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Mr. Jeffrey Crawford  
Rhode Island Department of Environmental Management  
Office of Waste Management  
235 Promenade Street  
Providence, RI 02908-5767

ENVIRONMENTAL

Subject:  
June 2013 Quarterly Monitoring Report for Springfield Street School Complex

Dear Mr. Crawford:

Date:  
September 5, 2013

ARCADIS US, Inc. (ARCADIS) conducted quarterly monitoring of soil gas, indoor air, the cap, and the sub-slab ventilation system between June 5 and June 11, 2013. The monitoring was performed in accordance with the *Long-Term Operation and Maintenance Plan and Site Contingency Plan* (O&M Plan) contained in the *Remedial Action Work Plan* prepared by ATC dated April 2, 1999, revised May 3, 1999 and May 9, 1999. The *Remedial Action Work Plan* (RAWP) was approved by the Rhode Island Department of Environmental Management (RIDEM) in a letter dated June 4, 1999.

Contact:  
Donna H. Pallister, PE

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This work is subject to the Limitations contained in Attachment A. Results of monitoring are provided in the following sections and in the attachments.

Our ref:  
WK012152.0008

## COVER MONITORING

ARCADIS conducted a visual survey of the site on June 6, 2013 for evidence of significant soil cover erosion, or for any areas where the orange snow fencing indicator barrier was visible. ARCADIS did not observe any areas where the orange indicator barrier was visible during this monitoring event. No evidence of erosion or significant settling was observed.

## SUB-SLAB VENTILATION SYSTEM

### Field Monitoring

The sub-slab ventilation system was inspected by ARCADIS during the quarterly monitoring on June 6, 2013. The two elementary school blowers and the two middle school blowers were operating normally upon arrival.

Samples of influent and effluent (before and after the carbon canisters) air were collected at each blower and screened for methane, carbon dioxide, oxygen, carbon monoxide, hydrogen sulfide, and organic vapors using a Landtec GEM2000 Plus and a MiniRae 2000. Results of screening are provided on Table 1. Methane, hydrogen sulfide, and organic vapors were not detected in any of the samples. Carbon Monoxide was detected at a concentration of 1 ppm at one location; the RAWP action level is 9 ppm for Carbon Monoxide. Carbon dioxide was detected at concentrations of 0.1% at all locations. Therefore, all seven sample concentrations were equal to the RAWP Action Level of 1000 ppm (0.1%).

Air samples were also collected in Tedlar bags from influent air at each blower. The Tedlar bags were submitted to Con-test Analytical Laboratory for analysis for VOC via EPA method TO-14.

#### **Soil Gas Laboratory Results**

Sub-slab soil gas samples were collected on June 6 and 11, 2013 from the influent to each sub-slab ventilation system. The samples were collected in Tedlar bags and submitted to Con-Test Analytical Laboratories for analysis by method TO-14. Results of the analysis are summarized in Table 2, and the laboratory report is provided in Attachment B.

The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are provided in Table 2 for comparison purposes even though they are not directly applicable to soil gas, because it does not represent exposure point concentrations. The PELs are the average concentrations that OSHA allows to be present in a workplace without any respiratory protection or exposure controls. The concentrations detected in soil gas were well below the OSHA PELs.

Results were also compared to the Connecticut Department of Environmental Protection (CTDEP) Residential Volatilization Criteria for Soil Vapor. These criteria are intended to be protective for occupants of residential dwellings. Site concentrations were well below the CTDEP criteria.

## INDOOR AIR MONITORING

Indoor air monitoring was conducted on June 6, 2013 using a Landtec GEM 2000 Plus meter (methane, hydrogen sulfide, oxygen), a Mini Rae photoionization detector (organic vapors), and a Fluke 975 Airmeter (carbon dioxide, carbon monoxide). School was in session during the monitoring event.

Results of monitoring are provided in the Table 3. Carbon dioxide measurements were made with a Fluke 975 Airmeter indoor air quality meter. The Fluke 975 has a range of 0 to 5,000 ppm, with a resolution of 1 ppm.

The outside temperature on June 6, 2013 was 75 °F. Carbon dioxide was measured outside in the school parking lot at 650 ppm.

All readings were below the RAWP Action Levels. Methane, carbon monoxide, hydrogen sulfide, and organic vapors were not detected, and carbon dioxide was within the expected range for an occupied building.

Concentrations of carbon dioxide inside occupied buildings are expected to be higher than the concentrations in outdoor air because the building occupants expel carbon dioxide. Therefore, in indoor air, the concentration of carbon dioxide is typically used as an indicator of the effectiveness of the heating, ventilating, and air conditioning (HVAC) system in circulating outdoor air into the building. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) have prepared ASHRAE Standard 62.1-2007 titled *Ventilation for Acceptable Indoor Air Quality*. The purpose of the Standard is to specify minimum ventilation rates and other measures to provide indoor air quality that is acceptable to human occupants and that minimize adverse health effects. A discussion regarding carbon dioxide concentrations in indoor air contained in Informative Appendix C of the Standard states: "maintaining a steady-state CO<sub>2</sub> concentration in a space of no greater than about 700 ppm above outdoor air levels will indicate that a substantial majority of visitors entering a space will be satisfied with respect to human bioeffluents (body odor)." This is the basis for ASHRAE's recommendations for concentrations of carbon dioxide in indoor air. The average concentrations measured inside the site buildings were less than 700 ppm above the ambient outdoor concentrations.

The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) for carbon dioxide in the workplace is 5,000 ppm. All readings were below this concentration.

The control panels for the methane monitors at both schools were inspected on June 6, 2013. The methane monitor control panels had stickers that indicated that the monitors were calibrated by Diamond Technical Services within the month prior to the inspection. Diamond Technical Services calibrates the sensors on a monthly basis.

Calibration Certificates from Diamond Calibration indicate that many of the sensors read above 0 when calibrated to the zero gas. This prevents the sensors from giving a fault alarm if the reading drops below zero due to a sudden temperature change, and still provides a conservative measure of protection because the alarm limit does not change.

## **GROUNDWATER MONITORING**

The groundwater monitoring wells were sampled by ARCADIS on June 6, 2013. Prior to sampling, the depth to water was gauged, and a volume of water equivalent to approximately three well volumes was removed from the well. Groundwater samples were collected in laboratory prepared sample jars and delivered under chain-of-custody protocol to Contest Laboratory in East Longmeadow, Massachusetts for analysis for volatile organic compounds by EPA method 8260. The laboratory report is provided as Attachment B. Results of analysis of groundwater samples are summarized in Table 4.

Two target analytes were detected in any the wells: 1,4-dichlorobenzene, which was detected in a sample collected from monitoring well ATC-4 at a concentration of 1.2 µg/L; and chloroform, which was detected in MW-6 at a concentration of 2.9 µg/L. There is no GB groundwater standard for these compounds. Both compounds have been detected during previous sampling events in these wells at similar concentrations. Chloroform is often found in drinking water from chlorinated public water supply sources. No other target analytes were detected in any of the groundwater samples collected on June 6, 2013.

## **SOIL GAS MONITORING**

Soil gas monitoring was conducted at 29 locations on June 6, 2013. The sampling was conducted by placing an air sampling gripper cap on each well and attaching a piece of tubing. A volume of air equivalent to approximately 3 well volumes was removed from each well using a Sensidyne BDXII air sampling pump.

Soil gas was then screened using a Landtec GEM 2000 Plus Landfill Gas Analyzer and a MiniRae Photoionization Detector (PID).

### **Soil Gas Field Monitoring Results**

Soil gas samples were screened for methane, carbon monoxide, hydrogen sulfide, carbon dioxide, oxygen, and total VOCs. Soil gas survey results are provided in Table 5. Carbon monoxide, hydrogen sulfide, and total VOCs were not detected in any soil gas wells.

Methane was detected in soil gas in eight wells at a concentration of 0.1%. All other wells did not detect methane. The methane Remedial Action Work Plan Action Level is 0.5%, which no readings exceeded during this monitoring round.

Carbon dioxide was detected in soil gas at concentrations ranging from 0.1% to 10.5% during the June monitoring event. The carbon dioxide Remedial Action Work Plan Action Level is 0.1% and 26 readings exceeded the action level. The maximum concentration detected during the June 2013 monitoring round was 10.5%, which was higher than the maximum detected during the March 2013 round of 8.8%. This is consistent with the pattern shown during previous rounds of declining carbon dioxide concentrations in the winter, and increasing concentrations in the summer and early fall. Graphs presenting carbon dioxide, oxygen, and methane concentrations over time for selected representative wells are presented in Attachment C.

The presence of carbon dioxide in soil gas is an indicator of subsurface bacterial activity and does not represent a threat to users of the property. The highest concentration of carbon dioxide was found in well MPL-6, located on the northern end of the property near Hartford Avenue. The monitoring locations on the northern end of the property adjacent to large expanses of paved parking lot, sidewalk, and streets have typically had the highest carbon dioxide concentrations.

### **CONCLUSIONS**

Methane, Hydrogen sulfide, carbon monoxide and organic vapor concentrations did not exceed RAWP action levels in any soil gas or indoor air samples. Carbon dioxide concentrations exceeded the action level at soil gas locations and sub slab system monitoring points. The detection of carbon dioxide in soil gas is typical of what has been detected during previous monitoring events and appears to be a result of naturally occurring bacterial activity in the subsurface.

If you have any questions or require any additional information, please contact the undersigned at 401-738-3887, extension 25.

Sincerely,

ARCADIS U.S., Inc.

A handwritten signature in black ink, appearing to read "Donna H. Pallister". The signature is fluid and cursive, with the first name "Donna" being the most prominent.

Donna H. Pallister, PE, LSP  
Senior Environmental Engineer

Copies:

A. Sepe, City of Providence  
Providence Public Building Authority

ARCADIS

**Tables**

Table 1  
 System Monitoring Notes  
 Springfield Street School Complex  
 Providence, Rhode Island  
 June 6, 2013

<b>Monitoring Location</b>	<b>Methane % by volume Landtec</b>	<b>Carbon Dioxide % by volume</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
Elementary School inlet 1	0.0	0.1	20.8	0	0	0.0
Elementary School inlet 2	0.0	0.1	20.9	0	0	0.0
Elementary School Outlet	0.0	0.1	20.8	0	0	0.0
Middle School front shed inlet	0.0	0.1	20.8	0	0	0.0
Middle School front shed after 2 <sup>nd</sup> carbon	0.0	0.1	20.9	1	0	0.0
Middle School back shed inlet	0.0	0.1	21.1	0	0	0.0
Middle School back shed after 2 <sup>nd</sup> carbon	0.0	0.1	21.1	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	<b>0.5</b>	<b>1,000 ppm (0.1%)</b>	<b>NA</b>	<b>9 ppm</b>	<b>10 ppm</b>	<b>5 ppm</b>

**Measurements made with:** Landtec GEM2000 Plus, MiniRae 2000

**Sampling date:** June 6, 2013

**Measured by:** Donna Pallister, Andrew DaSilva



Table 2  
Soil Gas Samples Collected from System Influent  
Springfield Street School Complex

Parameter	Sample Date	CT DEP Proposed Residential Volatilization Criteria For Soil Vapor (ug/m3)*	OSHA PEL's (ug/m3)	Middle School Back (ug/m3)	Middle School Front (ug/m3)	Elementary School #1 (ug/m3)	Elementary School # 2 (ug/m3)
Benzene	8/23/2012	3,247	3,000	0.87	1	0.7	0.7
	1/4/2013			0.2	0.26	0.37	0.33
	3/20/2013			ND	0.44	0.57	0.54
	6/6/13 and 6/11/13			2.2	2.2	1.7	0.76
Carbon Tetrachloride	8/23/2012	6,395	62,900	ND	ND	0.65	ND
	1/4/2013			ND	ND	ND	ND
	3/20/2013			ND	ND	ND	ND
	6/6/13 and 6/11/13			ND	ND	ND	ND
Chloroform	8/23/2012	22,334	240,000	ND	ND	1.7	1.7
	1/4/2013			0.26	ND	0.51	0.58
	3/20/2013			ND	ND	0.6	0.6
	6/6/13 and 6/11/13			ND	ND	2.1	1.7
Chloromethane	8/23/2012	NA	207,000	ND	2	ND	ND
	1/4/2013			0.18	0.23	ND	ND
	3/20/2013			ND	ND	ND	ND
	6/6/13 and 6/11/13			ND	1.2	ND	ND
1,4-Dichlorobenzene	8/23/2012	5,805,840	450,000	1.9	ND	1.9	ND
	1/4/2013			ND	ND	ND	ND
	3/20/2013			ND	ND	ND	ND
	6/6/13 and 6/11/13			ND	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	8/23/2012	NA	4,950,000	7	2.3	11	6.6
	1/4/2013			2.6	1.7	2.1	3.5
	3/20/2013			3.2	2.6	3	3
	6/6/13 and 6/11/13			5.5	2.5	4.4	3.9
trans- 1,3- Dichloropropene	8/23/2012	4,613	5,000	ND	ND	ND	0.61
	1/4/2013			ND	ND	ND	ND
	3/20/2013			ND	ND	ND	ND
	6/6/13 and 6/11/13			ND	ND	ND	ND
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	8/23/2012	NA	7,000,000	17	0.78	20	2
	1/4/2013			2.7	1.3	1.7	0.83
	3/20/2013			6.4	1.2	1.7	1.2
	6/6/13 and 6/11/13			7.6	ND	1.1	0.98
Ethylbenzene	8/23/2012	7,281,812	435,000	0.49	ND	0.49	ND
	1/4/2013			1.2	1.3	1.6	1
	3/20/2013			3	2.1	2.4	2
	6/6/13 and 6/11/13			0.95	1.2	0.87	0.44
Methylene Chloride	8/23/2012	4,237,289	86,750	19	52	18	46
	1/4/2013			5.8	6.8	10	5.9
	3/20/2013			55	33	29	36
	6/6/13 and 6/11/13			38	42	48	24
Styrene	8/23/2012	34,633	456,000	27	6.6	28	6.7
	1/4/2013			6.8	7.4	7.2	5.3
	3/20/2013			6.8	7.1	9.7	9.2
	6/6/13 and 6/11/13			2.1	1.9	2.3	1.2
Tetrachloroethylene	8/23/2012	75,840	678,000	1.4	ND	29	3.6
	1/4/2013			2.9	3.1	8.6	3.3
	3/20/2013			8.9	5.7	5.5	7.7
	6/6/13 and 6/11/13			2.8	ND	3	8.1
Toluene	8/23/2012	2,910,779	750,000	280	150	300	140
	1/4/2013			31	41	44	25
	3/20/2013			45	32	50	48
	6/6/13 and 6/11/13			63	59	71	16
Trichloroethylene	8/23/2012	38,237	537,000	ND	ND	4.5	0.63
	1/4/2013			1	1.3	3.7	1.3
	3/20/2013			7	3.1	2.9	3.9
	6/6/13 and 6/11/13			ND	ND	ND	3.2
Trichlorofluoromethane (Freon 11)	8/23/2012	NA	5,600,000	8.5	8	17	14
	1/4/2013			1.6	1.1	1.2	0.18
	3/20/2013			3	2.1	2	1.9
	6/6/13 and 6/11/13			4.4	3.4	9.6	6.7
1,2,4-Trimethylbenzene	8/23/2012	NA	125,000	ND	ND	ND	ND
	1/4/2013			ND	ND	ND	ND
	3/20/2013			ND	ND	ND	ND
	6/6/13 and 6/11/14			ND	1	ND	ND
M/p-Xylene	8/23/2012	2,215,755#	435,000	1.2	0.9	1.1	ND
	1/4/2013			6	6.3	7.1	4.3
	3/20/2013			11	8.7	9.7	8.1
	6/6/13 and 6/11/13			3.2	3.8	2.8	2.2
o-Xylene	8/23/2012	2,215,755#	435,000	0.45	ND	0.45	ND
	1/4/2013			1.3	1.40	1.40	0.88
	3/20/2013			3.5	2.8	3.2	2.70
	6/6/13 and 6/11/13			1.2	1.4	1.1	0.83

