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Springfield Street School Complex
May 2010 Quarterly Monitoring Report

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

SER-1

Subject:
May 2010 Quarterly Monitoring Report for Springfield Street School Complex

Date:
June 30, 2010

Contact:
Donna H. Pallister, PE

Phone:
401-738-3887

Email:
Donna.pallister@arcadis-us.com

Our ref:
WK012152.0006

Dear Mr. Crawford:

ARCADIS Inc. (ARCADIS, formerly LFR, Inc.) conducted quarterly monitoring of soil gas, indoor air, the cap, and the sub-slab ventilation system between May 20th and 21st, 2010. 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.

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

COVER MONITORING

ARCADIS conducted a visual survey of the site on May 20, 2010 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. Some small holes were observed adjacent to the Middle School in the following locations: near the boiler room, in the courtyard on the north end of building; near the gas main, on the southwest side of the building, and; next to the concrete berm around the transformer located southwest of the school building.

In addition, some tire damage to the lawn adjacent to the elementary school driveway was observed. The Providence School Department will repair these areas and documentation of the repairs will be submitted.

SUB-SLAB VENTILATION SYSTEM

The sub-slab ventilation system was inspected by ARCADIS during the quarterly monitoring on May 20, 2010. All of the sub-slab ventilation system blowers were operating at the time of the inspection. Water was not observed in the knockout tank for the blower in the front shed at the Middle School. The knockout tank was drained on March 25, 2010 and April 7, 2010, after heavy rain events resulted in a build up of water in the tank.

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, a MiniRae 2000, and a Q-Rae multigas meter. Results of screening are provided on Table 1. Methane, carbon monoxide, and hydrogen sulfide were not detected in any of the samples. Carbon dioxide was detected in all samples, at concentrations of 0.1% to 0.3%, which is equal to or greater than the RAWP Action Level of 1000 ppm.

Organic vapors were detected at concentrations of 0.0 to 1.4 ppm, which is below the RAWP Action Level of 5 ppm.

INDOOR AIR MONITORING

Indoor air monitoring was conducted on May 20, 2010 using a QRAE plus multi-gas meter (methane, hydrogen sulfide, oxygen), a Mini Rae photoionization detector (organic vapors), and a Fluke 975 Airmeter (carbon dioxide, carbon monoxide). The schools were occupied by students during the monitoring event. Results of monitoring are provided in the Table 2. 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.

All readings were below the RAWP Action Levels except for four carbon dioxide readings in the Middle School. Carbon dioxide was measured at 1219 ppm in the middle school elevator shaft, 1,207 ppm at sensor GS-03 across from the middle school boys' bathroom, 1,174 in middle school Room 101, and 1,221 in the middle school second floor hall near the central stairs. These measurements were made

when these areas were occupied. The outside temperature on May 20th was 68.9°F. Carbon dioxide was measured outside in the school parking lot at 365 to 601 ppm.

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_2 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 May 20, 2010. 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

Three of five groundwater monitoring wells were sampled by ARCADIS on May 20, 2010. Two monitoring wells, ATC-2 and ATC-3, were not able to be sampled because they were obstructed. Prior to sampling, the depth to water was gauged, and a volume of water equivalent to approximately three well volumes was removed from each 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 3.

No target analytes were detected in the three groundwater samples.

SOIL GAS MONITORING

Soil gas monitoring was conducted at 28 locations on May 21, 2010. 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, a QRAE 4-gas meter and a MiniRae Photoionization Detector (PID).

Air samples were also collected in Tedlar bags from wells WB-2 and MPL-6. The Tedlar bags were submitted to Con-test Analytical Laboratory for analysis for VOC via EPA method TO-14.

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 4. Methane, carbon monoxide and hydrogen sulfide were not detected in any samples. Organic vapor readings ranged from 0.0 to 2.7, below the RAWP Action Level of 5 ppm.

Carbon dioxide was detected in soil gas at concentrations ranging from 0.0% to 7.8%. The carbon dioxide Remedial Action Work Plan Action Level is 0.1% and 21 readings exceeded the action level. The maximum concentration detected during this round, 7.8%, is significantly lower than the maximum detected during the November

2009 monitoring round when the maximum concentration detected was 12.3%. The reading for this round is slightly higher than the maximum reading of 5% detected during the February 2010 monitoring round. This is consistent with the pattern shown during previous rounds of declining carbon dioxide concentrations in the winter, and increasing concentrations in the summer. Graphs presenting carbon dioxide, oxygen, and methane concentrations over time for seven 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 adjacent to the parking lot. 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.

Soil Gas Laboratory Results

Soil gas samples were collected from soil gas wells MPL-6 and WB-2 in Tedlar bags and submitted to Con-Test Analytical Laboratories for analysis by method TO-14. Results of the analysis are summarized in Table 5, and the laboratory report is provided in Attachment B. The results of analysis were generally consistent with the concentrations and compounds which have been detected in previous monitoring events.

The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are provided in Table 5 for comparison purposes even though they are not 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.

CONCLUSIONS

Methane, hydrogen sulfide, and organic vapor concentrations did not exceed RAWP action levels in any soil gas samples, or indoor air samples. Carbon dioxide concentrations exceeded the action level at many soil gas locations. 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.

Inspection of the cap detected some small areas requiring repairs. Documentation of the repairs will be submitted under separately.

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.

Donna H. Pallister, PE, LSP
Senior Environmental Engineer

Copies:
S. Tremblay, Providence Schools
A. Sepe, City of Providence
Providence Public Building Authority

Tables

Table 1
System Monitoring Notes
Springfield Street School Complex
Providence, Rhode Island
May 20, 2010

Monitoring Location	Methane % by volume Landtec	Carbon Dioxide % by volume	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
Elementary School inlet 1	0.0	0.3	19.9	0	0	0.5
Elementary School inlet 2	0.0	0.2	20.1	0	0	0.4
Elementary School Outlet	0.0	0.2	19.9	0	0	1.4
Middle School front shed inlet	0.0	0.1	20.5	0	0	0.0
Middle School front shed after 2nd carbon	0.0	0.1	20.5	0	0	0.0
Middle School back shed inlet	0.0	0.2	20.0	0	0	0.0
Middle School back shed after 2nd carbon	0.0	0.2	19.9	0	0	0.0
Remedial Action Work Plan Action Levels	**0.5**	**1,000 ppm (0.1%)**	**NA**	**9 ppm**	**10 ppm**	**5 ppm**

Measurements made with: Landtec GEM2000 Plus, a MiniRae 2000, and a Q-Rae multigas meter

Sampling date: May 20, 2010

Measured by: D.H. Pallister

Table 2
Indoor Air Monitoring Results
Springfield Street School Complex
Providence, Rhode Island
May 20, 2010

Monitoring Location	Methane as % LEL	Carbon Dioxide PPM	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
E.S. Front office	0	572	20.9	0	0	0.0
E.S. Elevator	0	649	20.9	0	0	0.0
E.S. Faculty Work Room	0	612	20.9	0	0	0.0
E.S. Gym Storage Rm	0	516	20.9	0	0	0.0
E.S. Stairway B	0	452	20.9	0	0	0.0
E.S. Stairway C	0	657	20.9	0	0	0.0
E.S. Library	0	613	20.9	0	0	0.0
E.S. Room 106 Music Room	0	558	20.9	0	0	0.0
E.S. Cafeteria	0	740	20.9	0	0	0.0
E.S. Mechanical Room	0	521	20.9	0	0	0.0

Table 2
Indoor Air Monitoring Notes
Springfield Street School Complex
May 20, 2010

Monitoring Location	Methane as % LEL	Carbon Dioxide PPM	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
M.S. Front Office	0	598	20.9	0	0	0.1
M.S. Elevator	0	1219	20.9	0	0	0.1
M.S. Stairway near Elem. School GS-01	0	917	20.9	0	0	0.1
M.S. Near sensor #16 in hall outside cafeteria	0	844	20.9	0	0	0.1
M.S. Faculty Work Room	0	818	20.9	0	0	0.1
M.S. Gym	0	899	20.9	1	0	0.1
M.S. GS-03 Across from Boys Bathroom	0	1207	20.9	0	0	0.1
M.S. Room 101	0	1174	20.9	0	0	0.1
M.S. Second Floor Hall near central stairs	0	1229	20.9	0	0	0.1

Table 2
Indoor Air Monitoring Notes
Springfield Street School Complex
May 20, 2010

