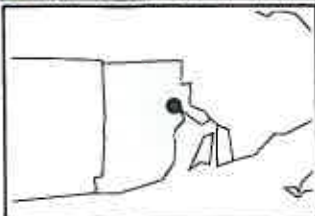
- Continuous indoor methane monitoring;
- Continuous monitoring of the operational status of the three rooftop fans;
- Monthly site inspections and monitoring using a photo-ionization detector with part-per-billion sensitivity;
- Collection of air samples from eight indoor locations, one ambient location, and six sub-slab monitoring points in July 2009.

These activities will be summarized in the next status report (Quarterly Status Report No. 8), expected to be submitted by the end of September 2009.





**SITE LOCATION**



FORMER GORHAM MANUFACTURING SITE, PARCEL B  
333 ADELAIDE AVENUE  
PROVIDENCE, RHODE ISLAND

FIGURE 1  
SITE LOCATION MAP

PROJECT MGR:  
TR

DESIGNED BY:  
DC

CREATED BY:  
DC

CHECKED BY:  
JP

SCALE:  
AS SHOWN

DATE:  
FEBRUARY 2005

PROJECT NO:  
6196501

FILE NO:  
I:RIFIG1  
333 ADELAIDE\_PROV.MXD



**Appendix A**  
**O&M Field Forms**

**Adelaide Avenue School - SSD & Interior Methane Monitoring System O&M Form**

Date of O&M: 4/29/2009 Performed by DMA/DB

PID/Methane Calibration? US Calibrated (yes/no) Replaced this O&M Visit? No (yes/no)

Date of last Methane Sensor Filter Replacement: 3/1/2009

General Status of SSD System: On-line  
 General Status of Methane Monitoring System: On-line

**Eng Cap/Fence Inspection Performed/Notes**

Monitoring/ Sampling Location	Sub-slab or gauge vacuum	Air Velocity (fpm)	VOC Monitoring PID (ppm)	Indoor Sensor (ppm)	Methane Monitoring		Air/Vapor Sample Collection				Comments/Notes (Ambient weather conditions, status of HVAC, possible monitoring/sampling interferences, etc ... continue on separate sheet if needed)		
					% Gas	% LEL*	Summa Can ID	Controller ID	Start Time (Inches Hg)	Start Vac (Inches Hg)		End Time	End Vac (Inches Hg)
Gymnasium	NA	NA	0.057	0	0	0	2835	0270	7:13	-30	7:45	-2	
Cafeteria	NA	NA	0.028	0	0	0	2991	0045	7:24	-30	7:58	-1	Cafeteria occupied
Kitchen Storage Room	NA	NA	0.004	0	0	0	7613	0019	7:26	-29	8:00	-1	
Elevator Hallway	NA	NA	0.053	0	0	0	7623	0289	7:23	-30	7:56	-1	
Room 145	NA	NA	0.000	0	0	0	3993	0404	7:15	-30	7:45	-2	
Room 152	NA	NA	0.000	0	0	0	7540	FC-0062	7:16	-30	7:46	-1	
Room 118	NA	NA	0.000	0	0	0	3994	0036	7:19	-30+	7:50	-4	
Room 110	NA	NA	0.000	0	0	0	4006	0272	7:20	-30	7:50	-1	
MP-1	0.07	NA	0.000	NA	0	0	-	-	-	-	-	-	
MP-2	0.12	NA	0.118	NA	0	0	-	-	-	-	-	-	
MP-3	0.05	NA	14.200	NA	0	0	0506	0152	9:10	-30+	9:38	-4	
MP-4	0.02	NA	0.654	NA	0	0	-	-	-	-	-	-	
MP-5	0.11	NA	0.580	NA	0	0	-	-	-	-	-	-	
MP-6	0.14	NA	3.470	NA	0	0	-	-	-	-	-	-	
MP-7	0.04	NA	0.112	NA	0	0	0381	0368	9:43	-29	10:12	-4	
MP-8	0.11	NA	.061	NA	0	0	-	-	-	-	-	-	
IMP-1	0.03	NA	0.44	NA	0	0	0063	0206	7:47	-30+	8:15	-1	
IMP-2	0.02	NA	0	NA	0	0	-	-	-	-	-	-	
IMP-3	0.01	NA	0	NA	0	0	0255	0448	8:17	-29	8:46	-1	
Roof-Top Fan 1	2.00	1430	0.000	NA	0	0	-	-	-	-	-	-	
Roof-Top Fan 2	3.70	1960	0.020	NA	0	0	-	-	-	-	-	-	
Roof-Top Fan 3	Broken	1130	0.530	NA	0	0	-	-	-	-	-	-	
Ambient Outdoor Air	NA	NA	0.000	NA	0	0	6872	0005	8:49	-29	9:22	-20	Still has vac. (northerly wind)

NA: not applicable  
 NIM: not monitored on this date.  
 NS: not sampled on this date.  
 \* RIDEEM Action Level for methane %LEL beneath the building is 10% and within the building is 1%. If these methane levels are exceeded, immediately notify EA Project Manager to initiate response protocol.

**Adelaide Avenue School - SSD & Interior Methane Monitoring System O&M Form**

Date of O&M 6/3/2009 Performed by DMA

PID/Methane Calibration? US Environmental (yes/no)  
 Replaced this O&M Visit? No (yes/no)

Date of last Methane Sensor Filler Replacement: 3/1/2009

General Status of SSD System: On-Line  
 General Status of Methane Monitoring System: On-Line

Eng Cap/Fence Inspection Performed/Notes: Intact - No deficiencies noted / Monthly Monitoring Event - No sampling took place during this event

Monitoring/ Sampling Location	Sub-slab or gauge vacuum	Air Velocity (fpm)	VOC Monitoring PID (ppm)	Methane Monitoring		AirVapor Sample Collection			Comments/Notes (Ambient weather conditions, status of HVAC, possible monitoring/sampling interferences, etc. ... continue on separate sheet if needed)
				Indoor Sensor (ppm)	(% Gas)	(% LEL)*	Summa Can ID	Controller ID	
Gymnasium	NA	NA	0.013	0					
Cafeteria	NA	NA	0	0					
Kitchen Storage Room	NA	NA	0	0					
Elevator Hallway	NA	NA	0.015	0					
Room 145	NA	NA	0	0					
Room 152	NA	NA	0	0					
Room 118	NA	NA	0.02	0					
Room 110	NA	NA	0	0					
MP-1	0.08	NA	1.731	NA					
MP-2	0.09	NA	0.138	NA					
MP-3	0.06	NA	23.3	NA					
MP-4	0.03	NA	0.837	NA					
MP-5	0.10	NA	0.629	NA					
MP-6	0.08	NA	54.7	NA					
MP-7	0.04	NA	0.218	NA					
MP-8	0.11	NA	0.096	NA					
IMP-1	0.04	NA	0.013	NA					
IMP-2	0.03	NA	0.011	NA					
IMP-3	0.03	NA	0.013	NA					
Roof-Top Fan 1	2.00	1353	0	NA					
Roof-Top Fan 2	3.80	2123	0.002	NA					
Roof-Top Fan 3	Broken	1256	3.55	NA					
Ambient Outdoor Air	NA	NA	0	NA					

NA: not applicable.  
 NM: not monitored on this date.  
 NS: not sampled on this date.  
 \* RIDEEM Action Level for methane %LEL beneath the building is 10% and within the building is 1% if these methane levels are exceeded, immediately notify EA Project Manager to initiate response protocol.

**Adelaide Avenue School - SSD & Interior Methane Monitoring System O&M Form**

Date of O&M 6/22/2009

Performed by DMA

PID/Methane Calibration? US Environmental

(yes/no) Replaced this O&M Visit? Yes (yes/no)

Date of last Methane Sensor Filter Replacement. 3/1/2009

General Status of SSD System: On-Line

General Status of Methane Monitoring System: On-Line

Eng. Cap/Fence Inspection Performed/Notes: Intact - No deficiencies noted / Monthly Monitoring Event - No sampling took place during this event.

Monitoring/ Sampling Location	Sub-slab or gauge vacuum	Air Velocity (fpm)	VOC Monitoring PID (ppm)	Indoor Sensor (ppm)	Methane Monitoring		Air/Vapor Sample Collection			Comments/Notes (Ambient weather conditions, status of HVAC, possible monitoring/sampling interferences, etc ... continue on separate sheet if needed)
					(% Gas)	(% LEL)	Summa Can ID	Controller ID	Start Time (inches Hg)	
Gymnasium	NA	NA	0	0						
Cafeteria	NA	NA	0	0						
Kitchen Storage Room	NA	NA	0	0						
Elevator Hallway	NA	NA	0	0						
Room 145	NA	NA	0	0						
Room 152	NA	NA	0	0						
Room 115	NA	NA	0	0						
Room 110	NA	NA	0	0						
MP-1	0.06	NA	1.473	NA						
MP-2	0.07	NA	0.127	NA						
MP-3	0.07	NA	2.6	NA						
MP-4	0.03	NA	0.056	NA						
MP-5	0.10	NA	0.329	NA						
MP-6	0.08	NA	21.2	NA						
MP-7	0.05	NA	0.127	NA						
MP-8	0.10	NA	0.038	NA						
IMP-1	0.02	NA	0.116	NA						
IMP-2	0.02	NA	0	NA						
IMP-3	0.02	NA	0	NA						
Roof-Top Fan 1	2.00	1286	0.012	NA						
Roof-Top Fan 2	3.80	1654	0.006	NA						
Roof-Top Fan 3	Broken	1326	1.2	NA						
Ambient Outdoor Air	NA	NA	0	NA						

NA not applicable  
 NM not monitored on this date.  
 NS not sampled on this date  
 \* RIDE/M Action Level for methane %LEL beneath the building is 10% and within the building is 1%. If these methane levels are exceeded, immediately notify EA Project Manager to initiate response protocol.

## **Appendix B**

### **Indoor and Ambient Outdoor Air Analytical Summary and Lab Reports**

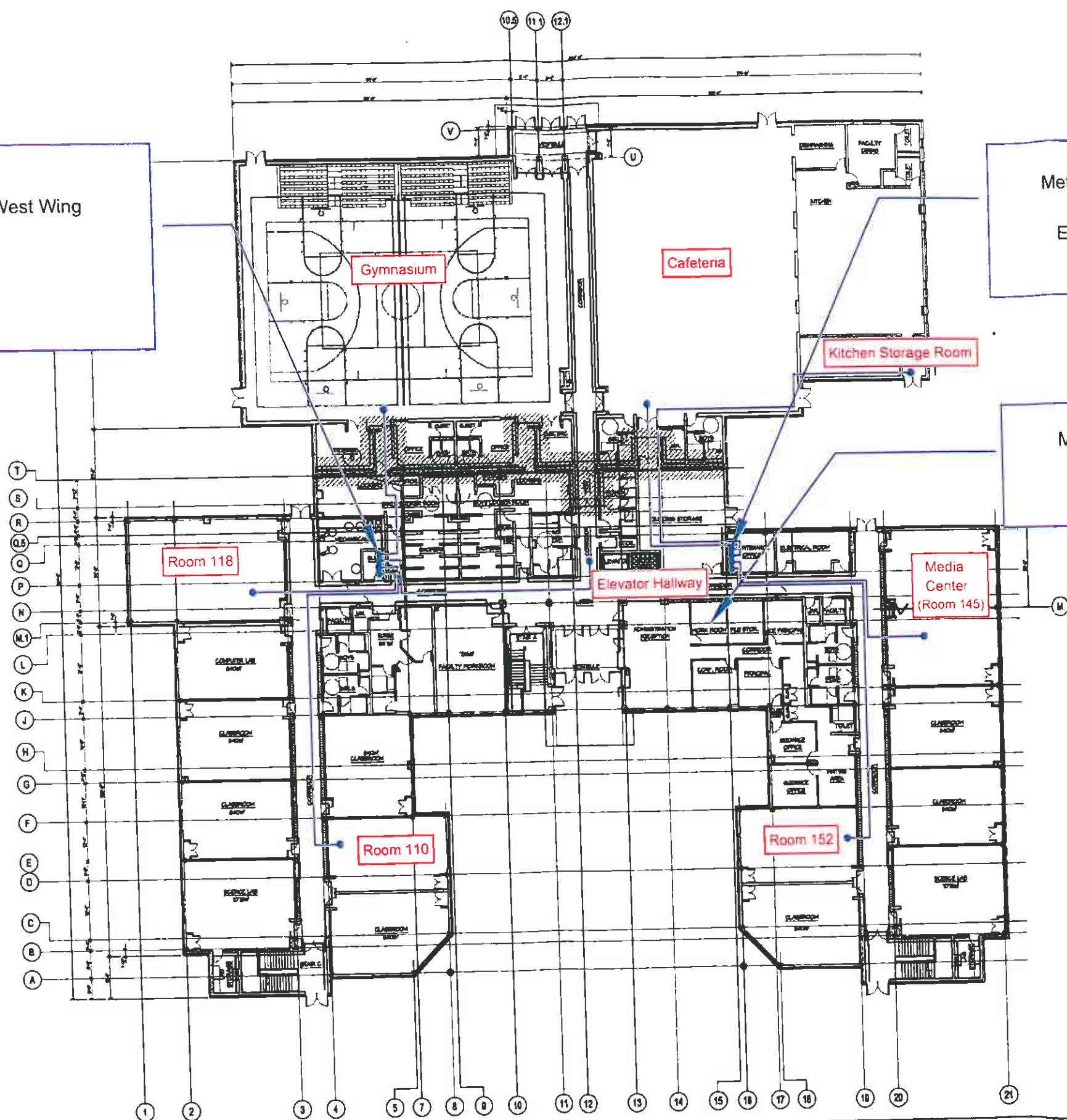


Methane Sensor Location in West Wing  
Electrical Room Area

Methane Sensor Location in East Wing  
Electrical Room/Maintenance Office  
Area.

Methane System Controller Location  
Adminstration Work Room

NOTE: NOT TO SCALE



PROJECT NORTH



DESIGNED BY PMG	DRAWN BY PMG	DATE 4-3-07	PROJECT NO. 61965.01	FILE NAME Gorham Layout
CHECKED BY PMG	PROJECT MGR. PMG	SCALE NTS	DRAWING NO. -	FIGURE N/A

INDOOR AIR SAMPLING AND METHANE MONITORING  
SYSTEM DIAGRAM - GORHAM HIGH SCHOOL  
PROVIDENCE, RHODE ISLAND

QUARTERLY STATUS REPORT  
APPENDIX B











Summary of Indoor Ambient Outdoor Air Sampling Data - Adelaide Avenue School Project - Volatile Organic Compounds  
March 2007 - April 2009

Year/Other Compounds (s) (1) - 16	C.T. Data/Program/Issues/Responsible Party/air Condition/Instruments/ROD/Instruments/Action/Level	Acoustic Blasting/Min	Calibration	Greenhouse	Flow Meter/Velocity	Room 118	Room 119	Mobile Case (Rm 119)	Room 153	Ambient/Outdoor	Unit		
Volatile Organic Compounds (s) (1) - 16 Benzene/Chloroform	0.034 / 0.13	15-Mar-07	0.130	0.130	1.300	0.130	0.130	0.130	0.130	0.130	U		
		22-Mar-07	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		28-Apr-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		29-Apr-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		25-May-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		26-Jun-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		23-Aug-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		29-Sep-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		8-Oct-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		4-Nov-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		8-Dec-07	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		8-Feb-08	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		21-Mar-08	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		15-Apr-08	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		27-May-08	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		21-Jun-08	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		28-Jul-08	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		21-Aug-08	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		18-Sep-08	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		21-Oct-08	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		25-Nov-08	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		20-Dec-08	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		19-Jan-09	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	U	
		23-Feb-09	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		26-Mar-09	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		23-Apr-09	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	U	
		Chloroform (s) (1) - 16	0.55	15-Mar-07	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U
				22-Mar-07	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
28-Apr-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
29-Apr-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
25-May-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
26-Jun-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
23-Aug-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
29-Sep-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
8-Oct-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
4-Nov-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
8-Dec-07	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
8-Feb-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
21-Mar-08	0.208			0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	U	
15-Apr-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
27-May-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
21-Jun-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
28-Jul-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
21-Aug-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
18-Sep-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
21-Oct-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
25-Nov-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
20-Dec-08	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
19-Jan-09	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
23-Feb-09	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
26-Mar-09	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
23-Apr-09	0.210			0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	U	
Chloroform (s) (1) - 16	0.50			15-Mar-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U
				22-Mar-07	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618
		28-Apr-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		29-Apr-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		25-May-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		26-Jun-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		23-Aug-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		29-Sep-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		8-Oct-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		4-Nov-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		8-Dec-07	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		8-Feb-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		21-Mar-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		15-Apr-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		27-May-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		21-Jun-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		28-Jul-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		21-Aug-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		18-Sep-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		21-Oct-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		25-Nov-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		20-Dec-08	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		19-Jan-09	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		23-Feb-09	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		26-Mar-09	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	
		23-Apr-09	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	U	





Summary of Indoor Ambient Outdoor Air Sampling Data - Adelaide Avenue School Project - Volatile Organic Compounds  
 March 2007 - April 2008

Yolatile Organic Compounds	CT Data Program Name: Residential Target Air Concentrations from TCEQ's Approval and Action Level	15-Minute Sampling Rate	Calculated	Comparison	Standard	Exceedance Frequency	Days	Range 1.15	Range 1.15	Median	Range 1.2	Standard	Range 1.2	Standard	Range 1.2	
Chloroform	16-Mar-07	1.300	1.190	U	1.000	U	1.000	1.000	U	1.190	1.000	U	1.190	1.000	U	
	23-Mar-07	1.030	1.030	U	1.000	U	1.000	1.030	U	1.030	1.000	U	1.030	1.000	U	
	26-Apr-07	1.030	1.030	U	1.000	U	1.000	1.030	U	1.030	1.000	U	1.030	1.000	U	
	21-May-07	0.870	0.870	U	0.800	U	0.800	0.870	U	0.870	0.800	U	0.870	0.800	U	
	19-Jun-07	0.880	0.880	U	0.800	U	0.800	0.880	U	0.880	0.800	U	0.880	0.800	U	
	20-Jul-07	0.880	0.880	U	0.800	U	0.800	0.880	U	0.880	0.800	U	0.880	0.800	U	
	22-Aug-07	1.200	1.100	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	22-Sep-07	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	14-Oct-07	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	7-Nov-07	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	4-Dec-07	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	5-Jan-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	8-Feb-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	27-Mar-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	18-Apr-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	21-May-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	25-Jun-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	28-Jul-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	28-Aug-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	29-Sep-08	1.200	1.200	U	1.000	U	1.000	1.200	U	1.200	1.000	U	1.200	1.000	U	
	16-Mar-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	22-Mar-07	0.870	0.870	U	0.800	U	0.800	0.870	U	0.870	0.800	U	0.870	0.800	U	
	28-Apr-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	31-May-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	29-Jun-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	30-Jul-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	21-Aug-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	20-Sep-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	14-Oct-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	14-Nov-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	14-Dec-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	11-Jan-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	8-Feb-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
8-Mar-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
29-Apr-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
29-May-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
26-Jun-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
11-Jul-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
8-Aug-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
8-Sep-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
27-Oct-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
24-Nov-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
18-Dec-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
21-Jan-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
18-Feb-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
22-Mar-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
29-Apr-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U		
1,2-Dichloroethane	16-Mar-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	22-Mar-07	0.870	0.870	U	0.800	U	0.800	0.870	U	0.870	0.800	U	0.870	0.800	U	
	28-Apr-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	31-May-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	29-Jun-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	30-Jul-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	21-Aug-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	20-Sep-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	14-Oct-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	14-Nov-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	14-Dec-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	11-Jan-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	8-Feb-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	8-Mar-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	29-Apr-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	29-May-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	26-Jun-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	11-Jul-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	8-Aug-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	8-Sep-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	27-Oct-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	24-Nov-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	18-Dec-08	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	21-Jan-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	18-Feb-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	22-Mar-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	29-Apr-09	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U	
	1,2,4-Trichloroethane	16-Mar-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U
		22-Mar-07	0.870	0.870	U	0.800	U	0.800	0.870	U	0.870	0.800	U	0.870	0.800	U
		28-Apr-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U
		31-May-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800	U	0.800	0.800	U
		29-Jun-07	0.800	0.800	U	0.800	U	0.800	0.800	U	0.800	0.800				



















the 1990s, the number of people with a mental health problem has increased in the UK (Mental Health Act 1983).

There is a growing awareness of the need to improve the lives of people with mental health problems. The UK Government has set out a strategy for mental health care (Department of Health 2005) and the World Health Organization has published a strategy for mental health care (World Health Organization 2003).

The UK Government's strategy for mental health care is based on the following principles: (1) to improve the lives of people with mental health problems; (2) to reduce the need for hospital care; (3) to improve the effectiveness of mental health services; (4) to improve the safety of mental health services; (5) to improve the quality of mental health services; (6) to improve the access to mental health services; (7) to improve the training of mental health professionals; (8) to improve the research into mental health problems.

The World Health Organization's strategy for mental health care is based on the following principles: (1) to improve the lives of people with mental health problems; (2) to reduce the need for hospital care; (3) to improve the effectiveness of mental health services; (4) to improve the safety of mental health services; (5) to improve the quality of mental health services; (6) to improve the access to mental health services; (7) to improve the training of mental health professionals; (8) to improve the research into mental health problems.

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The World Health Organization's strategy for mental health care is based on the following principles: (1) to improve the lives of people with mental health problems; (2) to reduce the need for hospital care; (3) to improve the effectiveness of mental health services; (4) to improve the safety of mental health services; (5) to improve the quality of mental health services; (6) to improve the access to mental health services; (7) to improve the training of mental health professionals; (8) to improve the research into mental health problems.