Notes:  
 Samples collected in Tedlar bags and analyzed via EPA method TO-14  
 Only detected compounds are listed, see laboratory certificate for complete list of analyses  
 OSHA PEL's = Occupational Safety and Health Administration Permissible Exposure Limits  
 CT DEP= Connecticut Department of Environmental Protection  
 ug/m3 = micrograms per cubic meter  
 \* From Appendix F to Sections 22a-133k-1 through 22a-133k-3 of the Regulations of Connecticut State Agencies  
 #- Represents Total Xylenes

**Table 3**  
**Indoor Air Monitoring Results**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**June 6, 2013**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>E.S. Front office</b>	0.0	590	21.0	0	0	0.0
<b>E.S. Elevator</b>	0.0	613	21.0	0	0	0.0
<b>E.S. Faculty Work Room</b>	0.0	695	20.9	0	0	0.0
<b>E.S. Gym</b>	0.0	691	20.9	0	0	0.0
<b>E.S. Stairway B</b>	0.0	631	20.9	0	0	0.0
<b>E.S. Stairway C</b>	0.0	625	21.0	0	0	0.0
<b>E.S. Library</b>	0.0	705	20.9	0	0	0.0
<b>E.S. Front Stairs</b>	0.0	589	21.0	0	0	0.0
<b>E.S. Cafeteria</b>	0.0	729	20.9	0	0	0.0
<b>E.S. Hall Near Gym</b>	0.0	789	20.9	0	0	0.0

**Table 3**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**June 6, 2013**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S.</b> Front Office	0.0	719	20.9	0	0	0.0
<b>M.S. Elevator</b>	0.0	857	21.2	0	0	0.0
<b>M.S. Stairway</b> near Elem. School GS-01	0.0	906	21.0	0	0	0.0
<b>M.S. Near</b> sensor #16 in hall outside cafeteria	0.0	797	21.1	0	0	0.0
<b>M.S.</b> Faculty Work Room	0.0	860	21.2	0	0	0.0
<b>M.S.</b> Sensor #15 Outside Gym	0.0	811	21.1	0	0	0.0
<b>M.S. GS-03</b> Across from Boys Bathroom	0.0	860	21.0	0	0	0.0
<b>M.S. Second</b> Floor - Library	0.0	846	21.2	0	0	0.0
<b>M.S. Music</b> Room	0.0	695	21.2	0	0	0.0
<b>M.S. Cafeteria</b>	0.0	773	21.1	0	0	0.0

**Table 3**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**June 6, 2013**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S.</b> Front Hall near sensor #4	0.0	775	21.0	0	0	0.0
<b>M.S.</b> Hallway across from elevator near sensor #9	0.0	707	21.1	0	0	0.0
<b>M.S.</b> Near sensor GS 06 hallway right end	0.0	873	21.2	0	0	0.0
<b>M.S.</b> stairway near Hartford Ave. sensor GS-7	0.0	858	21.2	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	<b>0.05</b>	<b>1,000 ppm (0.1%)</b>	<b>NA</b>	<b>9 ppm</b>	<b>5 ppm</b>	<b>5 ppm</b>

**Notes:**

E.S. indicates Elementary School, M.S. indicates Middle School

Measurements made with: MiniRae photoionization detector, Fluke 975 Airmeter, Landtec Gem 2000 Plus

PPM = Parts per million

Outdoor conditions: carbon dioxide = 650 ppm temperature = 75 degrees F



**Table 5**  
**Soil Gas Survey Field Notes**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**June 6, 2013**

<b>Monitoring Well</b>	<b>Methane % by volume</b>	<b>Carbon Dioxide % by volume</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
WB-1	0.1	0.1	21.4	0	0	0.0
WB-2	0.0	0.4	21.3	0	0	0.0
WB-3	0.0	0.5	19.3	0	0	0.0
WB-4	0.1	0.4	21.0	0	0	0.0
WB-5	0.0	1.7	18.7	0	0	0.0
WB-6	0.0	0.2	20.5	0	0	0.0
WB-7 R	0.0	0.3	20.6	0	0	0.0
WB-8	0.0	0.1	20.9	0	0	0.0
WB-12	0.0	1.9	18.8	0	0	0.0
WB-13	0.0	0.9	18.4	0	0	0.0
WB-14	0.0	1.8	17.0	0	0	0.0
WB-15	0.1	0.8	17.6	0	0	0.0
EPL-1	0.1	0.8	20.6	0	0	0.0
EPL-2	0.1	1.5	19.5	0	0	0.0
EPL-3	0.0	2.9	17.8	0	0	0.0
EPL-4	0.0	2.3	18.6	0	0	0.0
EPL-5	0.0	3.4	16.4	0	0	0.0
ENE-1	0.0	0.1	20.5	0	0	0.0

**Table 5**  
**Soil Gas Survey Field Notes**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**June 6, 2013**

Monitoring Well	Methane % by volume	Carbon Dioxide % by volume	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
MG1	0.0	2.8	18.0	0	0	0.0
MG2	0.1	1.6	19.1	0	0	0.0
MG3	0.0	3.1	15.3	0	0	0.0
MG4	0.0	1.3	19.3	0	0	0.0
MG5	0.0	1.2	18.6	0	0	0.0
MPL2	0.0	4.0	14.2	0	0	0.0
MPL3	0.1	5.5	11.2	0	0	0.0
MPL5	0.1	5.8	12.8	0	0	0.0
MPL6	0.0	10.5	8.9	0	0	0.0
MPL7	0.0	9.1	9.8	0	0	0.0
MPL8	0.0	4.9	13.6	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	<b>0.5%</b>	<b>0.1% (1,000 PPM)</b>	<b>NA</b>	<b>9 PPM</b>	<b>10 PPM</b>	<b>5 PPM</b>

**Sampled by:** Andrew DaSilva

**Weather Conditions:** Overcast 75 degrees F

**Sampling Equipment:** Landtec GEM 2000 Plus, MiniRae 2000 PID

**Appendix A**  
**Limitations & Service Constraints**



## **LIMITATIONS AND SERVICE CONSTRAINTS**

### **GENERAL REPORTS/DOCUMENT**

The opinions and recommendations presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by ARCADIS and the party for whom this report was originally prepared. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, express or implied, is intended or given. To the extent that ARCADIS relied upon any information prepared by other parties not under contract to ARCADIS, ARCADIS makes no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

Results of any investigations or testing and any findings presented in this report apply solely to conditions existing at the time when ARCADIS' investigative work was performed. It must be recognized that any such investigative or testing activities are inherently limited and do not represent a conclusive or complete characterization. Conditions in other parts of the project site may vary from those at the locations where data were collected. ARCADIS's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100% confidence in environmental investigation conclusions cannot reasonably be achieved.

ARCADIS, therefore, does not provide any guarantees, certifications, or warranties regarding any conclusions regarding environmental contamination of any such property. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

ARCADIS

**Appendix B**  
**Laboratory Results**

June 19, 2013

Donna Pallister  
Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886

Project Location: Springfield St., Providence  
Client Job Number:  
Project Number: WK012152.0008  
Laboratory Work Order Number: 13F0425

Enclosed are results of analyses for samples received by the laboratory on June 12, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Lisa A. Worthington  
Project Manager



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

Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886  
ATTN: Donna Pallister

REPORT DATE: 6/19/2013

PURCHASE ORDER NUMBER: 5131

PROJECT NUMBER: WK012152.0008

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13F0425

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

PROJECT LOCATION: Springfield St., Providence

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MS Back	13F0425-01	Sub Slab		EPA TO-14A	
ES #1	13F0425-02	Sub Slab		EPA TO-14A	
MS Front	13F0425-03	Sub Slab		EPA TO-14A	

**CASE NARRATIVE SUMMARY**

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

**EPA TO-14A**

**Qualifications:**

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Holding times and stability of samples taken in tedlar bags have not been determined

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

13F0425-01[MS Back], 13F0425-02[ES #1], 13F0425-03[MS Front]

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

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



Daren J. Damboragian  
Laboratory Manager

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 6/12/2013  
**Field Sample #: MS Back**  
**Sample ID: 13F0425-01**  
 Sample Matrix: Sub Slab  
 Sampled: 6/11/2013 12:50

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0425**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	0.68	0.10		2.2	0.32	2	6/14/13	8:44	WSD
Bromomethane	ND	0.10		ND	0.39	2	6/14/13	8:44	WSD
Carbon Tetrachloride	ND	0.10		ND	0.63	2	6/14/13	8:44	WSD
Chlorobenzene	ND	0.10		ND	0.46	2	6/14/13	8:44	WSD
Chloroethane	ND	0.10		ND	0.26	2	6/14/13	8:44	WSD
Chloroform	ND	0.10		ND	0.49	2	6/14/13	8:44	WSD
Chloromethane	ND	0.20		ND	0.41	2	6/14/13	8:44	WSD
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	6/14/13	8:44	WSD
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13	8:44	WSD
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13	8:44	WSD
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13	8:44	WSD
Dichlorodifluoromethane (Freon 12)	1.1	0.10		5.5	0.49	2	6/14/13	8:44	WSD
1,1-Dichloroethane	ND	0.10		ND	0.40	2	6/14/13	8:44	WSD
1,2-Dichloroethane	ND	0.10		ND	0.40	2	6/14/13	8:44	WSD
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	6/14/13	8:44	WSD
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	6/14/13	8:44	WSD
1,2-Dichloropropane	ND	0.10		ND	0.46	2	6/14/13	8:44	WSD
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/14/13	8:44	WSD
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/14/13	8:44	WSD
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	1.1	0.10		7.6	0.70	2	6/14/13	8:44	WSD
Ethylbenzene	0.22	0.10		0.95	0.43	2	6/14/13	8:44	WSD
Hexachlorobutadiene	ND	0.10		ND	1.1	2	6/14/13	8:44	WSD
Methylene Chloride	11	1.0		38	3.5	2	6/14/13	8:44	WSD
Styrene	0.49	0.10		2.1	0.43	2	6/14/13	8:44	WSD
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	6/14/13	8:44	WSD
Tetrachloroethylene	0.41	0.10		2.8	0.68	2	6/14/13	8:44	WSD
Toluene	17	0.10		63	0.38	2	6/14/13	8:44	WSD
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	6/14/13	8:44	WSD
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	6/14/13	8:44	WSD
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	6/14/13	8:44	WSD
Trichloroethylene	ND	0.10		ND	0.54	2	6/14/13	8:44	WSD
Trichlorofluoromethane (Freon 11)	0.78	0.10		4.4	0.56	2	6/14/13	8:44	WSD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	6/14/13	8:44	WSD
1,2,4-Trimethylbenzene	0.33	0.10		1.6	0.49	2	6/14/13	8:44	WSD
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	6/14/13	8:44	WSD
Vinyl Chloride	ND	0.10		ND	0.26	2	6/14/13	8:44	WSD
m&p-Xylene	0.73	0.20		3.2	0.87	2	6/14/13	8:44	WSD

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 6/12/2013  
**Field Sample #: MS Back**  
**Sample ID: 13F0425-01**  
 Sample Matrix: Sub Slab  
 Sampled: 6/11/2013 12:50

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0425**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.28	0.10		1.2	0.43	2	6/14/13	8:44	WSD

Surrogates	% Recovery		% REC Limits		Date/Time	
4-Bromofluorobenzene (1)	116		70-130		6/14/13 8:44	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 6/12/2013  
**Field Sample #: ES #1**  
**Sample ID: 13F0425-02**  
 Sample Matrix: Sub Slab  
 Sampled: 6/11/2013 13:15

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0425**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	0.53	0.10		1.7	0.32	2	6/14/13	9:22	WSD
Bromomethane	ND	0.10		ND	0.39	2	6/14/13	9:22	WSD
Carbon Tetrachloride	ND	0.10		ND	0.63	2	6/14/13	9:22	WSD
Chlorobenzene	ND	0.10		ND	0.46	2	6/14/13	9:22	WSD
Chloroethane	ND	0.10		ND	0.26	2	6/14/13	9:22	WSD
Chloroform	0.43	0.10		2.1	0.49	2	6/14/13	9:22	WSD
Chloromethane	ND	0.20		ND	0.41	2	6/14/13	9:22	WSD
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	6/14/13	9:22	WSD
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13	9:22	WSD
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13	9:22	WSD
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13	9:22	WSD
Dichlorodifluoromethane (Freon 12)	0.89	0.10		4.4	0.49	2	6/14/13	9:22	WSD
1,1-Dichloroethane	ND	0.10		ND	0.40	2	6/14/13	9:22	WSD
1,2-Dichloroethane	ND	0.10		ND	0.40	2	6/14/13	9:22	WSD
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	6/14/13	9:22	WSD
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	6/14/13	9:22	WSD
1,2-Dichloropropane	ND	0.10		ND	0.46	2	6/14/13	9:22	WSD
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/14/13	9:22	WSD
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/14/13	9:22	WSD
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	0.15	0.10		1.1	0.70	2	6/14/13	9:22	WSD
Ethylbenzene	0.20	0.10		0.87	0.43	2	6/14/13	9:22	WSD
Hexachlorobutadiene	ND	0.10		ND	1.1	2	6/14/13	9:22	WSD
Methylene Chloride	14	1.0		49	3.5	2	6/14/13	9:22	WSD
Styrene	0.54	0.10		2.3	0.43	2	6/14/13	9:22	WSD
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	6/14/13	9:22	WSD
Tetrachloroethylene	0.45	0.10		3.0	0.68	2	6/14/13	9:22	WSD
Toluene	19	0.10		71	0.38	2	6/14/13	9:22	WSD
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	6/14/13	9:22	WSD
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	6/14/13	9:22	WSD
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	6/14/13	9:22	WSD
Trichloroethylene	ND	0.10		ND	0.54	2	6/14/13	9:22	WSD
Trichlorofluoromethane (Freon 11)	1.7	0.10		9.6	0.56	2	6/14/13	9:22	WSD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	6/14/13	9:22	WSD
1,2,4-Trimethylbenzene	ND	0.10		ND	0.49	2	6/14/13	9:22	WSD
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	6/14/13	9:22	WSD
Vinyl Chloride	ND	0.10		ND	0.26	2	6/14/13	9:22	WSD
m&p-Xylene	0.63	0.20		2.8	0.87	2	6/14/13	9:22	WSD