Monitoring Location	Methane as % LEL	Carbon Dioxide PPM	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
M.S. Cafeteria	0	899	20.9	1	0	0.1
M.S. Front Hall near sensor #4	0	990	20.9	0	0	0.1
M.S. Hallway across from elevator near sensor #9	0	854	20.9	0	0	0.1
M.S. Near sensor GS 06 – hallway right end	0	759	20.9	0	0	0.1
Remedial Action Work Plan Action Levels	**0.5**	**1,000 ppm (0.1%)**	**NA**	**9 ppm**	**10 ppm**	**5 ppm**

Notes:

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

Measurements made with: Landtec GEM2000 Plus, a MiniRae 2000, and a Q-Rae multigas meter

PPM = Parts per million

Outdoor conditions: 68.9 deg F, sunny, light breeze

Table 3
Summary of Ground Water Sampling Results
Springfield Street School Complex
Springfield Street
Providence, Rhode Island

Monitoring Wells	Detected Compounds	Sampling Dates and Results in µg/L																																		RIDEM GB Groundwater Objective
		2/28/2001	7/20/2001	*9- 12/2001	8/1/2002	8/28/2002	12/19/2002	3/18/2003	7/17/2003	11/5/2003	1/22/2004	5/21/2004	8/17/2004	12/2/2004	4/6/2005	7/27/2005	10/27&28/2005	2/2/2006	4/27/2006	8/31/2006	11/15/2006	3/27/2007	5/21/2007	8/20/2007	11/13/2007	2/12/2008	5/21/2008	8/26/2008	11/18/2008	2/17/2009	5/7/2009	8/25/2009	11/18/2009	3/1/2010	5/20/2010	
ATC-1																																				
	Benzene	6.1	ND	18.9	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
	n-butylbenzene	1.7	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	sec-Butylbenzene	1.1	ND	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Ethylbenzene	4.5	ND	12.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600
	Isopropylbenzene	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	n-Propylbenzene	ND	ND	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	MTBE	12.4	7.0	28.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	5000
	Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	1.27	ND	ND	ND	ND	ND	1.10	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	540
	Toluene	2.5	ND	8.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1700
	1,2,4-Trimethylbenzene	2.2	ND	8.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	1,3,5-Trimethylbenzene	3.4	ND	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Xylenes	14.6	ND	37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
ATC-2																																				
	Chloroform	0.9	ND	ND	1.0	ND	ND	ND	ND	ND	NS	1.1	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
ATC-3																																				
	Toluene	ND	ND	ND	ND	NS	ND	ND	ND	ND	3.03	ND	ND	ND	ND	ND	ND	3.0	ND	4.5	13.1	ND	2.3	1.3	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1700
ATC-4																																				
	Benzene	ND	ND	2.5	0.6	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
	Chlorobenzene	2.6	ND	57.3	2.7	5.18	ND	ND	ND	ND	ND	ND	ND	0.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.80	1.90	ND	ND	1.2	ND	ND	ND	1	ND	ND	ND	70
	1,4-dichlorobenzene	4.2	ND	9.2	3.4	3.36	ND	ND	ND	ND	ND	0.80	1.6	2.1	ND	ND	ND	ND	ND	1.2	1.1	ND	1.2	2.1	2.1	ND	ND	2.1	1.4	ND	1.7	1.5	ND	ND	ND	NA
	MTBE	ND	ND	ND	ND	ND	ND	ND	1.19	9.55	1.06	2.90	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5000
	1,2,4-Trimethylbenzene	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
ATC-5																																				
	MTBE	ND	ND	2.2	NS	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5000
	Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Sampled By:		ATC	ATC	ATC	ATC	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	ARCADIS	ARCADIS	

*ATC Monitoring Report for September through December 2001 did not list date samples were collected.
ND is not detected above method detection limit
NS is not sampled
NA= No applicable standard published
MTBE is Methyl tert-Butyl Ether
µg/L = micrograms per liter

Table 4
Soil Gas Survey Field Notes
Springfield Street School Complex
Providence, Rhode Island
May 21, 2010

Monitoring Well	Methane % by volume	Carbon Dioxide % by volume	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
WB-1	0.0	2.3	17.1	0	0	0.0
WB-2	0.0	0.8	19.7	0	0	0.0
WB-3	0.0	0.0	20.6	0	0	0.0
WB-4	0.0	0.0	20.3	0	0	0.0
WB-5	0.0	0.0	200.2	0	0	0.0
WB-6	0.0	0.4	19.7	0	0	0.0
WB-7	Inundated with water					
WB-8	0.0	0.0	20.3	0	0	0.0
WB-12	0.0	1.3	18.7	0	0	0.0
WB-13	0.0	0.0	20.5	0	0	0.0
WB-14	0.0	0.1	20.0	0	0	0.0
WB-15	0.0	0.1	19.9	0	0	0.0
EPL-1	0.0	0.5	19.3	0	0	0.0
EPL-2	0.0	0.4	19.1	0	0	0.0
EPL-3	0.0	1.6	16.2	0	0	0.0
EPL-4	0.0	1.5	18.3	0	0	0.0
EPL-5	0.0	1.3	18.0	0	0	0.0
ENE-1	0.0	1.0	17.6	0	0	0.0

Table 4
Soil Gas Survey Field Notes
Springfield Street School Complex
Providence, Rhode Island
May 21, 2010

Monitoring Well	Methane % by volume	Carbon Dioxide % by volume	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
MG1	0.0	0.5	19.4	0	0	0.0
MG2	0.0	0.8	19.0	0	0	0.0
MG3	0.0	2.5	15.7	0	0	0.0
MG4	0.0	1.4	16.7	0	0	0.0
MG5	0.0	0.7	18.5	0	0	0.0
MPL2	0.0	1.8	16.8	0	0	2.7
MPL3	0.0	4.6	11.2	0	0	0.6
MPL5	0.0	5.6	11.9	0	0	1.7
MPL6	0.0	7.8	9.6	0	0	0.0
MPL7	0.0	6.8	8.9	0	0	0.0
MPL8	0.0	3.1	15.3	0	0	0.0
Remedial Action Work Plan Action Levels	**0.5%**	**1,000 PPM**	**NA**	**9 PPM**	**10 PPM**	**5 PPM**

Sampled by: Chris Jamison

Weather Conditions: Sunny, Temperature 75-80 F

Sampling Equipment: Landtec GEM 2000 Plus, MiniRae 2000 PID

NM = Not measured. Well WB-7 contained water to top of casing on day of sampling

Table 5
Results of Laboratory Analysis of Soil Gas
Springfield Street School Complex
Providence, Rhode Island