## ANALYTICAL REPORT

Lab Number: L0903759

Client: EA Engineering, Science and Tech  
2350 Post Road  
Warwick, RI 02886

ATTN: Mark Speer

Project Name: ALVEREZ HS

Project Number: 14613.01

Report Date: 04/06/09

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L0903759-01	GYMNASIUM	PROVIDENCE, RI	03/26/09 07:54
L0903759-02	CAFETERIA	PROVIDENCE, RI	03/26/09 07:41
L0903759-03	KITCHEN STORAGE	PROVIDENCE, RI	03/26/09 07:55
L0903759-04	ELEVATOR HALL	PROVIDENCE, RI	03/26/09 07:42
L0903759-05	RM 152	PROVIDENCE, RI	03/26/09 07:45
L0903759-06	RM 145	PROVIDENCE, RI	03/26/09 07:46
L0903759-07	RM 118	PROVIDENCE, RI	03/26/09 07:49
L0903759-08	RM 110	PROVIDENCE, RI	03/26/09 07:51
L0903759-09	AMBIENT OUTDOOR	PROVIDENCE, RI	03/26/09 07:48

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

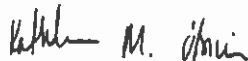
For additional information, please contact Client Services at 800-624-9220.

TO15-SIM

L0903759-03 results for Acetone should be considered estimated due to co-elution with a non-target peak.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 04/06/09

**AIR**



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-01  
Client ID: GYMNASIUM  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/01/09 20:09  
Analyst: RY

Date Collected: 03/26/09 07:54  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.305	0.020	1.50	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.022	0.020	0.087	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.129	0.020	0.634	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	0.546	0.070	1.74	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.086	0.020	0.542	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.023	0.020	0.110	0.098		1
Chloromethane	0.522	0.500	2.55	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-01  
Client ID: GYMNASIUM  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:54  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.430	0.050	2.12	0.247		1
Ethylbenzene	0.259	0.020	1.12	0.087		1
Methylene chloride	1.15	0.800	4.01	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	1.04	0.040	4.53	0.174		1
o-Xylene	0.251	0.020	1.09	0.087		1
Styrene	0.026	0.020	0.110	0.085		1
Tetrachloroethene	0.173	0.020	1.17	0.136		1
Toluene	1.06	0.020	3.99	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.281	0.020	1.51	0.107		1
Trichlorofluoromethane	0.209	0.050	1.18	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	3.72	2.00	8.82	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

### SAMPLE RESULTS

**Lab ID:** L0903759-02  
**Client ID:** CAFETERIA  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Anaytical Method:** 48,TO-15-SIM  
**Analytical Date:** 04/01/09 20:43  
**Analyst:** RY

**Date Collected:** 03/26/09 07:41  
**Date Received:** 03/27/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.175	0.020	0.859	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.021	0.020	0.084	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.064	0.020	0.315	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.022	0.020	0.129	0.120		1
Benzene	0.575	0.070	1.84	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.094	0.020	0.592	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.029	0.020	0.142	0.098		1
Chloromethane	0.549	0.500	2.68	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-02  
Client ID: CAFETERIA  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:41  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.444	0.050	2.19	0.247		1
Ethylbenzene	0.185	0.020	0.803	0.087		1
Methylene chloride	ND	0.800	1.87	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.657	0.040	2.85	0.174		1
o-Xylene	0.184	0.020	0.798	0.087		1
Styrene	0.027	0.020	0.113	0.085		1
Tetrachloroethene	0.179	0.020	1.21	0.136		1
Toluene	1.08	0.020	4.06	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.061	0.020	0.326	0.107		1
Trichlorofluoromethane	0.207	0.050	1.16	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	4.51	2.00	10.7	4.75		1
2-Butanone	0.531	0.500	1.56	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

### SAMPLE RESULTS

**Lab ID:** L0903759-03  
**Client ID:** KITCHEN STORAGE  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Analytical Method:** 48,TO-15-SIM  
**Analytical Date:** 04/01/09 21:16  
**Analyst:** RY

**Date Collected:** 03/26/09 07:55  
**Date Received:** 03/27/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.192	0.020	0.942	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.025	0.020	0.102	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.067	0.020	0.330	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.025	0.020	0.149	0.120		1
Benzene	0.730	0.070	2.33	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.090	0.020	0.568	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.048	0.020	0.236	0.098		1
Chloromethane	0.510	0.500	2.49	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-03  
Client ID: KITCHEN STORAGE  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:55  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.450	0.050	2.22	0.247		1
Ethylbenzene	0.215	0.020	0.932	0.087		1
Methylene chloride	2.17	0.800	7.54	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.711	0.040	3.08	0.174		1
o-Xylene	0.248	0.020	1.08	0.087		1
Styrene	0.191	0.020	0.814	0.085		1
Tetrachloroethene	0.226	0.020	1.53	0.136		1
Toluene	1.62	0.020	6.11	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.746	0.020	4.00	0.107		1
Trichlorofluoromethane	0.218	0.050	1.22	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	14.5	2.00	34.4	4.75		1
2-Butanone	0.817	0.500	2.41	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

### SAMPLE RESULTS

**Lab ID:** L0903759-04  
**Client ID:** ELEVATOR HALL  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Anaytical Method:** 48,TO-15-SIM  
**Analytical Date:** 04/01/09 21:50  
**Analyst:** RY

**Date Collected:** 03/26/09 07:42  
**Date Received:** 03/27/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.264	0.020	1.30	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethybenzene	0.110	0.020	0.540	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	0.516	0.070	1.65	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.089	0.020	0.561	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.024	0.020	0.115	0.098		1
Chloromethane	0.598	0.500	2.92	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-04  
Client ID: ELEVATOR HALL  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:42  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.424	0.050	2.09	0.247		1
Ethylbenzene	0.245	0.020	1.06	0.087		1
Methylene chloride	ND	0.800	2.10	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	1.00	0.040	4.34	0.174		1
o-Xylene	0.236	0.020	1.02	0.087		1
Styrene	0.026	0.020	0.110	0.085		1
Tetrachloroethene	0.145	0.020	0.980	0.136		1
Toluene	0.940	0.020	3.54	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.082	0.020	0.438	0.107		1
Trichlorofluoromethane	0.202	0.050	1.14	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	4.75	2.00	11.3	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

### SAMPLE RESULTS

**Lab ID:** L0903759-05  
**Client ID:** RM 152  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Analytical Method:** 48,TO-15-SIM  
**Analytical Date:** 04/01/09 22:23  
**Analyst:** RY

**Date Collected:** 03/26/09 07:45  
**Date Received:** 03/27/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.115	0.020	0.564	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.040	0.020	0.198	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.025	0.020	0.150	0.120		1
Benzene	0.590	0.070	1.88	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.086	0.020	0.542	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.022	0.020	0.109	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-05  
Client ID: RM 152  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:45  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.430	0.050	2.12	0.247		1
Ethylbenzene	0.136	0.020	0.589	0.087		1
Methylene chloride	ND	0.800	1.99	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.431	0.040	1.87	0.174		1
o-Xylene	0.150	0.020	0.651	0.087		1
Styrene	0.032	0.020	0.138	0.085		1
Tetrachloroethene	0.279	0.020	1.89	0.136		1
Toluene	1.62	0.020	6.08	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.084	0.020	0.450	0.107		1
Trichlorofluoromethane	0.201	0.050	1.13	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	5.05	2.00	12.0	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

### SAMPLE RESULTS

**Lab ID:** L0903759-06  
**Client ID:** RM 145  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Analytical Method:** 48,TO-15-SIM  
**Analytical Date:** 04/01/09 22:56  
**Analyst:** RY

**Date Collected:** 03/26/09 07:46  
**Date Received:** 03/27/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.020	0.020	0.109	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.150	0.020	0.737	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.050	0.020	0.246	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.020	0.020	0.120	0.120		1
Benzene	0.710	0.070	2.27	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.090	0.020	0.566	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.020	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
 Project Number: 14613.01

Lab Number: L0903759  
 Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-06  
 Client ID: RM 145  
 Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:46  
 Date Received: 03/27/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.420	0.050	2.08	0.247		1
Ethylbenzene	0.170	0.020	0.738	0.087		1
Methylene chloride	1.17	0.800	4.06	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.540	0.040	2.34	0.174		1
o-Xylene	0.190	0.020	0.824	0.087		1
Styrene	0.030	0.020	0.128	0.085		1
Tetrachloroethene	0.210	0.020	1.42	0.136		1
Toluene	1.56	0.020	5.87	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.300	0.020	1.61	0.107		1
Trichlorofluoromethane	0.200	0.050	1.12	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	4.44	2.00	10.5	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-07  
Client ID: RM 118  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/01/09 23:30  
Analyst: RY

Date Collected: 03/26/09 07:49  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.107	0.020	0.526	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.040	0.020	0.194	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.032	0.020	0.193	0.120		1
Benzene	0.483	0.070	1.54	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.093	0.020	0.584	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.027	0.020	0.133	0.098		1
Chloromethane	0.596	0.500	2.91	2.44		1
cis-1,2-Dichloroethene	0.020	0.020	0.079	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-07  
Client ID: RM 118  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:49  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.449	0.050	2.22	0.247		1
Ethylbenzene	0.118	0.020	0.511	0.087		1
Methylene chloride	ND	0.800	1.85	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.365	0.040	1.58	0.174		1
o-Xylene	0.127	0.020	0.551	0.087		1
Styrene	0.029	0.020	0.125	0.085		1
Tetrachloroethene	0.160	0.020	1.08	0.136		1
Toluene	1.03	0.020	3.90	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.119	0.020	0.639	0.107		1
Trichlorofluoromethane	0.219	0.050	1.23	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	5.81	2.00	13.8	4.75		1
2-Butanone	0.541	0.500	1.59	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

### SAMPLE RESULTS

**Lab ID:** L0903759-08  
**Client ID:** RM 110  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Analytical Method:** 48,TO-15-SIM  
**Analytical Date:** 04/02/09 00:04  
**Analyst:** RY

**Date Collected:** 03/26/09 07:51  
**Date Received:** 03/27/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.115	0.020	0.563	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.038	0.020	0.185	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.024	0.020	0.146	0.120		1
Benzene	0.692	0.070	2.21	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.089	0.020	0.561	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.024	0.020	0.119	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-08  
Client ID: RM 110  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:51  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.440	0.050	2.18	0.247		1
Ethylbenzene	0.149	0.020	0.648	0.087		1
Methylene chloride	0.930	0.800	3.23	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.458	0.040	1.99	0.174		1
o-Xylene	0.166	0.020	0.718	0.087		1
Styrene	0.026	0.020	0.111	0.085		1
Tetrachloroethene	0.194	0.020	1.32	0.136		1
Toluene	1.26	0.020	4.73	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.220	0.020	1.18	0.107		1
Trichlorofluoromethane	0.212	0.050	1.19	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	5.05	2.00	12.0	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-09  
Client ID: AMBIENT OUTDOOR  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/02/09 00:37  
Analyst: RY

Date Collected: 03/26/09 07:48  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.150	0.020	0.739	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.048	0.020	0.238	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	0.749	0.070	2.39	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.096	0.020	0.604	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.022	0.020	0.108	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

### SAMPLE RESULTS

Lab ID: L0903759-09  
Client ID: AMBIENT OUTDOOR  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:48  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.432	0.050	2.13	0.247		1
Ethylbenzene	0.168	0.020	0.727	0.087		1
Methylene chloride	3.36	0.800	11.6	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.533	0.040	2.31	0.174		1
o-Xylene	0.190	0.020	0.826	0.087		1
Styrene	0.029	0.020	0.122	0.085		1
Tetrachloroethene	0.204	0.020	1.38	0.136		1
Toluene	1.41	0.020	5.31	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	1.28	0.020	6.87	0.107		1
Trichlorofluoromethane	0.207	0.050	1.16	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	4.08	2.00	9.68	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/01/09 14:26

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-09 Batch: WG357471-3						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	ND	0.020	ND	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	ND	0.070	ND	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	ND	0.020	ND	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/01/09 14:26

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-09 Batch: WG357471-3</b>						
Dichlorodifluoromethane	ND	0.050	ND	0.247		1
Ethylbenzene	ND	0.020	ND	0.087		1
Methylene chloride	ND	0.800	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	ND	0.040	ND	0.174		1
o-Xylene	ND	0.020	ND	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	ND	0.020	ND	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	ND	0.050	ND	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	ND	2.00	ND	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



# Lab Control Sample Analysis

Batch Quality Control

Lab Number: L0903759  
 Report Date: 04/06/09

Project Name: ALVEREZ HS  
 Project Number: 14613.01

Parameter	LCS %Recovery	LCS %Recovery	LCS %Recovery	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 Batch: WG357471-2</b>					
1,1,1-Trichloroethane	122	-	70-130	-	-
1,1,1,2-Tetrachloroethane	88	-	70-130	-	-
1,1,2,2-Tetrachloroethane	84	-	70-130	-	-
1,1,2-Trichloroethane	108	-	70-130	-	-
1,1-Dichloroethane	110	-	70-130	-	-
1,1-Dichloroethene	95	-	70-130	-	-
1,2,4-Trimethylbenzene	87	-	70-130	-	-
1,2-Dibromoethane	80	-	70-130	-	-
1,2-Dichlorobenzene	76	-	70-130	-	-
1,2-Dichloroethane	126	-	70-130	-	-
1,2-Dichloropropane	118	-	70-130	-	-
1,3,5-Trimethylbenzene	90	-	70-130	-	-
1,3-Butadiene	98	-	70-130	-	-
1,3-Dichlorobenzene	78	-	70-130	-	-
1,4-Dichlorobenzene	76	-	70-130	-	-
Benzene	107	-	70-130	-	-
Bromodichloromethane	117	-	70-130	-	-
Bromoform	83	-	70-130	-	-
Bromomethane	73	-	70-130	-	-
Carbon tetrachloride	117	-	70-130	-	-
Chlorobenzene	89	-	70-130	-	-



# Lab Control Sample Analysis

Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 Batch: WG357471-2</b>					
Chloroethane	95	-	70-130	-	-
Chloroform	106	-	70-130	-	-
Chloromethane	95	-	70-130	-	-
cis-1,2-Dichloroethene	111	-	70-130	-	-
cis-1,3-Dichloropropene	104	-	70-130	-	-
Dibromochloromethane	84	-	70-130	-	-
Dichlorodifluoromethane	98	-	70-130	-	-
Ethylbenzene	96	-	70-130	-	-
1,1,2-Trichloro-1,2,2-Trifluoroethane	89	-	70-130	-	-
1,2-Dichloro-1,1,2,2-tetrafluoroethane	89	-	70-130	-	-
Methylene chloride	100	-	70-130	-	-
Methyl tert butyl ether	85	-	70-130	-	-
Naphthalene	70	-	70-130	-	-
p/m-Xylene	102	-	70-130	-	-
o-Xylene	100	-	70-130	-	-
Styrene	89	-	70-130	-	-
Tetrachloroethene	84	-	70-130	-	-
Toluene	90	-	70-130	-	-
trans-1,2-Dichloroethene	102	-	70-130	-	-
trans-1,3-Dichloropropene	88	-	70-130	-	-
Trichloroethene	102	-	70-130	-	-



### Lab Control Sample Analysis

Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

Parameter	LCS %Recovery	LCS %Recovery	LCS %Recovery	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 Batch: WG357471-2</b>					
1,2,4-Trichlorobenzene	74	-	70-130	-	-
Trichlorofluoromethane	100	-	70-130	-	-
Vinyl chloride	93	-	70-130	-	-
Acrylonitrile	90	-	70-130	-	-
n-Butylbenzene	78	-	70-130	-	-
sec-Butylbenzene	81	-	70-130	-	-
Isopropylbenzene	91	-	70-130	-	-
p-Isopropyltoluene	75	-	70-130	-	-
Acetone	79	-	70-130	-	-
2-Bulanone	86	-	70-130	-	-
4-Methyl-2-pentanone	108	-	70-130	-	-



# Lab Duplicate Analysis

Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG357471-4 QC Sample: L0903665-01 Client ID: DUP</b>					
<b>Sample</b>					
1,1,1-Trichloroethane	ND	ND	ppbv	NC	25
1,1,1,2-Tetrachloroethane	ND	ND	ppbv	NC	25
1,1,1,2,2-Tetrachloroethane	ND	ND	ppbv	NC	25
1,1,1,2-Trichloroethane	ND	ND	ppbv	NC	25
1,1-Dichloroethane	ND	ND	ppbv	NC	25
1,1-Dichloroethane	ND	ND	ppbv	NC	25
1,2,4-Trimethylbenzene	0.436	0.410	ppbv	6	25
1,2-Dibromoethane	ND	ND	ppbv	NC	25
1,2-Dichlorobenzene	ND	ND	ppbv	NC	25
1,2-Dichloroethane	0.030	0.026	ppbv	16	25
1,2-Dichloropropane	ND	ND	ppbv	NC	25
1,3,5-Trimethylbenzene	0.154	0.141	ppbv	9	25
1,3-Dichlorobenzene	ND	ND	ppbv	NC	25
1,4-Dichlorobenzene	0.228	0.211	ppbv	8	25
Benzene	0.240	0.209	ppbv	14	25
Bromodichloromethane	ND	ND	ppbv	NC	25
Bromoform	ND	ND	ppbv	NC	25
Carbon tetrachloride	0.108	0.095	ppbv	13	25
Chlorobenzene	ND	ND	ppbv	NC	25



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG357471-4 QC Sample: L0903665-01 Client ID: DUP Sample</b>					
Chloroethane	ND	ND	ppbV	NC	25
Chloroform	0.044	0.039	ppbV	13	25
Chloromethane	1.19	1.15	ppbV	3	25
cis-1,2-Dichloroethene	0.033	0.029	ppbV	13	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
Dichlorodifluoromethane	0.470	0.436	ppbV	8	25
Ethylbenzene	0.332	0.290	ppbV	14	25
Methylene chloride	0.879	0.760	ppbV	15	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
p/m-Xylene	1.11	0.983	ppbV	12	25
o-Xylene	0.380	0.338	ppbV	12	25
Styrene	0.292	0.268	ppbV	9	25
Tetrachloroethene	2.72	2.35	ppbV	15	25
Toluene	3.72	3.17	ppbV	16	25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Trichloroethene	9.42	8.18	ppbV	14	25
Trichlorofluoromethane	0.242	0.217	ppbV	11	25



# Lab Duplicate Analysis

Batch Quality Control

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903759  
Report Date: 04/06/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09</b> <b>Sample</b>	QC Batch ID: WG357471-4	QC Sample: L0903665-01	ppbV	NC	Client ID: DUP 25

Vinyl chloride

ND

ND

ppbV

NC

25





Project Name: ALVEREZ HS

Project Number: 14613.01

04060916:34

Lab Number: L0903759

Report Date: 04/06/09

### Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Cleaning Batch ID	Initial Pressure (In. Hg)	Pressure on Receipt (In. Hg)	Flow Out mL/min	Flow In mL/min	% RSD
L0903759-01	GYMNASIUM	0452	#90 SV		-	-	80	82	2
L0903759-01	GYMNASIUM	318	2.7L Can	10902478	-29.1	-1.0	-	-	-
L0903759-02	CAFETERIA	0116	#30 AMB		-	-	78	87	11
L0903759-02	CAFETERIA	558	2.7L Can	10902478	-29.5	-0.2	-	-	-
L0903759-03	KITCHEN STORAGE	0001	#16 AMB		-	-	77	72	7
L0903759-03	KITCHEN STORAGE	522	2.7L Can	10902478	-29.7	0.5	-	-	-
L0903759-04	ELEVATOR HALL	0075	#90 SV		-	-	76	81	6
L0903759-04	ELEVATOR HALL	210	2.7L Can	10902478	-29.6	-2.1	-	-	-
L0903759-05	RM 152	0043	#90 SV		-	-	78	78	0
L0903759-05	RM 152	145	2.7L Can	10902478	-29.7	-4.2	-	-	-
L0903759-06	RM 145	0360	#16 AMB		-	-	81	84	4
L0903759-06	RM 145	323	2.7L Can	10902478	-29.7	-2.5	-	-	-
L0903759-07	RM 118	0173	#16 AMB		-	-	80	83	4
L0903759-07	RM 118	163	2.7L Can	10902478	-29.7	-2.0	-	-	-
L0903759-08	RM 110	0409	#90 SV		-	-	76	82	8
L0903759-08	RM 110	506	2.7L Can	10902478	-29.7	-1.4	-	-	-
L0903759-09	AMBIENT OUTDOOR	0045	#90 SV		-	-	80	84	5



Project Name: ALVEREZ HS

Project Number: 14613.01

04060916:34

Lab Number: L0903759

Report Date: 04/06/09

### Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Cleaning Batch ID	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Out mL/min	Flow In mL/min	% RSD
L0903759-09	AMBIENT OUTDOOR	402	2.7L Can	I0902478	-29.7	-0.1	-	-	-



Project Name: ALVEREZ HS

Lab Number: L0903759

Project Number: 14613.01

Report Date: 04/06/09

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

## Cooler Information

Cooler	Custody Seal
N/A	Present/Intact

## Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0903759-01A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-02A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-03A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-04A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-05A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-06A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-07A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-08A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903759-09A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)

\*Hold days indicated by values in parentheses

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

## GLOSSARY

### Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1.8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

*	· The batch duplicate RPD exceeds the acceptance criteria. This flag is not applicable when the sample concentrations are less than 5x the RDL. (Metals only.)
A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
N	· The matrix spike recovery exceeds the acceptance criteria. This flag is not applicable when the sample concentration is greater than 4x the spike added. (Metals only.)
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**Report Format:** Data Usability Report



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903759  
**Report Date:** 04/06/09

## REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised February 18, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Chloride, Fluoride, Sulfate, Sulfite, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), Total Cyanide, Bromide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Ignitability, Corrosivity, TCLP 1311, Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### Florida Department of Health Certificate/Lab ID: E87814.

*Non-Potable Water* (Inorganic Parameters: SM2320B, 4500NH3-F, EPA 120.1, SM2510B, 2340B, EPA 245.1, EPA 365.2, EPA 150.1, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 335.2, 420.1, SM2540G, EPA 180.1. Organic Parameters: EPA 624, 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 9050, 7470, 7471, 9045, EPA 7.3.3.2, EPA 7.3.4.2, 9014, 9065. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### Louisiana Department of Environmental Quality Certificate/Lab ID: 03090.