**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 6/12/2013  
**Field Sample #: ES #1**  
**Sample ID: 13F0425-02**  
 Sample Matrix: Sub Slab  
 Sampled: 6/11/2013 13:15

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0425**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.24	0.10		1.1	0.43	2	6/14/13	9:22	WSD

Surrogates	% Recovery		% REC Limits		Date/Time	
4-Bromofluorobenzene (1)	116		70-130		6/14/13 9:22	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 6/12/2013  
**Field Sample #: MS Front**  
**Sample ID: 13F0425-03**  
 Sample Matrix: Sub Slab  
 Sampled: 6/11/2013 16:20

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0425**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Benzene	0.69	0.10		2.2	0.32	2	6/14/13 10:01	WSD	
Bromomethane	ND	0.10		ND	0.39	2	6/14/13 10:01	WSD	
Carbon Tetrachloride	ND	0.10		ND	0.63	2	6/14/13 10:01	WSD	
Chlorobenzene	ND	0.10		ND	0.46	2	6/14/13 10:01	WSD	
Chloroethane	ND	0.10		ND	0.26	2	6/14/13 10:01	WSD	
Chloroform	ND	0.10		ND	0.49	2	6/14/13 10:01	WSD	
Chloromethane	0.60	0.20		1.2	0.41	2	6/14/13 10:01	WSD	
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	6/14/13 10:01	WSD	
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13 10:01	WSD	
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13 10:01	WSD	
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	6/14/13 10:01	WSD	
Dichlorodifluoromethane (Freon 12)	0.51	0.10		2.5	0.49	2	6/14/13 10:01	WSD	
1,1-Dichloroethane	ND	0.10		ND	0.40	2	6/14/13 10:01	WSD	
1,2-Dichloroethane	ND	0.10		ND	0.40	2	6/14/13 10:01	WSD	
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	6/14/13 10:01	WSD	
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	6/14/13 10:01	WSD	
1,2-Dichloropropane	ND	0.10		ND	0.46	2	6/14/13 10:01	WSD	
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/14/13 10:01	WSD	
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/14/13 10:01	WSD	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	6/14/13 10:01	WSD	
Ethylbenzene	0.28	0.10		1.2	0.43	2	6/14/13 10:01	WSD	
Hexachlorobutadiene	ND	0.10		ND	1.1	2	6/14/13 10:01	WSD	
Methylene Chloride	12	1.0		42	3.5	2	6/14/13 10:01	WSD	
Styrene	0.46	0.10		1.9	0.43	2	6/14/13 10:01	WSD	
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	6/14/13 10:01	WSD	
Tetrachloroethylene	ND	0.10		ND	0.68	2	6/14/13 10:01	WSD	
Toluene	16	0.10		59	0.38	2	6/14/13 10:01	WSD	
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	6/14/13 10:01	WSD	
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	6/14/13 10:01	WSD	
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	6/14/13 10:01	WSD	
Trichloroethylene	ND	0.10		ND	0.54	2	6/14/13 10:01	WSD	
Trichlorofluoromethane (Freon 11)	0.61	0.10		3.4	0.56	2	6/14/13 10:01	WSD	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	6/14/13 10:01	WSD	
1,2,4-Trimethylbenzene	0.21	0.10		1.0	0.49	2	6/14/13 10:01	WSD	
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	6/14/13 10:01	WSD	
Vinyl Chloride	ND	0.10		ND	0.26	2	6/14/13 10:01	WSD	
m&p-Xylene	0.87	0.20		3.8	0.87	2	6/14/13 10:01	WSD	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 6/12/2013  
**Field Sample #: MS Front**  
**Sample ID: 13F0425-03**  
 Sample Matrix: Sub Slab  
 Sampled: 6/11/2013 16:20

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0425**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.33	0.10		1.4	0.43	2	6/14/13	10:01	WSD

Surrogates	% Recovery		% REC Limits		Date/Time	
4-Bromofluorobenzene (1)	117		70-130		6/14/13 10:01	

**Sample Extraction Data**

Prep Method: TO-15 Prep-EPA TO-14A

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
13F0425-01 [MS Back]	B075219	1	1	N/A	1000	400	200	06/13/13
13F0425-02 [ES #1]	B075219	1	1	N/A	1000	400	200	06/13/13
13F0425-03 [MS Front]	B075219	1	1	N/A	1000	400	200	06/13/13

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	Limits	RPD	Limit	
<b>Batch B075219 - TO-15 Prep</b>											
<b>Blank (B075219-BLK1)</b>						Prepared & Analyzed: 06/13/13					
Benzene	ND	0.025									
Bromomethane	ND	0.025									
Carbon Tetrachloride	ND	0.025									
Chlorobenzene	ND	0.025									
Chloroethane	ND	0.025									
Chloroform	ND	0.025									
Chloromethane	ND	0.050									
1,2-Dibromoethane (EDB)	ND	0.025									
1,2-Dichlorobenzene	ND	0.025									
1,3-Dichlorobenzene	ND	0.025									
1,4-Dichlorobenzene	ND	0.025									
Dichlorodifluoromethane (Freon 12)	ND	0.025									
1,1-Dichloroethane	ND	0.025									
1,2-Dichloroethane	ND	0.025									
1,1-Dichloroethylene	ND	0.025									
cis-1,2-Dichloroethylene	ND	0.025									
1,2-Dichloropropane	ND	0.025									
cis-1,3-Dichloropropene	ND	0.025									
trans-1,3-Dichloropropene	ND	0.025									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.025									
Ethylbenzene	ND	0.025									
Hexachlorobutadiene	ND	0.025									
Methylene Chloride	ND	0.25									
Styrene	ND	0.025									
1,1,1,2-Tetrachloroethane	ND	0.025									
Tetrachloroethylene	ND	0.025									
Toluene	ND	0.025									
1,2,4-Trichlorobenzene	ND	0.025									
1,1,1-Trichloroethane	ND	0.025									
1,1,2-Trichloroethane	ND	0.025									
Trichloroethylene	ND	0.025									
Trichlorofluoromethane (Freon 11)	ND	0.025									
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.025									
1,2,4-Trimethylbenzene	ND	0.025									
1,3,5-Trimethylbenzene	ND	0.025									
Vinyl Chloride	ND	0.025									
m&p-Xylene	ND	0.050									
o-Xylene	ND	0.025									
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	9.12				8.00		114			70-130	

**QUALITY CONTROL**

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

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B075219 - TO-15 Prep</b>											
<b>LCS (B075219-BS1)</b>						Prepared & Analyzed: 06/13/13					
Benzene	4.56				5.00		91.3	70-130			
Bromomethane	4.76				5.00		95.3	70-130			
Carbon Tetrachloride	4.82				5.00		96.4	70-130			
Chlorobenzene	5.21				5.00		104	70-130			
Chloroethane	4.97				5.00		99.5	70-130			
Chloroform	5.49				5.00		110	70-130			
Chloromethane	5.00				5.00		100	70-130			
1,2-Dibromoethane (EDB)	5.02				5.00		100	70-130			
1,2-Dichlorobenzene	5.75				5.00		115	70-130			
1,3-Dichlorobenzene	5.67				5.00		113	70-130			
1,4-Dichlorobenzene	5.60				5.00		112	70-130			
Dichlorodifluoromethane (Freon 12)	5.12				5.00		102	70-130			
1,1-Dichloroethane	5.14				5.00		103	70-130			
1,2-Dichloroethane	5.06				5.00		101	70-130			
1,1-Dichloroethylene	4.74				5.00		94.9	70-130			
cis-1,2-Dichloroethylene	5.33				5.00		107	70-130			
1,2-Dichloropropane	4.83				5.00		96.6	70-130			
cis-1,3-Dichloropropene	5.09				5.00		102	70-130			
trans-1,3-Dichloropropene	5.22				5.00		104	70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.89				5.00		97.9	70-130			
Ethylbenzene	5.23				5.00		105	70-130			
Hexachlorobutadiene	5.67				5.00		113	70-130			
Methylene Chloride	4.76				5.00		95.1	70-130			
Styrene	5.54				5.00		111	70-130			
1,1,2,2-Tetrachloroethane	5.28				5.00		106	70-130			
Tetrachloroethylene	6.04				5.00		121	70-130			
Toluene	5.32				5.00		106	70-130			
1,2,4-Trichlorobenzene	5.56				5.00		111	70-130			
1,1,1-Trichloroethane	4.88				5.00		97.5	70-130			
1,1,2-Trichloroethane	5.48				5.00		110	70-130			
Trichloroethylene	5.13				5.00		103	70-130			
Trichlorofluoromethane (Freon 11)	5.42				5.00		108	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.36				5.00		107	70-130			
1,2,4-Trimethylbenzene	5.30				5.00		106	70-130			
1,3,5-Trimethylbenzene	5.21				5.00		104	70-130			
Vinyl Chloride	4.93				5.00		98.7	70-130			
m&p-Xylene	10.5				10.0		105	70-130			
o-Xylene	5.25				5.00		105	70-130			
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>9.11</i>				<i>8.00</i>		<i>114</i>	<i>70-130</i>			

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
  - † Wide recovery limits established for difficult compound.
  - ‡ Wide RPD limits established for difficult compound.
  - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- A-09 Holding times and stability of samples taken in tedlar bags have not been determined

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-14A in Air</i>	
Benzene	AIHA,FL,NY
Bromomethane	AIHA,FL,NY
Carbon Tetrachloride	AIHA,FL,NY
Chlorobenzene	AIHA,FL,NY
Chloroethane	AIHA,FL,NY
Chloroform	AIHA,FL,NY
Chloromethane	AIHA,FL,NY
1,2-Dibromoethane (EDB)	NY
1,2-Dichlorobenzene	AIHA,FL,NY
1,3-Dichlorobenzene	AIHA,FL,NY
1,4-Dichlorobenzene	AIHA,FL,NY
Dichlorodifluoromethane (Freon 12)	AIHA,FL,NY
1,1-Dichloroethane	AIHA,FL,NY
1,2-Dichloroethane	AIHA,FL,NY
1,1-Dichloroethylene	AIHA,FL,NY
cis-1,2-Dichloroethylene	AIHA,FL,NY
1,2-Dichloropropane	AIHA,FL,NY
cis-1,3-Dichloropropene	AIHA,FL,NY
trans-1,3-Dichloropropene	NY
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	AIHA,FL,NY
Ethylbenzene	AIHA,FL,NY
Hexachlorobutadiene	AIHA,FL,NY
Methylene Chloride	AIHA,FL,NY
Styrene	AIHA,FL,NY
1,1,2,2-Tetrachloroethane	AIHA,FL,NY
Tetrachloroethylene	AIHA,FL,NY
Toluene	AIHA,FL,NY
1,2,4-Trichlorobenzene	AIHA,FL,NY
1,1,1-Trichloroethane	AIHA,FL,NY
1,1,2-Trichloroethane	AIHA,FL,NY
Trichloroethylene	AIHA,FL,NY
Trichlorofluoromethane (Freon 11)	AIHA,FL,NY
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NY
1,2,4-Trimethylbenzene	AIHA,FL,NY
1,3,5-Trimethylbenzene	AIHA,FL,NY
Vinyl Chloride	AIHA,FL,NY
m&p-Xylene	AIHA,FL,NY
o-Xylene	AIHA,FL,NY



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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



Phone: 413-525-2332  
 Fax: 413-525-6405  
 Email: info@contestlabs.com  
 www.contestlabs.com

**AIR SAMPLE CHAIN OF CUSTODY RECORD**

39 SPRUCE ST  
 EAST LONGMEADOW, MA 01028

Company Name: ARCADIS  
 Address: 300 Metro Center Blvd., Warwick RI

Telephone: (401) 738-3887  
 Project # WKO12152.0008  
 Client PO # 13F0425

Attention: Dona Palister

Project Location: Springfield St., Providence

Sampled By: A. Dasilva

Proposal Provided? (For Billing purposes)  
 yes  proposal date

DATA DELIVERY (check one):  
 FAX  EMAIL  WEBSITE CLIENT  
 Fax #: \_\_\_\_\_  
 Email: dona.palister@arcadis-us.com  
 Format:  EXCEL  PDF  GIS KEY  OTHER \_\_\_\_\_

Date Sampled		ONLY USE WHEN USING PUMPS	
Start Date	Stop Date	Total Minutes Sampled	Flow Rate M <sup>3</sup> /Min. or L/Min.
6.11.13	12:50		
	13:15		
	16:20		

Field ID	Sample Description	Media	Lab #	Date Time	Date Time	Total Minutes Sampled	Flow Rate M <sup>3</sup> /Min. or L/Min.	Volume Liters or M <sup>3</sup>	Matrix Code*	Analysis Requested	"Hg	Flow Control ID
	MS Back	TB	-01	6.11.13	12:50				SS			
	ES #1	TB	-02		13:15				SS			
	MS Front	TB	-03		16:20				SS			

CLIENT COMMENTS:

Relinquished by (signature) [Signature] 6.11.13 16:45 (to MS) Date/Time: \_\_\_\_\_

Received by (signature) [Signature] 6/12/13 Date/Time: \_\_\_\_\_

Relinquished by (signature) [Signature] 6/12/13 Date/Time: \_\_\_\_\_

Received by (signature) [Signature] 6/12/13 Date/Time: \_\_\_\_\_

Turnaround \*\*  
 7-Day  
 10-Day  
 Other STP  
 \*RUSH \*  
 \*24-Hr  \*48-Hr  
 \*72-Hr  \*4-Day  
 \*Approval Required

Special Requirements: Phase I/Level 2  
 Regulations: Phase I/Level 2  
 Data Enhancement/RCP?  Y  N  
 Enhanced Data Package  Y  N  
 Required Detection Limits: \_\_\_\_\_  
 Other: \_\_\_\_\_

\*Matrix Code: SG=SOIL GAS IA=INDOOR AIR AMB=AMBIENT SS=SUB SLAB D=DUP BL=BLANK O=other

\*\*Media Codes: S=summa can TB=tedlar bag P=PUF T=tube F=filter C=cassette O=Other

\*\*TURNAROUND TIME STARTS AT 9:00 AM. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.