Parameter	OSHA PELs (PPBv)	Results of Analysis in parts per billion by volume (PPBv)																										
		MPL-6														WB-2												
Date Collected:		2/20/2007	5/17/2007	8/22/2007	11/14/2007	2/12/2008	5/21/2008	8/26/2008	11/26/2008	2/10/2009	5/7/2009	8/25/2009	11/19/2009	3/1/2010	5/21/2010	2/20/2007	5/17/2007	8/22/2007	11/14/2007	2/12/2008	5/21/2008	8/26/2008	11/26/2008	2/26/2009	5/12/2009	8/25/2009	11/18/2009	3/1/2010	5/21/2010
Benzene	1,000	ND	0.36	0.74	ND	ND	0.51	1.0	0.3	0.31	0.31	2.40	0.29	0.18	0.52	ND	0.29	ND	ND	ND	0.21	0.46	0.23	0.24	ND	2.1	0.39	0.16	0.22
Carbon Tetrachloride	10,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.093	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06	ND	0.062	ND
Chlorobenzene	75,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.058	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.053	ND	0.073	ND
Chloroethane	1,000,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	50,000	ND	3.2	0.48	ND	ND	0.25	ND	0.10	ND	ND	0.15	0.12	0.12	0.13	ND	ND	ND	ND	ND	ND	ND	0.06	ND	ND	0.22	0.38	0.07	0.12
Chloromethane	100,000	ND	0.24	0.36	ND	ND	0.28	0.88	0.36	0.39	0.16	0.77	0.13	0.26	0.22	ND	0.11	ND	ND	ND	0.2	0.56	0.23	0.54	ND	0.28	0.2	0.22	0.23
Dichlorodifluoromethane (Freon 12)	1,000,000	ND	ND	0.28	ND	ND	0.53	0.78	0.31	0.44	0.44	0.43	0.28	0.61	0.48	ND	0.5	0.57	0.66	0.57	0.49	0.66	0.4	0.51	0.55	0.57	0.44	0.66	0.49
1,3-Dichlorobenzene	None	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30	1.70	ND	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31	0.74	ND	0.20
1,4-Dichlorobenzene	75,000	ND	ND	0.54	ND	ND	ND	0.65	ND	0.13	ND	0.27	0.44	0.051	0.27	ND	0.16	0.37	ND	ND	ND	ND	ND	0.15	ND	0.3	0.25	0.056	0.12
1,1-Dichoroethane	100,000	ND	ND	0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	None	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethylene	200,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	1,000,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.36	ND	ND	ND
Ethylbenzene	100,000	ND	0.75	0.7	2.3	0.65	1.3	3.9	0.4	0.36	3.8	5.6	1.1	0.14	0.44	ND	0.55	0.46	3.2	0.78	0.41	1.3	0.33	0.42	2.0	4.6	0.6	0.16	0.37
Methylene Chloride	100,000	ND	ND	0.84	3.5	2	2.6	3.8	2.9	1.7	2.2	1.9	1.5	1.7	3.2	ND	0.53	0.5	4.9	2.5	3.4	3.0	2.3	1.1	2.0	1.8	1.8	1.9	3.2
Styrene	100,000	ND	1.6	1.5	1.4	ND	1.1	3.0	0.3	0.36	2.8	3.2	1.0	0.26	10	ND	1	1.1	0.69	ND	0.5	1.5	0.1	0.47	1.3	3.1	0.51	0.33	3.6
Tetrachloroethylene	100,000	ND	0.19	0.27	4.6	1.9	0.99	4.1	0.6	0.33	0.65	4.0	0.76	0.19	0.21	ND	0.16	0.81	3.2	2.7	0.64	1.6	0.8	0.32	16	3.2	0.43	0.13	0.37
Toluene	200,000	4.9	17	7.2	15	6.9	7.7	64	4	4.1	30	21	5	0.84	32	4.6	12	5.3	10	9.3	3	30	1.8	2.3	12	21	2.6	1.4	8.8
1,1,1-Trichloroethane	350,000	ND	ND	0.36	ND	ND	ND	0.27	ND	ND	ND	ND	ND	ND	0.19	ND	ND	38	ND	1.3	ND	ND	ND	ND	ND	ND	0.052	ND	ND
Trichloroethylene	100,000	ND	ND	0.25	0.53	1	4.1	3.6	1.7	ND	0.26	0.098	0.91	0.067	0.24	ND	ND	4.6	ND	ND	3	2.8	0.97	0.32	ND	0.095	0.26	ND	0.37
Trichlorofluoromethane (Freon 11)	1,000,000	ND	ND	0.7	0.65	ND	0.27	1.3	0.5	0.28	0.72	0.96	0.60	0.44	6.0	ND	0.41	0.43	ND	ND	0.26	0.54	0.3	0.41	2.8	2	0.51	0.47	1.2
1,1,2-Trichloro-1,2,2,-Trifluoroethane (Freon 113)	1,000,000	ND	ND	0.27	ND	ND	ND	ND	0.06	ND	ND	0.06	0.083	0.069	ND	ND	ND	ND	ND	ND	ND	ND	0.07	ND	ND	0.06	0.11	0.076	ND
1,3,5-Trimethylbenzene	None	ND	0.12	ND	ND	ND	0.28	3.7	0.1	ND	8.1	0.5	0.31	0.057	ND	ND	ND	ND	0.57	ND	ND	0.67	0.2	0.13	1.4	0.41	0.18	0.071	ND
1,2,4-Trimethylbenzene	None	ND	ND	0.44	1.6	1.3	1.3	9.1	0.3	0.24	15	1.6	1.3	0.23	0.72	ND	1	0.26	1.7	1.1	0.66	1.6	0.66	0.52	3.2	1.2	0.9	0.28	0.62
Vinyl chloride	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M/p-Xylene	100,000	1.4	3.1	2.4	5.3	2.2	3.7	11	1	0.95	11	15	3	0.41	1.2	1.2	2.5	1.8	10	2.6	1.3	3.7	0.94	1.4	6.1	13	1.5	0.52	0.93
o-Xylene	100,000	ND	0.61	0.68	1.8	0.69	1.6	5.0	0.4	0.32	8.0	4.3	1.2	0.15	0.34	ND	0.56	0.48	3.5	0.8	0.64	1.5	0.43	0.45	2.3	3.3	0.6	0.18	0.26

Notes:
ND = Not detected
Only detected compounds are listed, see laboratory report for complete list on analytes.

ARCADIS

Appendix A

Limitations and 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's 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.

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Appendix B

Laboratory Results

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May 28, 2010

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: WK012152.0006
Laboratory Work Order Number: 10E0489

Enclosed are results of analyses for samples received by the laboratory on May 21, 2010. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Holly L. Folsom
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: 5/28/2010

PURCHASE ORDER NUMBER: 5131

PROJECT NUMBER: WK012152.0006

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 10E0489

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
ATC-5	10E0489-01	Ground Water		SW-846 8260B	
ATC-4	10E0489-02	Ground Water		SW-846 8260B	
ATC-1	10E0489-03	Ground Water		SW-846 8260B	
Trip Blank	10E0489-04	Trip Blank Water		SW-846 8260B	
MPL-6	10E0489-05	Air		EPA TO-14A	
WB-2	10E0489-06	Air		EPA TO-14A	

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CASE NARRATIVE SUMMARY

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

SW-846 8260B

Qualifications:

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

Analyte & Samples(s) Qualified:

Chlorodibromomethane

B013973-BS1, B013973-BSD1

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

Analyte & Samples(s) Qualified:

1,4-Dioxane, 2,2-Dichloropropane, Chloromethane, tert-Butyl Alcohol (TBA)

10E0489-01[ATC-5], 10E0489-02[ATC-4], 10E0489-03[ATC-1], 10E0489-04[Trip Blank], B013973-BLK1, B013973-BS1, B013973-BSD1

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

Analyte & Samples(s) Qualified:

Bromomethane, Chlorodibromomethane

B013973-BS1, B013973-BSD1

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

Analyte & Samples(s) Qualified:

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

10E0489-01[ATC-5], 10E0489-02[ATC-4], 10E0489-03[ATC-1], 10E0489-04[Trip Blank], B013973-BLK1, B013973-BS1, B013973-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 individuuals 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

con-test® ANALYTICAL LABORATORY
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ANALYTICAL RESULTS

Project Location: Springfield St., Providence, RI
Date Received: 5/21/2010
Field Sample #: MPL-6
Sample ID: 10E0489-05
Sample Matrix: Air
Sampled: 5/21/2010 09:10

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

Work Order: 10E0489
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

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Benzene	0.52	0.10		1.6	0.32	2	5/23/10 1:22	WSD
Bromomethane	ND	0.10		ND	0.39	2	5/23/10 1:22	WSD
Carbon Tetrachloride	ND	0.10		ND	0.63	2	5/23/10 1:22	WSD
Chlorobenzene	ND	0.10		ND	0.46	2	5/23/10 1:22	WSD
Chloroethane	ND	0.10		ND	0.26	2	5/23/10 1:22	WSD
Chloroform	0.13	0.10		0.62	0.49	2	5/23/10 1:22	WSD
Chloromethane	0.22	0.10		0.45	0.21	2	5/23/10 1:22	WSD
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	5/23/10 1:22	WSD
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	5/23/10 1:22	WSD
1,3-Dichlorobenzene	0.14	0.10		0.84	0.60	2	5/23/10 1:22	WSD
1,4-Dichlorobenzene	0.27	0.10		1.6	0.60	2	5/23/10 1:22	WSD
Dichlorodifluoromethane (Freon 12)	0.48	0.10		2.4	0.49	2	5/23/10 1:22	WSD
1,1-Dichloroethane	ND	0.10		ND	0.40	2	5/23/10 1:22	WSD
1,2-Dichloroethane	ND	0.10		ND	0.40	2	5/23/10 1:22	WSD
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	5/23/10 1:22	WSD
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	5/23/10 1:22	WSD
1,2-Dichloropropane	ND	0.10		ND	0.46	2	5/23/10 1:22	WSD
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	5/23/10 1:22	WSD
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	5/23/10 1:22	WSD
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	5/23/10 1:22	WSD
Ethylbenzene	0.44	0.10		1.9	0.43	2	5/23/10 1:22	WSD
Hexachlorobutadiene	ND	0.10		ND	1.1	2	5/23/10 1:22	WSD
Methylene Chloride	3.2	0.20		11	0.69	2	5/23/10 1:22	WSD
Styrene	10	0.10		43	0.43	2	5/23/10 1:22	WSD
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	5/23/10 1:22	WSD
Tetrachloroethylene	0.21	0.10		1.5	0.68	2	5/23/10 1:22	WSD
Toluene	32	0.10		120	0.38	2	5/23/10 1:22	WSD
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	5/23/10 1:22	WSD
1,1,1-Trichloroethane	0.19	0.10		1.0	0.55	2	5/23/10 1:22	WSD
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	5/23/10 1:22	WSD
Trichloroethylene	0.24	0.10		1.3	0.54	2	5/23/10 1:22	WSD
Trichlorofluoromethane (Freon 11)	6.0	0.10		34	0.56	2	5/23/10 1:22	WSD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	5/23/10 1:22	WSD
1,2,4-Trimethylbenzene	0.72	0.10		3.5	0.49	2	5/23/10 1:22	WSD
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	5/23/10 1:22	WSD
Vinyl Chloride	ND	0.10		ND	0.26	2	5/23/10 1:22	WSD
m&p-Xylene	1.2	0.20		5.1	0.87	2	5/23/10 1:22	WSD
o-Xylene	0.34	0.10		1.5	0.43	2	5/23/10 1:22	WSD