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

### Maine Department of Human Services Certificate/Lab ID: MA0030.

*Wastewater* (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

### Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

### New Hampshire Department of Environmental Services Certificate/Lab ID: 2206.

*Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)*

**New Jersey Department of Environmental Protection Certificate/Lab ID: MA015.**

*Non-Potable Water (Inorganic Parameters: SW-846 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)*

*Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)*

*Atmospheric Organic Parameters (EPA TO-15)*

**New York Department of Health Certificate/Lab ID: 11627.**

*Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)*

*Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035.)*

*Air & Emissions (EPA TO-15.)*

**Rhode Island Department of Health Certificate/Lab ID: LAO00299.**

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX.**

*Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7471. Organic Parameters: EPA 8015, 8270.)*

**Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. Registered Laboratory.**

**U.S. Army Corps of Engineers**

**ALPHA**  
CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048  
TEL: 508-822-9300 FAX: 508-822-3288

**AIR ANALYSIS**

PAGE 1 OF 1

Date Rec'd In Lab:

ALPHA Job #: 20903759

**Project Information**

Project Name: Alvener HS

Project Location: Randome, RI

Project #: 14613.01

Project Manager: Mark Speer

ALPHA Quote #:

Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)

Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Email: mark@ceast.com

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments:

**Report Information - Data Deliverables**

FAX

ADEX

Criteria Checker: \_\_\_\_\_

Other Formats: \_\_\_\_\_

EMAIL (standard pdf report)

Additional Deliverables:

Report to: (if different than Project Manager)

**Billing Information**

Same as Client info

PO #:

**Regulatory Requirements/Report Limits**

State/Fed

Program

Criteria

CT Target in door air concentrations

**All Columns Below Must Be Filled Out**

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection				Sample Matrix*	Sampler's Initials	Can Size	I.D. Can	I.D. Flow Controller	ANALYSIS	Sample Comments (i.e. PID)
		Date	Start Time	End Time	Vacuum							
20903759-1	Cypermethrin	3/24/09	7:24	7:54	30	3	AA	2.7L	519	0852	X	DID = .032
-2	Cyfluthrin	7/11	7:41	8:00	30	2			558	0116		.038
-3	L.H. Stamps	7/16	7:55	8:30	30	2			522	0009		.033
-4	Fluorfenox	7/12	7:42	8:20	30	2			210	0005		.018
-5	LM 152	7/17	7:45	8:30	30	5			145	0045		.068
-6	LM 145	7/16	7:46	8:30	30	5			323	0360		.015
-7	LM 118	7:20	7:49	8:25	30	4			163	0125		.001
-8	LM 110	7:22	7:51	8:30	30	3			506	0109		D
-9	Ambient Data	7:19	7:48	8:30	30	2			403	0045		D

**\*SAMPLE MATRIX CODES**

AA = Ambient Air (Indoor/Outdoor)  
SV = Soil Vapor/Landfill Gas/SVE  
Other = Please Specify

Container Type

5

Requested By:

Date/Time

Received By:

Date/Time

Don Sands

7/22/09 13:30

Don Sands

7/27/09 13:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



the 1990s, the number of people in the world who are illiterate has increased from 1.1 billion to 1.2 billion (UNESCO, 2003).

There are a number of reasons for this increase. One of the main reasons is that the population of the world is growing rapidly. In 1990, the world population was 5.3 billion. In 2003, it was 6.1 billion. This means that there are 800 million more people in the world than there were in 1990.

Another reason is that the number of people who are illiterate is increasing in many countries. In 1990, there were 1.1 billion illiterate people in the world. In 2003, there were 1.2 billion illiterate people in the world. This means that there are 100 million more illiterate people in the world than there were in 1990.

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the 1990s, the number of people in the world who are living in poverty has increased from 1.2 billion to 1.6 billion (World Bank 2000).

There are a number of reasons for this increase in poverty. One of the main reasons is the rapid population growth in the developing countries. The population of the world is expected to reach 8 billion by the year 2025 (United Nations 2000). This rapid population growth is putting a huge strain on the world's resources, particularly in the developing countries.

Another reason for the increase in poverty is the rapid technological change in the developed countries. The rapid technological change is creating a huge demand for skilled labour in the developed countries, which is leading to a large increase in the wages of skilled workers. However, the demand for unskilled labour is falling, which is leading to a large decrease in the wages of unskilled workers. This is leading to a large increase in the number of people who are living in poverty in the developed countries.

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## ANALYTICAL REPORT

Lab Number: L0905469

Client: EA Engineering, Science and Tech  
2350 Post Road  
Warwick, RI 02886

ATTN: Mark Speer

Project Name: ALVEREZ HS

Project Number: 14613.01

Report Date: 05/07/09

Certifications & Approvals. MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L0905469-01	GYMNASIUM	PROVIDENCE, RI	04/29/09 07:43
L0905469-02	CAFETERIA	PROVIDENCE, RI	04/29/09 07:58
L0905469-03	KITCHEN STORAGE	PROVIDENCE, RI	04/29/09 08:00
L0905469-04	ELEVATOR HALLWAY	PROVIDENCE, RI	04/29/09 07:55
L0905469-05	RM 145	PROVIDENCE, RI	04/29/09 07:45
L0905469-06	RM 152	PROVIDENCE, RI	04/29/09 07:46
L0905469-07	RM 118	PROVIDENCE, RI	04/29/09 07:50
L0905469-08	RM 110	PROVIDENCE, RI	04/29/09 07:50
L0905469-09	AMBIENT OUTDOOR	PROVIDENCE, RI	04/29/09 09:22

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

#### Volatile Organics in Air by SIM

The WG361122-2 LCS recovery associated with L0905469-01 through -07, and -09, is below the acceptance criteria of 70-130% for trans-1,3-Dichloropropene (67%). The LCS was within overall method allowances, therefore the analysis proceeded.

The WG361122-6 LCS recovery associated with L0905469 -08 is above the acceptance criteria of 70-130% for Carbon tetrachloride (142%). The LCS was within overall method allowances, therefore the analysis proceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 05/07/09

**AIR**



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-01  
Client ID: GYMNASIUM  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/04/09 17:35  
Analyst: BS

Date Collected: 04/29/09 07:43  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.274	0.020	1.34	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.138	0.020	0.678	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.030	0.020	0.180	0.120		1
Benzene	0.104	0.070	0.332	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.095	0.020	0.597	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	0.737	0.500	3.60	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-01  
Client ID: GYMNASIUM  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 07:43  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.497	0.050	2.46	0.247		1
Ethylbenzene	0.146	0.020	0.633	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.541	0.040	2.35	0.174		1
o-Xylene	0.123	0.020	0.534	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.185	0.020	0.697	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.238	0.050	1.34	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	3.05	2.00	7.23	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-02  
Client ID: CAFETERIA  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/04/09 18:08  
Analyst: BS

Date Collected: 04/29/09 07:58  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.075	0.020	0.368	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.039	0.020	0.192	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.024	0.020	0.144	0.120		1
Benzene	0.112	0.070	0.358	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.083	0.020	0.522	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.025	0.020	0.122	0.098		1
Chloromethane	0.597	0.500	2.91	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-02  
Client ID: CAFETERIA  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 07:58  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.458	0.050	2.26	0.247		1
Ethylbenzene	0.054	0.020	0.234	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.169	0.040	0.733	0.174		1
o-Xylene	0.043	0.020	0.186	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.158	0.020	0.595	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.208	0.050	1.17	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	2.40	2.00	5.70	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

### SAMPLE RESULTS

**Lab ID:** L0905469-03  
**Client ID:** KITCHEN STORAGE  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Analytical Method:** 48,TO-15-SIM  
**Analytical Date:** 05/04/09 18:43  
**Analyst:** BS

**Date Collected:** 04/29/09 08:00  
**Date Received:** 04/30/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.022	0.020	0.120	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.031	0.020	0.152	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.041	0.020	0.246	0.120		1
Benzene	0.186	0.070	0.594	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.085	0.020	0.534	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.039	0.020	0.190	0.098		1
Chloromethane	0.556	0.500	2.71	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-03  
Client ID: KITCHEN STORAGE  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 08:00  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.507	0.050	2.50	0.247		1
Ethylbenzene	0.045	0.020	0.195	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.105	0.040	0.456	0.174		1
o-Xylene	0.033	0.020	0.143	0.087		1
Styrene	0.121	0.020	0.515	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.207	0.020	0.779	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.265	0.050	1.49	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	ND	2.00	ND	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

### SAMPLE RESULTS

**Lab ID:** L0905469-04  
**Client ID:** ELEVATOR HALLWAY  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Anaytical Method:** 48,TO-15-SIM  
**Analytical Date:** 05/04/09 19:51  
**Analyst:** BS

**Date Collected:** 04/29/09 07:55  
**Date Received:** 04/30/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.244	0.020	1.20	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.128	0.020	0.629	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.029	0.020	0.174	0.120		1
Benzene	0.104	0.070	0.332	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.085	0.020	0.534	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.021	0.020	0.102	0.098		1
Chloromethane	0.764	0.500	3.73	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-04  
Client ID: ELEVATOR HALLWAY  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 07:55  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.469	0.050	2.32	0.247		1
Ethylbenzene	0.124	0.020	0.538	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.450	0.040	1.95	0.174		1
o-Xylene	0.102	0.020	0.442	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.187	0.020	0.704	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.226	0.050	1.27	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	3.47	2.00	8.24	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

### SAMPLE RESULTS

**Lab ID:** L0905469-05  
**Client ID:** RM 145  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Air  
**Analytical Method:** 48,TO-15-SIM  
**Analytical Date:** 05/04/09 20:26  
**Analyst:** BS

**Date Collected:** 04/29/09 07:45  
**Date Received:** 04/30/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.042	0.020	0.229	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.022	0.020	0.108	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.034	0.020	0.204	0.120		1
Benzene	0.099	0.070	0.316	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.090	0.020	0.566	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	0.567	0.500	2.77	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-05  
Client ID: RM 145  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 07:45  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.482	0.050	2.38	0.247		1
Ethylbenzene	0.032	0.020	0.139	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.072	0.040	0.312	0.174		1
o-Xylene	0.024	0.020	0.104	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.163	0.020	0.614	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.226	0.050	1.27	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	3.19	2.00	7.57	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-06  
Client ID: RM 152  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/04/09 20:59  
Analyst: BS

Date Collected: 04/29/09 07:46  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.032	0.020	0.174	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.020	0.020	0.098	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.020	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.028	0.020	0.168	0.120		1
Benzene	0.105	0.070	0.335	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.089	0.020	0.559	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	0.607	0.500	2.96	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-06  
Client ID: RM 152  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 07:46  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.478	0.050	2.36	0.247		1
Ethylbenzene	0.035	0.020	0.152	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.080	0.040	0.347	0.174		1
o-Xylene	0.025	0.020	0.108	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.162	0.020	0.610	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.230	0.050	1.29	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	4.05	2.00	9.61	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-07  
Client ID: RM 118  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/04/09 21:33  
Analyst: BS

Date Collected: 04/29/09 07:50  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.039	0.020	0.192	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.022	0.020	0.089	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.020	0.020	0.098	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.035	0.020	0.210	0.120		1
Benzene	0.095	0.070	0.303	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.084	0.020	0.528	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.021	0.020	0.102	0.098		1
Chloromethane	0.641	0.500	3.13	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

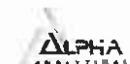
Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-07  
Client ID: RM 118  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 07:50  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.457	0.050	2.26	0.247		1
Ethylbenzene	0.045	0.020	0.195	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.110	0.040	0.477	0.174		1
o-Xylene	0.038	0.020	0.165	0.087		1
Styrene	0.032	0.020	0.136	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.278	0.020	1.05	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.211	0.050	1.18	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	8.08	2.00	19.2	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-08  
Client ID: RM 110  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/06/09 22:29  
Analyst: BS

Date Collected: 04/29/09 07:50  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.028	0.020	0.153	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	ND	0.020	ND	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.028	0.020	0.168	0.120		1
Benzene	0.112	0.070	0.358	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.099	0.020	0.622	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	0.546	0.500	2.66	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

### SAMPLE RESULTS

**Lab ID:** L0905469-08  
**Client ID:** RM 110  
**Sample Location:** PROVIDENCE, RI

**Date Collected:** 04/29/09 07:50  
**Date Received:** 04/30/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.469	0.050	2.32	0.247		1
Ethylbenzene	0.032	0.020	0.139	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.071	0.040	0.308	0.174		1
o-Xylene	0.023	0.020	0.10	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.158	0.020	0.595	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.212	0.050	1.19	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	3.97	2.00	9.42	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-09  
Client ID: AMBIENT OUTDOOR  
Sample Location: PROVIDENCE, RI  
Matrix: Air  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/04/09 22:10  
Analyst: BS

Date Collected: 04/29/09 09:22  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.050	0.020	0.272	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.029	0.020	0.142	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.061	0.020	0.366	0.120		1
Benzene	0.110	0.070	0.351	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.082	0.020	0.515	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	0.515	0.500	2.51	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905469-09  
Client ID: AMBIENT OUTDOOR  
Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 09:22  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.437	0.050	2.16	0.247		1
Ethylbenzene	0.041	0.020	0.178	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.102	0.040	0.442	0.174		1
o-Xylene	0.036	0.020	0.156	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	0.253	0.020	0.953	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	0.212	0.050	1.19	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	3.25	2.00	7.70	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





Project Name: ALVEREZ HS  
 Project Number: 14613.01

Lab Number: L0905469  
 Report Date: 05/07/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM  
 Analytical Date: 05/04/09 17:01

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07,09 Batch: WG361122-3</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	ND	0.020	ND	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	ND	0.070	ND	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	ND	0.020	ND	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/04/09 17:01

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07,09 Batch: WG361122-3</b>						
Dichlorodifluoromethane	ND	0.050	ND	0.247		1
Ethylbenzene	ND	0.020	ND	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	ND	0.040	ND	0.174		1
o-Xylene	ND	0.020	ND	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	ND	0.020	ND	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	ND	0.050	ND	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	ND	2.00	ND	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/06/09 17:02

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 08 Batch: WG361122-7</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	ND	0.020	ND	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	ND	0.070	ND	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	ND	0.020	ND	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905469  
Report Date: 05/07/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/06/09 17:02

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 08 Batch: WG361122-7</b>						
Dichlorodifluoromethane	ND	0.050	ND	0.247		1
Ethylbenzene	ND	0.020	ND	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	ND	0.040	ND	0.174		1
o-Xylene	ND	0.020	ND	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	ND	0.020	ND	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	ND	0.050	ND	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	ND	2.00	ND	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



### Lab Control Sample Analysis

Batch Quality Control

Project Name: ALVEREZ HS  
 Project Number: 14613.01

Lab Number: L0905469  
 Report Date: 05/07/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,09 Batch: WG361122-2</b>					
1,1,1-Trichloroethane	113	-	70-130	-	-
1,1,1,2-Tetrachloroethane	87	-	70-130	-	-
1,1,2,2-Tetrachloroethane	90	-	70-130	-	-
1,1,2-Trichloroethane	98	-	70-130	-	-
1,1-Dichloroethane	105	-	70-130	-	-
1,1-Dichloroethene	105	-	70-130	-	-
1,2,4-Trimethylbenzene	80	-	70-130	-	-
1,2-Dibromoethane	86	-	70-130	-	-
1,2-Dichlorobenzene	78	-	70-130	-	-
1,2-Dichloroethane	104	-	70-130	-	-
1,2-Dichloropropane	99	-	70-130	-	-
1,3,5-Trimethylbenzene	81	-	70-130	-	-
1,3-Dichlorobenzene	80	-	70-130	-	-
1,4-Dichlorobenzene	79	-	70-130	-	-
Benzene	89	-	70-130	-	-
Bromodichloromethane	107	-	70-130	-	-
Bromoform	89	-	70-130	-	-
Carbon tetrachloride	117	-	70-130	-	-
Chlorobenzene	91	-	70-130	-	-
Chloroethane	104	-	70-130	-	-
Chloroform	111	-	70-130	-	-



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatiles Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,09 Batch: WG361122-2</b>					
Chloromethane	110	-	70-130	-	-
cis-1,2-Dichloroethene	107	-	70-130	-	-
cis-1,3-Dichloropropene	86	-	70-130	-	-
Dibromochloromethane	101	-	70-130	-	-
Dichlorodifluoromethane	107	-	70-130	-	-
Ethylbenzene	86	-	70-130	-	-
Methylene chloride	101	-	70-130	-	-
Methyl tert butyl ether	91	-	70-130	-	-
p/m-Xylene	85	-	70-130	-	-
o-Xylene	87	-	70-130	-	-
Styrene	77	-	70-130	-	-
Tetrachloroethene	101	-	70-130	-	-
Toluene	85	-	70-130	-	-
trans-1,2-Dichloroethene	100	-	70-130	-	-
trans-1,3-Dichloropropene	67	-	70-130	-	-
Trichloroethene	105	-	70-130	-	-
Trichlorofluoromethane	109	-	70-130	-	-
Vinyl chloride	106	-	70-130	-	-
Acrylonitrile	76	-	70-130	-	-
n-Butylbenzene	78	-	70-130	-	-
sec-Butylbenzene	78	-	70-130	-	-



### Lab Control Sample Analysis

Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	LCS %Recovery	LCS %Recovery	LCS %Recovery	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,09 Batch: WG361122-2</b>					
Isopropylbenzene	84	-	70-130	-	-
p-Isopropyltoluene	71	-	70-130	-	-
Acetone	93	-	70-130	-	-
2-Butanone	98	-	70-130	-	-
4-Methyl-2-pentanone	91	-	70-130	-	-
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 08 Batch: WG361122-6</b>					
1,1,1-Trichloroethane	130	-	70-130	-	-
1,1,1,2-Tetrachloroethane	94	-	70-130	-	-
1,1,2,2-Tetrachloroethane	108	-	70-130	-	-
1,1,2-Trichloroethane	122	-	70-130	-	-
1,1-Dichloroethane	101	-	70-130	-	-
1,1-Dichloroethene	106	-	70-130	-	-
1,2,4-Trimethylbenzene	96	-	70-130	-	-
1,2-Dibromoethane	93	-	70-130	-	-
1,2-Dichlorobenzene	96	-	70-130	-	-



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 08 Batch: WG361122-6</b>					
1,2-Dichloroethane	98	-	70-130	-	-
1,2-Dichloropropane	114	-	70-130	-	-
1,3,5-Trimethylbenzene	94	-	70-130	-	-
1,3-Dichlorobenzene	97	-	70-130	-	-
1,4-Dichlorobenzene	97	-	70-130	-	-
Benzene	96	-	70-130	-	-
Bromodichloromethane	119	-	70-130	-	-
Bromoform	91	-	70-130	-	-
Carbon tetrachloride	142	-	70-130	-	-
Chlorobenzene	97	-	70-130	-	-
Chloroethane	103	-	70-130	-	-
Chloroform	111	-	70-130	-	-
Chloromethane	111	-	70-130	-	-
cis-1,2-Dichloroethene	105	-	70-130	-	-
cis-1,3-Dichloropropene	103	-	70-130	-	-
Dibromochloromethane	98	-	70-130	-	-
Dichlorodifluoromethane	106	-	70-130	-	-
Ethylbenzene	97	-	70-130	-	-
Methylene chloride	104	-	70-130	-	-
Methyl tert butyl ether	95	-	70-130	-	-
p/m-Xylene	98	-	70-130	-	-





### Lab Control Sample Analysis

Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 08 Batch: WG361122-6</b>					
o-Xylene	101	-	70-130	-	-
Styrene	89	-	70-130	-	-
Tetrachloroethene	100	-	70-130	-	-
Toluene	87	-	70-130	-	-
trans-1,2-Dichloroethene	96	-	70-130	-	-
trans-1,3-Dichloropropene	89	-	70-130	-	-
Trichloroethene	122	-	70-130	-	-
Trichlorofluoromethane	109	-	70-130	-	-
Vinyl chloride	104	-	70-130	-	-
Acrylonitrile	82	-	70-130	-	-
n-Butylbenzene	102	-	70-130	-	-
sec-Butylbenzene	94	-	70-130	-	-
Isopropylbenzene	97	-	70-130	-	-
p-Isopropyltoluene	87	-	70-130	-	-
Acalone	102	-	70-130	-	-
2-Butanone	108	-	70-130	-	-
4-Methyl-2-pentanone	122	-	70-130	-	-



### Lab Duplicate Analysis Batch Quality Control

Lab Number: L0905469  
Report Date: 05/07/09

Project Name: ALVEREZ HS  
Project Number: 14613.01

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG361122-4 QC Sample: L0905469-03 Client ID: KITCHEN STORAGE</b>					
1,1,1-Trichloroethane	0.022	0.022	ppbV	0	25
1,1,1,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethene	ND	ND	ppbV	NC	25
1,2,4-Trimethylbenzene	0.031	0.037	ppbV	18	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichloroethane	ND	ND	ppbV	NC	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	0.041	0.051	ppbV	22	25
Benzene	0.186	0.173	ppbV	7	25
Bromodichloromethane	ND	ND	ppbV	NC	25
Bromoform	ND	ND	ppbV	NC	25
Carbon tetrachloride	0.085	0.087	ppbV	2	25
Chlorobenzene	ND	ND	ppbV	NC	25



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG361122-4 QC Sample: L0905469-03 Client ID: KITCHEN STORAGE</b>					
Chloroethane	ND	ND	ppbV	NC	25
Chloroform	0.039	0.037	ppbV	5	25
Chloromethane	0.566	0.564	ppbV	1	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
Dichlorodifluoromethane	0.507	0.517	ppbV	2	25
Ethylbenzene	0.045	0.045	ppbV	0	25
Methylene chloride	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
p/m-Xylene	0.105	0.107	ppbV	2	25
o-Xylene	0.033	0.034	ppbV	3	25
Styrene	0.121	0.138	ppbV	13	25
Tetrachloroethene	ND	ND	ppbV	NC	25
Toluene	0.207	0.200	ppbV	3	25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Trichloroethene	ND	ND	ppbV	NC	25
Trichlorofluoromethane	0.265	0.272	ppbV	3	25



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG361122-4 QC Sample: L0905469-03 Client ID: KITCHEN STORAGE</b>					
Vinyl chloride	ND	ND	ppbV	NC	25
Acrylonitrile	ND	ND	ppbV	NC	25
n-Butylbenzene	ND	ND	ppbV	NC	25
sec-Butylbenzene	ND	ND	ppbV	NC	25
Isopropylbenzene	ND	ND	ppbV	NC	25
p-Isopropyltoluene	ND	ND	ppbV	NC	25
Acelone	ND	ND	ppbV	NC	25
2-Butanone	ND	ND	ppbV	NC	25
4-Methyl-2-pentanone	ND	ND	ppbV	NC	25