39 Spruce St.  
 East Longmeadow, MA.  
 01028  
 P: 413-525-2332  
 F: 413-525-6405

### AIR Only Receipt Checklist

CLIENT NAME: Arcadis RECEIVED BY: CEC DATE: 6/12/13

- 1) Was the chain(s) of custody relinquished and signed?  Yes  No
- 2) Does the chain agree with the samples?  Yes  No  
 If not, explain:
- 3) Are all the samples in good condition?  Yes  No  
 If not, explain:
- 4) Are there any samples "On Hold"? Yes  No  Stored where:
- 5) Are there any RUSH or SHORT HOLDING TIME samples? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Location where samples are stored:  Permission to subcontract samples? Yes  No   
 (Walk-in clients only) if not already approved  
 Client Signature: \_\_\_\_\_

Containers received at Con-Test		
	# of Containers	Types (Size, Duration)
Summa Cans		
Tedlar Bags	3	
Tubes		
Regulators		
Restrictors		
Tubing		
Other		

Unused Summas:

Unused Regulators:

- 1) Was all media (used & unused checked into the WASP?
- 2) Were all returned summa cans, Restrictors, & Regulators documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:

June 14, 2013

Donna Pallister  
Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886

Project Location: Springfield St, Providence RI  
Client Job Number:  
Project Number: WK012152.0008  
Laboratory Work Order Number: 13F0301

Enclosed are results of analyses for samples received by the laboratory on June 7, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Lisa A. Worthington  
Project Manager



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

Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886  
ATTN: Donna Pallister

REPORT DATE: 6/14/2013

PURCHASE ORDER NUMBER: 5131

PROJECT NUMBER: WK012152.0008

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13F0301

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

PROJECT LOCATION: Springfield St, Providence RI

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
ES #2	13F0301-01	Sub Slab		EPA TO-14A	

**CASE NARRATIVE SUMMARY**

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

**EPA TO-14A**

**Qualifications:**

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Holding times and stability of samples taken in tedlar bags have not been determined

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

13F0301-01[ES #2]

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

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

**1,3,5-Trimethylbenzene**  
B074979-BS1

---

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

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



Daren J. Damboragian  
Laboratory Manager

**ANALYTICAL RESULTS**

Project Location: Springfield St, Providence RI  
 Date Received: 6/7/2013  
**Field Sample #: ES #2**  
**Sample ID: 13F0301-01**  
 Sample Matrix: Sub Slab  
 Sampled: 6/6/2013 13:50

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0301**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	0.24	0.10		0.76	0.32	2	6/12/13 20:18	WSD	
Bromomethane	ND	0.10		ND	0.39	2	6/12/13 20:18	WSD	
Carbon Tetrachloride	ND	0.10		ND	0.63	2	6/12/13 20:18	WSD	
Chlorobenzene	ND	0.10		ND	0.46	2	6/12/13 20:18	WSD	
Chloroethane	ND	0.10		ND	0.26	2	6/12/13 20:18	WSD	
Chloroform	0.35	0.10		1.7	0.49	2	6/12/13 20:18	WSD	
Chloromethane	ND	0.20		ND	0.41	2	6/12/13 20:18	WSD	
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	6/12/13 20:18	WSD	
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	6/12/13 20:18	WSD	
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	6/12/13 20:18	WSD	
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	6/12/13 20:18	WSD	
Dichlorodifluoromethane (Freon 12)	0.79	0.10		3.9	0.49	2	6/12/13 20:18	WSD	
1,1-Dichloroethane	ND	0.10		ND	0.40	2	6/12/13 20:18	WSD	
1,2-Dichloroethane	ND	0.10		ND	0.40	2	6/12/13 20:18	WSD	
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	6/12/13 20:18	WSD	
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	6/12/13 20:18	WSD	
1,2-Dichloropropane	ND	0.10		ND	0.46	2	6/12/13 20:18	WSD	
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/12/13 20:18	WSD	
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	6/12/13 20:18	WSD	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	0.14	0.10		0.98	0.70	2	6/12/13 20:18	WSD	
Ethylbenzene	0.10	0.10		0.44	0.43	2	6/12/13 20:18	WSD	
Hexachlorobutadiene	ND	0.10		ND	1.1	2	6/12/13 20:18	WSD	
Methylene Chloride	6.9	1.0		24	3.5	2	6/12/13 20:18	WSD	
Styrene	0.29	0.10		1.2	0.43	2	6/12/13 20:18	WSD	
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	6/12/13 20:18	WSD	
Tetrachloroethylene	1.2	0.10		8.1	0.68	2	6/12/13 20:18	WSD	
Toluene	4.2	0.10		16	0.38	2	6/12/13 20:18	WSD	
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	6/12/13 20:18	WSD	
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	6/12/13 20:18	WSD	
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	6/12/13 20:18	WSD	
Trichloroethylene	0.59	0.10		3.2	0.54	2	6/12/13 20:18	WSD	
Trichlorofluoromethane (Freon 11)	1.2	0.10		6.7	0.56	2	6/12/13 20:18	WSD	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	6/12/13 20:18	WSD	
1,2,4-Trimethylbenzene	ND	0.10		ND	0.49	2	6/12/13 20:18	WSD	
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	6/12/13 20:18	WSD	
Vinyl Chloride	ND	0.10		ND	0.26	2	6/12/13 20:18	WSD	
m&p-Xylene	0.50	0.20		2.2	0.87	2	6/12/13 20:18	WSD	

**ANALYTICAL RESULTS**

Project Location: Springfield St, Providence RI  
 Date Received: 6/7/2013  
**Field Sample #: ES #2**  
**Sample ID: 13F0301-01**  
 Sample Matrix: Sub Slab  
 Sampled: 6/6/2013 13:50

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13F0301**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.19	0.10		0.83	0.43	2	6/12/13 20:18		WSD

Surrogates	% Recovery		% REC Limits		Date/Time	
4-Bromofluorobenzene (1)		102		70-130		6/12/13 20:18



**Sample Extraction Data**

Prep Method: TO-15 Prep-EPA TO-14A

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
13F0301-01 [ES #2]	B074979	1	1	N/A	1000	400	200	06/12/13

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	Limits	RPD		
<b>Batch B074979 - TO-15 Prep</b>											
<b>Blank (B074979-BLK1)</b>						Prepared & Analyzed: 06/12/13					
Benzene	ND	0.020									
Bromomethane	ND	0.020									
Carbon Tetrachloride	ND	0.020									
Chlorobenzene	ND	0.020									
Chloroethane	ND	0.020									
Chloroform	ND	0.020									
Chloromethane	ND	0.040									
1,2-Dibromoethane (EDB)	ND	0.020									
1,2-Dichlorobenzene	ND	0.020									
1,3-Dichlorobenzene	ND	0.020									
1,4-Dichlorobenzene	ND	0.020									
Dichlorodifluoromethane (Freon 12)	ND	0.020									
1,1-Dichloroethane	ND	0.020									
1,2-Dichloroethane	ND	0.020									
1,1-Dichloroethylene	ND	0.020									
cis-1,2-Dichloroethylene	ND	0.020									
1,2-Dichloropropane	ND	0.020									
cis-1,3-Dichloropropene	ND	0.020									
trans-1,3-Dichloropropene	ND	0.020									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.020									
Ethylbenzene	ND	0.020									
Hexachlorobutadiene	ND	0.020									
Methylene Chloride	ND	0.20									
Styrene	ND	0.020									
1,1,1,2-Tetrachloroethane	ND	0.020									
Tetrachloroethylene	ND	0.020									
Toluene	ND	0.020									
1,2,4-Trichlorobenzene	ND	0.020									
1,1,1-Trichloroethane	ND	0.020									
1,1,2-Trichloroethane	ND	0.020									
Trichloroethylene	ND	0.020									
Trichlorofluoromethane (Freon 11)	ND	0.020									
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.020									
1,2,4-Trimethylbenzene	ND	0.020									
1,3,5-Trimethylbenzene	ND	0.020									
Vinyl Chloride	ND	0.020									
m&p-Xylene	ND	0.040									
o-Xylene	ND	0.020									
Surrogate: 4-Bromofluorobenzene (1)	8.17				8.00		102	70-130			

**QUALITY CONTROL**

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

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B074979 - TO-15 Prep</b>											
<b>LCS (B074979-BS1)</b>					Prepared & Analyzed: 06/12/13						
Benzene	5.00				5.00		100		70-130		
Bromomethane	5.28				5.00		106		70-130		
Carbon Tetrachloride	6.06				5.00		121		70-130		
Chlorobenzene	5.65				5.00		113		70-130		
Chloroethane	5.62				5.00		112		70-130		
Chloroform	5.24				5.00		105		70-130		
Chloromethane	5.07				5.00		101		70-130		
1,2-Dibromoethane (EDB)	5.65				5.00		113		70-130		
1,2-Dichlorobenzene	6.36				5.00		127		70-130		
1,3-Dichlorobenzene	6.43				5.00		129		70-130		
1,4-Dichlorobenzene	6.34				5.00		127		70-130		
Dichlorodifluoromethane (Freon 12)	5.60				5.00		112		70-130		
1,1-Dichloroethane	4.94				5.00		98.8		70-130		
1,2-Dichloroethane	5.51				5.00		110		70-130		
1,1-Dichloroethylene	5.11				5.00		102		70-130		
cis-1,2-Dichloroethylene	5.08				5.00		102		70-130		
1,2-Dichloropropane	4.82				5.00		96.4		70-130		
cis-1,3-Dichloropropene	5.75				5.00		115		70-130		
trans-1,3-Dichloropropene	6.16				5.00		123		70-130		
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	5.63				5.00		113		70-130		
Ethylbenzene	5.97				5.00		119		70-130		
Hexachlorobutadiene	6.03				5.00		121		70-130		
Methylene Chloride	4.70				5.00		94.0		70-130		
Styrene	6.42				5.00		128		70-130		
1,1,1,2-Tetrachloroethane	5.44				5.00		109		70-130		
Tetrachloroethylene	6.13				5.00		123		70-130		
Toluene	5.62				5.00		112		70-130		
1,2,4-Trichlorobenzene	6.13				5.00		123		70-130		
1,1,1-Trichloroethane	5.69				5.00		114		70-130		
1,1,2-Trichloroethane	5.51				5.00		110		70-130		
Trichloroethylene	5.38				5.00		108		70-130		
Trichlorofluoromethane (Freon 11)	5.99				5.00		120		70-130		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.23				5.00		105		70-130		
1,2,4-Trimethylbenzene	6.37				5.00		127		70-130		
1,3,5-Trimethylbenzene	6.55				5.00		131 *		70-130		L-01
Vinyl Chloride	5.51				5.00		110		70-130		
m&p-Xylene	12.8				10.0		128		70-130		
o-Xylene	6.11				5.00		122		70-130		
Surrogate: 4-Bromofluorobenzene (1)	9.36				8.00		117		70-130		

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
  - † Wide recovery limits established for difficult compound.
  - ‡ Wide RPD limits established for difficult compound.
  - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- A-09 Holding times and stability of samples taken in tedlar bags have not been determined
- L-01 Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-14A in Air</i>	
Benzene	AIHA,FL,NY
Bromomethane	AIHA,FL,NY
Carbon Tetrachloride	AIHA,FL,NY
Chlorobenzene	AIHA,FL,NY
Chloroethane	AIHA,FL,NY
Chloroform	AIHA,FL,NY
Chloromethane	AIHA,FL,NY
1,2-Dibromoethane (EDB)	NY
1,2-Dichlorobenzene	AIHA,FL,NY
1,3-Dichlorobenzene	AIHA,FL,NY
1,4-Dichlorobenzene	AIHA,FL,NY
Dichlorodifluoromethane (Freon 12)	AIHA,FL,NY
1,1-Dichloroethane	AIHA,FL,NY
1,2-Dichloroethane	AIHA,FL,NY
1,1-Dichloroethylene	AIHA,FL,NY
cis-1,2-Dichloroethylene	AIHA,FL,NY
1,2-Dichloropropane	AIHA,FL,NY
cis-1,3-Dichloropropene	AIHA,FL,NY
trans-1,3-Dichloropropene	NY
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	AIHA,FL,NY
Ethylbenzene	AIHA,FL,NY
Hexachlorobutadiene	AIHA,FL,NY
Methylene Chloride	AIHA,FL,NY
Styrene	AIHA,FL,NY
1,1,2,2-Tetrachloroethane	AIHA,FL,NY
Tetrachloroethylene	AIHA,FL,NY
Toluene	AIHA,FL,NY
1,2,4-Trichlorobenzene	AIHA,FL,NY
1,1,1-Trichloroethane	AIHA,FL,NY
1,1,2-Trichloroethane	AIHA,FL,NY
Trichloroethylene	AIHA,FL,NY
Trichlorofluoromethane (Freon 11)	AIHA,FL,NY
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NY
1,2,4-Trimethylbenzene	AIHA,FL,NY
1,3,5-Trimethylbenzene	AIHA,FL,NY
Vinyl Chloride	AIHA,FL,NY
m&p-Xylene	AIHA,FL,NY
o-Xylene	AIHA,FL,NY

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



Phone: 413-525-2332  
 Fax: 413-525-6405  
 Email: info@contestlabs.com  
 www.contestlabs.com

**AIR SAMPLE CHAIN OF CUSTODY RECORD**

39 SPRUCE ST  
 EAST LONGMEADOW, MA 01028

Company Name: ARCADIS  
 Address: 300 Metro Center Blvd, Warwick, RI

Attention: Donna Pallister

Project Location: Springfield St, Providence  
 Sampled By: A. Dasilva

Telephone: (401) 338-3687  
 Project # WK 012152.0008  
 Client PO # \_\_\_\_\_

13F0301

DATA DELIVERY (check one):  
 FAX  EMAIL  WEBSITE CLIENT

Fax #: \_\_\_\_\_  
 Email: donna.pallister@arcadis-us.com  
 Format:  EXCEL  PDF  GIS KEY  OTHER \_\_\_\_\_

Proposal Provided? (For Billing purposes)  
 Yes  No

Field ID	Sample Description	Media	Lab #	Date	Stop	Total	ONLY USE WHEN USING PUMPS		Matrix Code*	Flow Rate	Volume	L	Hg	Flow Cont ID
							Minutes Sampled	M <sup>3</sup> /Min. or L/Min.						
<del>MS Front</del>	<del>MS Front</del>	<del>TB</del>		<del>6/13</del>	<del>12:55</del>									
<del>MS Back</del>	<del>MS Back</del>	<del>TB</del>		<del>6/13</del>	<del>13:02</del>									
<del>ES #1</del>	<del>ES #1</del>	<del>TB</del>		<del>6/13</del>	<del>13:59</del>									
<del>ES #2</del>	<del>ES #2</del>	<del>TB</del>	<del>Q1</del>	<del>6/13</del>	<del>13:50</del>									

Laboratory Comments: Cancel 1st 3 samples per A. Dasilva, not enough volume.