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ANALYTICAL RESULTS

Project Location: Springfield St., Providence, RI
Date Received: 5/21/2010
Field Sample #: MPL-6
Sample ID: 10E0489-05
Sample Matrix: Air
Sampled: 5/21/2010 09:10

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

Work Order: 10E0489
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

Analyte	ppbv Results	ppbv RL	Flag	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Surrogates	% Recovery			% REC Limits				
4-Bromofluorobenzene (1)	101			70-130			5/23/10 1:22	

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ANALYTICAL RESULTS

Project Location: Springfield St., Providence, RI
Date Received: 5/21/2010
Field Sample #: WB-2
Sample ID: 10E0489-06
Sample Matrix: Air
Sampled: 5/21/2010 11:50

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

Work Order: 10E0489
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

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Benzene	0.22	0.10		0.72	0.32	2	5/23/10 2:36	WSD
Bromomethane	ND	0.10		ND	0.39	2	5/23/10 2:36	WSD
Carbon Tetrachloride	ND	0.10		ND	0.63	2	5/23/10 2:36	WSD
Chlorobenzene	ND	0.10		ND	0.46	2	5/23/10 2:36	WSD
Chloroethane	ND	0.10		ND	0.26	2	5/23/10 2:36	WSD
Chloroform	0.12	0.10		0.57	0.49	2	5/23/10 2:36	WSD
Chloromethane	0.23	0.10		0.47	0.21	2	5/23/10 2:36	WSD
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	5/23/10 2:36	WSD
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	5/23/10 2:36	WSD
1,3-Dichlorobenzene	0.20	0.10		1.2	0.60	2	5/23/10 2:36	WSD
1,4-Dichlorobenzene	0.12	0.10		0.73	0.60	2	5/23/10 2:36	WSD
Dichlorodifluoromethane (Freon 12)	0.49	0.10		2.4	0.49	2	5/23/10 2:36	WSD
1,1-Dichloroethane	ND	0.10		ND	0.40	2	5/23/10 2:36	WSD
1,2-Dichloroethane	ND	0.10		ND	0.40	2	5/23/10 2:36	WSD
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	5/23/10 2:36	WSD
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	5/23/10 2:36	WSD
1,2-Dichloropropane	ND	0.10		ND	0.46	2	5/23/10 2:36	WSD
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	5/23/10 2:36	WSD
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	5/23/10 2:36	WSD
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	5/23/10 2:36	WSD
Ethylbenzene	0.37	0.10		1.6	0.43	2	5/23/10 2:36	WSD
Hexachlorobutadiene	ND	0.10		ND	1.1	2	5/23/10 2:36	WSD
Methylene Chloride	3.2	0.20		11	0.69	2	5/23/10 2:36	WSD
Styrene	3.6	0.10		15	0.43	2	5/23/10 2:36	WSD
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	5/23/10 2:36	WSD
Tetrachloroethylene	0.37	0.10		2.5	0.68	2	5/23/10 2:36	WSD
Toluene	8.8	0.10		33	0.38	2	5/23/10 2:36	WSD
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	5/23/10 2:36	WSD
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	5/23/10 2:36	WSD
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	5/23/10 2:36	WSD
Trichloroethylene	0.37	0.10		2.0	0.54	2	5/23/10 2:36	WSD
Trichlorofluoromethane (Freon 11)	1.2	0.10		6.8	0.56	2	5/23/10 2:36	WSD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	5/23/10 2:36	WSD
1,2,4-Trimethylbenzene	0.62	0.10		3.0	0.49	2	5/23/10 2:36	WSD
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	5/23/10 2:36	WSD
Vinyl Chloride	ND	0.10		ND	0.26	2	5/23/10 2:36	WSD
m&p-Xylene	0.93	0.20		4.1	0.87	2	5/23/10 2:36	WSD
o-Xylene	0.26	0.10		1.1	0.43	2	5/23/10 2:36	WSD

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ANALYTICAL RESULTS

Project Location: Springfield St., Providence, RI
Date Received: 5/21/2010
Field Sample #: WB-2
Sample ID: 10E0489-06
Sample Matrix: Air
Sampled: 5/21/2010 11:50

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

Work Order: 10E0489
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

Analyte	ppbv Results	ppbv RL	Flag	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Surrogates	% Recovery			% REC Limits				
4-Bromofluorobenzene (1)	101			70-130			5/23/10 2:36	

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Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: ATC-5 | Sampled: 5/20/2010 13:35

Sample ID: 10E0489-01

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 8260B	5/24/10	5/24/10 23:06	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/24/10 23:06	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Carbon Tetrachloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/24/10 23:06	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF

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

Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: ATC-5 | Sampled: 5/20/2010 13:35

Sample ID: 10E0489-01

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 8260B	5/24/10	5/24/10 23:06	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Naphthalene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:06	MFF

Surrogates	% Recovery	Recovery Limits	Flag	
1,2-Dichloroethane-d4	97.7	70-130		5/24/10 23:06
Toluene-d8	102	70-130		5/24/10 23:06
4-Bromofluorobenzene	97.2	70-130		5/24/10 23:06

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: ATC-4 | Sampled: 5/20/2010 12:05

Sample ID: 10E0489-02

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 8260B	5/24/10	5/24/10 23:36	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/24/10 23:36	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Carbon Tetrachloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/24/10 23:36	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: ATC-4 | Sampled: 5/20/2010 12:05

Sample ID: 10E0489-02

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 8260B	5/24/10	5/24/10 23:36	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Naphthalene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 23:36	MFF

Surrogates	% Recovery	Recovery Limits	Flag	
1,2-Dichloroethane-d4	97.7	70-130		5/24/10 23:36
Toluene-d8	102	70-130		5/24/10 23:36
4-Bromofluorobenzene	96.8	70-130		5/24/10 23:36

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: ATC-1 | Sampled: 5/20/2010 16:15

Sample ID: 10E0489-03

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 8260B	5/24/10	5/25/10 0:06	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/25/10 0:06	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Carbon Tetrachloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/25/10 0:06	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: ATC-1 | Sampled: 5/20/2010 16:15

Sample ID: 10E0489-03

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 8260B	5/24/10	5/25/10 0:06	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Naphthalene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/25/10 0:06	MFF

Surrogates	% Recovery	Recovery Limits	Flag		
1,2-Dichloroethane-d4	98.1	70-130		5/25/10	0:06
Toluene-d8	102	70-130		5/25/10	0:06
4-Bromofluorobenzene	96.4	70-130		5/25/10	0:06

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: Trip Blank | Sampled: 5/20/2010 00:00

Sample ID: 10E0489-04

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 8260B	5/24/10	5/24/10 22:36	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/24/10 22:36	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Carbon Tetrachloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/24/10 22:36	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Springfield St., Providence, RI | Sample Description: | Work Order: 10E0489

Date Received: 5/21/2010

Field Sample #: Trip Blank | Sampled: 5/20/2010 00:00

Sample ID: 10E0489-04

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 8260B	5/24/10	5/24/10 22:36	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Naphthalene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	5/24/10	5/24/10 22:36	MFF

Surrogates	% Recovery	Recovery Limits	Flag	
1,2-Dichloroethane-d4	95.6	70-130		5/24/10 22:36
Toluene-d8	102	70-130		5/24/10 22:36
4-Bromofluorobenzene	95.5	70-130		5/24/10 22:36

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

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
10E0489-05 [MPL-6]	B014052	1	1	N/A	1000	400	200	05/22/10
10E0489-06 [WB-2]	B014052	1	1	N/A	1000	400	200	05/22/10

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
10E0489-01 [ATC-5]	B013973	5	5.00	05/24/10
10E0489-02 [ATC-4]	B013973	5	5.00	05/24/10
10E0489-03 [ATC-1]	B013973	5	5.00	05/24/10
10E0489-04 [Trip Blank]	B013973	5	5.00	05/24/10