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG361122-8 QC Sample: L0905467-04 Client ID: DUP Sample</b>					
1,1,1-Trichloroethane	0.035	0.030	ppbV	15	25
1,1,1,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethene	ND	ND	ppbV	NC	25
1,2,4-Trimethylbenzene	0.163	0.153	ppbV	6	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichloroethane	0.022	0.020	ppbV	10	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
1,3,5-Trimethylbenzene	0.049	0.045	ppbV	9	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	0.707	0.696	ppbV	2	25
Benzene	0.115	0.099	ppbV	15	25
Bromodichloromethane	ND	ND	ppbV	NC	25
Bromoform	ND	ND	ppbV	NC	25
Carbon tetrachloride	0.104	0.090	ppbV	14	25
Chlorobenzene	ND	ND	ppbV	NC	25



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatiles Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG361122-8 QC Sample: L0905467-04 Client ID: DUP</b>					
Chloroethane	ND	ND	ppbV	NC	25
Chloroform	0.274	0.253	ppbV	8	25
Chloromethane	ND	ND	ppbV	NC	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
Dichlorodifluoromethane	0.486	0.456	ppbV	6	25
Ethylbenzene	0.075	0.072	ppbV	4	25
Methylene chloride	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
p/m-Xylene	0.244	0.234	ppbV	4	25
o-Xylene	0.115	0.109	ppbV	5	25
Styrene	0.057	0.055	ppbV	4	25
Tetrachloroethene	0.102	0.099	ppbV	3	25
Toluene	1.21	1.16	ppbV	4	25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Trichloroethene	0.551	0.485	ppbV	13	25
Trichlorofluoromethane	0.564	0.530	ppbV	6	25



**Lab Duplicate Analysis**  
Batch Quality Control

Lab Number: L0905469  
Report Date: 05/07/09

Project Name: ALVEREZ HS  
Project Number: 14613.01

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG361122-8 QC Sample: L0905467-04 Client ID: DUP</b>					
Vinyl chloride	ND	ND	ppbV	NC	25
Acrylonitrile	ND	ND	ppbV	NC	25
n-Butylbenzene	ND	ND	ppbV	NC	25
sec-Butylbenzene	ND	ND	ppbV	NC	25
Isopropylbenzene	ND	ND	ppbV	NC	25
p-Isopropyltoluene	ND	ND	ppbV	NC	25
Acetone	9.32	8.10	ppbV	14	25
2-Butanone	1.04	0.899	ppbV	15	25
4-Methyl-2-pentanone	ND	ND	ppbV	NC	25



Project Name: ALVEREZ HS

Project Number: 14613.01

05070917:21

Lab Number: L0905469

Report Date: 05/07/09

### Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Cleaning Batch ID	Initial Pressure (In. Hg)	Pressure on Receipt (In. Hg)	Flow Out mL/min	Flow In mL/min	% RSD
L0905469-01	GYMNASIUM	0270	#90 SV		-	-	174	175	1
L0905469-01	GYMNASIUM	985	6.0L Can	I0904159	-29.2	0.7	-	-	-
L0905469-02	CAFETERIA	0045	#90 SV		-	-	176	176	0
L0905469-02	CAFETERIA	811	6.0L Can	I0904269	-29.9	0.7	-	-	-
L0905469-03	KITCHEN STORAGE	0019	#16 SV		-	-	171	158	8
L0905469-03	KITCHEN STORAGE	1641	6.0L Can	I0904159	-29.9	0.4	-	-	-
L0905469-04	ELEVATOR HALLWAY	0289	#90 SV		-	-	170	169	1
L0905469-04	ELEVATOR HALLWAY	1647	6.0L Can	I0904159	-29.9	0.4	-	-	-
L0905469-05	RM 145	0404	#90 SV		-	-	173	180	4
L0905469-05	RM 145	639	6.0L Can	I0904159	-29.4	0.7	-	-	-
L0905469-06	RM 152	1517	6.0L Can	I0904159	-29.4	0.7	-	-	-
L0905469-07	RM 118	0036	#90 SV		-	-	173	170	2
L0905469-07	RM 118	771	6.0L Can	I0904269	-29.4	0.7	-	-	-
L0905469-08	RM 110	0272	#90 SV		-	-	175	172	2
L0905469-08	RM 110	951	6.0L Can	I0904269	-29.4	0.7	-	-	-
L0905469-09	AMBIENT OUTDOOR	969	6.0L Can	I0904269	-29.9	-18.9	-	-	-





Project Name: ALVEREZ HS

Lab Number: L0905469

Project Number: 14613.01

Report Date: 05/07/09

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

## Cooler Information

Cooler	Custody Seal
N/A	Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0905469-01A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-02A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-03A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-04A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-05A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-06A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-07A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-08A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)
L0905469-09A	Canister - 6 Liter	N/A	NA		NA	Absent	TO15-SIM(30)

\*Hold days indicated by values in parentheses



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

## GLOSSARY

### Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

*	· The batch duplicate RPD exceeds the acceptance criteria. This flag is not applicable when the sample concentrations are less than 5x the RDL. (Metals only.)
A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
N	· The matrix spike recovery exceeds the acceptance criteria. This flag is not applicable when the sample concentration is greater than 4x the spike added. (Metals only.)
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**Report Format:** Data Usability Report



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905469  
**Report Date:** 05/07/09

## REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised February 18, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Chloride, Fluoride, Sulfate, Sulfite, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), Total Cyanide, Bromide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Ignitability, Corrosivity, TCLP 1311, Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### Florida Department of Health Certificate/Lab ID: E87814.

*Non-Potable Water* (Inorganic Parameters: SM2320B, 4500NH3-F, EPA 120.1, SM2510B, 2340B, EPA 245.1, EPA 365.2, EPA 150.1, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 335.2, 420.1, SM2540G, EPA 180.1. Organic Parameters: EPA 624, 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 9050, 7470, 7471, 9045, EPA 7.3.3.2, EPA 7.3.4.2, 9014, 9065. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### Louisiana Department of Environmental Quality Certificate/Lab ID: 03090.

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

### Maine Department of Human Services Certificate/Lab ID: MA0030.

*Wastewater* (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

### Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

### New Hampshire Department of Environmental Services Certificate/Lab ID: 2206.

*Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)*

**New Jersey Department of Environmental Protection Certificate/Lab ID: MA015.**

*Non-Potable Water (Inorganic Parameters: SW-846 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)*

*Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)*

*Atmospheric Organic Parameters (EPA TO-15)*

**New York Department of Health Certificate/Lab ID: 11627.**

*Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)*

*Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035.)*

*Air & Emissions (EPA TO-15.)*

**Rhode Island Department of Health Certificate/Lab ID: LAO00299.**

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX.**

*Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7471. Organic Parameters: EPA 8015, 8270.)*

**Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. Registered Laboratory.**

**U.S. Army Corps of Engineers**



CHAIN OF CUSTODY

# AIR ANALYSIS

PAGE 1 OF 1

320 Forbes Blvd, Mansfield, MA 02048  
 TEL: 508-822-9300 FAX: 508-822-3288

**Client Information**

Client: *EA Engineering*  
 Address: *2350 Post Rd N*  
*Warwick, RI 02886*  
 Phone: *401-736-3448*  
 Fax: *401-736-3423*  
 Email:

**Project Information**

Project Name: *Alvarez H.S.*  
 Project Location: *Providence, RI*  
 Project #: *14613.01*  
 Project Manager: *Mark V. Spear*  
 ALPHA Quote #:  
 Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)  
 10 days  
 Date Due: *5/7/09* Time:

These samples have been previously analyzed by Alpha  
 Other Project Specific Requirements/Comments:

Date Rec'd in Lab: *4/30/09*

**Report Information - Data Deliverables**

FAX  
 ADEX  
 Criteria Checker:  
 (Default based on Regulatory Criteria Indicated)  
 Other Formats:  
 EMAIL (standard pdf report)  
 Additional Deliverables:

Report ID: (if different than Project Manager)  
*mark@alpha.com*  
*mspear@alpha.com*

ALPHA Job #: *10905469*

**Billing Information**

Same as Client info PO #:

**Regulatory Requirements/Report Limits**

Standard Program Criteria  
*OT TARD ET INADUR*  
*AIR CURRENT REGULATIONS*

**All Columns Below Must Be Filled Out**

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection				Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	ANALYSIS	Sample Comments (i.e. PID)
		Date	Start Time	End Time	Initial Vacuum							
7469, 1	<i>Cyanassia</i>	<i>4/29</i>	<i>7:13</i>	<i>7:43</i>	<i>-30</i>	<i>-2</i>	<i>AA</i>	<i>D4608</i>	<i>6.212355</i>	<i>0270</i>	<input checked="" type="checkbox"/>	<i>PID = 0.067ppm</i>
2	<i>Cafeteria</i>		<i>7:24</i>	<i>7:58</i>	<i>-38</i>	<i>-1</i>			<i>29910545</i>			<i>0.028</i>
3	<i>Lithics Storage</i>		<i>7:26</i>	<i>8:00</i>	<i>-29</i>	<i>-1</i>			<i>76130019</i>			<i>0.004</i>
4	<i>Flourish Hallway</i>		<i>7:23</i>	<i>7:55</i>	<i>-30</i>	<i>-1</i>			<i>76230289</i>			<i>0.050</i>
5	<i>RM145</i>		<i>7:15</i>	<i>7:45</i>	<i>-38</i>	<i>-2</i>			<i>39930404</i>			<i>0</i>
6	<i>RM152</i>		<i>7:16</i>	<i>7:46</i>	<i>-30</i>	<i>-1</i>			<i>78460062</i>			<i>0</i>
7	<i>RM118</i>		<i>7:19</i>	<i>7:50</i>	<i>-30+</i>	<i>-4</i>			<i>39940036</i>			<i>0</i>
8	<i>RM110</i>		<i>7:20</i>	<i>7:50</i>	<i>-30</i>	<i>-1</i>			<i>40160272</i>			<i>0</i>
9	<i>Ambient Dilute</i>		<i>8:49</i>	<i>9:22</i>	<i>-29</i>	<i>-20*</i>			<i>68220005</i>			<i>0</i>

**\*SAMPLE MATRIX CODES**

AA = Ambient Air (Indoor/Outdoor)  
 SV = Soil Vapor/Landfill Gas/SVE  
 Other = Please Specify

Container Type

Requisitioned By:

Date/Time

Received By:

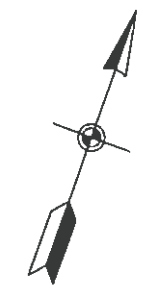
Date/Time:

*Paul S. Stewart*  
*4/29/09 12:10*  
*Paul S. Stewart*  
*5-109 8:50*  
*5-109 12:10*

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any empty bottles are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

## **Appendix C**

### **Sub-Slab Air Analytical Summary and Lab Reports**



**LEGEND :**

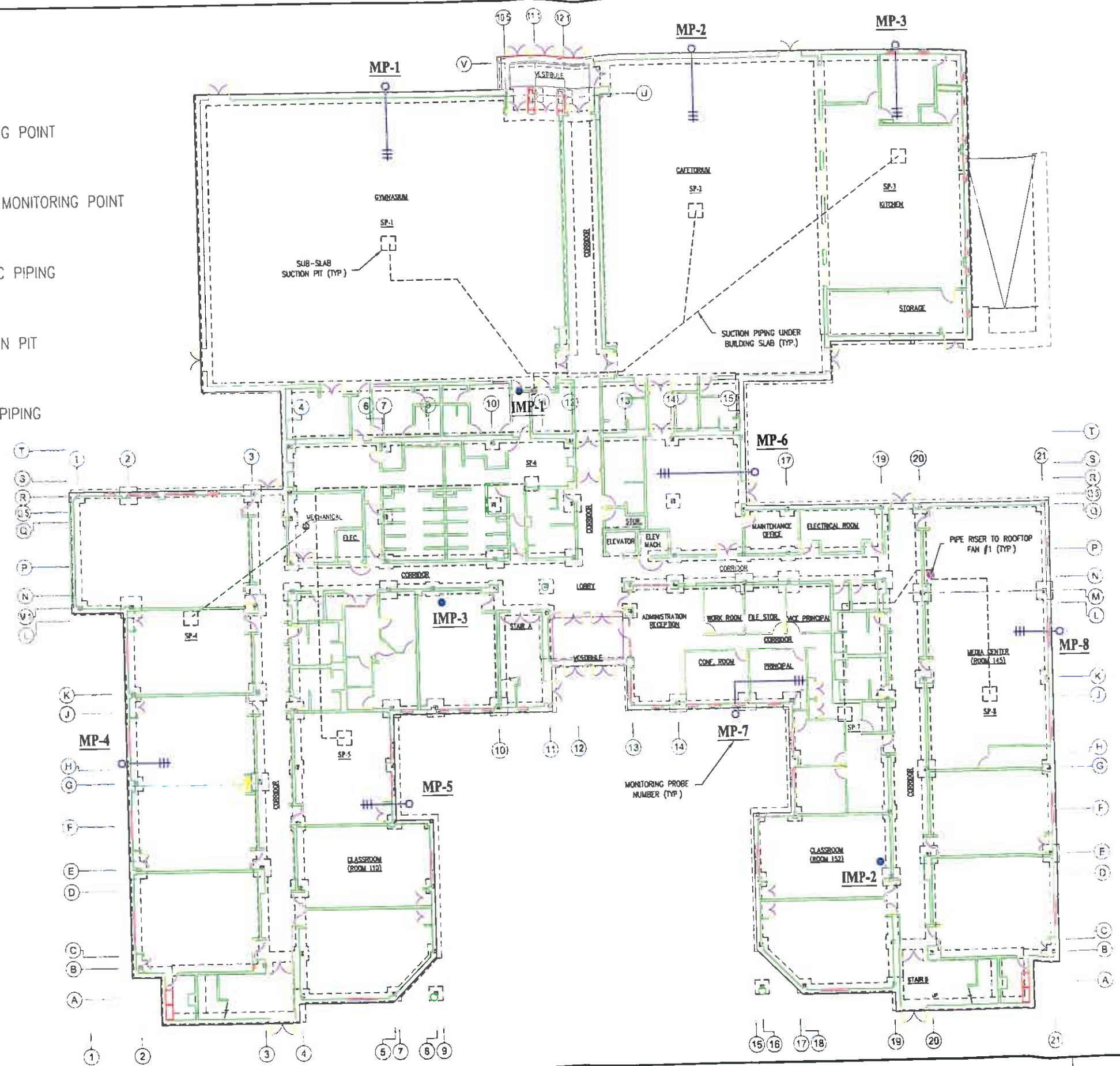
**MP-1** SUB-SLAB MONITORING POINT

**IMP-1** INTERIOR SUB-SLAB MONITORING POINT

—||— SLOTTED 1 INCH PVC PIPING

□ SSD SYSTEM SUCTION PIT

- - - - - SOLID 4 INCH PVC PIPING



DESIGNED BY PMG	DRAWN BY DMA	DATE AUG 27 2007	PROJECT NO. 61965.01	FILE NAME AS-BUILT08-07
CHECKED BY PMG	PROJECT MGR. PMG	SCALE NTS	DRAWING NO. 2 OF 3	FIGURE N/A

AS-BUILT  
SUB SLAB MONITORING AND SAMPLING LOCATIONS  
ADELAIDE AVE HIGH SCHOOL  
PROVIDENCE, RHODE ISLAND

QUARTERLY STATUS REPORT  
APPENDIX C

























Summary of Sub-Station Air Sampling Data - Adelaide Avenue School Project - Volatile Organic Compounds  
March 2007 - April 2009