CLIENT COMMENTS:

TO-14-VOC's

**ANALYSIS REQUESTED**  
 I n i t i a l s  
 F i n a l R e p o r t  
 P l e a s e f i l l o u t c o m p l e t e l y, s i g n, d a t e a n d r e t a i n t h e y e l l o w c o p y f o r y o u r r e c o r d.  
 S u m m a c a n i s t e r s a r e f l o w c o n t r o l l e r s m u s t b e r e t u r n e d w i t h i n 1 4 d a y s o f r e c e i p t o r r e n t a l w i l l a p p l y.  
 S u m m a c a n i s t e r s w h e n r e t a i n e d f o r a m i n i m u m o f 1 4 d a y s a f t e r s a m p l i n g d a t e p r i o r c l e a n i n g.

**Turnaround \*\***

7-Day  
 10-Day  
 Other SRP  
**RUSH \***  
 \*24-Hr  \*48-Hr  
 \*72-Hr  \*4-Day

**Special Requirements**

Regulations: Ehode ISLADA  
 Data Enhancement/RCP?  Y  N  
 Enhanced Data Package  Y  N  
 (Surcharge Applies)  
 Required Detection Limits: \_\_\_\_\_  
 Other: \_\_\_\_\_

**\*Matrix Code:**

SG= SOIL GAS  
 IA= INDOOR AIR  
 AMB=AMBIENT  
 SS = SUB SLAB  
 D = DUP  
 BL = BLANK  
 O = other

**\*\*Media Codes:**

S=summary can  
 TB=tecliar bag  
 P=PUF  
 T=tube  
 F= filter  
 C=cassette  
 O = Other

Received by: (signature) [Signature] Date/Time: 6.6.13 1906  
 Received by: (signature) [Signature] Date/Time: 6-13-13 1335  
 Relinquished by: (signature) [Signature] Date/Time: 6-7-13 1714  
 Relinquished by: (signature) [Signature] Date/Time: 6/7/13 1914

\*\* TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.



39 Spruce St.  
 East Longmeadow, MA.  
 01028  
 P: 413-525-2332  
 F: 413-525-6405

**AIR Only Receipt Checklist**

CLIENT NAME: ARCADIS RECEIVED BY: RLF DATE: 6/7/13

- 1) Was the chain(s) of custody relinquished and signed?  Yes  No
- 2) Does the chain agree with the samples?  
 If not, explain:  Yes  No
- 3) Are all the samples in good condition?  
 If not, explain:  Yes  No
- 4) Are there any samples "On Hold"? Yes  No Stored where:
- 5) Are there any RUSH or SHORT HOLDING TIME samples?  
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Yes  No

6) Location where samples are stored: our lab  
 Permission to subcontract samples? Yes No  
 (Walk-in clients only) if not already approved  
 Client Signature: \_\_\_\_\_

Containers received at Con-Test		
	# of Containers	Types (Size, Duration)
Summa Cans		
Tedlar Bags	4	
Tubes		
Regulators		
Restrictors		
Tubing		
Other		

Unused Summas:

Unused Regulators:

- 1) Was all media (used & unused checked into the WASP?
- 2) Were all returned summa cans, Restrictors, & Regulators documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:



June 14, 2013

Donna Pallister  
Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886

Project Location: Springfield St., Providence  
Client Job Number:  
Project Number: WK012152.0008  
Laboratory Work Order Number: 13F0287

Enclosed are results of analyses for samples received by the laboratory on June 7, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Lisa A. Worthington  
Project Manager

Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886  
ATTN: Donna Pallister

REPORT DATE: 6/14/2013

PURCHASE ORDER NUMBER: 5131

PROJECT NUMBER: WK012152.0008

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13F0287

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

PROJECT LOCATION: Springfield St., Providence

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
ATC-4	13F0287-01	Ground Water		SW-846 8260C	
MW-7	13F0287-02	Ground Water		SW-846 8260C	
MW-6	13F0287-03	Ground Water		SW-846 8260C	
MW-8	13F0287-04	Ground Water		SW-846 8260C	
ATC-1	13F0287-05	Ground Water		SW-846 8260C	
Trip Blank	13F0287-06	Trip Blank Water		SW-846 8260C	

**CASE NARRATIVE SUMMARY**

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

**SW-846 8260C**

**Qualifications:**

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

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

**Chloromethane**

13F0287-01[ATC-4], 13F0287-02[MW-7], 13F0287-03[MW-6], 13F0287-04[MW-8], 13F0287-05[ATC-1], 13F0287-06[Trip Blank], B074628-BLK1, B074628-BS1, B074628-BSD1

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

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

**1,4-Dioxane, tert-Butyl Alcohol (TBA)**

13F0287-01[ATC-4], 13F0287-02[MW-7], 13F0287-03[MW-6], 13F0287-04[MW-8], 13F0287-05[ATC-1], 13F0287-06[Trip Blank], B074628-BLK1, B074628-BS1, B074628-BSD1

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

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

**trans-1,4-Dichloro-2-butene**

B074628-BS1, B074628-BSD1

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

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



Daren J. Damboragian  
Laboratory Manager

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: ATC-4

Sampled: 6/6/2013 09:05

Sample ID: 13F0287-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 17:18	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Carbon Disulfide	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/10/13	6/10/13 17:18	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,4-Dichlorobenzene	1.7	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: ATC-4

Sampled: 6/6/2013 09:05

Sample ID: 13F0287-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:18	EEH

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	109	70-130	6/10/13 17:18
Toluene-d8	101	70-130	6/10/13 17:18
4-Bromofluorobenzene	101	70-130	6/10/13 17:18

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: MW-7

Sampled: 6/6/2013 09:45

Sample ID: 13F0287-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 17:44	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Carbon Disulfide	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/10/13	6/10/13 17:44	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: MW-7

Sampled: 6/6/2013 09:45

Sample ID: 13F0287-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 17:44	EEH

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	108	70-130	6/10/13 17:44
Toluene-d8	102	70-130	6/10/13 17:44
4-Bromofluorobenzene	104	70-130	6/10/13 17:44

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: MW-6

Sampled: 6/6/2013 10:35

Sample ID: 13F0287-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 18:10	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Carbon Disulfide	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Chloroform	2.9	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/10/13	6/10/13 18:10	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH



Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: MW-6

Sampled: 6/6/2013 10:35

Sample ID: 13F0287-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:10	EEH

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	107	70-130	6/10/13 18:10
Toluene-d8	103	70-130	6/10/13 18:10
4-Bromofluorobenzene	101	70-130	6/10/13 18:10

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: MW-8

Sampled: 6/6/2013 11:10

Sample ID: 13F0287-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 18:36	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Carbon Disulfide	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/10/13	6/10/13 18:36	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: MW-8

Sampled: 6/6/2013 11:10

Sample ID: 13F0287-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 18:36	EEH

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	106	70-130	6/10/13 18:36
Toluene-d8	103	70-130	6/10/13 18:36
4-Bromofluorobenzene	101	70-130	6/10/13 18:36

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: ATC-1

Sampled: 6/6/2013 16:45

Sample ID: 13F0287-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 19:02	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Carbon Disulfide	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/10/13	6/10/13 19:02	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: ATC-1

Sampled: 6/6/2013 16:45

Sample ID: 13F0287-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 19:02	EEH

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	108	70-130	6/10/13 19:02
Toluene-d8	103	70-130	6/10/13 19:02
4-Bromofluorobenzene	102	70-130	6/10/13 19:02

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: Trip Blank

Sampled: 6/6/2013 00:00

Sample ID: 13F0287-06

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 16:52	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Carbon Disulfide	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/10/13	6/10/13 16:52	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13F0287

Date Received: 6/7/2013

Field Sample #: Trip Blank

Sampled: 6/6/2013 00:00

Sample ID: 13F0287-06

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/10/13	6/10/13 16:52	EEH

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	106	70-130	6/10/13 16:52
Toluene-d8	102	70-130	6/10/13 16:52
4-Bromofluorobenzene	99.6	70-130	6/10/13 16:52

**Sample Extraction Data**

**Prep Method: SW-846 5030B-SW-846 8260C**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
13F0287-01 [ATC-4]	B074628	5	5.00	06/10/13
13F0287-02 [MW-7]	B074628	5	5.00	06/10/13
13F0287-03 [MW-6]	B074628	5	5.00	06/10/13
13F0287-04 [MW-8]	B074628	5	5.00	06/10/13
13F0287-05 [ATC-1]	B074628	5	5.00	06/10/13
13F0287-06 [Trip Blank]	B074628	5	5.00	06/10/13



QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B074628 - SW-846 5030B

Blank (B074628-BLK1)

Prepared & Analyzed: 06/10/13

Acetone	ND	50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							V-16
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	2.0	µg/L							
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							V-05
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B074628 - SW-846 5030B

Blank (B074628-BLK1)

Prepared & Analyzed: 06/10/13

Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	10	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
1,3,5-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	27.6		µg/L	25.0		110	70-130			
Surrogate: Toluene-d8	25.4		µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	25.8		µg/L	25.0		103	70-130			

LCS (B074628-BS1)

Prepared & Analyzed: 06/10/13

Acetone	91.9	50	µg/L	100		91.9	70-160			†
Acrylonitrile	11.3	5.0	µg/L	10.0		113	70-130			
tert-Amyl Methyl Ether (TAME)	10.6	0.50	µg/L	10.0		106	70-130			
Benzene	9.44	1.0	µg/L	10.0		94.4	70-130			
Bromobenzene	10.3	1.0	µg/L	10.0		103	70-130			
Bromochloromethane	10.5	1.0	µg/L	10.0		105	70-130			
Bromodichloromethane	10.2	0.50	µg/L	10.0		102	70-130			
Bromoform	9.21	1.0	µg/L	10.0		92.1	70-130			
Bromomethane	4.21	2.0	µg/L	10.0		42.1	40-160			†
2-Butanone (MEK)	106	20	µg/L	100		106	40-160			†
tert-Butyl Alcohol (TBA)	118	20	µg/L	100		118	40-160		V-16	†
n-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130			
sec-Butylbenzene	11.1	1.0	µg/L	10.0		111	70-130			
tert-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130			
tert-Butyl Ethyl Ether (TBEE)	10.9	0.50	µg/L	10.0		109	70-130			
Carbon Disulfide	9.47	2.0	µg/L	10.0		94.7	70-130			
Carbon Tetrachloride	10.2	5.0	µg/L	10.0		102	70-130			
Chlorobenzene	10.4	1.0	µg/L	10.0		104	70-130			
Chlorodibromomethane	10.6	0.50	µg/L	10.0		106	70-130			
Chloroethane	8.81	2.0	µg/L	10.0		88.1	70-130			
Chloroform	9.95	2.0	µg/L	10.0		99.5	70-130			
Chloromethane	5.36	2.0	µg/L	10.0		53.6	40-160		V-05	†
2-Chlorotoluene	10.8	1.0	µg/L	10.0		108	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B074628 - SW-846 5030B</b>										
<b>LCS (B074628-BS1)</b>										
Prepared & Analyzed: 06/10/13										
4-Chlorotoluene	11.0	1.0	µg/L	10.0		110	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	10.7	5.0	µg/L	10.0		107	70-130			
1,2-Dibromoethane (EDB)	10.8	0.50	µg/L	10.0		108	70-130			
Dibromomethane	10.6	1.0	µg/L	10.0		106	70-130			
1,2-Dichlorobenzene	11.0	1.0	µg/L	10.0		110	70-130			
1,3-Dichlorobenzene	10.9	1.0	µg/L	10.0		109	70-130			
1,4-Dichlorobenzene	10.1	1.0	µg/L	10.0		101	70-130			
trans-1,4-Dichloro-2-butene	11.4	2.0	µg/L	10.0		114	70-130			V-20
Dichlorodifluoromethane (Freon 12)	6.73	2.0	µg/L	10.0		67.3	40-160			†
1,1-Dichloroethane	10.3	1.0	µg/L	10.0		103	70-130			
1,2-Dichloroethane	9.74	1.0	µg/L	10.0		97.4	70-130			
1,1-Dichloroethylene	9.97	1.0	µg/L	10.0		99.7	70-130			
cis-1,2-Dichloroethylene	9.48	1.0	µg/L	10.0		94.8	70-130			
trans-1,2-Dichloroethylene	10.6	1.0	µg/L	10.0		106	70-130			
1,2-Dichloropropane	9.68	1.0	µg/L	10.0		96.8	70-130			
1,3-Dichloropropane	10.3	0.50	µg/L	10.0		103	70-130			
2,2-Dichloropropane	10.5	1.0	µg/L	10.0		105	40-130			†
1,1-Dichloropropene	10.1	2.0	µg/L	10.0		101	70-130			
cis-1,3-Dichloropropene	9.92	0.50	µg/L	10.0		99.2	70-130			
trans-1,3-Dichloropropene	11.0	0.50	µg/L	10.0		110	70-130			
Diethyl Ether	8.68	2.0	µg/L	10.0		86.8	70-130			
Diisopropyl Ether (DIPE)	11.6	0.50	µg/L	10.0		116	70-130			
1,4-Dioxane	98.8	50	µg/L	100		98.8	40-130			V-16 †
Ethylbenzene	10.0	1.0	µg/L	10.0		100	70-130			
Hexachlorobutadiene	10.7	0.50	µg/L	10.0		107	70-130			
2-Hexanone (MBK)	110	10	µg/L	100		110	70-160			†
Isopropylbenzene (Cumene)	10.6	1.0	µg/L	10.0		106	70-130			
p-Isopropyltoluene (p-Cymene)	11.1	1.0	µg/L	10.0		111	70-130			
Methyl tert-Butyl Ether (MTBE)	11.4	1.0	µg/L	10.0		114	70-130			
Methylene Chloride	10.7	5.0	µg/L	10.0		107	70-130			
4-Methyl-2-pentanone (MIBK)	108	10	µg/L	100		108	70-160			†
Naphthalene	10.7	2.0	µg/L	10.0		107	40-130			†
n-Propylbenzene	10.9	1.0	µg/L	10.0		109	70-130			
Styrene	9.76	1.0	µg/L	10.0		97.6	70-130			
1,1,1,2-Tetrachloroethane	10.2	1.0	µg/L	10.0		102	70-130			
1,1,2,2-Tetrachloroethane	10.6	0.50	µg/L	10.0		106	70-130			
Tetrachloroethylene	10.6	1.0	µg/L	10.0		106	70-130			
Tetrahydrofuran	11.0	10	µg/L	10.0		110	70-130			
Toluene	10.3	1.0	µg/L	10.0		103	70-130			
1,2,3-Trichlorobenzene	12.0	5.0	µg/L	10.0		120	70-130			
1,2,4-Trichlorobenzene	11.0	1.0	µg/L	10.0		110	70-130			
1,3,5-Trichlorobenzene	10.6	1.0	µg/L	10.0		106	70-130			
1,1,1-Trichloroethane	10.1	1.0	µg/L	10.0		101	70-130			
1,1,2-Trichloroethane	10.0	1.0	µg/L	10.0		100	70-130			
Trichloroethylene	10.0	1.0	µg/L	10.0		100	70-130			
Trichlorofluoromethane (Freon 11)	9.11	2.0	µg/L	10.0		91.1	70-130			
1,2,3-Trichloropropane	10.5	2.0	µg/L	10.0		105	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.8	1.0	µg/L	10.0		108	70-130			
1,2,4-Trimethylbenzene	10.1	1.0	µg/L	10.0		101	70-130			
1,3,5-Trimethylbenzene	9.87	1.0	µg/L	10.0		98.7	70-130			
Vinyl Chloride	7.70	2.0	µg/L	10.0		77.0	40-160			†