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

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch B014052 - TO-15 Prep											
Blank (B014052-BLK1)					Prepared: 05/22/10 Analyzed: 05/23/10						
Benzene	ND	0.050									
Bromomethane	ND	0.050									
Carbon Tetrachloride	ND	0.050									
Chlorobenzene	ND	0.050									
Chloroethane	ND	0.050									
Chloroform	ND	0.050									
Chloromethane	ND	0.050									
1,2-Dibromoethane (EDB)	ND	0.050									
1,2-Dichlorobenzene	ND	0.050									
1,3-Dichlorobenzene	ND	0.050									
1,4-Dichlorobenzene	ND	0.050									
Dichlorodifluoromethane (Freon 12)	ND	0.050									
1,1-Dichloroethane	ND	0.050									
1,2-Dichloroethane	ND	0.050									
1,1-Dichloroethylene	ND	0.050									
cis-1,2-Dichloroethylene	ND	0.050									
1,2-Dichloropropane	ND	0.050									
cis-1,3-Dichloropropene	ND	0.050									
trans-1,3-Dichloropropene	ND	0.050									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.050									
Ethylbenzene	ND	0.050									
Hexachlorobutadiene	ND	0.050									
Methylene Chloride	ND	0.10									
Styrene	ND	0.050									
1,1,2,2-Tetrachloroethane	ND	0.050									
Tetrachloroethylene	ND	0.050									
Toluene	ND	0.050									
1,2,4-Trichlorobenzene	ND	0.050									
1,1,1-Trichloroethane	ND	0.050									
1,1,2-Trichloroethane	ND	0.050									
Trichloroethylene	ND	0.050									
Trichlorofluoromethane (Freon 11)	ND	0.050									
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.050									
1,2,4-Trimethylbenzene	ND	0.050									
1,3,5-Trimethylbenzene	ND	0.050									
Vinyl Chloride	ND	0.050									
m&p-Xylene	ND	0.10									
o-Xylene	ND	0.050									
Surrogate: 4-Bromofluorobenzene (1)	*8.04*				*8.00*		*101*	*70-130*			

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

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch B014052 - TO-15 Prep											
LCS (B014052-BS1)					Prepared & Analyzed: 05/22/10						
Benzene	4.51				5.00		90.2	70-130			
Bromomethane	4.81				5.00		96.2	70-130			
Carbon Tetrachloride	4.40				5.00		88.0	70-130			
Chlorobenzene	4.68				5.00		93.5	70-130			
Chloroethane	4.54				5.00		90.7	70-130			
Chloroform	4.99				5.00		99.7	70-130			
Chloromethane	4.34				5.00		86.9	70-130			
1,2-Dibromoethane (EDB)	4.67				5.00		93.5	70-130			
1,2-Dichlorobenzene	4.59				5.00		91.9	70-130			
1,3-Dichlorobenzene	4.73				5.00		94.7	70-130			
1,4-Dichlorobenzene	4.67				5.00		93.4	70-130			
Dichlorodifluoromethane (Freon 12)	4.72				5.00		94.5	70-130			
1,1-Dichloroethane	4.86				5.00		97.2	70-130			
1,2-Dichloroethane	4.59				5.00		91.9	70-130			
1,1-Dichloroethylene	4.60				5.00		92.0	70-130			
cis-1,2-Dichloroethylene	4.89				5.00		97.9	70-130			
1,2-Dichloropropane	4.31				5.00		86.2	70-130			
cis-1,3-Dichloropropene	4.68				5.00		93.7	70-130			
trans-1,3-Dichloropropene	3.99				5.00		79.8	70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.29				5.00		85.8	70-130			
Ethylbenzene	4.58				5.00		91.6	70-130			
Hexachlorobutadiene	4.30				5.00		85.9	70-130			
Methylene Chloride	4.23				5.00		84.6	70-130			
Styrene	4.71				5.00		94.2	70-130			
1,1,2,2-Tetrachloroethane	4.54				5.00		90.7	70-130			
Tetrachloroethylene	4.80				5.00		96.0	70-130			
Toluene	4.63				5.00		92.6	70-130			
1,2,4-Trichlorobenzene	4.60				5.00		92.1	70-130			
1,1,1-Trichloroethane	4.38				5.00		87.7	70-130			
1,1,2-Trichloroethane	4.67				5.00		93.4	70-130			
Trichloroethylene	4.69				5.00		93.9	70-130			
Trichlorofluoromethane (Freon 11)	4.60				5.00		92.1	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.12				5.00		102	70-130			
1,2,4-Trimethylbenzene	4.55				5.00		91.1	70-130			
1,3,5-Trimethylbenzene	4.55				5.00		91.0	70-130			
Vinyl Chloride	4.58				5.00		91.7	70-130			
m&p-Xylene	9.27				10.0		92.7	70-130			
o-Xylene	4.58				5.00		91.6	70-130			
Surrogate: 4-Bromofluorobenzene (1)	*8.25*				*8.00*		*103*	*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
Batch B013973 - SW-846 5030B										
Blank (B013973-BLK1)				Prepared & Analyzed: 05/24/10						
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-05, 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	4.0	µg/L							
Carbon Tetrachloride	ND	2.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	1.0	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							V-05
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-05, 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	
Batch B013973 - SW-846 5030B												
Blank (B013973-BLK1)				Prepared & Analyzed: 05/24/10								
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	*24.2*		µg/L	25.0		96.6		70-130				
Surrogate: Toluene-d8	*25.4*		µg/L	25.0		102		70-130				
Surrogate: 4-Bromofluorobenzene	*24.6*		µg/L	25.0		98.5		70-130				
LCS (B013973-BS1)				Prepared & Analyzed: 05/24/10								
Acetone	197	50	µg/L	200		98.6		70-160				†
Acrylonitrile	16.0	5.0	µg/L	20.0		80.0		70-130				
tert-Amyl Methyl Ether (TAME)	18.0	0.50	µg/L	20.0		89.8		70-130				
Benzene	17.8	1.0	µg/L	20.0		88.8		70-130				
Bromobenzene	18.3	1.0	µg/L	20.0		91.6		70-130				
Bromochloromethane	16.3	1.0	µg/L	20.0		81.4		70-130				
Bromodichloromethane	20.7	0.50	µg/L	20.0		103		70-130				
Bromoform	18.2	1.0	µg/L	20.0		91.0		70-130				
Bromomethane	9.92	2.0	µg/L	20.0		49.6		40-160			V-06	†
2-Butanone (MEK)	187	20	µg/L	200		93.5		40-160				†
tert-Butyl Alcohol (TBA)	119	20	µg/L	200		59.3		40-160			V-05, V-16	†
n-Butylbenzene	18.7	1.0	µg/L	20.0		93.6		70-130				
sec-Butylbenzene	18.2	1.0	µg/L	20.0		90.8		70-130				
tert-Butylbenzene	18.4	1.0	µg/L	20.0		92.1		70-130				
tert-Butyl Ethyl Ether (TBEE)	16.6	0.50	µg/L	20.0		83.2		70-130				
Carbon Disulfide	18.5	4.0	µg/L	20.0		92.6		70-130				
Carbon Tetrachloride	19.4	2.0	µg/L	20.0		96.8		70-130				
Chlorobenzene	18.0	1.0	µg/L	20.0		90.0		70-130				
Chlorodibromomethane	27.6	1.0	µg/L	20.0		**138**	*	70-130			L-02, V-06	
Chloroethane	18.1	2.0	µg/L	20.0		90.6		70-130				
Chloroform	18.6	2.0	µg/L	20.0		93.2		70-130				
Chloromethane	11.1	2.0	µg/L	20.0		55.4		40-160			V-05	†
2-Chlorotoluene	18.4	1.0	µg/L	20.0		92.2		70-130				