Compound	15-Mar-07		22-Mar-07		29-Mar-07		05-Apr-07		12-Apr-07		19-Apr-07		26-Apr-07		03-May-07		10-May-07		17-May-07		24-May-07		31-May-07		07-Jun-07		14-Jun-07		21-Jun-07		28-Jun-07		05-Jul-07		12-Jul-07		19-Jul-07		26-Jul-07		02-Aug-07		09-Aug-07		16-Aug-07		23-Aug-07		30-Aug-07		06-Sep-07		13-Sep-07		20-Sep-07		27-Sep-07		04-Oct-07		11-Oct-07		18-Oct-07		25-Oct-07		01-Nov-07		08-Nov-07		15-Nov-07		22-Nov-07		29-Nov-07		06-Dec-07		13-Dec-07		20-Dec-07		27-Dec-07		03-Jan-08		10-Jan-08		17-Jan-08		24-Jan-08		31-Jan-08		07-Feb-08		14-Feb-08		21-Feb-08		28-Feb-08		06-Mar-08		13-Mar-08		20-Mar-08		27-Mar-08		03-Apr-08		10-Apr-08		17-Apr-08		24-Apr-08		01-May-08		08-May-08		15-May-08		22-May-08		29-May-08		05-Jun-08		12-Jun-08		19-Jun-08		26-Jun-08		03-Jul-08		10-Jul-08		17-Jul-08		24-Jul-08		31-Jul-08		07-Aug-08		14-Aug-08		21-Aug-08		28-Aug-08		04-Sep-08		11-Sep-08		18-Sep-08		25-Sep-08		02-Oct-08		09-Oct-08		16-Oct-08		23-Oct-08		30-Oct-08		06-Nov-08		13-Nov-08		20-Nov-08		27-Nov-08		04-Dec-08		11-Dec-08		18-Dec-08		25-Dec-08		01-Jan-09		08-Jan-09		15-Jan-09		22-Jan-09		29-Jan-09		05-Feb-09		12-Feb-09		19-Feb-09		26-Feb-09		05-Mar-09		12-Mar-09		19-Mar-09		26-Mar-09		02-Apr-09		09-Apr-09		16-Apr-09		23-Apr-09		30-Apr-09		07-May-09		14-May-09		21-May-09		28-May-09		04-Jun-09		11-Jun-09		18-Jun-09		25-Jun-09		02-Jul-09		09-Jul-09		16-Jul-09		23-Jul-09		30-Jul-09		06-Aug-09		13-Aug-09		20-Aug-09		27-Aug-09		03-Sep-09		10-Sep-09		17-Sep-09		24-Sep-09		01-Oct-09		08-Oct-09		15-Oct-09		22-Oct-09		29-Oct-09		05-Nov-09		12-Nov-09		19-Nov-09		26-Nov-09		03-Dec-09		10-Dec-09		17-Dec-09		24-Dec-09		31-Dec-09		07-Jan-10		14-Jan-10		21-Jan-10		28-Jan-10		04-Feb-10		11-Feb-10		18-Feb-10		25-Feb-10		03-Mar-10		10-Mar-10		17-Mar-10		24-Mar-10		31-Mar-10		07-Apr-10		14-Apr-10		21-Apr-10		28-Apr-10		05-May-10		12-May-10		19-May-10		26-May-10		02-Jun-10		09-Jun-10		16-Jun-10		23-Jun-10		30-Jun-10		07-Jul-10		14-Jul-10		21-Jul-10		28-Jul-10		04-Aug-10		11-Aug-10		18-Aug-10		25-Aug-10		01-Sep-10		08-Sep-10		15-Sep-10		22-Sep-10		29-Sep-10		06-Oct-10		13-Oct-10		20-Oct-10		27-Oct-10		03-Nov-10		10-Nov-10		17-Nov-10		24-Nov-10		01-Dec-10		08-Dec-10		15-Dec-10		22-Dec-10		29-Dec-10		05-Jan-11		12-Jan-11		19-Jan-11		26-Jan-11		02-Feb-11		09-Feb-11		16-Feb-11		23-Feb-11		01-Mar-11		08-Mar-11		15-Mar-11		22-Mar-11		29-Mar-11		05-Apr-11		12-Apr-11		19-Apr-11		26-Apr-11		03-May-11		10-May-11		17-May-11		24-May-11		31-May-11		07-Jun-11		14-Jun-11		21-Jun-11		28-Jun-11		05-Jul-11		12-Jul-11		19-Jul-11		26-Jul-11		02-Aug-11		09-Aug-11		16-Aug-11		23-Aug-11		30-Aug-11		06-Sep-11		13-Sep-11		20-Sep-11		27-Sep-11		04-Oct-11		11-Oct-11		18-Oct-11		25-Oct-11		01-Nov-11		08-Nov-11		15-Nov-11		22-Nov-11		29-Nov-11		06-Dec-11		13-Dec-11		20-Dec-11		27-Dec-11		03-Jan-12		10-Jan-12		17-Jan-12		24-Jan-12		31-Jan-12		07-Feb-12		14-Feb-12		21-Feb-12		28-Feb-12		06-Mar-12		13-Mar-12		20-Mar-12		27-Mar-12		03-Apr-12		10-Apr-12		17-Apr-12		24-Apr-12		01-May-12		08-May-12		15-May-12		22-May-12		29-May-12		05-Jun-12		12-Jun-12		19-Jun-12		26-Jun-12		03-Jul-12		10-Jul-12		17-Jul-12		24-Jul-12		31-Jul-12		07-Aug-12		14-Aug-12		21-Aug-12		28-Aug-12		04-Sep-12		11-Sep-12		18-Sep-12		25-Sep-12		02-Oct-12		09-Oct-12		16-Oct-12		23-Oct-12		30-Oct-12		06-Nov-12		13-Nov-12		20-Nov-12		27-Nov-12		04-Dec-12		11-Dec-12		18-Dec-12		25-Dec-12		01-Jan-13		08-Jan-13		15-Jan-13		22-Jan-13		29-Jan-13		05-Feb-13		12-Feb-13		19-Feb-13		26-Feb-13		05-Mar-13		12-Mar-13		19-Mar-13		26-Mar-13		02-Apr-13		09-Apr-13		16-Apr-13		23-Apr-13		30-Apr-13		07-May-13		14-May-13		21-May-13		28-May-13		04-Jun-13		11-Jun-13		18-Jun-13		25-Jun-13		02-Jul-13		09-Jul-13		16-Jul-13		23-Jul-13		30-Jul-13		06-Aug-13		13-Aug-13		20-Aug-13		27-Aug-13		03-Sep-13		10-Sep-13		17-Sep-13		24-Sep-13		01-Oct-13		08-Oct-13		15-Oct-13		22-Oct-13		29-Oct-13		05-Nov-13		12-Nov-13		19-Nov-13		26-Nov-13		03-Dec-13		10-Dec-13		17-Dec-13		24-Dec-13		31-Dec-13		07-Jan-14		14-Jan-14		21-Jan-14		28-Jan-14		04-Feb-14		11-Feb-14		18-Feb-14		25-Feb-14		03-Mar-14		10-Mar-14		17-Mar-14		24-Mar-14		31-Mar-14		07-Apr-14		14-Apr-14		21-Apr-14		28-Apr-14		05-May-14		12-May-14		19-May-14		26-May-14		02-Jun-14		09-Jun-14		16-Jun-14		23-Jun-14		30-Jun-14		07-Jul-14		14-Jul-14		21-Jul-14		28-Jul-14		04-Aug-14		11-Aug-14		18-Aug-14		25-Aug-14		01-Sep-14		08-Sep-14		15-Sep-14		22-Sep-14		29-Sep-14		06-Oct-14		13-Oct-14		20-Oct-14		27-Oct-14		03-Nov-14		10-Nov-14		17-Nov-14		24-Nov-14		01-Dec-14		08-Dec-14		15-Dec-14		22-Dec-14		29-Dec-14		05-Jan-15		12-Jan-15		19-Jan-15		26-Jan-15		02-Feb-15		09-Feb-15		16-Feb-15		23-Feb-15		01-Mar-15		08-Mar-15		15-Mar-15		22-Mar-15		29-Mar-15		05-Apr-15		12-Apr-15		19-Apr-15		26-Apr-15		03-May-15		10-May-15		17-May-15		24-May-15		31-May-15		07-Jun-15		14-Jun-15		21-Jun-15		28-Jun-15		05-Jul-15		12-Jul-15		19-Jul-15		26-Jul-15		02-Aug-15		09-Aug-15		16-Aug-15		23-Aug-15		30-Aug-15		06-Sep-15		13-Sep-15		20-Sep-15		27-Sep-15		04-Oct-15		11-Oct-15		18-Oct-15		25-Oct-15		01-Nov-15		08-Nov-15		15-Nov-15		22-Nov-15		29-Nov-15		06-Dec-15		13-Dec-15		20-Dec-15		27-Dec-15		03-Jan-16		10-Jan-16		17-Jan-16		24-Jan-16		31-Jan-16		07-Feb-16		14-Feb-16		21-Feb-16		28-Feb-16		06-Mar-16		13-Mar-16		20-Mar-16		27-Mar-16		03-Apr-16		10-Apr-16		17-Apr-16		24-Apr-16		01-May-16		08-May-16		15-May-16		22-May-16		29-May-16		05-Jun-16		12-Jun-16		19-Jun-16		26-Jun-16		03-Jul-16		10-Jul-16		17-Jul-16		24-Jul-16		31-Jul-16		07-Aug-16		14-Aug-16		21-Aug-16		28-Aug-16		04-Sep-16		11-Sep-16		18-Sep-16		25-Sep-16		02-Oct-16		09-Oct-16		16-Oct-16		23-Oct-16		30-Oct-16		06-Nov-16		13-Nov-16		20-Nov-16		27-Nov-16		04-Dec-16		11-Dec-16		18-Dec-16		25-Dec-16		01-Jan-17		08-Jan-17		15-Jan-17		22-Jan-17		29-Jan-17		05-Feb-17		12-Feb-17		19-Feb-17		26-Feb-17		05-Mar-17		12-Mar-17		19-Mar-17		26-Mar-17		02-Apr-17		09-Apr-17		16-Apr-17		23-Apr-17		30-Apr-17		07-May-17		14-May-17		21-May-17		28-May-17		04-Jun-17		11-Jun-17		18-Jun-17		25-Jun-17		02-Jul-17		09-Jul-17		16-Jul-17		23-Jul-17		30-Jul-17		06-Aug-17		13-Aug-17		20-Aug-17		27-Aug-17		03-Sep-17		10-Sep-17		17-Sep-17		24-Sep-17		01-Oct-17		08-Oct-17		15-Oct-17		22-Oct-17		29-Oct-17		05-Nov-17		12-Nov-17		19-Nov-17		26-Nov-17		03-Dec-17		10-Dec-17		17-Dec-17		24-Dec-17		31-Dec-17		07-Jan-18		14-Jan-18		21-Jan-18		28-Jan-18		04-Feb-18		11-Feb-18		18-Feb-18		25-Feb-18		03-Mar-18		10-Mar-18		17-Mar-18		24-Mar-18		31-Mar-18		07-Apr-18		14-Apr-18		21-Apr-18		28-Apr-18		05-May-18		12-May-18		19-May-18		26-May-18		02-Jun-18		09-Jun-18		16-Jun-18		23-Jun-18		30-Jun-18		07-Jul-18		14-Jul-18		21-Jul-18		28-Jul-18		04-Aug-18		11-Aug-18		18-Aug-18		25-Aug-18		01-Sep-18		08-Sep-18		15-Sep-18		22-Sep-18		29-Sep-18		06-Oct-18		13-Oct-18		20-Oct-18		27-Oct-18		03-Nov-18		10-Nov-18		17-Nov-18		24-Nov-18		01-Dec-18		08-Dec-18		15-Dec-18		22-Dec-18		29-Dec-18		05-Jan-19		12-Jan-19		19-Jan-19		26-Jan-19		02-Feb-19		09-Feb-19		16-Feb-19		23-Feb-19		01-Mar-19		08-Mar-19		15-Mar-19		22-Mar-19		29-Mar-19		05-Apr-19		12-Apr-19		19-Apr-19		26-Apr-19		03-May-19		10-May-19		17-May-19		24-May-19		31-May-19		07-Jun-19		14-Jun-19		21-Jun-19		28-Jun-19		05-Jul-19		12-Jul-19		19-Jul-19		26-Jul-19		02-Aug-19		09-Aug-19		16-Aug-19		23-Aug-19		30-Aug-19		06-Sep-19		13-Sep-19		20-Sep-19		27-Sep-19		04-Oct-19		11-Oct-19		18-Oct-19		25-Oct-19		01-Nov-19		08-Nov-19		15-Nov-19		22-Nov-19		29-Nov-19		06-Dec-19		13-Dec-19		20-Dec-19		27-Dec-19		03-Jan-20		10-Jan-20		17-Jan-20		24-Jan-20		31-Jan-20		07-Feb-20		14-Feb-20		21-Feb-20		28-Feb-20		06-Mar-20		13-Mar-20		20-Mar-20		27-Mar-20		03-Apr-20		10-Apr-20		17-Apr-20		24-Apr-20		01-May-20		08-May-20		15-May-20		22-May-20		29-May-20		05-Jun-20		12-Jun-20		19-Jun-20		26-Jun-20		03-Jul-20		10-Jul-20		17-Jul-20		24-Jul-20		31-Jul-20		07-Aug-20		14-Aug-20		21-Aug-20		28-Aug-20		04-Sep-20		11-Sep-20		18-Sep-20		25-Sep-20		02-Oct-20		09-Oct-20		16-Oct-20		23-Oct-20		30-Oct-20		06-Nov-20		13-Nov-20		20-Nov-20		27-Nov-20		04-Dec-20		11-Dec-20		18-Dec-20		25-Dec-20		01-Jan-21		08-Jan-21		15-Jan-21		22-Jan-21		29-Jan-21		05-Feb-21		12-Feb-21		19-Feb-21		26-Feb-21		05-Mar-21		12-Mar-21		19-Mar-21		26-Mar-21		02-Apr-21		09-Apr-21		16-Apr-21		23-Apr-21		30-Apr-21		07-May-21		14-May-21		21-May-21		28-May-21		04-Jun-21		11-Jun-21		18-Jun-21		25-Jun-21		02-Jul-21		09-Jul-21		16-Jul-21		23-Jul-21		30-Jul-21		06-Aug-21		13-Aug-21		20-Aug-21		27-Aug-21		03-Sep-21		10-Sep-21		17-Sep-21		24-Sep-21		01-Oct-21		08-Oct-21		15-Oct-21		22-Oct-21		29-Oct-21		05-Nov-21		12-Nov-21		19-Nov-21		26-Nov-21		03-Dec-21		10-Dec-21		17-Dec-21		24-Dec-21		31-Dec-21		07-Jan-22		14-Jan-22		21-Jan-22		28-Jan-22		04-Feb-22		11-Feb-22		18-Feb-22		25-Feb-22		03-Mar-22		10-Mar-22		17-Mar-22		24-Mar-22		31-Mar-22		07-Apr-22		14-Apr-22		21-Apr-22		28-Apr-22		05-May-22		12-May-22		19-May-22		26-May-22		02-Jun-22		09-Jun-22		16-Jun-22		23-Jun-22		30-Jun-22		07-Jul-22		14-Jul-22		21-Jul-22		28-Jul-22		04-Aug-22		11-Aug-22		18-Aug-22		25-Aug-22		01-Sep-22		08-Sep-22		15-Sep-22		22-Sep-22		29-Sep-22		06-Oct-22		13-Oct-22		20-Oct-22		27-Oct-22		0	
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Summary of Sub-Slab Air Sampling Data - Adelaide Avenue School Project - Volatile Organic Compounds  
 March 2007 - April 2008

Sample Date	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8	MP-9	MP-10	MP-11	MP-12	MP-13	MP-14	MP-15
15-Mar-07	4900.000	4100.000	4100.000	4100.000	4800.000	1000.000	170.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
22-Mar-07	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100	27.100
28-Mar-07	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300	19.300
29-Mar-07	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400
30-Mar-07	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400
27-Apr-07	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100
29-Apr-07	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100	21.100
6-May-07	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6-May-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
27-Jun-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25-Jul-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
29-Aug-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
30-Sep-08	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200
27-Oct-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18-Nov-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18-Dec-08	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200
25-Feb-09	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
26-Mar-09	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
28-Apr-09	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
15-Mar-07	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000	12000.000
22-Mar-07	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800
26-Apr-07	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400
21-May-07	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900	49.900
29-Jun-07	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500
30-Jul-07	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000
22-Aug-07	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
22-Sep-07	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800	68.800
9-Oct-07	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
9-Nov-07	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740	3.740
8-Dec-07	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
8-Feb-08	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740
13-Mar-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
29-Mar-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
27-Jun-08	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270	4.270
31-Jul-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18-Aug-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
20-Sep-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
20-Oct-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25-Nov-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18-Dec-08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
19-Jan-09	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25-Feb-09	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500	5.500
26-Mar-09	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
28-Apr-09	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000







the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million (13.5% of the population).

There is a growing awareness of the need to address the needs of older people, and the Government has set out a strategy for the 21st century in the White Paper on *Ageing Better: Our Future Together* (Department of Health 2000). This sets out a vision of a society where older people are able to live well, and are able to contribute to their communities. The White Paper also sets out a number of key objectives for the Government, including:

• To ensure that older people are able to live well, and are able to contribute to their communities.

• To ensure that older people are able to live independently, and are able to live in their own homes.

• To ensure that older people are able to live in good health, and are able to live free from pain and suffering.

The White Paper also sets out a number of key actions for the Government, including:

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ANALYTICAL REPORT

Lab Number: L0903761  
Client: EA Engineering, Science and Tech  
2350 Post Road  
Warwick, RI 02886  
ATTN: Mark Speer  
Project Name: ALVEREZ HS  
Project Number: 14613.01  
Report Date: 04/07/09

Certifications & Approvals. MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers

320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903761  
**Report Date:** 04/07/09

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L0903761-01	MP-2	PROVIDENCE, RI	03/26/09 08:15
L0903761-02	MP-6	PROVIDENCE, RI	03/26/09 08:20
L0903761-03	IMP-2	PROVIDENCE, RI	03/26/09 07:58
L0903761-04	IMP-3	PROVIDENCE, RI	03/26/09 07:52

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903761  
**Report Date:** 04/07/09

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

#### TO15-SIM

L0903761-01 has elevated detection limits due to the 5x dilution required by the elevated concentrations of target compounds in the sample. The sample was re-analyzed on a 10x dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

L0903761-02 has elevated detection limits due to the 10x dilution required by the elevated concentrations of non-target compounds in the sample.

The WG358026-2 LCS recoveries for trans-1,3-Dichloropropene and n-Butylbenzene are outside the 70%-

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

**Case Narrative (continued)**

130% acceptance limit. The LCS was within overall method allowances, therefore the analysis proceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 04/07/09

**AIR**

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

### SAMPLE RESULTS

Lab ID: L0903761-01 D  
Client ID: MP-2  
Sample Location: PROVIDENCE, RI  
Matrix: Soil\_Vapor  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/04/09 16:53  
Analyst: AJ

Date Collected: 03/26/09 08:15  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.292	0.100	1.59	0.545		5
1,1,1,2-Tetrachloroethane	ND	0.100	ND	0.686		5
1,1,2,2-Tetrachloroethane	ND	0.100	ND	0.686		5
1,1,2-Trichloroethane	ND	0.100	ND	0.545		5
1,1-Dichloroethane	ND	0.100	ND	0.404		5
1,1-Dichloroethene	ND	0.100	ND	0.396		5
1,2,4-Trimethylbenzene	ND	0.100	ND	0.491		5
1,2-Dibromoethane	ND	0.100	ND	0.768		5
1,2-Dichlorobenzene	ND	0.100	ND	0.601		5
1,2-Dichloroethane	ND	0.100	ND	0.404		5
1,2-Dichloropropane	ND	0.100	ND	0.462		5
1,3,5-Trimethylbenzene	ND	0.100	ND	0.491		5
1,3-Dichlorobenzene	ND	0.100	ND	0.601		5
1,4-Dichlorobenzene	0.904	0.100	5.43	0.601		5
Benzene	0.658	0.350	2.10	1.12		5
Bromodichloromethane	ND	0.100	ND	0.670		5
Bromoform	ND	0.100	ND	1.03		5
Carbon tetrachloride	ND	0.100	ND	0.629		5
Chlorobenzene	ND	0.100	ND	0.460		5
Chloroethane	ND	0.100	ND	0.264		5
Chloroform	ND	0.100	ND	0.488		5
Chloromethane	ND	2.50	ND	12.2		5
cis-1,2-Dichloroethene	ND	0.100	ND	0.396		5
cis-1,3-Dichloropropene	ND	0.100	ND	0.453		5
Dibromochloromethane	ND	0.100	ND	0.480		5





Project Name: ALVEREZ HS

Lab Number: L0903761

Project Number: 14613.01

Report Date: 04/07/09

## SAMPLE RESULTS

Lab ID: L0903761-01 D  
 Client ID: MP-2  
 Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 08:15  
 Date Received: 03/27/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.516	0.250	2.55	1.24		5
Ethylbenzene	0.119	0.100	0.516	0.434		5
Methylene chloride	4.63	2.50	16.1	8.68		5
Methyl tert butyl ether	ND	0.100	ND	0.360		5
p/m-Xylene	0.312	0.200	1.35	0.868		5
o-Xylene	0.112	0.100	0.486	0.434		5
Styrene	ND	0.200	ND	0.851		5
Tetrachloroethene	0.190	0.100	1.28	0.678		5
Toluene	0.936	0.200	3.53	0.753		5
trans-1,2-Dichloroethene	ND	0.100	ND	0.396		5
trans-1,3-Dichloropropene	ND	0.100	ND	0.453		5
Trichloroethene	1.71	0.100	9.20	0.537		5
Trichlorofluoromethane	0.255	0.250	1.43	1.40		5
Vinyl chloride	ND	0.100	ND	0.255		5
Acrylonitrile	ND	2.50	ND	5.42		5
n-Butylbenzene	ND	2.50	ND	13.7		5
sec-Butylbenzene	ND	2.50	ND	13.7		5
Isopropylbenzene	ND	2.50	ND	12.3		5
p-Isopropyltoluene	ND	2.50	ND	13.7		5
Acetone	43.2	10.0	102	23.7		5
2-Butanone	314	2.50	926	7.37	E	5
4-Methyl-2-pentanone	ND	2.50	ND	10.2		5



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903761  
**Report Date:** 04/07/09

### SAMPLE RESULTS

**Lab ID:** L0903761-01 D2  
**Client ID:** MP-2  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Soil\_Vapor  
**Anaytical Method:** 48,TO-15-SIM  
**Analytical Date:** 04/07/09 03:24  
**Analyst:** AJ

**Date Collected:** 03/26/09 08:15  
**Date Received:** 03/27/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
2-Butanone	328	5.00	966	14.7		10



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

### SAMPLE RESULTS

Lab ID: L0903761-02  
Client ID: MP-6  
Sample Location: PROVIDENCE, RI  
Matrix: Soil\_Vapor  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/04/09 17:29  
Analyst: AJ

Date Collected: 03/26/09 08:20  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		10
1,1,1,2-Tetrachloroethane	ND	0.200	ND	1.37		10
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		10
1,1,2-Trichloroethane	ND	0.200	ND	1.09		10
1,1-Dichloroethane	ND	0.200	ND	0.809		10
1,1-Dichloroethene	ND	0.200	ND	0.792		10
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		10
1,2-Dibromoethane	ND	0.200	ND	1.54		10
1,2-Dichlorobenzene	ND	0.200	ND	1.20		10
1,2-Dichloroethane	ND	0.200	ND	0.809		10
1,2-Dichloropropane	ND	0.200	ND	0.924		10
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		10
1,3-Dichlorobenzene	ND	0.200	ND	1.20		10
1,4-Dichlorobenzene	0.810	0.200	4.87	1.20		10
Benzene	ND	0.700	ND	2.23		10
Bromodichloromethane	ND	0.200	ND	1.34		10
Bromoform	ND	0.200	ND	2.06		10
Carbon tetrachloride	ND	0.200	ND	1.26		10
Chlorobenzene	ND	0.200	ND	0.920		10
Chloroethane	ND	0.200	ND	0.527		10
Chloroform	0.265	0.200	1.29	0.976		10
Chloromethane	ND	5.00	ND	24.4		10
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		10
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		10
Dibromochloromethane	ND	0.200	ND	0.960		10



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

### SAMPLE RESULTS

Lab ID: L0903761-02  
Client ID: MP-6  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 08:20  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.503	0.500	2.48	2.47		10
Ethylbenzene	ND	0.200	ND	0.868		10
Methylene chloride	ND	5.00	ND	17.4		10
Methyl tert butyl ether	ND	0.200	ND	0.720		10
p/m-Xylene	ND	0.400	ND	1.74		10
o-Xylene	ND	0.200	ND	0.868		10
Styrene	ND	0.400	ND	1.70		10
Tetrachloroethene	ND	0.200	ND	1.36		10
Toluene	1.04	0.400	3.92	1.51		10
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		10
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		10
Trichloroethene	0.723	0.200	3.88	1.07		10
Trichlorofluoromethane	ND	0.500	ND	2.81		10
Vinyl chloride	ND	0.200	ND	0.511		10
Acrylonitrile	ND	5.00	ND	10.8		10
n-Butylbenzene	ND	5.00	ND	27.4		10
sec-Butylbenzene	ND	5.00	ND	27.4		10
Isopropylbenzene	ND	5.00	ND	24.6		10
p-Isopropyltoluene	ND	5.00	ND	27.4		10
Acetone	ND	20.0	ND	47.5		10
2-Butanone	9.88	5.00	29.1	14.7		10
4-Methyl-2-pentanone	ND	5.00	ND	20.5		10



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

### SAMPLE RESULTS

Lab ID: L0903761-03  
Client ID: IMP-2  
Sample Location: PROVIDENCE, RI  
Matrix: Soil\_Vapor  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/04/09 18:06  
Analyst: AJ

Date Collected: 03/26/09 07:58  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.125	0.020	0.682	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.222	0.020	1.09	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.024	0.020	0.098	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.069	0.020	0.337	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	3.43	0.020	20.6	0.120		1
Benzene	0.296	0.070	0.945	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.096	0.020	0.601	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	0.046	0.020	0.121	0.053		1
Chloroform	0.054	0.020	0.265	0.098		1
Chloromethane	0.939	0.500	4.58	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS

Lab Number: L0903761

Project Number: 14613.01

Report Date: 04/07/09

## SAMPLE RESULTS

Lab ID: L0903761-03  
 Client ID: IMP-2  
 Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:58  
 Date Received: 03/27/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.497	0.050	2.46	0.247		1
Ethylbenzene	0.195	0.020	0.845	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.596	0.040	2.59	0.174		1
o-Xylene	0.212	0.020	0.922	0.087		1
Styrene	0.069	0.040	0.292	0.170		1
Tetrachloroethene	1.05	0.020	7.11	0.136		1
Toluene	1.92	0.040	7.23	0.151		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	4.68	0.020	25.1	0.107		1
Trichlorofluoromethane	3.49	0.050	19.6	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	21.3	2.00	50.6	4.75		1
2-Butanone	0.901	0.500	2.66	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS

Lab Number: L0903761

Project Number: 14613.01

Report Date: 04/07/09

## SAMPLE RESULTS

Lab ID: L0903761-04  
 Client ID: IMP-3  
 Sample Location: PROVIDENCE, RI  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15-SIM  
 Analytical Date: 04/04/09 19:22  
 Analyst: AJ

Date Collected: 03/26/09 07:52  
 Date Received: 03/27/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.039	0.020	0.213	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.315	0.020	1.55	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.033	0.020	0.133	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.087	0.020	0.425	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	5.49	0.020	33.0	0.120		1
Benzene	0.465	0.070	1.48	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.090	0.020	0.565	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	0.024	0.020	0.063	0.053		1
Chloroform	0.041	0.020	0.200	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

### SAMPLE RESULTS

Lab ID: L0903761-04  
Client ID: IMP-3  
Sample Location: PROVIDENCE, RI

Date Collected: 03/26/09 07:52  
Date Received: 03/27/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.488	0.050	2.41	0.247		1
Ethylbenzene	0.271	0.020	1.18	0.087		1
Methylene chloride	0.519	0.500	1.80	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.820	0.040	3.56	0.174		1
o-Xylene	0.296	0.020	1.28	0.087		1
Styrene	0.085	0.040	0.361	0.170		1
Tetrachloroethene	0.307	0.020	2.08	0.136		1
Toluene	2.59	0.040	9.75	0.151		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	1.02	0.020	5.49	0.107		1
Trichlorofluoromethane	1.83	0.050	10.3	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	27.3	2.00	64.8	4.75		1
2-Butanone	1.02	0.500	3.02	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM  
Analytical Date: 04/04/09 13:46

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-04 Batch: WG358026-3</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	ND	0.020	ND	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	ND	0.070	ND	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	ND	0.020	ND	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS