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B074628 - SW-846 5030B

LCS (B074628-BS1)

Prepared & Analyzed: 06/10/13

m+p Xylene	20.8	2.0	µg/L	20.0		104	70-130			
o-Xylene	10.6	1.0	µg/L	10.0		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	27.2		µg/L	25.0		109	70-130			
Surrogate: Toluene-d8	25.4		µg/L	25.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	24.6		µg/L	25.0		98.6	70-130			

LCS Dup (B074628-BS1)

Prepared & Analyzed: 06/10/13

Acetone	94.1	50	µg/L	100		94.1	70-160	2.33	25	†
Acrylonitrile	10.2	5.0	µg/L	10.0		102	70-130	10.4	25	
tert-Amyl Methyl Ether (TAME)	10.8	0.50	µg/L	10.0		108	70-130	1.77	25	
Benzene	9.23	1.0	µg/L	10.0		92.3	70-130	2.25	25	
Bromobenzene	10.2	1.0	µg/L	10.0		102	70-130	1.36	25	
Bromochloromethane	10.5	1.0	µg/L	10.0		105	70-130	0.00	25	
Bromodichloromethane	10.2	0.50	µg/L	10.0		102	70-130	0.196	25	
Bromoform	10.1	1.0	µg/L	10.0		101	70-130	9.02	25	
Bromomethane	4.26	2.0	µg/L	10.0		42.6	40-160	1.18	25	†
2-Butanone (MEK)	105	20	µg/L	100		105	40-160	1.33	25	†
tert-Butyl Alcohol (TBA)	113	20	µg/L	100		113	40-160	4.53	25	V-16 †
n-Butylbenzene	10.4	1.0	µg/L	10.0		104	70-130	5.44	25	
sec-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130	1.18	25	
tert-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130	0.00	25	
tert-Butyl Ethyl Ether (TBEE)	10.9	0.50	µg/L	10.0		109	70-130	0.0920	25	
Carbon Disulfide	8.89	2.0	µg/L	10.0		88.9	70-130	6.32	25	
Carbon Tetrachloride	10.1	5.0	µg/L	10.0		101	70-130	0.890	25	
Chlorobenzene	10.7	1.0	µg/L	10.0		107	70-130	2.76	25	
Chlorodibromomethane	10.4	0.50	µg/L	10.0		104	70-130	2.48	25	
Chloroethane	8.90	2.0	µg/L	10.0		89.0	70-130	1.02	25	
Chloroform	9.99	2.0	µg/L	10.0		99.9	70-130	0.401	25	
Chloromethane	6.15	2.0	µg/L	10.0		61.5	40-160	13.7	25	V-05 †
2-Chlorotoluene	10.8	1.0	µg/L	10.0		108	70-130	0.278	25	
4-Chlorotoluene	11.6	1.0	µg/L	10.0		116	70-130	5.50	25	
1,2-Dibromo-3-chloropropane (DBCP)	10.9	5.0	µg/L	10.0		109	70-130	2.31	25	
1,2-Dibromoethane (EDB)	10.4	0.50	µg/L	10.0		104	70-130	3.20	25	
Dibromomethane	10.5	1.0	µg/L	10.0		105	70-130	1.32	25	
1,2-Dichlorobenzene	10.8	1.0	µg/L	10.0		108	70-130	1.75	25	
1,3-Dichlorobenzene	10.9	1.0	µg/L	10.0		109	70-130	0.0919	25	
1,4-Dichlorobenzene	9.95	1.0	µg/L	10.0		99.5	70-130	1.30	25	
trans-1,4-Dichloro-2-butene	11.3	2.0	µg/L	10.0		113	70-130	0.881	25	V-20
Dichlorodifluoromethane (Freon 12)	6.78	2.0	µg/L	10.0		67.8	40-160	0.740	25	†
1,1-Dichloroethane	10.0	1.0	µg/L	10.0		100	70-130	2.56	25	
1,2-Dichloroethane	9.55	1.0	µg/L	10.0		95.5	70-130	1.97	25	
1,1-Dichloroethylene	9.89	1.0	µg/L	10.0		98.9	70-130	0.806	25	
cis-1,2-Dichloroethylene	9.46	1.0	µg/L	10.0		94.6	70-130	0.211	25	
trans-1,2-Dichloroethylene	10.3	1.0	µg/L	10.0		103	70-130	2.20	25	
1,2-Dichloropropane	9.80	1.0	µg/L	10.0		98.0	70-130	1.23	25	
1,3-Dichloropropane	10.1	0.50	µg/L	10.0		101	70-130	1.27	25	
2,2-Dichloropropane	10.4	1.0	µg/L	10.0		104	40-130	0.953	25	†
1,1-Dichloropropene	9.55	2.0	µg/L	10.0		95.5	70-130	5.50	25	
cis-1,3-Dichloropropene	10.0	0.50	µg/L	10.0		100	70-130	1.00	25	
trans-1,3-Dichloropropene	10.8	0.50	µg/L	10.0		108	70-130	1.93	25	
Diethyl Ether	8.72	2.0	µg/L	10.0		87.2	70-130	0.460	25	
Diisopropyl Ether (DIPE)	11.5	0.50	µg/L	10.0		115	70-130	1.12	25	

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B074628 - SW-846 5030B</b>										
<b>LCS Dup (B074628-BSD1)</b>										
Prepared & Analyzed: 06/10/13										
1,4-Dioxane	100	50	µg/L	100		100	40-130	1.66	50	V-16 † ‡
Ethylbenzene	10.2	1.0	µg/L	10.0		102	70-130	1.58	25	
Hexachlorobutadiene	10.8	0.50	µg/L	10.0		108	70-130	0.929	25	
2-Hexanone (MBK)	106	10	µg/L	100		106	70-160	3.41	25	†
Isopropylbenzene (Cumene)	11.0	1.0	µg/L	10.0		110	70-130	3.70	25	
p-Isopropyltoluene (p-Cymene)	11.1	1.0	µg/L	10.0		111	70-130	0.0904	25	
Methyl tert-Butyl Ether (MTBE)	11.6	1.0	µg/L	10.0		116	70-130	2.00	25	
Methylene Chloride	11.0	5.0	µg/L	10.0		110	70-130	2.48	25	
4-Methyl-2-pentanone (MIBK)	106	10	µg/L	100		106	70-160	1.48	25	†
Naphthalene	10.8	2.0	µg/L	10.0		108	40-130	1.30	25	†
n-Propylbenzene	10.8	1.0	µg/L	10.0		108	70-130	0.277	25	
Styrene	10.4	1.0	µg/L	10.0		104	70-130	5.87	25	
1,1,1,2-Tetrachloroethane	10.3	1.0	µg/L	10.0		103	70-130	1.47	25	
1,1,2,2-Tetrachloroethane	10.4	0.50	µg/L	10.0		104	70-130	1.33	25	
Tetrachloroethylene	10.5	1.0	µg/L	10.0		105	70-130	0.379	25	
Tetrahydrofuran	11.2	10	µg/L	10.0		112	70-130	1.81	25	
Toluene	9.83	1.0	µg/L	10.0		98.3	70-130	4.67	25	
1,2,3-Trichlorobenzene	11.2	5.0	µg/L	10.0		112	70-130	6.38	25	
1,2,4-Trichlorobenzene	10.5	1.0	µg/L	10.0		105	70-130	4.29	25	
1,3,5-Trichlorobenzene	10.6	1.0	µg/L	10.0		106	70-130	0.0941	25	
1,1,1-Trichloroethane	9.98	1.0	µg/L	10.0		99.8	70-130	0.898	25	
1,1,2-Trichloroethane	9.99	1.0	µg/L	10.0		99.9	70-130	0.400	25	
Trichloroethylene	9.75	1.0	µg/L	10.0		97.5	70-130	2.83	25	
Trichlorofluoromethane (Freon 11)	9.11	2.0	µg/L	10.0		91.1	70-130	0.00	25	
1,2,3-Trichloropropane	10.7	2.0	µg/L	10.0		107	70-130	1.97	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.7	1.0	µg/L	10.0		107	70-130	1.67	25	
1,2,4-Trimethylbenzene	9.85	1.0	µg/L	10.0		98.5	70-130	2.80	25	
1,3,5-Trimethylbenzene	10.0	1.0	µg/L	10.0		100	70-130	1.61	25	
Vinyl Chloride	7.84	2.0	µg/L	10.0		78.4	40-160	1.80	25	†
m+p Xylene	21.2	2.0	µg/L	20.0		106	70-130	1.72	25	
o-Xylene	10.7	1.0	µg/L	10.0		107	70-130	0.936	25	
Surrogate: 1,2-Dichloroethane-d4	27.5		µg/L	25.0		110	70-130			
Surrogate: Toluene-d8	25.6		µg/L	25.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	26.1		µg/L	25.0		104	70-130			

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
  - † Wide recovery limits established for difficult compound.
  - ‡ Wide RPD limits established for difficult compound.
  - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- V-05 Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
  - V-16 Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
  - V-20 Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>SW-846 8260C in Water</i>	
Acetone	CT,NY,ME,NH,VA
Acrylonitrile	CT,NY,ME,NH,VA
tert-Amyl Methyl Ether (TAME)	NY,ME,NH,VA
Benzene	CT,NY,ME,NH,VA
Bromochloromethane	NY,ME,NH,VA
Bromodichloromethane	CT,NY,ME,NH,VA
Bromoform	CT,NY,ME,NH,VA
Bromomethane	CT,NY,ME,NH,VA
2-Butanone (MEK)	CT,NY,ME,NH,VA
tert-Butyl Alcohol (TBA)	NY,ME,NH,VA
n-Butylbenzene	NY,ME,VA
sec-Butylbenzene	NY,ME,VA
tert-Butylbenzene	NY,ME,VA
tert-Butyl Ethyl Ether (TBEE)	NY,ME,NH,VA
Carbon Disulfide	CT,NY,ME,NH,VA
Carbon Tetrachloride	CT,NY,ME,NH,VA
Chlorobenzene	CT,NY,ME,NH,VA
Chlorodibromomethane	CT,NY,ME,NH,VA
Chloroethane	CT,NY,ME,NH,VA
Chloroform	CT,NY,ME,NH,VA
Chloromethane	CT,NY,ME,NH,VA
2-Chlorotoluene	NY,ME,NH,VA
4-Chlorotoluene	NY,ME,NH,VA
Dibromomethane	NY,ME,NH,VA
1,2-Dichlorobenzene	CT,NY,ME,NH,VA
1,3-Dichlorobenzene	CT,NY,ME,NH,VA
1,4-Dichlorobenzene	CT,NY,ME,NH,VA
trans-1,4-Dichloro-2-butene	NY,ME,NH,VA
Dichlorodifluoromethane (Freon 12)	NY,ME,NH,VA
1,1-Dichloroethane	CT,NY,ME,NH,VA
1,2-Dichloroethane	CT,NY,ME,NH,VA
1,1-Dichloroethylene	CT,NY,ME,NH,VA
cis-1,2-Dichloroethylene	NY,ME
trans-1,2-Dichloroethylene	CT,NY,ME,NH,VA
1,2-Dichloropropane	CT,NY,ME,NH,VA
1,3-Dichloropropane	NY,ME,VA
2,2-Dichloropropane	NY,ME,NH,VA
1,1-Dichloropropene	NY,ME,NH,VA
cis-1,3-Dichloropropene	CT,NY,ME,NH,VA
trans-1,3-Dichloropropene	CT,NY,ME,NH,VA
Diisopropyl Ether (DIPE)	NY,ME,NH,VA
Ethylbenzene	CT,NY,ME,NH,VA
Hexachlorobutadiene	CT,NY,ME,NH,VA
2-Hexanone (MBK)	CT,NY,ME,NH,VA
Isopropylbenzene (Cumene)	NY,ME,VA
p-Isopropyltoluene (p-Cymene)	CT,NY,ME,NH,VA
Methyl tert-Butyl Ether (MTBE)	CT,NY,ME,NH,VA

**CERTIFICATIONS**

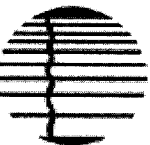
**Certified Analyses included in this Report**