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

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	
Batch B013973 - SW-846 5030B											
LCS (B013973-BS1)				Prepared & Analyzed: 05/24/10							
4-Chlorotoluene	19.2	1.0	µg/L	20.0		95.9	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	16.6	5.0	µg/L	20.0		83.0	70-130				
1,2-Dibromoethane (EDB)	19.5	0.50	µg/L	20.0		97.7	70-130				
Dibromomethane	19.6	1.0	µg/L	20.0		98.0	70-130				
1,2-Dichlorobenzene	18.4	1.0	µg/L	20.0		92.0	70-130				
1,3-Dichlorobenzene	18.2	1.0	µg/L	20.0		91.1	70-130				
1,4-Dichlorobenzene	18.0	1.0	µg/L	20.0		90.0	70-130				
trans-1,4-Dichloro-2-butene	14.8	2.0	µg/L	20.0		74.2	70-130				
Dichlorodifluoromethane (Freon 12)	16.8	2.0	µg/L	20.0		83.9	40-160				†
1,1-Dichloroethane	16.4	1.0	µg/L	20.0		82.2	70-130				
1,2-Dichloroethane	18.9	1.0	µg/L	20.0		94.4	70-130				
1,1-Dichloroethylene	17.9	1.0	µg/L	20.0		89.4	70-130				
cis-1,2-Dichloroethylene	16.3	1.0	µg/L	20.0		81.4	70-130				
trans-1,2-Dichloroethylene	17.0	1.0	µg/L	20.0		84.9	70-130				
1,2-Dichloropropane	16.7	1.0	µg/L	20.0		83.4	70-130				
1,3-Dichloropropane	18.8	0.50	µg/L	20.0		94.2	70-130				
2,2-Dichloropropane	13.1	1.0	µg/L	20.0		65.6	40-130			V-05	†
1,1-Dichloropropene	18.3	2.0	µg/L	20.0		91.4	70-130				
cis-1,3-Dichloropropene	18.0	0.50	µg/L	20.0		90.1	70-130				
trans-1,3-Dichloropropene	21.2	0.50	µg/L	20.0		106	70-130				
Diethyl Ether	18.5	2.0	µg/L	20.0		92.6	70-130				
Diisopropyl Ether (DIPE)	17.5	0.50	µg/L	20.0		87.7	70-130				
1,4-Dioxane	129	50	µg/L	200		64.3	40-130			V-05, V-16	†
Ethylbenzene	19.1	1.0	µg/L	20.0		95.7	70-130				
Hexachlorobutadiene	18.8	0.50	µg/L	20.0		93.8	70-130				
2-Hexanone (MBK)	197	10	µg/L	200		98.3	70-160				†
Isopropylbenzene (Cumene)	21.0	1.0	µg/L	20.0		105	70-130				
p-Isopropyltoluene (p-Cymene)	18.5	1.0	µg/L	20.0		92.6	70-130				
Methyl tert-Butyl Ether (MTBE)	18.6	1.0	µg/L	20.0		93.1	70-130				
Methylene Chloride	15.6	5.0	µg/L	20.0		78.2	70-130				
4-Methyl-2-pentanone (MIBK)	193	10	µg/L	200		96.4	70-160				†
Naphthalene	15.9	2.0	µg/L	20.0		79.4	40-130				†
n-Propylbenzene	18.7	1.0	µg/L	20.0		93.4	70-130				
Styrene	18.7	1.0	µg/L	20.0		93.6	70-130				
1,1,1,2-Tetrachloroethane	22.3	1.0	µg/L	20.0		111	70-130				
1,1,2,2-Tetrachloroethane	18.6	0.50	µg/L	20.0		93.2	70-130				
Tetrachloroethylene	19.6	1.0	µg/L	20.0		98.0	70-130				
Tetrahydrofuran	16.3	10	µg/L	20.0		81.7	70-130				
Toluene	19.3	1.0	µg/L	20.0		96.4	70-130				
1,2,3-Trichlorobenzene	18.0	5.0	µg/L	20.0		89.8	70-130				
1,2,4-Trichlorobenzene	18.8	1.0	µg/L	20.0		94.0	70-130				
1,3,5-Trichlorobenzene	19.4	1.0	µg/L	20.0		97.2	70-130				
1,1,1-Trichloroethane	19.0	1.0	µg/L	20.0		94.8	70-130				
1,1,2-Trichloroethane	19.4	1.0	µg/L	20.0		97.1	70-130				
Trichloroethylene	19.4	1.0	µg/L	20.0		96.9	70-130				
Trichlorofluoromethane (Freon 11)	20.6	2.0	µg/L	20.0		103	70-130				
1,2,3-Trichloropropane	16.5	2.0	µg/L	20.0		82.7	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	20.1	1.0	µg/L	20.0		101	70-130				
1,2,4-Trimethylbenzene	18.8	1.0	µg/L	20.0		94.2	70-130				
1,3,5-Trimethylbenzene	18.4	1.0	µg/L	20.0		92.1	70-130				
Vinyl Chloride	14.0	2.0	µg/L	20.0		69.9	40-160				†

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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	
Batch B013973 - SW-846 5030B												
LCS (B013973-BS1)				Prepared & Analyzed: 05/24/10								
m+p Xylene	38.7	2.0	µg/L	40.0		96.8		70-130				
o-Xylene	19.0	1.0	µg/L	20.0		95.2		70-130				
Surrogate: 1,2-Dichloroethane-d4	*24.2*		µg/L	25.0		96.8		70-130				
Surrogate: Toluene-d8	*25.8*		µg/L	25.0		103		70-130				
Surrogate: 4-Bromofluorobenzene	*24.6*		µg/L	25.0		98.3		70-130				
LCS Dup (B013973-BSD1)				Prepared & Analyzed: 05/24/10								
Acetone	175	50	µg/L	200		87.7		70-160	11.7	25		†
Acrylonitrile	16.1	5.0	µg/L	20.0		80.5		70-130	0.686	25		
tert-Amyl Methyl Ether (TAME)	17.7	0.50	µg/L	20.0		88.4		70-130	1.57	25		
Benzene	17.3	1.0	µg/L	20.0		86.4		70-130	2.74	25		
Bromobenzene	18.2	1.0	µg/L	20.0		91.0		70-130	0.657	25		
Bromochloromethane	16.5	1.0	µg/L	20.0		82.5		70-130	1.40	25		
Bromodichloromethane	20.5	0.50	µg/L	20.0		102		70-130	0.973	25		
Bromoform	18.2	1.0	µg/L	20.0		91.0		70-130	0.00	25		
Bromomethane	11.1	2.0	µg/L	20.0		55.4		40-160	11.1	25	V-06	†
2-Butanone (MEK)	180	20	µg/L	200		89.8		40-160	3.99	25		†
tert-Butyl Alcohol (TBA)	117	20	µg/L	200		58.7		40-160	0.958	25	V-05, V-16	†
n-Butylbenzene	18.6	1.0	µg/L	20.0		93.0		70-130	0.750	25		
sec-Butylbenzene	17.9	1.0	µg/L	20.0		89.6		70-130	1.33	25		
tert-Butylbenzene	18.1	1.0	µg/L	20.0		90.6		70-130	1.59	25		
tert-Butyl Ethyl Ether (TBEE)	16.8	0.50	µg/L	20.0		84.0		70-130	0.897	25		
Carbon Disulfide	17.9	4.0	µg/L	20.0		89.6		70-130	3.29	25		
Carbon Tetrachloride	19.7	2.0	µg/L	20.0		98.4		70-130	1.64	25		
Chlorobenzene	17.6	1.0	µg/L	20.0		88.1		70-130	2.08	25		
Chlorodibromomethane	27.0	1.0	µg/L	20.0		**135**	*	70-130	1.98	25	L-02, V-06	
Chloroethane	18.2	2.0	µg/L	20.0		90.8		70-130	0.165	25		
Chloroform	18.5	2.0	µg/L	20.0		92.6		70-130	0.592	25		
Chloromethane	11.1	2.0	µg/L	20.0		55.6		40-160	0.450	25	V-05	†
2-Chlorotoluene	18.2	1.0	µg/L	20.0		91.1		70-130	1.25	25		
4-Chlorotoluene	19.1	1.0	µg/L	20.0		95.5		70-130	0.418	25		
1,2-Dibromo-3-chloropropane (DBCP)	16.9	5.0	µg/L	20.0		84.4		70-130	1.67	25		
1,2-Dibromoethane (EDB)	19.1	0.50	µg/L	20.0		95.4		70-130	2.33	25		
Dibromomethane	19.3	1.0	µg/L	20.0		96.7		70-130	1.39	25		
1,2-Dichlorobenzene	18.1	1.0	µg/L	20.0		90.3		70-130	1.81	25		
1,3-Dichlorobenzene	18.2	1.0	µg/L	20.0		90.8		70-130	0.330	25		
1,4-Dichlorobenzene	17.6	1.0	µg/L	20.0		88.0		70-130	2.25	25		
trans-1,4-Dichloro-2-butene	14.6	2.0	µg/L	20.0		73.0		70-130	1.56	25		
Dichlorodifluoromethane (Freon 12)	16.3	2.0	µg/L	20.0		81.6		40-160	2.72	25		†
1,1-Dichloroethane	16.4	1.0	µg/L	20.0		81.8		70-130	0.610	25		
1,2-Dichloroethane	18.8	1.0	µg/L	20.0		93.8		70-130	0.744	25		
1,1-Dichloroethylene	17.8	1.0	µg/L	20.0		89.0		70-130	0.392	25		
cis-1,2-Dichloroethylene	16.3	1.0	µg/L	20.0		81.5		70-130	0.0614	25		
trans-1,2-Dichloroethylene	16.7	1.0	µg/L	20.0		83.4		70-130	1.84	25		
1,2-Dichloropropane	16.4	1.0	µg/L	20.0		82.0		70-130	1.57	25		
1,3-Dichloropropane	18.8	0.50	µg/L	20.0		93.8		70-130	0.425	25		
2,2-Dichloropropane	13.3	1.0	µg/L	20.0		66.4		40-130	1.21	25	V-05	†
1,1-Dichloropropene	18.0	2.0	µg/L	20.0		90.2		70-130	1.32	25		
cis-1,3-Dichloropropene	18.0	0.50	µg/L	20.0		90.1		70-130	0.00	25		
trans-1,3-Dichloropropene	21.3	0.50	µg/L	20.0		106		70-130	0.565	25		
Diethyl Ether	18.6	2.0	µg/L	20.0		93.0		70-130	0.485	25		
Diisopropyl Ether (DIPE)	17.5	0.50	µg/L	20.0		87.4		70-130	0.400	25		