Lab Number: L0903761

Project Number: 14613.01

Report Date: 04/07/09

**Method Blank Analysis**  
Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 04/04/09 13:46

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-04 Batch: WG358026-3</b>						
Dichlorodifluoromethane	ND	0.050	ND	0.247		1
Ethylbenzene	ND	0.020	ND	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	ND	0.040	ND	0.174		1
o-Xylene	ND	0.020	ND	0.087		1
Styrene	ND	0.040	ND	0.170		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	ND	0.040	ND	0.151		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	ND	0.050	ND	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	ND	2.00	ND	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS

Lab Number: L0903761

Project Number: 14613.01

Report Date: 04/07/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM

Analytical Date: 04/06/09 19:55

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01 Batch: WG358026-7</b>						
2-Butanone	ND	0.500	ND	1.47		1



# Lab Control Sample Analysis

Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903761  
**Report Date:** 04/07/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG358026-2</b>					
1,1,1-Trichloroethane	106	-	70-130	-	-
1,1,1,2-Tetrachloroethane	89	-	70-130	-	-
1,1,2,2-Tetrachloroethane	100	-	70-130	-	-
1,1,2-Trichloroethane	92	-	70-130	-	-
1,1-Dichloroethane	108	-	70-130	-	-
1,1-Dichloroethene	109	-	70-130	-	-
1,2,4-Trimethylbenzene	97	-	70-130	-	-
1,2-Dibromoethane	84	-	70-130	-	-
1,2-Dichlorobenzene	102	-	70-130	-	-
1,2-Dichloroethane	104	-	70-130	-	-
1,2-Dichloropropane	97	-	70-130	-	-
1,3,5-Trimethylbenzene	90	-	70-130	-	-
1,3-Dichlorobenzene	95	-	70-130	-	-
1,4-Dichlorobenzene	96	-	70-130	-	-
Benzene	87	-	70-130	-	-
Bromodichloromethane	100	-	70-130	-	-
Bromoform	86	-	70-130	-	-
Carbon tetrachloride	101	-	70-130	-	-
Chlorobenzene	87	-	70-130	-	-
Chloroethane	109	-	70-130	-	-
Chloroform	109	-	70-130	-	-



# Lab Control Sample Analysis

Batch Quality Control

Lab Number: L0903761  
Report Date: 04/07/09

Project Name: ALVEREZ HS  
Project Number: 14613.01

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG358026-2</b>					
Chloromethane	105	-	70-130	-	-
cis-1,2-Dichloroethene	105	-	70-130	-	-
cis-1,3-Dichloropropene	79	-	70-130	-	-
Dibromochloromethane	95	-	70-130	-	-
Dichlorodifluoromethane	111	-	70-130	-	-
Ethylbenzene	87	-	70-130	-	-
Methylene chloride	93	-	70-130	-	-
Methyl tert butyl ether	104	-	70-130	-	-
p/m-Xylene	87	-	70-130	-	-
o-Xylene	90	-	70-130	-	-
Styrene	70	-	70-130	-	-
Tetrachloroethene	108	-	70-130	-	-
Toluene	64	-	70-130	-	-
trans-1,2-Dichloroethene	98	-	70-130	-	-
trans-1,3-Dichloropropene	64	-	70-130	-	-
Trichloroethene	105	-	70-130	-	-
Trichlorofluoromethane	114	-	70-130	-	-
Vinyl chloride	111	-	70-130	-	-
Acrylonitrile	87	-	70-130	-	-
n-Butylbenzene	140	-	70-130	-	-
sec-Butylbenzene	94	-	70-130	-	-



### Lab Control Sample Analysis

Batch Quality Control

Project Name: ALVEREZ HS  
 Project Number: 14613.01

Lab Number: L0903761  
 Report Date: 04/07/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatle Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG358026-2</b>					
Isopropylbenzene	85	-	70-130	-	-
p-Isopropyltoluene	99	-	70-130	-	-
Acetone	101	-	70-130	-	-
2-Butanone	103	-	70-130	-	-
4-Methyl-2-pentanone	100	-	70-130	-	-

<b>Volatle Organics in Air by SIM - Mansfield Lab Associated sample(s): 01 Batch: WG358026-6</b>					
2-Butanone	104	-	70-130	-	-



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903761  
**Report Date:** 04/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatiles Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG358026-4 QC Sample: L0903761-03 Client ID: IMP-2</b>					
1,1,1-Trichloroethane	0.125	0.127	ppbv	2	25
1,1,1,2-Tetrachloroethane	ND	ND	ppbv	NC	25
1,1,1,2,2-Tetrachloroethane	ND	ND	ppbv	NC	25
1,1,2-Trichloroethane	ND	ND	ppbv	NC	25
1,1-Dichloroethane	ND	ND	ppbv	NC	25
1,1-Dichloroethene	ND	ND	ppbv	NC	25
1,2,4-Trimethylbenzene	0.222	0.239	ppbv	7	25
1,2-Dibromoethane	ND	ND	ppbv	NC	25
1,2-Dichlorobenzene	ND	ND	ppbv	NC	25
1,2-Dichloroethane	0.024	0.025	ppbv	2	25
1,2-Dichloropropane	ND	ND	ppbv	NC	25
1,3,5-Trimethylbenzene	0.069	0.073	ppbv	6	25
1,3-Dichlorobenzene	ND	ND	ppbv	NC	25
1,4-Dichlorobenzene	3.43	3.60	ppbv	5	25
Benzene	0.296	0.371	ppbv	22	25
Bromodichloromethane	ND	ND	ppbv	NC	25
Bromoform	ND	ND	ppbv	NC	25
Carbon tetrachloride	0.096	0.095	ppbv	0	25
Chlorobenzene	ND	ND	ppbv	NC	25



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0903761  
**Report Date:** 04/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG358026-4 QC Sample: L0903761-03 Client ID: IMP-2</b>					
Chloroethane	0.046	0.046	ppbv	0	25
Chloroform	0.054	0.056	ppbv	2	25
Chloromethane	0.939	0.935	ppbv	0	25
cis-1,2-Dichloroethene	ND	ND	ppbv	NC	25
cis-1,3-Dichloropropene	ND	ND	ppbv	NC	25
Dibromochloromethane	ND	ND	ppbv	NC	25
Dichlorodifluoromethane	0.497	0.499	ppbv	0	25
Ethylbenzene	0.195	0.200	ppbv	3	25
Methylene chloride	ND	ND	ppbv	NC	25
Methyl tert butyl ether	ND	ND	ppbv	NC	25
p/m-Xylene	0.596	0.611	ppbv	2	25
o-Xylene	0.212	0.219	ppbv	3	25
Styrene	0.069	0.071	ppbv	4	25
Tetrachloroethene	1.05	1.07	ppbv	2	25
Toluene	1.92	1.96	ppbv	2	25
trans-1,2-Dichloroethene	ND	ND	ppbv	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbv	NC	25
Trichloroethene	4.68	4.80	ppbv	3	25
Trichlorofluoromethane	3.49	3.47	ppbv	1	25





### Lab Duplicate Analysis Batch Quality Control

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0903761  
Report Date: 04/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG358026-4 QC Sample: L0903761-03 Client ID: IMP-2</b>					
Vinyl chloride	ND	ND	ppbv	NC	25
Acrylonitrile	ND	ND	ppbv	NC	25
n-Butylbenzene	ND	ND	ppbv	NC	25
sec-Butylbenzene	ND	ND	ppbv	NC	25
Isopropylbenzene	ND	ND	ppbv	NC	25
p-Isopropyltoluene	ND	ND	ppbv	NC	25
Acetone	21.3	21.4	ppbv	0	25
2-Butanone	0.901	0.900	ppbv	0	25
4-Methyl-2-pentanone	ND	ND	ppbv	NC	25



Project Name: ALVEREZ HS

Project Number: 14613.01

04070916:02

Lab Number: L0903761

Report Date: 04/07/09

### Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Cleaning Batch ID	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Out mL/min	Flow In mL/min	% RSD
L0903761-01	MP-2	0165	#90 SV		-	-	81	82	1
L0903761-01	MP-2	381	2.7L Can	I0902478	-29.7	-0.2	-	-	-
L0903761-02	MP-6	0362	#90 SV		-	-	81	75	8
L0903761-02	MP-6	502	2.7L Can	I0902478	-29.5	-2.2	-	-	-
L0903761-03	IMP-2	0367	#90 SV		-	-	80	85	6
L0903761-03	IMP-2	140	2.7L Can	I0902478	-29.7	-0.5	-	-	-
L0903761-04	IMP-3	0161	#90 SV		-	-	81	76	6
L0903761-04	IMP-3	409	2.7L Can	I0902478	-29.7	-4.7	-	-	-



Project Name: ALVEREZ HS

Lab Number: L0903761

Project Number: 14613.01

Report Date: 04/07/09

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information**

Cooler	Custody Seal
N/A	Present/Intact

**Container Information**

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0903761-01A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903761-02A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903761-03A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)
L0903761-04A	Canister - 2.7 Liter	N/A	NA		NA	Present/Intact	TO15-SIM(30)

\*Hold days indicated by values in parentheses

## Certificate/Approval Program Summary

Last revised February 18, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Chloride, Fluoride, Sulfate, Sulfite, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), Total Cyanide, Bromide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Ignitability, Corrosivity, TCLP 1311, Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### Florida Department of Health Certificate/Lab ID: E87814.

*Non-Potable Water* (Inorganic Parameters: SM2320B, 4500NH3-F, EPA 120.1, SM2510B, 2340B, EPA 245.1, EPA 365.2, EPA 150.1, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 335.2, 420.1, SM2540G, EPA 180.1. Organic Parameters: EPA 624, 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 9050, 7470, 7471, 9045, EPA 7.3.3.2, EPA 7.3.4.2, 9014, 9065. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### Louisiana Department of Environmental Quality Certificate/Lab ID: 03090.

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

### Maine Department of Human Services Certificate/Lab ID: MA0030.

*Wastewater* (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

### Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

### New Hampshire Department of Environmental Services Certificate/Lab ID: 2206.

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015.

*Non-Potable Water* (Inorganic Parameters: SW-846 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

**New York Department of Health** Certificate/Lab ID: 11627.

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299.

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX.

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7471. Organic Parameters: EPA 8015, 8270.)

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID: 68-02089. Registered Laboratory.

**U.S. Army Corps of Engineers**

# ALPHA CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048  
 TEL: 508-822-9300 FAX: 508-822-3288

## AIR ANALYSIS

PAGE 1 OF 1

Date Rec'd In Lab:

ALPHA Job #: 40903761

### Project Information

Project Name: Alvarez HS  
 Project Location: Providence, RI  
 Project #: 1461301  
 Project Manager: Mark Spear  
 ALPHA Quote #:

### Report Information - Data Deliverables

FAX  
 ADEX  
 Criteria Checker: \_\_\_\_\_  
(Default based on Regulatory Criteria Indicated)  
 Other Formats: \_\_\_\_\_  
 EMAIL (standard pdf report)  
 Additional Deliverables:  
 Report to: (if different than Project Manager)

### Billing Information

Same as Client info PO #:

### Regulatory Requirements/Report Limits

State/Fed Program Criteria  
CI Target indoor air concentrations

Client: EPA Engineering  
 Address: 2350 Post Rd  
Providence, RI 02886  
 Phone: 401-736-3440  
 Fax: 401-736-3423  
 Email: mark@equest.com

Standard  RUSH (only confirmed if pre-approved)  
 10 days  
 Date Due: Time:

These samples have been previously analyzed by Alpha  
 Other Project Specific Requirements/Comments:

### All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection				Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	ANALYSIS	Sample Comments (i.e. PID)
		Date	Start Time	End Time	Initial Vacuum							
40903761-1	MR-2	3/24/09	744	815	30	2	SV	DAK	2.2	351/0165	TO-14A by TO-15 TO-15 TO-15 SIM APH FIXED GASES TO-13A TO-1/TO-10	DED = 54.8 ppm 1.77 2.48 3.26
	2 MR 6		752	880	30	6				5020362		
	-3 IMP-2		728	758	30	1				1420367		
	-4 IMP-3		783	752	30	7				4090161		

### \*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)  
 SV = Soil Vapor/Landfill Gas/SVE  
 Other = Please Specify

Container Type

S

Relinquished By:

Date/Time

Received By:

Date/Time

Date/Time

*[Signature]*

3/29/09 1330

*[Signature]*

3/27/09 1330

3/27/09 1430

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.









ANALYTICAL REPORT

Lab Number: L0905467  
Client: EA Engineering, Science and Tech  
2350 Post Road  
Warwick, RI 02886  
ATTN: Mark Speer  
Project Name: ALVEREZ HS  
Project Number: 14613.01  
Report Date: 05/07/09

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC

320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L0905467-01	MP-3	PROVIDENCE, RI	04/29/09 09:38
L0905467-02	MP-7	PROVIDENCE, RI	04/29/09 10:12
L0905467-03	IMP-1	PROVIDENCE, RI	04/29/09 08:15
L0905467-04	IMP-3	PROVIDENCE, RI	04/29/09 08:46

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

#### Volatile Organics in Air by SIM

L0905467-01 and -02: The results for Chloromethane should be considered estimated due to co-elution with a non-target peak.

L0905467-01 was re-analyzed on dilution in order to quantitate the sample within the calibration range. The result is qualified with an E flag for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

The WG361122-2 LCS recovery associated with L0905467-01 through -03 is below the acceptance criteria of 70-130% for trans-1,3-Dichloropropene (67%). The LCS was within overall method allowances, therefore the analysis proceeded.

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905467  
Report Date: 05/07/09

**Case Narrative (continued)**

The WG361122-6 LCS recovery associated with L0905467-01 and -04 is above the acceptance criteria of 70-130% for Carbon tetrachloride (142%). The LCS was within overall method allowances, therefore the analysis proceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 05/07/09

**AIR**

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905467  
Report Date: 05/07/09

### SAMPLE RESULTS

Lab ID: L0905467-01  
Client ID: MP-3  
Sample Location: PROVIDENCE, RI  
Matrix: Soil\_Vapor  
Analytical Method: 48,TO-15-SIM  
Analytical Date: 05/05/09 00:26  
Analyst: BS

Date Collected: 04/29/09 09:38  
Date Received: 04/30/09  
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.032	0.020	0.174	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	0.047	0.020	0.190	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.054	0.020	0.265	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.079	0.020	0.319	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.030	0.020	0.147	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.199	0.020	1.20	0.120		1
Benzene	0.189	0.070	0.603	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.077	0.020	0.484	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	0.052	0.020	0.137	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	4.59	0.500	22.4	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

## SAMPLE RESULTS

Lab ID: L0905467-01

Date Collected: 04/29/09 09:38

Client ID: MP-3

Date Received: 04/30/09

Sample Location: PROVIDENCE, RI

Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.488	0.050	2.41	0.247		1
Ethylbenzene	0.045	0.020	0.195	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.108	0.040	0.468	0.174		1
o-Xylene	0.040	0.020	0.174	0.087		1
Styrene	0.041	0.020	0.174	0.085		1
Tetrachloroethene	0.040	0.020	0.271	0.136		1
Toluene	0.529	0.020	1.99	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.041	0.020	0.220	0.107		1
Trichlorofluoromethane	0.258	0.050	1.45	0.281		1
Vinyl chloride	0.024	0.020	0.061	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	836	2.00	1980	4.75	E	1
2-Butanone	4220	0.500	12400	1.47	E	1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

## SAMPLE RESULTS

Lab ID: L0905467-01 D3  
 Client ID: MP-3  
 Sample Location: PROVIDENCE, RI  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15-SIM  
 Analytical Date: 05/07/09 08:56  
 Analyst: BS

Date Collected: 04/29/09 09:38  
 Date Received: 04/30/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Acelone	484	316	1150	750		158.1
2-Butanone	5640	79.0	16600	233		158.1





Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

## SAMPLE RESULTS

Lab ID: L0905467-02  
 Client ID: MP-7  
 Sample Location: PROVIDENCE, RI  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15-SIM  
 Analytical Date: 05/04/09 23:18  
 Analyst: BS

Date Collected: 04/29/09 10:12  
 Date Received: 04/30/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.027	0.020	0.147	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.077	0.020	0.378	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.026	0.020	0.128	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.318	0.020	1.91	0.120		1
Benzene	0.077	0.070	0.246	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.084	0.020	0.528	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	0.024	0.020	0.063	0.053		1
Chloroform	0.028	0.020	0.136	0.098		1
Chloromethane	3.98	0.500	19.4	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

## SAMPLE RESULTS

Lab ID: L0905467-02

Date Collected: 04/29/09 10:12

Client ID: MP-7

Date Received: 04/30/09

Sample Location: PROVIDENCE, RI

Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.764	0.050	3.78	0.247		1
Ethylbenzene	0.044	0.020	0.191	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.119	0.040	0.516	0.174		1
o-Xylene	0.048	0.020	0.208	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	0.045	0.020	0.305	0.136		1
Toluene	0.173	0.020	0.651	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.223	0.020	1.20	0.107		1
Trichlorofluoromethane	0.754	0.050	4.23	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	9.82	2.00	23.3	4.75		1
2-Butanone	12.9	0.500	38.1	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

## SAMPLE RESULTS

Lab ID: L0905467-03  
 Client ID: IMP-1  
 Sample Location: PROVIDENCE, RI  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15-SIM  
 Analytical Date: 05/04/09 23:52  
 Analyst: BS

Date Collected: 04/29/09 08:15  
 Date Received: 04/30/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.029	0.020	0.158	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	0.030	0.020	0.121	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.144	0.020	0.707	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.043	0.020	0.211	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.685	0.020	4.12	0.120		1
Benzene	ND	0.070	ND	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.083	0.020	0.522	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

## SAMPLE RESULTS

Lab ID: L0905467-03

Date Collected: 04/29/09 08:15

Client ID: IMP-1

Date Received: 04/30/09

Sample Location: PROVIDENCE, RI

Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.458	0.050	2.26	0.247		1
Ethylbenzene	0.070	0.020	0.304	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.215	0.040	0.933	0.174		1
o-Xylene	0.085	0.020	0.369	0.087		1
Styrene	0.023	0.020	0.098	0.085		1
Tetrachloroethene	0.035	0.020	0.237	0.136		1
Toluene	0.396	0.020	1.49	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.073	0.020	0.392	0.107		1
Trichlorofluoromethane	0.227	0.050	1.27	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	2.17	2.00	5.15	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

### SAMPLE RESULTS

**Lab ID:** L0905467-04  
**Client ID:** IMP-3  
**Sample Location:** PROVIDENCE, RI  
**Matrix:** Soil\_Vapor  
**Anaytical Method:** 48,TO-15-SIM  
**Analytical Date:** 05/06/09 23:03  
**Analyst:** BS

**Date Collected:** 04/29/09 08:46  
**Date Received:** 04/30/09  
**Field Prep:** Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
1,1,1-Trichloroethane	0.035	0.020	0.191	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	0.163	0.020	0.801	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	0.022	0.020	0.089	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	0.049	0.020	0.241	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	0.707	0.020	4.25	0.120		1
Benzene	0.115	0.070	0.367	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	0.104	0.020	0.654	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	0.274	0.020	1.34	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

## SAMPLE RESULTS

Lab ID: L0905467-04  
 Client ID: IMP-3  
 Sample Location: PROVIDENCE, RI

Date Collected: 04/29/09 08:46  
 Date Received: 04/30/09  
 Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab</b>						
Dichlorodifluoromethane	0.486	0.050	2.40	0.247		1
Ethylbenzene	0.075	0.020	0.325	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	0.244	0.040	1.06	0.174		1
o-Xylene	0.115	0.020	0.499	0.087		1
Styrene	0.057	0.020	0.243	0.085		1
Tetrachloroethene	0.102	0.020	0.691	0.136		1
Toluene	1.21	0.020	4.56	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	0.551	0.020	2.96	0.107		1
Trichlorofluoromethane	0.564	0.050	3.17	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	9.32	2.00	22.1	4.75		1
2-Butanone	1.04	0.500	3.06	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15-SIM

Analytical Date: 05/04/09 17:01

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-03 Batch: WG361122-3</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	ND	0.020	ND	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	ND	0.070	ND	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	ND	0.020	ND	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1

Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 48,TO-15-SIM

Analytical Date: 05/04/09 17:01

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-03 Batch: WG361122-3</b>						
Dichlorodifluoromethane	ND	0.050	ND	0.247		1
Ethylbenzene	ND	0.020	ND	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	ND	0.040	ND	0.174		1
o-Xylene	ND	0.020	ND	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	ND	0.020	ND	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	ND	0.050	ND	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	ND	2.00	ND	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1





Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 05/06/09 17:02

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01,04 Batch: WG361122-7</b>						
1,1,1-Trichloroethane	ND	0.020	ND	0.109		1
1,1,1,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2,2-Tetrachloroethane	ND	0.020	ND	0.137		1
1,1,2-Trichloroethane	ND	0.020	ND	0.109		1
1,1-Dichloroethane	ND	0.020	ND	0.081		1
1,1-Dichloroethene	ND	0.020	ND	0.079		1
1,2,4-Trimethylbenzene	ND	0.020	ND	0.098		1
1,2-Dibromoethane	ND	0.020	ND	0.154		1
1,2-Dichlorobenzene	ND	0.020	ND	0.120		1
1,2-Dichloroethane	ND	0.020	ND	0.081		1
1,2-Dichloropropane	ND	0.020	ND	0.092		1
1,3,5-Trimethylbenzene	ND	0.020	ND	0.098		1
1,3-Dichlorobenzene	ND	0.020	ND	0.120		1
1,4-Dichlorobenzene	ND	0.020	ND	0.120		1
Benzene	ND	0.070	ND	0.223		1
Bromodichloromethane	ND	0.020	ND	0.134		1
Bromoform	ND	0.020	ND	0.206		1
Carbon tetrachloride	ND	0.020	ND	0.126		1
Chlorobenzene	ND	0.020	ND	0.092		1
Chloroethane	ND	0.020	ND	0.053		1
Chloroform	ND	0.020	ND	0.098		1
Chloromethane	ND	0.500	ND	2.44		1
cis-1,2-Dichloroethene	ND	0.020	ND	0.079		1
cis-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Dibromochloromethane	ND	0.020	ND	0.096		1