Analyte	Certifications
<i>SW-846 8260C in Water</i>	
Methylene Chloride	CT,NY,ME,NH,VA
4-Methyl-2-pentanone (MIBK)	CT,NY,ME,NH,VA
Naphthalene	NY,ME,NH,VA
n-Propylbenzene	CT,NY,ME,NH,VA
Styrene	CT,NY,ME,NH,VA
1,1,1,2-Tetrachloroethane	CT,NY,ME,NH,VA
1,1,2,2-Tetrachloroethane	CT,NY,ME,NH,VA
Tetrachloroethylene	CT,NY,ME,NH,VA
Toluene	CT,NY,ME,NH,VA
1,2,3-Trichlorobenzene	NY,ME,NH,VA
1,2,4-Trichlorobenzene	CT,NY,ME,NH,VA
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,NY,ME,NH,VA
1,1,2-Trichloroethane	CT,NY,ME,NH,VA
Trichloroethylene	CT,NY,ME,NH,VA
Trichlorofluoromethane (Freon 11)	CT,NY,ME,NH,VA
1,2,3-Trichloropropane	NY,ME,NH,VA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NY,VA
1,2,4-Trimethylbenzene	NY,ME,VA
1,3,5-Trimethylbenzene	NY,ME,VA
Vinyl Chloride	CT,NY,ME,NH,VA
m+p Xylene	CT,NY,ME,NH,VA
o-Xylene	CT,NY,ME,NH,VA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012





**CON-TEST**  
ANALYTICAL LABORATORY

Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

**CHAIN OF CUSTODY RECORD**

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Rev 04.05.12

13F0287  
401-738-3887

Company Name: AECADIS  
Address: 300 Metro Center Blvd.  
Warwick, RI

Project # WK012152.6008  
Client PO# 13F0287  
Telephone: 401-738-3887

ANALYSIS REQUESTED

Attention: Dona Pallister

Project Location: Springfield St., Providence  
Sampled By: A. DeSiva

DATA DELIVERY (check all that apply)  
 FAX  EMAIL  WEBSITE

Project Proposal Provided? (for billing purposes)  
 Yes  No  
proposal date

Format:  PDF  EXCEL  OGIS  
 OTHER

Con-Test Lab ID <small>(Laboratory Use Only)</small>	Client Sample ID / Description	Collection		Composite	Grab	*Matrix		# of Containers	** Preservation	*** Container Co
		Beginning Date/Time	Ending Date/Time			Code	Lane Code			
01	ATC-4	6.6.13	905	X						
02	MW-7		945	X						
03	MW-6		1035	X						
04	MW-8		1110	X						
05	ATC-2		1645	X						
06	Trip Blank									

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) (to left)  
Date/Time: 6.6.13  
17:00

Received by: (signature)  
Date/Time: 10:35

Relinquished by: (signature)  
Date/Time: 6-7-13  
17:18

Received by: (signature)  
Date/Time: 6-7-13  
17:14

Turnaround <sup>††</sup>  
 7-Day  
 10-Day  
 Other: RUSH

24-Hr  48-Hr  
 72-Hr  14-Day  
 Require lab approval

Detection Limit Requirements  
Massachusetts: \_\_\_\_\_  
Connecticut: \_\_\_\_\_  
Other: Rhode Island

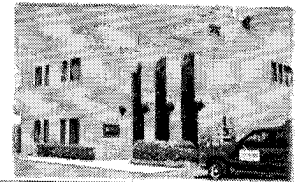
Is your project MCP or RCP?  
 MCP Form Required  
 RCP Form Required  
 MA State DW Form Required PWSID # \_\_\_\_\_

NEIAC & AIHA-LAP, LLC  
Accredited  
WBE/DBE Certified

AGREED TO BE BOUND BY THE TERMS AND CONDITIONS OF THE CHAIN OF CUSTODY RECORD

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT. PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.  
 East Longmeadow, MA. 01028  
 P: 413-525-2332  
 F: 413-525-6405  
 www.contestlabs.com



### Sample Receipt Checklist

CLIENT NAME: Arcaids RECEIVED BY: RLF DATE: 6/7/13

- 1) Was the chain(s) of custody relinquished and signed?  Yes No No CoC Included
- 2) Does the chain agree with the samples?  Yes No  
If not, explain:
- 3) Are all the samples in good condition?  Yes No  
If not, explain:

4) How were the samples received:  
 On Ice  Direct from Sampling  Ambient  In Cooler(s)

Were the samples received in Temperature Compliance of (2-6°C)?  Yes No N/A  
 Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 3.2°

5) Are there Dissolved samples for the lab to filter? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored: 19  
 Permission to subcontract samples? Yes No  
 (Walk-in clients only) if not already approved  
 Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No  N/A

9) Do all samples have the proper Base pH: Yes No  N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No  N/A

### Containers received at Con-Test

	# of containers			# of containers
1 Liter Amber			8 oz amber/clear jar	
500 mL Amber			4 oz amber/clear jar	
250 mL Amber (8oz amber)			2 oz amber/clear jar	
1 Liter Plastic			Air Cassette	
500 mL Plastic			Hg/Hopcalite Tube	
250 mL plastic			Plastic Bag / Ziploc	
40 mL Vial - type listed below	18		PM 2.5 / PM 10	
Colisure / bacteria bottle			PUF Cartridge	
Dissolved Oxygen bottle			SOC Kit	
Encore			TO-17 Tubes	
Flashpoint bottle			Non-ConTest Container	
Perchlorate Kit			Other glass jar	
Other			Other	

Laboratory Comments: \_\_\_\_\_

40 mL vials: # HCl 18 # Methanol \_\_\_\_\_  
 # Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_  
 # Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_