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

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	
Batch B013973 - SW-846 5030B											
LCS Dup (B013973-BSD1)				Prepared & Analyzed: 05/24/10							
1,4-Dioxane	148	50	µg/L	200		73.8	40-130	13.8	50	V-05, V-16	† ‡
Ethylbenzene	18.6	1.0	µg/L	20.0		93.2	70-130	2.59	25		
Hexachlorobutadiene	18.5	0.50	µg/L	20.0		92.7	70-130	1.18	25		
2-Hexanone (MBK)	191	10	µg/L	200		95.6	70-160	2.71	25		†
Isopropylbenzene (Cumene)	21.1	1.0	µg/L	20.0		105	70-130	0.190	25		
p-Isopropyltoluene (p-Cymene)	18.4	1.0	µg/L	20.0		92.0	70-130	0.596	25		
Methyl tert-Butyl Ether (MTBE)	18.4	1.0	µg/L	20.0		92.2	70-130	0.917	25		
Methylene Chloride	15.8	5.0	µg/L	20.0		79.0	70-130	1.08	25		
4-Methyl-2-pentanone (MIBK)	190	10	µg/L	200		95.0	70-160	1.54	25		†
Naphthalene	15.6	2.0	µg/L	20.0		78.0	40-130	1.65	25		†
n-Propylbenzene	18.5	1.0	µg/L	20.0		92.4	70-130	1.08	25		
Styrene	18.5	1.0	µg/L	20.0		92.4	70-130	1.24	25		
1,1,1,2-Tetrachloroethane	22.3	1.0	µg/L	20.0		111	70-130	0.0449	25		
1,1,2,2-Tetrachloroethane	18.5	0.50	µg/L	20.0		92.6	70-130	0.646	25		
Tetrachloroethylene	19.4	1.0	µg/L	20.0		96.9	70-130	1.13	25		
Tetrahydrofuran	16.4	10	µg/L	20.0		81.8	70-130	0.122	25		
Toluene	18.9	1.0	µg/L	20.0		94.4	70-130	1.99	25		
1,2,3-Trichlorobenzene	17.8	5.0	µg/L	20.0		88.9	70-130	1.06	25		
1,2,4-Trichlorobenzene	18.4	1.0	µg/L	20.0		91.9	70-130	2.26	25		
1,3,5-Trichlorobenzene	19.1	1.0	µg/L	20.0		95.4	70-130	1.97	25		
1,1,1-Trichloroethane	18.8	1.0	µg/L	20.0		94.0	70-130	0.848	25		
1,1,2-Trichloroethane	19.2	1.0	µg/L	20.0		96.2	70-130	0.879	25		
Trichloroethylene	19.3	1.0	µg/L	20.0		96.4	70-130	0.465	25		
Trichlorofluoromethane (Freon 11)	20.3	2.0	µg/L	20.0		102	70-130	1.61	25		
1,2,3-Trichloropropane	16.6	2.0	µg/L	20.0		83.0	70-130	0.302	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	20.0	1.0	µg/L	20.0		100	70-130	0.598	25		
1,2,4-Trimethylbenzene	18.4	1.0	µg/L	20.0		92.2	70-130	2.09	25		
1,3,5-Trimethylbenzene	18.6	1.0	µg/L	20.0		92.8	70-130	0.757	25		
Vinyl Chloride	13.7	2.0	µg/L	20.0		68.7	40-160	1.73	25		†
m+p Xylene	38.1	2.0	µg/L	40.0		95.3	70-130	1.56	25		
o-Xylene	18.9	1.0	µg/L	20.0		94.5	70-130	0.685	25		
Surrogate: 1,2-Dichloroethane-d4	*23.8*		µg/L	25.0		95.1	70-130				
Surrogate: Toluene-d8	*25.5*		µg/L	25.0		102	70-130				
Surrogate: 4-Bromofluorobenzene	*24.8*		µg/L	25.0		99.3	70-130				

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits estabished for difficult compound.
‡	Wide RPD limits estabished 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.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Significant uncertainty is associated with the reported value which is likely to be biased on the low side.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Significant uncertainty is associated with the reported value which is likely to be biased on the high side.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy are associated with reported result.

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-14A in Air	
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-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
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
1,2,4-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
SW-846 8260B in Water	
Acetone	CT,NH,NY
Acrylonitrile	CT,NY,RI
tert-Amyl Methyl Ether (TAME)	NH,NY
Benzene	CT,NH,NY,RI
Bromochloromethane	NH,NY
Bromodichloromethane	CT,NH,NY,RI
Bromoform	CT,NH,NY,RI
Bromomethane	CT,NH,NY,RI
2-Butanone (MEK)	CT,NH,NY
tert-Butyl Alcohol (TBA)	NH,NY

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260B in Water	
n-Butylbenzene	NY
sec-Butylbenzene	NY
tert-Butylbenzene	NY
tert-Butyl Ethyl Ether (TBEE)	NH,NY
Carbon Disulfide	CT,NH,NY
Carbon Tetrachloride	CT,NH,NY,RI
Chlorobenzene	CT,NH,NY,RI
Chlorodibromomethane	CT,NH,NY,RI
Chloroethane	CT,NH,NY,RI
Chloroform	CT,NH,NY,RI
Chloromethane	CT,NH,NY,RI
Dibromomethane	NH,NY
1,2-Dichlorobenzene	CT,NY,RI
1,3-Dichlorobenzene	CT,NH,NY,RI
1,4-Dichlorobenzene	CT,NH,NY,RI
trans-1,4-Dichloro-2-butene	NH,NY
Dichlorodifluoromethane (Freon 12)	NH,NY,RI
1,1-Dichloroethane	CT,NH,NY,RI
1,2-Dichloroethane	CT,NH,NY,RI
1,1-Dichloroethylene	CT,NH,NY,RI
trans-1,2-Dichloroethylene	CT,NH,NY,RI
1,2-Dichloropropane	CT,NH,NY,RI
2,2-Dichloropropane	NH,NY
1,1-Dichloropropene	NH,NY
cis-1,3-Dichloropropene	CT,NH,NY,RI
trans-1,3-Dichloropropene	CT,NH,NY,RI
Diisopropyl Ether (DIPE)	NH,NY
Ethylbenzene	CT,NH,NY,RI
Hexachlorobutadiene	CT,NH,NY
2-Hexanone (MBK)	CT,NH,NY
Isopropylbenzene (Cumene)	NY
p-Isopropyltoluene (p-Cymene)	CT,NH,NY
Methyl tert-Butyl Ether (MTBE)	CT,NH,NY
Methylene Chloride	CT,NH,NY,RI
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY
n-Propylbenzene	CT,NH,NY
Styrene	CT,NH,NY
1,1,1,2-Tetrachloroethane	CT,NH,NY
1,1,2,2-Tetrachloroethane	CT,NH,NY,RI
Tetrachloroethylene	CT,NH,NY,RI
Toluene	CT,NH,NY,RI
1,2,3-Trichlorobenzene	NH,NY
1,2,4-Trichlorobenzene	CT,NH,NY
1,1,1-Trichloroethane	CT,NH,NY,RI
1,1,2-Trichloroethane	CT,NH,NY,RI
Trichloroethylene	CT,NH,NY,RI