Project Name: ALVEREZ HS

Lab Number: L0905467

Project Number: 14613.01

Report Date: 05/07/09

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 48,TO-15-SIM

Analytical Date: 05/06/09 17:02

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
<b>Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01,04 Batch: WG361122-7</b>						
Dichlorodifluoromethane	ND	0.050	ND	0.247		1
Ethylbenzene	ND	0.020	ND	0.087		1
Methylene chloride	ND	0.500	ND	1.74		1
Methyl tert butyl ether	ND	0.020	ND	0.072		1
p/m-Xylene	ND	0.040	ND	0.174		1
o-Xylene	ND	0.020	ND	0.087		1
Styrene	ND	0.020	ND	0.085		1
Tetrachloroethene	ND	0.020	ND	0.136		1
Toluene	ND	0.020	ND	0.075		1
trans-1,2-Dichloroethene	ND	0.020	ND	0.079		1
trans-1,3-Dichloropropene	ND	0.020	ND	0.091		1
Trichloroethene	ND	0.020	ND	0.107		1
Trichlorofluoromethane	ND	0.050	ND	0.281		1
Vinyl chloride	ND	0.020	ND	0.051		1
Acrylonitrile	ND	0.500	ND	1.08		1
n-Butylbenzene	ND	0.500	ND	2.74		1
sec-Butylbenzene	ND	0.500	ND	2.74		1
Isopropylbenzene	ND	0.500	ND	2.46		1
p-Isopropyltoluene	ND	0.500	ND	2.74		1
Acetone	ND	2.00	ND	4.75		1
2-Butanone	ND	0.500	ND	1.47		1
4-Methyl-2-pentanone	ND	0.500	ND	2.05		1



### Lab Control Sample Analysis

Batch Quality Control

Project Name: ALVEREZ HS  
 Project Number: 14613.01

Lab Number: L0905467  
 Report Date: 05/07/09

Parameter	LCS %Recovery	LCS D %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-03 Batch: WG361122-2</b>					
1,1,1-Trichloroethane	113	-	70-130	-	-
1,1,1,2-Tetrachloroethane	87	-	70-130	-	-
1,1,2,2-Tetrachloroethane	90	-	70-130	-	-
1,1,2-Trichloroethane	98	-	70-130	-	-
1,1-Dichloroethane	105	-	70-130	-	-
1,1-Dichloroethene	105	-	70-130	-	-
1,2,4-Trimethylbenzene	80	-	70-130	-	-
1,2-Dibromoethane	86	-	70-130	-	-
1,2-Dichlorobenzene	78	-	70-130	-	-
1,2-Dichloroethane	104	-	70-130	-	-
1,2-Dichloropropane	99	-	70-130	-	-
1,3,5-Trimethylbenzene	81	-	70-130	-	-
1,3-Dichlorobenzene	80	-	70-130	-	-
1,4-Dichlorobenzene	79	-	70-130	-	-
Benzene	89	-	70-130	-	-
Bromodichloromethane	107	-	70-130	-	-
Bromoform	89	-	70-130	-	-
Carbon tetrachloride	117	-	70-130	-	-
Chlorobenzene	91	-	70-130	-	-
Chloroethane	104	-	70-130	-	-
Chloroform	111	-	70-130	-	-



## Lab Control Sample Analysis

Batch Quality Control

Project Name: ALVEREZ HS  
Project Number: 14613.01

Lab Number: L0905467  
Report Date: 05/07/09

Parameter	LCS %Recovery	LCS D %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-03 Batch: WG361122-2</b>					
Chloromethane	110	-	70-130	-	-
cis-1,2-Dichloroethene	107	-	70-130	-	-
cis-1,3-Dichloropropene	86	-	70-130	-	-
Dibromochloromethane	101	-	70-130	-	-
Dichlorodifluoromethane	107	-	70-130	-	-
Ethylbenzene	86	-	70-130	-	-
Methylene chloride	101	-	70-130	-	-
Methyl tert butyl ether	81	-	70-130	-	-
p/m-Xylene	65	-	70-130	-	-
o-Xylene	67	-	70-130	-	-
Styrene	77	-	70-130	-	-
Tetrachloroethene	101	-	70-130	-	-
Toluene	85	-	70-130	-	-
trans-1,2-Dichloroethene	100	-	70-130	-	-
trans-1,3-Dichloropropene	67	-	70-130	-	-
Trichloroethene	105	-	70-130	-	-
Trichlorofluoromethane	109	-	70-130	-	-
Vinyl chloride	106	-	70-130	-	-
Acrylonitrile	76	-	70-130	-	-
n-Butylbenzene	78	-	70-130	-	-
sec-Butylbenzene	78	-	70-130	-	-



### Lab Control Sample Analysis

Batch Quality Control

Project Name: ALVEREZ HS  
 Project Number: 14613.01

Lab Number: L0905467  
 Report Date: 05/07/09

Parameter	LCS %Recovery	LCS %Recovery	LCS %Recovery	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-03 Batch: WG361122-2</b>					
Isopropylbenzene	84	-	70-130	-	-
p-Isopropyltoluene	71	-	70-130	-	-
Acetone	93	-	70-130	-	-
2-Butanone	96	-	70-130	-	-
4-Methyl-2-pentanone	91	-	70-130	-	-

**Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG361122-6**

1,1,1-Trichloroethane	130	-	70-130	-	-
1,1,1,2-Tetrachloroethane	94	-	70-130	-	-
1,1,2,2-Tetrachloroethane	108	-	70-130	-	-
1,1,2-Trichloroethane	122	-	70-130	-	-
1,1-Dichloroethane	101	-	70-130	-	-
1,1-Dichloroethene	106	-	70-130	-	-
1,2,4-Trimethylbenzene	96	-	70-130	-	-
1,2-Dibromoethane	93	-	70-130	-	-
1,2-Dichlorobenzene	96	-	70-130	-	-



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01,04 Batch: WG361122-6</b>					
1,2-Dichloroethane	98	-	70-130	-	-
1,2-Dichloropropane	114	-	70-130	-	-
1,3,5-Trimethylbenzene	94	-	70-130	-	-
1,3-Dichlorobenzene	97	-	70-130	-	-
1,4-Dichlorobenzene	97	-	70-130	-	-
Benzene	96	-	70-130	-	-
Bromodichloromethane	119	-	70-130	-	-
Bromoform	91	-	70-130	-	-
Carbon tetrachloride	142	-	70-130	-	-
Chlorobenzene	97	-	70-130	-	-
Chloroethane	103	-	70-130	-	-
Chloroform	111	-	70-130	-	-
Chloromethane	111	-	70-130	-	-
cis-1,2-Dichloroethene	105	-	70-130	-	-
cis-1,3-Dichloropropene	103	-	70-130	-	-
Dibromochloromethane	98	-	70-130	-	-
Dichlorodifluoromethane	106	-	70-130	-	-
Ethylbenzene	97	-	70-130	-	-
Methylene chloride	104	-	70-130	-	-
Methyl tert butyl ether	95	-	70-130	-	-
p/m-Xylene	98	-	70-130	-	-



### Lab Control Sample Analysis

Batch Quality Control

Project Name: ALVEREZ HS  
 Project Number: 14613.01

Lab Number: L0905467  
 Report Date: 05/07/09

Parameter	LCS %Recovery	LCS D %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01,04 Batch: WG361122-6</b>					
o-Xylene	101	-	70-130	-	-
Styrene	89	-	70-130	-	-
Tetrachloroethene	100	-	70-130	-	-
Toluene	87	-	70-130	-	-
trans-1,2-Dichloroethene	96	-	70-130	-	-
trans-1,3-Dichloropropane	89	-	70-130	-	-
Trichloroethene	122	-	70-130	-	-
Trichlorofluoromethane	109	-	70-130	-	-
Vinyl chloride	104	-	70-130	-	-
Acrylonitrile	82	-	70-130	-	-
n-Butylbenzene	102	-	70-130	-	-
sec-Butylbenzene	94	-	70-130	-	-
Isopropylbenzene	97	-	70-130	-	-
p-Isopropyltoluene	87	-	70-130	-	-
Acetone	102	-	70-130	-	-
2-Butanone	108	-	70-130	-	-
4-Methyl-2-pentanone	122	-	70-130	-	-



**Lab Duplicate Analysis**  
Batch Quality Control

Lab Number: L0905467  
Report Date: 05/07/09

Project Name: ALVEREZ HS  
Project Number: 14613.01

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Marisfield Lab Associated sample(s): 01-04 QC Batch ID: WG361122-4 QC Sample: L0905469-03 Client ID: DUP</b>					
Sample					
1,1,1-Trichloroethane	0.022	0.022	ppbV	0	25
1,1,1,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethene	ND	ND	ppbV	NC	25
1,2,4-Trimethylbenzene	0.031	0.037	ppbV	18	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichloroethane	ND	ND	ppbV	NC	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	0.041	0.051	ppbV	22	25
Benzene	0.186	0.173	ppbV	7	25
Bromodichloromethane	ND	ND	ppbV	NC	25
Bromoform	ND	ND	ppbV	NC	25
Carbon tetrachloride	0.085	0.087	ppbV	2	25
Chlorobenzene	ND	ND	ppbV	NC	25





### Lab Duplicate Analysis Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG361122-4 QC Sample: L0905469-03 Client ID: DUP Sample</b>					
Chloroethane	ND	ND	ppbV	NC	25
Chloroform	0.039	0.037	ppbV	5	25
Chloromethane	0.566	0.564	ppbV	1	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
Dichlorodifluoromethane	0.507	0.517	ppbV	2	25
Ethylbenzene	0.045	0.045	ppbV	0	25
Methylene chloride	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
p/m-Xylene	0.105	0.107	ppbV	2	25
o-Xylene	0.033	0.034	ppbV	3	25
Styrene	0.121	0.138	ppbV	13	25
Tetrachloroethene	ND	ND	ppbV	NC	25
Toluene	0.207	0.200	ppbV	3	25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Trichloroethene	ND	ND	ppbV	NC	25
Trichlorofluoromethane	0.265	0.272	ppbV	3	25



**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab</b> Associated sample(s): 01-04 QC Batch ID: WG361122-4 QC Sample: L0905469-03 Client ID: DUP					
Vinyl chloride	ND	ND	ppbV	NC	25
Acrylonitrile	ND	ND	ppbV	NC	25
n-Butylbenzene	ND	ND	ppbV	NC	25
sec-Butylbenzene	ND	ND	ppbV	NC	25
Isopropylbenzene	ND	ND	ppbV	NC	25
p-Isopropyltoluene	ND	ND	ppbV	NC	25
Acetone	ND	ND	ppbV	NC	25
2-Butanone	ND	ND	ppbV	NC	25
4-Methyl-2-pentanone	ND	ND	ppbV	NC	25



**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatiles Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG361122-8 QC Sample: L0905467-04 Client ID: IMP-3</b>					
1,1,1-Trichloroethane	0.035	0.030	ppbV	15	25
1,1,1,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethane	ND	ND	ppbV	NC	25
1,1-Dichloroethene	ND	ND	ppbV	NC	25
1,2,4-Trimethylbenzene	0.163	0.153	ppbV	6	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichloroethane	0.022	0.020	ppbV	10	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
1,3,5-Trimethylbenzene	0.049	0.045	ppbV	9	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	0.707	0.696	ppbV	2	25
Benzene	0.115	0.099	ppbV	15	25
Bromodichloromethane	ND	ND	ppbV	NC	25
Bromoform	ND	ND	ppbV	NC	25
Carbon tetrachloride	0.104	0.090	ppbV	14	25
Chlorobenzene	ND	ND	ppbV	NC	25



## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatiles Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG361122-8 QC Sample: L0905467-04 Client ID: IMP-3</b>					
Chloroethane	ND	ND	ppbV	NC	25
Chloroform	0.274	0.253	ppbV	8	25
Chloromethane	ND	ND	ppbV	NC	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
Dichlorodifluoromethane	0.486	0.456	ppbV	6	25
Ethylbenzene	0.075	0.072	ppbV	4	25
Methylene chloride	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
p/m-Xylene	0.244	0.234	ppbV	4	25
o-Xylene	0.115	0.109	ppbV	5	25
Styrene	0.057	0.055	ppbV	4	25
Tetrachloroethene	0.102	0.099	ppbV	3	25
Toluene	1.21	1.16	ppbV	4	25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Trichloroethene	0.551	0.485	ppbV	13	25
Trichlorofluoromethane	0.564	0.530	ppbV	6	25



**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG361122-8 QC Sample: L0905467-04 Client ID: IMP-3</b>					
Vinyl chloride	ND	ND	ppbv	NC	25
Acrylonitrile	ND	ND	ppbv	NC	25
n-Butylbenzene	ND	ND	ppbv	NC	25
sec-Butylbenzene	ND	ND	ppbv	NC	25
Isopropylbenzene	ND	ND	ppbv	NC	25
p-Isopropyltoluene	ND	ND	ppbv	NC	25
Acetone	9.32	8.10	ppbv	14	25
2-Butanone	1.04	0.899	ppbv	15	25
4-Methyl-2-pentanone	ND	ND	ppbv	NC	25



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

## GLOSSARY

### Acronyms

- EPA** · Environmental Protection Agency.
- LCS** · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
- LCSD** · Laboratory Control Sample Duplicate: Refer to LCS.
- MS** · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
- MSD** · Matrix Spike Sample Duplicate: Refer to MS.
- NA** · Not Applicable.
- NC** · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
- ND** · Not detected at the reported detection limit for the sample.
- NI** · Not Ignitable.
- RDL** · Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
- RPD** · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- \*** · The batch duplicate RPD exceeds the acceptance criteria. This flag is not applicable when the sample concentrations are less than 5x the RDL. (Metals only.)
- A** · Spectra identified as "Aldol Condensation Product".
- B** · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.
- D** · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- H** · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- N** · The matrix spike recovery exceeds the acceptance criteria. This flag is not applicable when the sample concentration is greater than 4x the spike added. (Metals only.)
- P** · The RPD between the results for the two columns exceeds the method-specified criteria.
- R** · Analytical results are from sample re-analysis.
- RE** · Analytical results are from sample re-extraction.
- J** · Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**Report Format:** Data Usability Report



**Project Name:** ALVEREZ HS  
**Project Number:** 14613.01

**Lab Number:** L0905467  
**Report Date:** 05/07/09

## REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised February 18, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Chloride, Fluoride, Sulfate, Sulfite, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), Total Cyanide, Bromide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Ignitability, Corrosivity, TCLP 1311, Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### Florida Department of Health Certificate/Lab ID: E87814.

*Non-Potable Water* (Inorganic Parameters: SM2320B, 4500NH<sub>3</sub>-F, EPA 120.1, SM2510B, 2340B, EPA 245.1, EPA 365.2, EPA 150.1, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 335.2, 420.1, SM2540G, EPA 180.1. Organic Parameters: EPA 624, 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 9050, 7470, 7471, 9045, EPA 7.3.3.2, EPA 7.3.4.2, 9014, 9065. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### Louisiana Department of Environmental Quality Certificate/Lab ID: 03090.

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

### Maine Department of Human Services Certificate/Lab ID: MA0030.

*Wastewater* (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

### Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

### New Hampshire Department of Environmental Services Certificate/Lab ID: 2206.



*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015.

*Non-Potable Water* (Inorganic Parameters: SW-846 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

**New York Department of Health** Certificate/Lab ID: 11627.

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, SM2540C, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299.

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX.

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7471. Organic Parameters: EPA 8015, 8270.)

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID: 68-02089. Registered Laboratory.

**U.S. Army Corps of Engineers**

# ALPHA CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048  
 TEL: 508-822-9300 FAX: 508-822-3286

AIR ANALYSIS PAGE 1 OF 1

**Client Information**

Client: EA Engineering  
 Address: 2350 Post Rd  
Lanwick Pt 02886  
 Phone: 401-536-3448  
 Fax: 401-786-3423  
 Email:

**Project Information**

Project Name: Alvarez H.S  
 Project Location: Pardner, RI  
 Project #: 14613.01  
 Project Manager: Mackell Spear  
 ALPHA Quote #:  
 Turn-Around Time

Standard 10 DAYS  
 RUSH (only confirmed if pre-approved)  
 Date Due: 6/7/09 Time:

**Report Information - Data Deliverables**

Date Rec'd in Lab: 4/30/09  
 FAX  
 ADEX  
 Criteria Checker:  
 (Default based on Regulatory Criteria Indicated)  
 Other Formats:  
 EMAIL (standard pdf report)  
 Additional Deliverables:  
 Report to: (if different than Project Manager)  
mspear@easitecon

**Alpha Job #:**

169054107

**Billing Information**

Same as Client Info  
 PO #:

**Regulatory Requirements/Report Limits**

State/ed Program Criteria  
CT TA062 IADP  
AIR CONCENTRATIONS

**All columns below must be filled out**

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION				Sample Matrix*	Sampler's Initials	Can Size	I.D. Can	I.D. - Flow Controller	ANALYSIS				Sample Comments (i.e. PID)
		Date	Start Time	End Time	Vacuum						TO-14A by TO-15	TO-15	TO-15 SIM	APH	
0467.1	MD-3	4/29	9:10	9:35	-38"	-4	SV	DYBR	2.7L	0506.052	X				OTD = <del>0.012</del> <u>0.012</u> RDS
2	MD-7		9:43	10:12	-29	-4				03810368					0.012
3	IMP-1		7:47	8:15	-30"	-1				01650206					0.012
4	IMP-3		8:16	8:42	-29	-1				02570948					0

**\*SAMPLE MATRIX CODES**

AA = Ambient Air (Indoor/Outdoor)  
 SV = Soil Vapor/Landfill Gas/SVE  
 Other = Please Specify

Relinquished By: [Signature] Date/Time: 4/30/09 1800

Received By: [Signature] Date/Time: 4/30/09 1800

Container Type: S

Form No: 101-02 (rev. 1-8-08)  
Paul Stewart 5-1-09 18:30  
[Signature] 5-1-09 18:20

Please print clearly, legibly, and completely. Samples can not be logged in and turnaround time clock will not start until any ambient air samples are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

## **Appendix D**

### **Laboratory Reporting Limits Correspondence**



June 26, 2009

**To:** Ron Mack  
EA Engineering, Science, & Technology  
2350 Post Road  
Warwick, RI 02886

**From:** Katie O'Brien  
Alpha Analytical  
320 Forbes Blvd  
Mansfield, MA 01581

**Re:** TO15 SIM Reporting Limits

Dear Ron,

As we communicated prior to the TO-15 SIM analyses completed for the Alverez High School air samples collected on 3/26/09 and 4/29/09; the SIM Reporting Limits achieved for the following compounds are the lowest that we can currently achieve at Alpha. Please note that these reporting limits are above the Draft Proposed CT RSR (Residential) Criteria for these compounds:

1,2-Dichloroethane SIM RL = 0.08 ug/m<sup>3</sup>  
Ethylene Dibromide (a.k.a. 1,2-Dibromoethane) SIM RL = 0.15 ug/m<sup>3</sup>  
1,1,1,2- Tetrachloroethane SIM RL = 0.14 ug/m<sup>3</sup>  
1,1,2,2-Tetrachloroethane SIM RL = 0.14 ug/m<sup>3</sup>  
Bromodichloromethane SIM RL = 0.13 ug/m<sup>3</sup>

Please don't hesitate to contact me at 508-844-4156 if you have any questions.

Best Regards,

Katie O'Brien

## **Appendix E**

**Order of Approval Amendment Request  
27 April 2009**



EA Engineering, Science, and Technology, Inc.

Airport Professional Park  
2350 Post Road  
Warwick, Rhode Island 02886  
Telephone: 401-736-3440  
Fax: 401-736-3423  
www.eaest.com

27 April 2009

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

RE: Order of Approval Amendment Request  
Alvarez High School, 333 Adelaide Avenue, Providence, Rhode Island  
Case No. 2005-029  
EA Project No. 14613.01

Dear Mr. Martella:

On behalf of the City of Providence School Department (City), EA Engineering, Science, and Technology, Inc. (EA) is providing this letter request to revise the current indoor air and subslab vapor monitoring program at the above referenced Alvarez High School site (the Site). A summary of site data collected is provided below and is intended to provide support for our request.

Project Monitoring History

The Alvarez High School (formerly Adelaide High School) is constructed upon property formerly occupied by Gorham Manufacturing. Industrial processes were reportedly conducted at the site and included the manufacture of sterling and plated silverware, as well as bronze castings. The former plating and degreasing operations reportedly contributed to the presence of soil and groundwater impacted by chlorinated solvents across the property. Table 1 provides a list of contaminants of concern (COC) at the property, identified during historical site investigations of the site, reportedly due to the former Gorham Manufacturing operations.

Table 1: Contaminants of Concern

Soil	Groundwater
Tetrachloroethene	Tetrachloroethene
Trichloroethene	Trichloroethene
1,1,1-Trichloroethane	1,1,1-Trichloroethane
1,1-Dichloroethane	Vinyl Chloride
Benzo(a)anthracene	1,1-Dichloroethane
Benzo(a)pyrene	cis-1,2-Dichloroethene
Benzo(b)flouranthene	
Arsenic	
Lead	



The current primary environmental concern of the Alvarez High School parcel is the potential for contaminants from within the groundwater and/or soil volatilizing and “flowing” through cracks/seams of the concrete foundation and/or floor of the school and affecting indoor air. This process is commonly referred to as soil vapor intrusion.

Soil vapor intrusion is a common problem in contaminated sites, and the most common solution is the installation of a sub-slab depressurization (SSD) system, similar to what has been installed at the Site. The typical SSD system consists of one or more fans that are connected to a series of interconnected perforated pipes constructed beneath the school’s concrete floor. These pipes are connected to vapor suction pits, which provide a means to draw vapor from the soils. The fan(s) then draw the vapor from these pits through the pipes and discharge the vapor above the roof of the building, diluting the vapor in ambient air. This process creates a negative pressure, or vacuum, beneath the school, and the vapor will follow the “path of least resistance,” which is always through the SSD system, i.e., the vapor will not flow through the competent concrete foundation slab but will instead flow into the vacuum of the SSD system.

The SSD system has been in operation at the Alvarez High School continuously since 16 March 2007. EA has completed sampling of the sub-slab vapor, ambient outdoor air, and indoor air in accordance with the Order of Approval and subsequent amendments (Amended OA) for this Site since March 2007 (refer to the Alvarez High School Building Plan with Indoor Air Sampling locations in Attachment A). Indoor air and soil vapor samples have been collected on a monthly basis following the first three bi-weekly sampling events in March and April 2007. Analytical data summary tables for indoor air and subslab vapor are provided as Attachments B and C, respectively. Monitoring has included inspections of the rooftop fans to ensure proper operation. In addition, continuous electronic monitoring of each of the three SSD system fans has been, and continues to be, ongoing. The continuous operation of the SSD system and confirmation of sub-slab vacuum beneath the school, between -0.01 and -0.18 inches of water column, illustrates ongoing effective operation of the SSD system, and elimination of the soil vapor intrusion pathway at the Site.