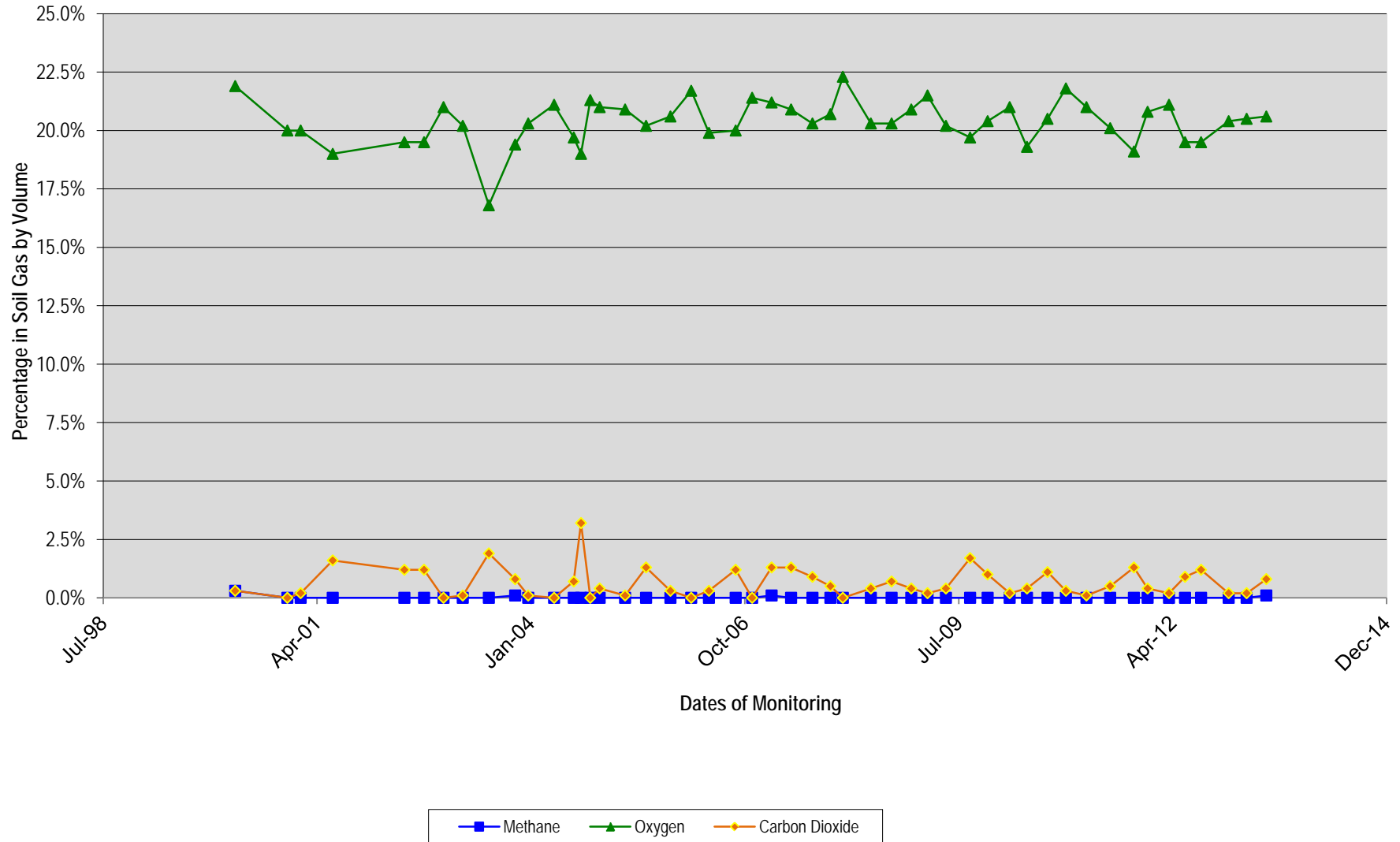
Time and Date Frozen: \_\_\_\_\_

Doc# 277

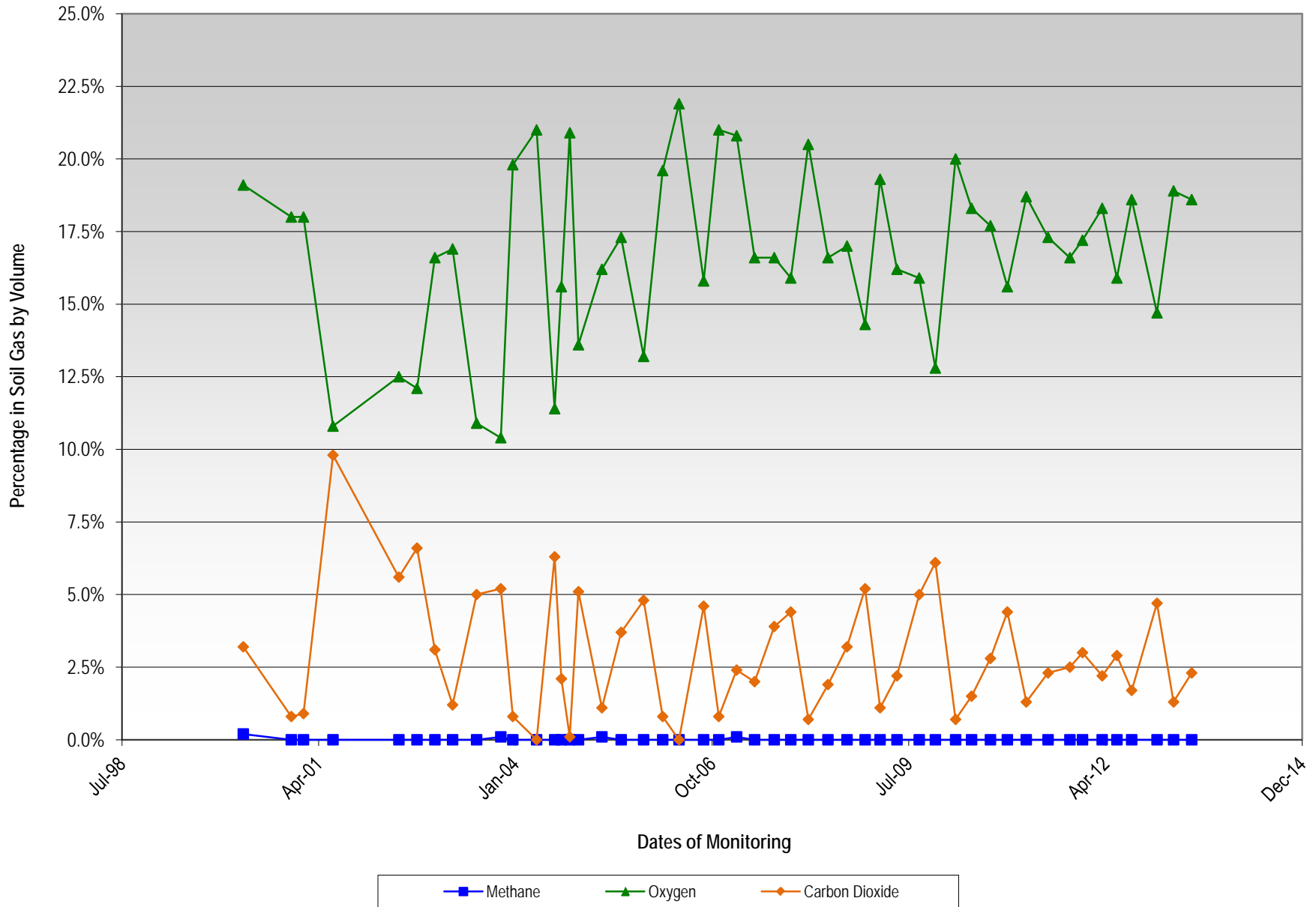
Rev. 3 May 2012

**Appendix C**  
**Soil Gas Parameter Graphs**

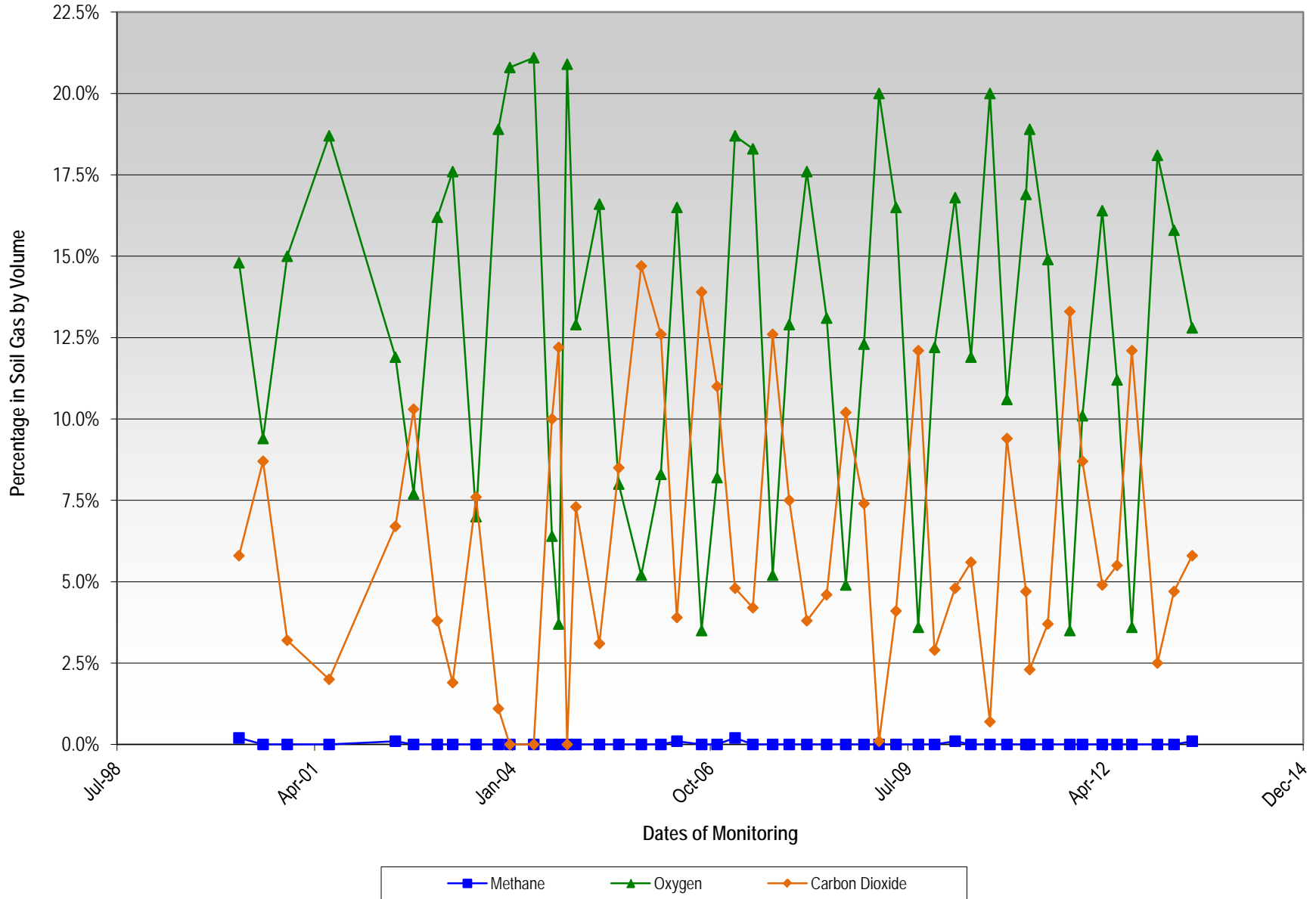
Soil Gas Well EPL1  
Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
Springfield Street School Complex  
Providence, Rhode Island



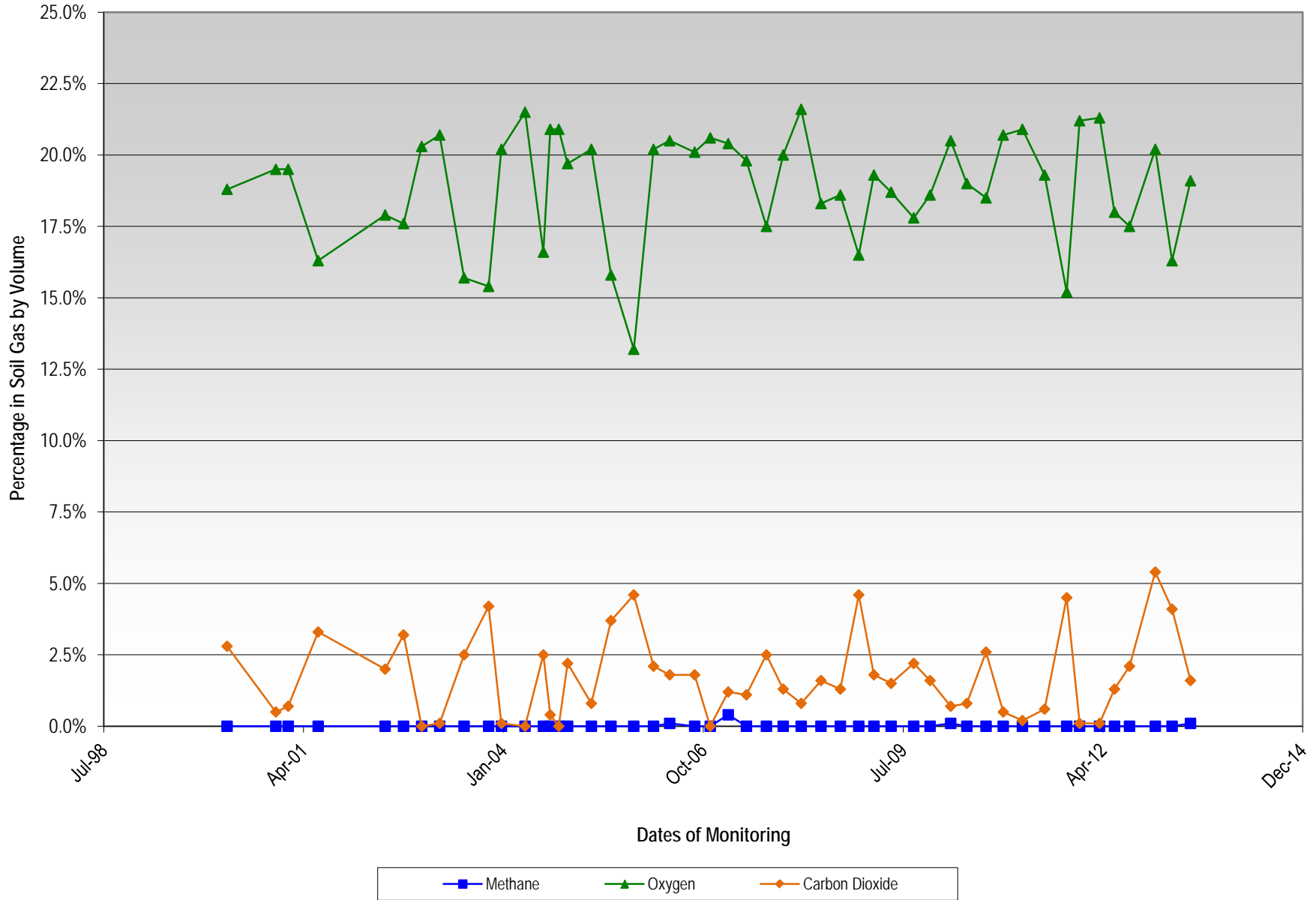
Soil Gas Well EPL4  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



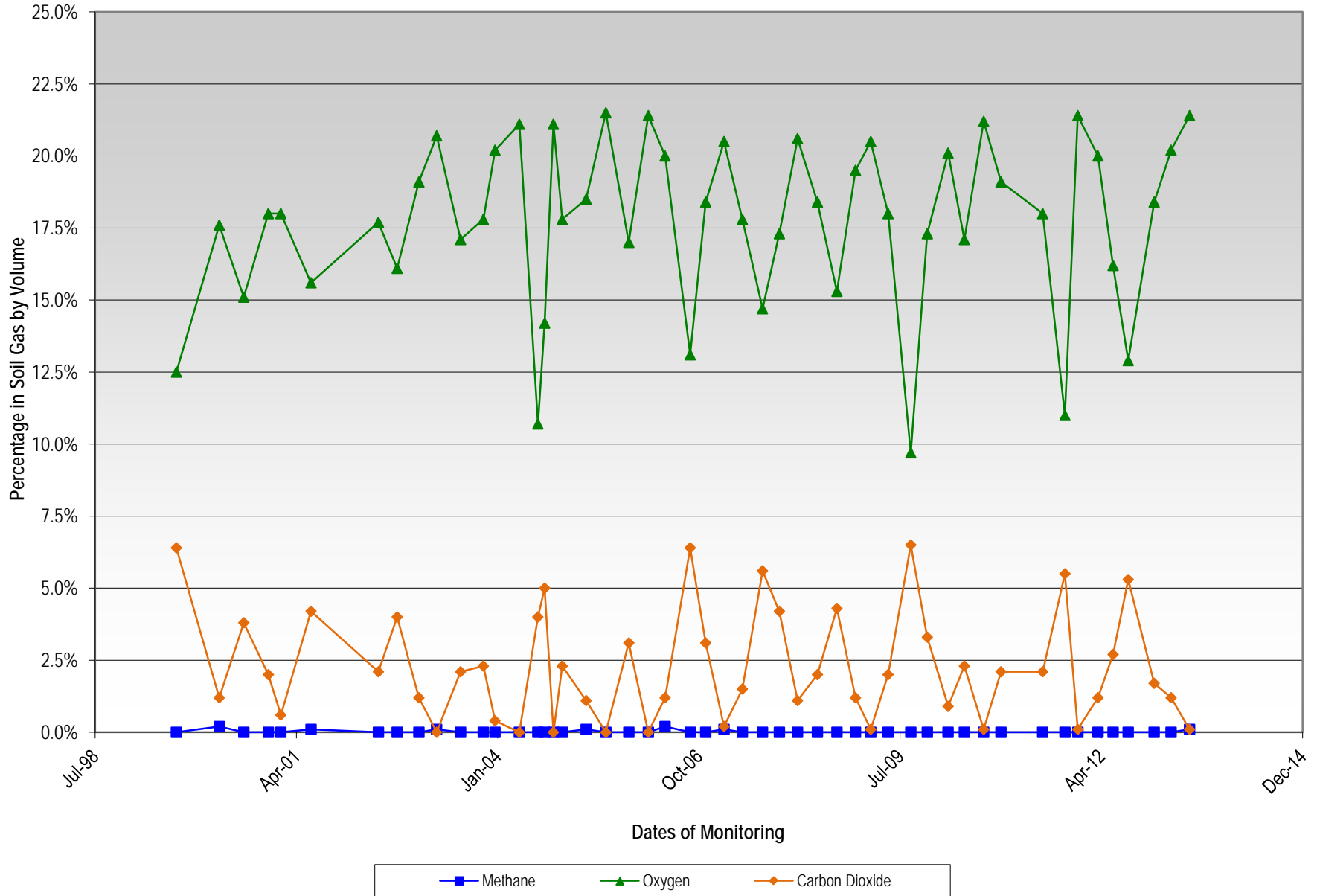
Soil Gas Well MPL5  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



Soil Gas Well MG2  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island

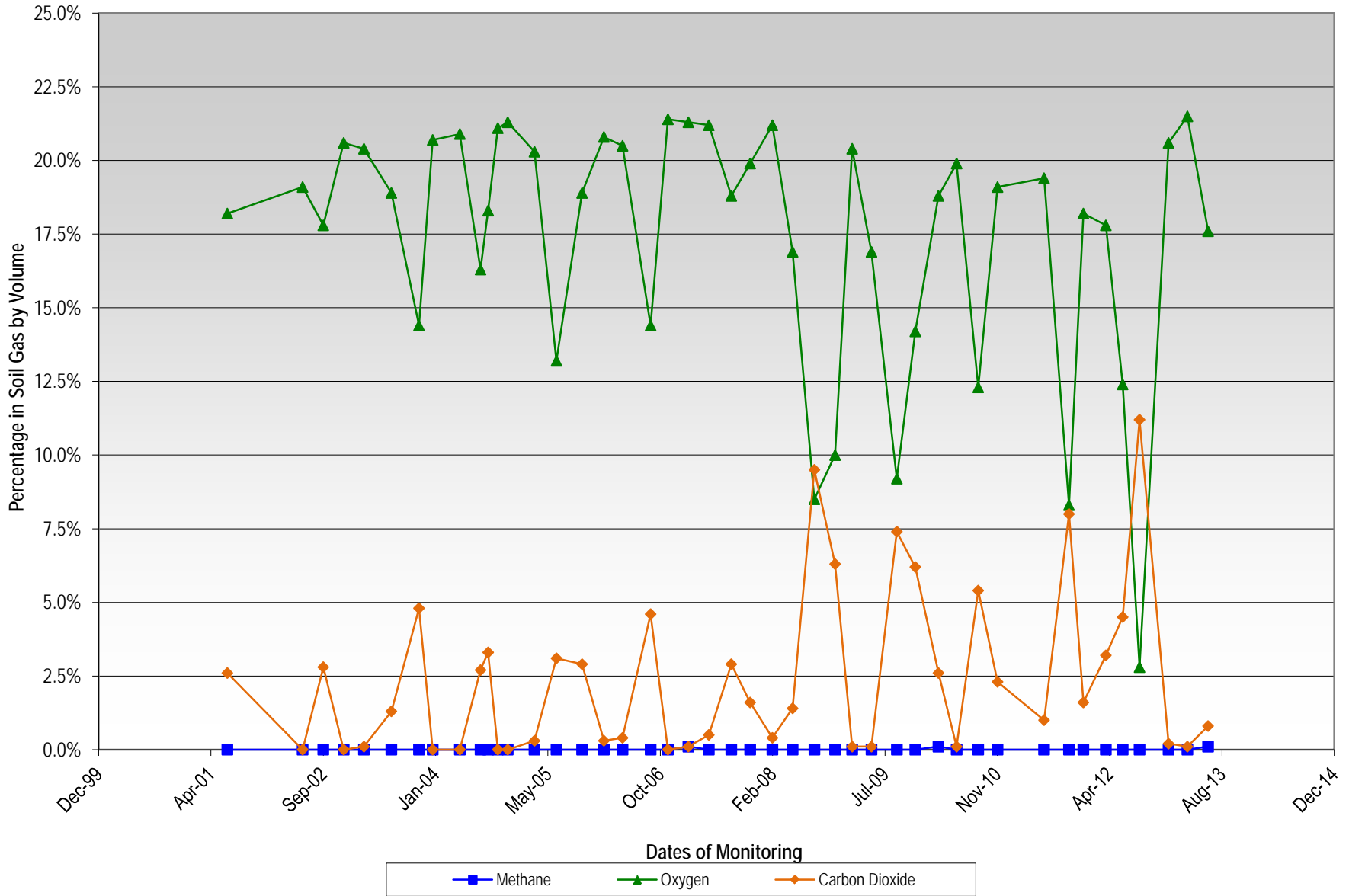


Soil Gas Well WB1  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island





Soil Gas Well WB15  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



Soil Gas Well MPL-7 Fluctuations in Methane, Oxygen and Carbon Dioxide