With two years of data compiled for the Site, several types of detections and/or exceedances of the State of Connecticut’s Draft Proposed Indoor Residential Targeted Air Concentrations (Order of Approval-required site criteria) have been identified. It is important to note that these standards are Draft/Proposed and have not been enacted due to the extremely low detection limits. Reportedly, laboratories do not have the means to confidently meet these low standards consistently, with some concentrations reported as “false-positives”, as detailed below. The types of exceedances, with specific historical project examples, are summarized below.

- **Construction-related Compounds** – During the initial monitoring events, several compounds were detected in indoor air samples or sub-slab vapor samples. During the first 5 months of monitoring, two volatile organic compounds (VOCs), acetone and 2-butanone, were detected within samples collected from sub-slab vapor sampling points and were attributable to the use of PVC primer and solvent during construction of the SSD system and the monitoring points. The VOC concentrations originally detected



dissipated by August 2007, and have not been detected in the sub-slab system since that time. In addition, several VOCs (1,2-dichloroethane, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene) were detected during the initial monitoring events and are attributed to construction activities taking place at the time (i.e., building materials, off-gassing, construction worker cigarette smoke) and were detected intermittently in indoor air after the five-month period following system start-up, and are discussed below.

In the 20 September 2007 event, 1,2,4-trimethylbenzene was detected within indoor air in the gymnasium, but was not detected at comparable levels within the sub-slab, indicating the compound had originated from materials within the gymnasium, not soil vapor. In addition, chloroform and bromodichloromethane were detected in the initial indoor air samples. As concentrations were not replicated beyond the first month of sampling, it was concluded that the presence of chloroform and bromodichloromethane was attributable to the chlorination of the school's water supply. None of these contaminants were noted as site-specific COCs for the Site.

- **Background Ambient Air Compounds** – Carbon tetrachloride has been detected in the indoor air at the Site at concentrations exceeding the site criteria. However, carbon tetrachloride was also detected in the outdoor ambient air samples at analogous concentrations, even on days with wind speeds exceeding 10-15 miles per hour. Carbon tetrachloride is known to be a statewide and urban background compound detectable in trace concentrations. Based upon discussions and guidance provided by the Rhode Island Department of Health and RIDEM Office of Waste Management and Office of Air Resources, these carbon tetrachloride results do not constitute Indoor Air Action Level exceedances for the Site since they are consistent with documented background concentrations. Carbon tetrachloride is not included on the site-specific list of monitoring detected as it has been concluded that indoor concentrations are indicative of background levels.
- **Laboratory Contaminate Compound** – Methylene chloride was detected in outdoor ambient air samples (26 April 2007, 29 June 2007, and 20 August 2007) below the site criteria, but not within indoor air. Methylene chloride is not a COC for the Site and is an industry recognized common laboratory contaminant.
- With the exception of one VOC compound in one indoor sample collected on 22 March 2007 (trichloroethylene [TCE]) and also detected in ambient outdoor air at a greater concentration than the detected indoor air concentration, none of the VOC compounds of greatest potential concern to human health at this site, as identified by the Agency for Toxic Substances and Disease Registry in their December 2006 Health Consultation, were detected in any of the samples at concentrations greater than the applicable site criteria. TCE and tetrachloroethylene (PCE) have been detected in sub-slab sampling points several times but have not been detected within indoor air at levels exceeding the site criteria, indicating the SSD system is performing as designed.





During monitoring events at which COCs were detected within indoor ambient air, EA took immediate measures to determine the source of these contaminants. Examples of these events and the proactive steps to determine the sources of the exceedances are described below.

- During the 22 August and 22 September 2007 events, PCE and TCE were detected within sub-slab sampling/monitoring points. Although these compounds were detected at up to 8.37 and 31.9 microgram/cubic meters ( $\mu\text{g}/\text{m}^3$ ), respectively, levels detected within indoor air were  $1 \mu\text{g}/\text{m}^3$  and  $0.1 \mu\text{g}/\text{m}^3$ , respectively, well below the Site criteria. Therefore, these levels were not considered to be cause for concern, but rather indicated effective operation of the SSD system.
- PCE was detected within one indoor air sample on 25 January 2008 at a concentration ( $8.9 \mu\text{g}/\text{m}^3$ ), exceeding the Indoor Air Action Level of  $5.0 \mu\text{g}/\text{m}^3$ . Immediate arrangements were made to collect follow-up indoor air from the impacted room, sub-slab vapor from the corresponding sampling point, and an outdoor ambient air sample. Laboratory correspondence indicated that results may have been skewed high from a previously analyzed and unrelated sample collected from a different site with very high PCE concentrations (“false-positive”). This laboratory-related exceedance was confirmed through resampling, which indicated concentrations of PCE below the laboratory reporting limit in the subsequent indoor air, sub-slab vapor, and outdoor ambient air conducted on 28 January 2008.
- PCE and acetone were detected at levels exceeding the site criteria during the 27 March 2008 monitoring event. The SSD system was checked following the receipt of sample results on 9 April 2008 and was determined to be operational. However, EA was informed at the time of the April site visit that a new cleaning crew had been hired after the February 2008 monitoring event and had been routinely using two “new” aerosol cleaning products within the school. Both of these cleaning products--a steel polisher and a graffiti remover--were shown to contain these contaminants detected in indoor air. EA coordinated with the School Department’s janitorial staff and the cleaning company to ensure no future use of the cleaning products in question.
- Four compounds were detected above the site criteria in one room during the 30 September 2008 sampling event. The compounds detected were 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-butylbenzene, and p-isopropyltoluene. Sub-slab vapor samples beneath the room in question did not indicate the presence of these compounds above laboratory method detection limits. The laboratory indicated that the relatively high molecular weights of these compounds may have contributed to cross-contamination from previous samples obtained by others at different sites and that the laboratory “consider the results for these four compounds to be suspect and recommend that they be stricken from the results” (false-positive). As the SSD system appeared to be in



continuous, effective working order at the time, it was concluded that the results were not significant.

- During the 27 October 2008 sampling event, 1,2-dichloroethane was detected within one indoor air sample at a concentration exceeding the site criteria ( $0.150 \mu\text{g}/\text{m}^3$  compared to a criterion of  $0.07 \mu\text{g}/\text{m}^3$ ). Both sub-slab sampling locations closest to the room where this compound was detected (the cafeteria) did not contain 1,2-dichloroethane above the laboratory method detection limit. EA performed supplementary indoor air and sub-slab vapor sampling to determine whether the exceedance was significant on 12 November 2008. This follow-up sampling did not reveal the presence of 1,2-dichloroethane within the cafeteria or in the sub-slab directly beneath the cafeteria. Therefore, it is considered an anomalous detection.
- One compound, 1,2-dibromoethane, was detected within the indoor air sample collected in the gymnasium on 18 December 2008. It was detected at a level of  $0.280 \mu\text{g}/\text{m}^3$  as compared to the site criteria of  $0.150 \mu\text{g}/\text{m}^3$ . This compound was not detected within any of the sub-slab vapor samples. Resampling of the gymnasium indoor air was conducted on 21 January 2009. Results did not detect the presence of 1,2-dibromoethane at levels above the laboratory method detection limits. Therefore, this was also considered an anomalous event.
- One compound, 1,1,1,2-tetrachloroethane, has been detected within samples collected from the cafeteria during the January and February 2009 sampling events ( $0.500 \mu\text{g}/\text{m}^3$  and  $0.320 \mu\text{g}/\text{m}^3$ , respectively, vs. criterion of  $0.082 \mu\text{g}/\text{m}^3$ ). EA is currently investigating the cause of these detections further, but is currently attributing these detections to either cleaning/buffing products utilized for the gymnasium floor or an anomalous event. The March 2009 sampling event, conducted on 26 March 2009, will assist in determining if this compound is persisting in indoor air.

### **Proposed Monitoring Modifications**

During the two-year period between March 2007 and March 2009, 312 air and soil vapor samples have been collected and 14,664 sampling and monitoring data points have been evaluated. The comprehensive overall body of data collected to date clearly demonstrates that the SSD system operating at the site has eliminated the soil vapor intrusion pathway, and that neither soil vapor intrusion of VOCs into the school nor the accumulation of methane beneath or within the school is occurring. The reliability of the SSD system is evidenced by the fact that no SSD system malfunctions or equipment failures have occurred throughout the two years of SSD system operation. This high level of reliability and performance is expected to continue over time, and ongoing continuous monitoring of the SSD system via the existing alarm system will ensure that redundancies remain in place to ensure prompt notifications and responses to any interruptions in SSD system operation. Based on the overwhelming supporting data and SSD system effectiveness and reliability, continuation of the current monthly sampling/monitoring



frequency of site parameters is excessive, disproportionately costly to the City, and not necessary to demonstrate ongoing safety to building occupants.

The proposed amendments, in conjunction with all other elements of the Order of Approval and subsequent Amended OA, collectively comprise an Operations and Maintenance (O&M) Program that meets or exceeds all state guidance policies reviewed by EA regarding performing O&M at sites where SSD systems have been installed, and will therefore effectively provide the appropriate amount of data necessary to continue to demonstrate the high level of site safety with respect to potential soil vapor intrusion. The requested O&M Program amendments are presented below:

- Revise the sub-slab soil vapor sampling frequency to quarterly. Revise sub-slab sampling rotation to include four “MP” points and two “IMP” points each quarterly sampling event. This will allow each point to be sampled at least twice per year. A proposed sample point monitoring schedule is provided in Attachment D.
- Revise indoor air sampling frequency to quarterly. All areas currently sampled within the school will be sampled on a quarterly, rather than monthly, basis.
- Revise the current ambient outdoor air sampling frequency to quarterly to coincide with proposed indoor and sub-slab sampling frequencies.

No changes are proposed to the current annual schedule of rooftop fan effluent sampling; to the field inspection and monitoring currently performed on a monthly basis; to the continuous monitoring frequency for SSD system operation and indoor methane levels; to any of the quarterly summary reporting requirements; or to any of the Amended OA provisions regarding emergency response, document repository maintenance, and verbal/written RIDEM notifications. In order to address RIDEM’s concern that a site criteria exceedance resultant from soil vapor intrusion may not automatically trigger a timely increase in sampling frequency, EA proposes to include language in the Amended Order that states:

- In the event that a site criteria exceedance demonstrated to be resultant from soil vapor intrusion occurs, then the City shall collect additional monthly samples from the indoor area exhibiting the exceedance and the corresponding closest sub-slab sampling location until such time that the exceeding VOC concentrations return to levels below the compound-specific site criteria for a period of three consecutive months.
- A “monthly comment letter” would be provided outlining the results of any additional monitoring conducted during the prior month.

EA would continue to provide exceedance notifications to RIDEM per the current Amended OA and to investigate the potential source of the exceeding compound.

As noted above, EA is not requesting an alteration of the following Amended OA requirements:



- Monthly monitoring of indoor air using a PID with part-per-billion sensitivity
- Monthly monitoring of subslab vapor sampling points to ensure adequate vacuum is present beneath foundation slab of building
- Monthly monitoring of roof-top fans to ensure proper operation
- Monthly monitoring of methane monitoring system to ensure proper operation
- Quarterly submittal of Operations and Maintenance Status Reports to detail the system's effectiveness

EA is confident this approach will satisfy all involved parties to ensure the well-being of the attendants of Alvarez High School, as well as providing some financial relief to the City. EA looks forward to your response on this matter and will continue monthly monitoring until a response to this request is received. If you have any questions or require additional information, please contact me at 401-736-3440, Ext. 202.

Sincerely,  
EA ENGINEERING, SCIENCE,  
AND TECHNOLOGY, INC.

Mark K. Speer, P.E.  
Senior Engineer

MKS/rgm

**Attachments:**

Attachment A: Alvarez High School Building Plans  
Attachment B: Indoor Air Sampling Data Summary Tables  
Attachment C: Subslab Vapor Sampling Data Summary Tables  
Attachment D: Proposed Sampling Schedule

cc: M. Dunham, Prov. Dept. of Public Schools  
S. Rapport, City of Prov. Law Department  
J. Fernandez, City of Prov. Law Department  
J. Boehnert, Partridge, Snow, & Hahn  
T. Slater, Representative  
Knight Memorial Library Repository  
S. Fischbach, RI Legal Services  
A. Sepe, Prov. Dept. of Public Property  
T. Deller, Prov. Redevelopment Agency  
J. Ryan, Partridge, Snow, & Hahn  
R. Dorr, Neighborhood Resident  
J. Pichardo, Senator  
G. Simpson, Textron  
Principal Torchon, Adelaide High School

## **Appendix F**

### **March 2009 Air Sampling Summary Letter (Abbreviated)**



EA Engineering, Science, and Technology, Inc.

Airport Professional Park  
2350 Post Road  
Warwick, Rhode Island 02886  
Telephone: 401-736-3440  
Fax: 401-736-3423  
www.eaest.com

27 April 2009

Mr. Joseph T. Martella II, Senior Engineer  
RIDEM - Office of Waste Management  
Site Remediation Program  
235 Promenade Street  
Providence, RI 02908

RE: March 2009 Air Sampling Event Comment Letter  
Alvarez High School, 333 Adelaide Avenue, Providence, Rhode Island  
Case No. 2005-029  
EA Project No. 14613.01

Dear Mr. Martella:

On behalf of the City of Providence Department of Public Schools, EA Engineering, Science, and Technology, Inc. (EA) is providing this summary of data collected at the referenced Alvarez High School site (the Site) on 26 March 2009.

In accordance with the Order of Approval and amendments (Amended OA) for this Site, your office was notified via telephone that three compounds, 1,2-Dichloroethane, Trichloroethylene, and Methylene Chloride, were detected within several samples collected from the Alvarez High School at concentrations that exceed the State of Connecticut's Draft Proposed Indoor Residential Targeted Air Concentrations. The detections are detailed below:

- **1,2-Dichloroethane**
  - Standard: 0.07  $\mu\text{g}/\text{m}^3$
  - Gymnasium: 0.087  $\mu\text{g}/\text{m}^3$
  - Cafeteria: 0.084  $\mu\text{g}/\text{m}^3$
  
- **Trichloroethylene**
  - Standard: 1.00  $\mu\text{g}/\text{m}^3$
  - Gymnasium: 1.51  $\mu\text{g}/\text{m}^3$
  - Kitchen Storage Room: 4.00  $\mu\text{g}/\text{m}^3$
  - Room 145: 1.61  $\mu\text{g}/\text{m}^3$
  - Room 110: 1.18  $\mu\text{g}/\text{m}^3$
  - Ambient Outdoor Air: 6.87  $\mu\text{g}/\text{m}^3$
  
- **Methylene Chloride**
  - Standard: 3.0  $\mu\text{g}/\text{m}^3$
  - Gymnasium: 4.01  $\mu\text{g}/\text{m}^3$
  - Kitchen Storage Room: 7.54  $\mu\text{g}/\text{m}^3$
  - Room 145: 4.06  $\mu\text{g}/\text{m}^3$
  - Room 110: 3.23  $\mu\text{g}/\text{m}^3$
  - Ambient Outdoor Air: 11.6  $\mu\text{g}/\text{m}^3$



Upon receipt of this data, EA referenced monitoring field notes and analytical results of subslab vapor sampling, which was conducted concurrently with the indoor air sampling. Monitoring notes indicate the SSD System continues to operate effectively in accordance with design. Analytical results from subslab vapor sampling indicate that Trichloroethylene was detected at the subslab vapor points at concentrations ranging from 3.88 to 25.1  $\mu\text{g}/\text{m}^3$ , methylene chloride was detected in the subslab at concentrations ranging from non-detectable concentrations to 16.1  $\mu\text{g}/\text{m}^3$ , and 1,2-Dichloroethane was detected in the subslab at concentrations ranging from non-detectable concentrations to 0.133  $\mu\text{g}/\text{m}^3$ .

Please note ambient air concentrations of Methylene Chloride and Trichloroethylene at concentrations greater than those detected within the indoor air samples collected from within the school. The high indoor air concentrations are most likely directly attributable to the ambient air concentrations, as the outside air is used to ventilate the school. EA has researched ambient air concentrations in the vicinity of the school as well as potential sources of the compounds and has not found a direct source. The ambient air sample was taken from an upwind location (south) on the day of sampling.

EA has also noted a correlation between the detection of Methylene Chloride and Trichloroethylene as these compounds were detected in the same samples. The highest concentrations of Methylene Chloride and Trichloroethylene were both detected in the ambient air sample as well. Considering Methylene Chloride is not a site contaminant and is a common laboratory contaminant, EA has questioned the validity of the analytical results. However, the laboratory (Alpha Analytical Laboratory) insists the data is valid.

Our April sampling event is scheduled for 28 April, and will serve as our supplementary sampling event to confirm or disprove the presence of these compounds. The City will continue to perform monthly monitoring at the school.

No SSD system modifications or other actions to address current site conditions are warranted or proposed at this time. Your office will be notified if it is determined that this issue persists or if any other issues arise. If you have any questions or require additional information, please contact me at 401-736-3440, Ext. 202.

Sincerely,

EA ENGINEERING, SCIENCE,  
AND TECHNOLOGY, INC.

Mark K. Speer, P.E.  
Senior Engineer

MKS/rgm

**Figures**

- Figure 1: Indoor Air Sampling and Methane Monitoring Plan  
Figure 2: As-Built Subslab Monitoring and Sampling Locations Plan



**Attachments**

Attachment A: Indoor Air Analytical Report, 26 March 2009

Attachment B: Subslab Vapor Analytical Report, 26 March 2009

cc: M. Dunham, Prov. Dept. of Public Schools  
S. Rapport, City of Prov. Law Department  
J. Fernandez, City of Prov. Law Department  
J. Boehnert, Partridge, Snow, & Hahn  
T. Slater, Representative  
Knight Memorial Library Repository  
S. Fischbach, RI Legal Services  
A. Sepe, Prov. Dept. of Public Property  
T. Deller, Prov. Redevelopment Agency  
J. Ryan, Partridge, Snow, & Hahn  
R. Dorr, Neighborhood Resident  
J. Pichardo, Senator  
G. Simpson, Textron  
Principal Torchon, Adelaide High School



## **Appendix G**

### **April 2009 Air Sampling Summary Letter (Abbreviated)**



EA Engineering, Science, and Technology, Inc.

Airport Professional Park  
2350 Post Road  
Warwick, Rhode Island 02886  
Telephone: 401-736-3440  
Fax: 401-736-3423  
www.eaest.com

18 May 2009

Mr. Joseph T. Martella II, Senior Engineer  
RIDEM - Office of Waste Management  
Site Remediation Program  
235 Promenade Street  
Providence, RI 02908

RE: April 2009 Air Sampling Event Comment Letter  
Alvarez High School, 333 Adelaide Avenue, Providence, Rhode Island  
Case No. 2005-029  
EA Project No. 14613.01

Dear Mr. Martella:

On behalf of the City of Providence Department of Public Schools, EA Engineering, Science, and Technology, Inc. (EA) is providing this summary of data collected at the referenced Alvarez High School site (the Site) on 29 April 2009.

In accordance with the Order of Approval and amendments (Amended OA) for this Site, your office was notified via telephone that one compound, 1,2-Dichloroethane, was detected within a sample collected from Room 118 (Figure 1) at a concentration that exceeds the State of Connecticut's Draft Proposed Indoor Residential Targeted Air Concentrations ( $0.089 \mu\text{g}/\text{m}^3$  vs. criteria of  $0.082 \mu\text{g}/\text{m}^3$ ).

Upon receipt of this detection, EA reviewed monitoring field notes and analytical results of subslab vapor sampling, which was conducted concurrently with the indoor air sampling. Analytical results indicate that 1,2-Dichloroethane was detected in two samples collected from subslab vapor sampling points, MP-3 and IMP-3 (Figure 2) at concentrations of  $0.319$  and  $0.089 \mu\text{g}/\text{m}^3$ , respectively.

1,2-Dichloroethane has historically been used in degreasing, paint removal, and carpet cleaning products. Room 118, which is the music classroom, is the only room with carpeting. Therefore, a carpet cleaning product may be the source of the detection, as well as a graffiti removal product. The compound is also used as a precursor in the production of PVC, which is the material the subslab sampling points are made from. This may also be a cause for the subslab detections. EA will conduct supplementary sampling this month during regular monthly sampling, unless the proposed quarterly sampling schedule is approved. If quarterly sampling is approved, EA will perform supplementary sampling as soon as possible. Monthly sampling is tentatively scheduled for 27 May 2009.

To summarize, 1,2-Dichloroethane was detected within Room 118 during April 2009 indoor air sampling conducted at the Alvarez High School. EA will perform monthly sampling on 27 May 2009 and will review the results and determine if the presence of this compound persists. However, according to our monitoring data, the SSD System continues to operate effectively in



accordance with design. Copies of the Analytical Reports for Indoor Air and Subslab Vapor sampling for April 2009 are provided in Attachments A and B, respectively.

No SSD system modifications or other actions to address current site conditions are warranted or proposed at this time. Your office will be notified if it is determined that this issue persists or if any other issues arise. If you have any questions or require additional information, please contact me at 401-736-3440, Ext. 202.

Sincerely,

EA ENGINEERING, SCIENCE,  
AND TECHNOLOGY, INC.

Mark K. Speer, P.E.  
Senior Engineer

MKS/rgm

**Figures**

Figure 1: Indoor Air Sampling and Methane Monitoring Plan  
Figure 2: As-Built Subslab Monitoring and Sampling Locations Plan

**Attachments**

Attachment A: Indoor Air Analytical Report, 29 April 2009  
Attachment B: Subslab Vapor Analytical Report, 29 April 2009

cc: M. Dunham, Prov. Dept. of Public Schools      A. Sepe, Prov. Dept. of Public Property  
T. Deller, Prov. Redevelopment Agency      S. Fischbach, RI Legal Services  
J. Fernandez, City of Prov. Law Department      J. Ryan, Partridge, Snow, & Hahn  
J. Boehmert, Partridge, Snow, & Hahn      R. Dorr, Neighborhood Resident  
T. Slater, Representative      J. Pichardo, Senator  
Knight Memorial Library Repository      Principal Torchon, Adelaide High School