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260B in Water	
Trichlorofluoromethane (Freon 11)	CT,NH,NY,RI
1,2,3-Trichloropropane	NH,NY
1,2,4-Trimethylbenzene	NY
1,3,5-Trimethylbenzene	NY
Vinyl Chloride	CT,NH,NY,RI
m+p Xylene	CT,NH,NY,RI
o-Xylene	CT,NH,NY,RI

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

Code	Description	Number	Expires
AIHA	American Industrial Hygiene Association	100033	01/1/2012
MA	Massachusetts DEP	M-MA100	06/30/2010
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2011
NY	New York State Department of Health	10899 NELAP	04/1/2011
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2011
RI	Rhode Island Department of Health	LAO00112	12/30/2010
NC	North Carolina Div. of Water Quality	652	12/31/2010
NJ	New Jersey DEP	MA007 NELAP	06/30/2010
FL	Florida Department of Health	E871027 NELAP	06/30/2010
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2010
WA	State of Washington Department of Ecology	C2065	02/23/2011

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 ST, 2ND FLOOR
EAST LONGMEADOW, MA 01028

Page 1 of 1

Company Name: ARCADIS
Address: 300 METRO CENTER BLVD SUITE 250
WARWICK RI 02886
Attention: DONNA PALLISTER
Project Location: SPRINGFIELD ST PROVIDENCE RI
Sampled By: C. DENTCH / C. JAMISON

Telephone: (401) 738-3887
Project # WK012152.0006
Client PO #

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 _____ proposal date

State Form Required?
☐ yes ☐ no

Field ID	Sample Description	Lab # 10E0489	Date Sampled: Start Date/Time	Stop Date/Time	Composite	Grab	*Matrix Code	Conc. Code	12	H	✓	# of containers	**Preservation Codes	~Cont.Code
	ATC-5	01	5/20/10	1435		X	GW		X					
	ATC-4	02	5/20/10	1205		X	GW		X					
	ATC-1	03	5/20/10	1615		X	GW		X					
	TRIP BLANK	04		~~0710~~					X					
	MPL-6	05	5/21/10	0910		X	A			X				
	WB-2	06	5/21/10	1150		X	A			X				

VOC 8260 — ATC-1 thru ATC-4

ANALYSIS REQUESTED

~Cont. Code: A=amber glass, G=glass, P=plastic, ST=sterile, V=vial, S=summa can, T=tedlar bag, O=Other

Client Comments:

Laboratory Comments:
RELEASED BY Joseph M Pallister 5/21 1800
Rec'd Comm 5/21/10 1810 0 Temp 6°C

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)	Date/Time:
(TOREF)	5/20/10 1700
Received by: (signature)	Date/Time: 5/21/10 0730
Relinquished by: (signature)	Date/Time: 5/21/10
Received by: (signature)	Date/Time: 5-21-10 1340

Turnaround **
☐ 7-Day
☐ 10-Day
☑ Other STD
RUSH *
☐ *24-Hr ☐ *48-Hr
☐ *72-Hr ☐ *4-Day
* Require lab approval

Detection Limit Requirements
Regulations? RI 6.13
Data Enhancement Project/RCP? ☐ Y ☑ N
Special Requirements or DL's:

***Matrix Code:**
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

****Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
O = Other
X = Na hydroxide
T = Na thiosulfate

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 RESOLVED.

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con-test ANALYTICAL LABORATORY

Sample Receipt Checklist

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

CLIENT NAME: Arcadis RECEIVED BY: KO DATE: 5/21/10

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) How were the samples received:

On Ice [X] Direct from Sampling [ ] Ambient [ ] In Cooler(s) [X]

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No

Temperature °C by Temp blank 6.C Temperature °C by Temp gun _____

5) Are there Dissolved samples for the lab to filter? Yes (No)

Who was notified _____ Date _____ Time _____

6) Are there any samples "On Hold"? Yes (No) Stored where: _____

7) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)

Who was notified _____ Date _____ Time _____

8) Location where samples are stored: 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved

Client Signature: _____

Containers sent in to Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz clear jar	
500 mL Amber		4 oz clear jar	
250 mL Amber (8oz amber)		2 oz clear jar	
1 Liter Plastic		Other glass jar	
500 mL Plastic		Plastic Bag / Ziploc	
250 mL plastic		Air Cassette	
40 mL Vial - type listed below	12	Brass Sleeves	
Colisure / bacteria bottle		Tubes	
Dissolved Oxygen bottle		Summa Cans	
Flashpoint bottle		Regulators	
Encore		Other	2 Tedlar Bags

Laboratory Comments:

40 mL vials: # HCl 12 # Methanol _____

Bisulfate _____ # DI Water _____ **Time and Date Frozen:** _____

Thiosulfate _____ Unpreserved _____

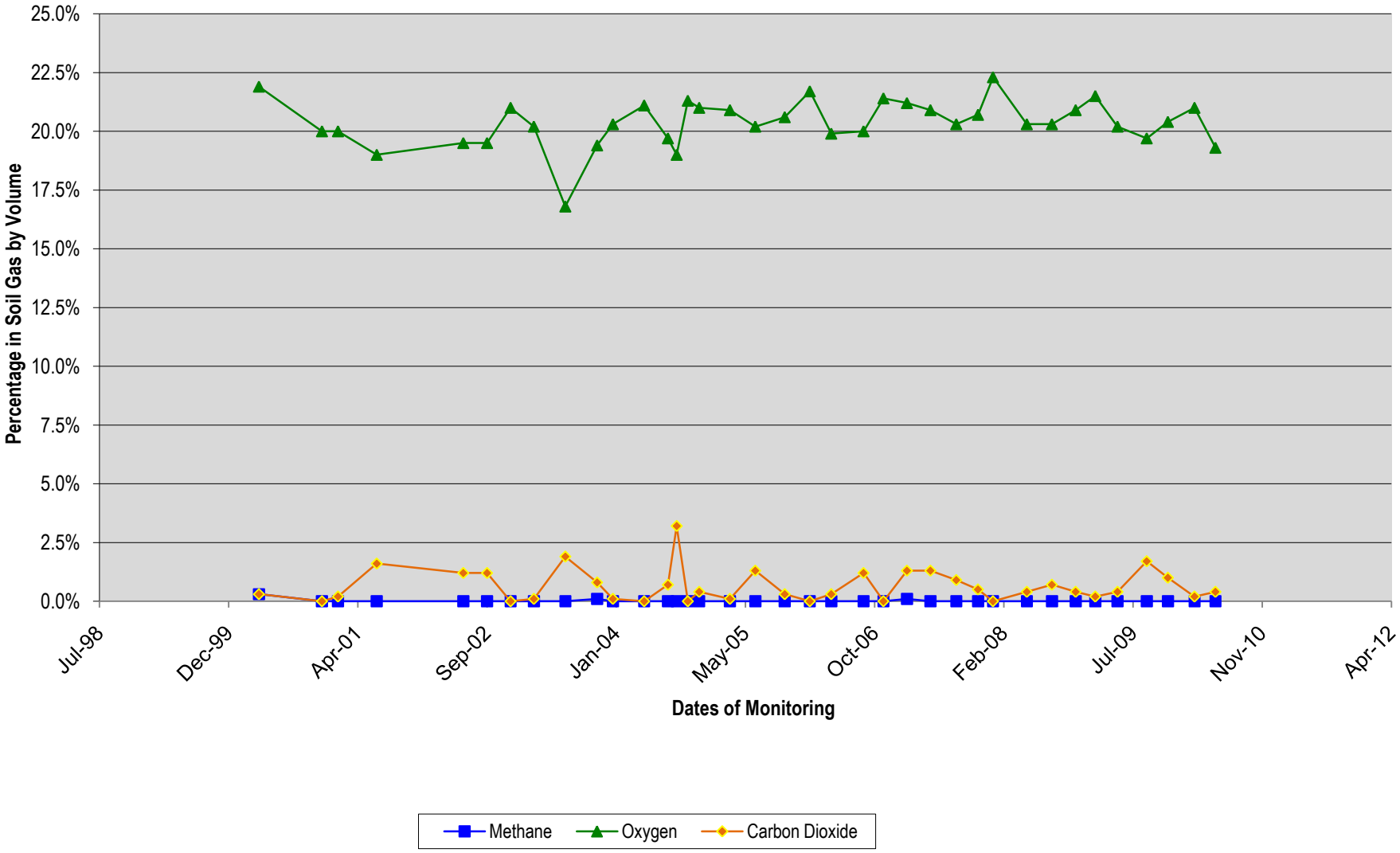
Do all samples have the proper pH: Yes No N/A

ARCADIS

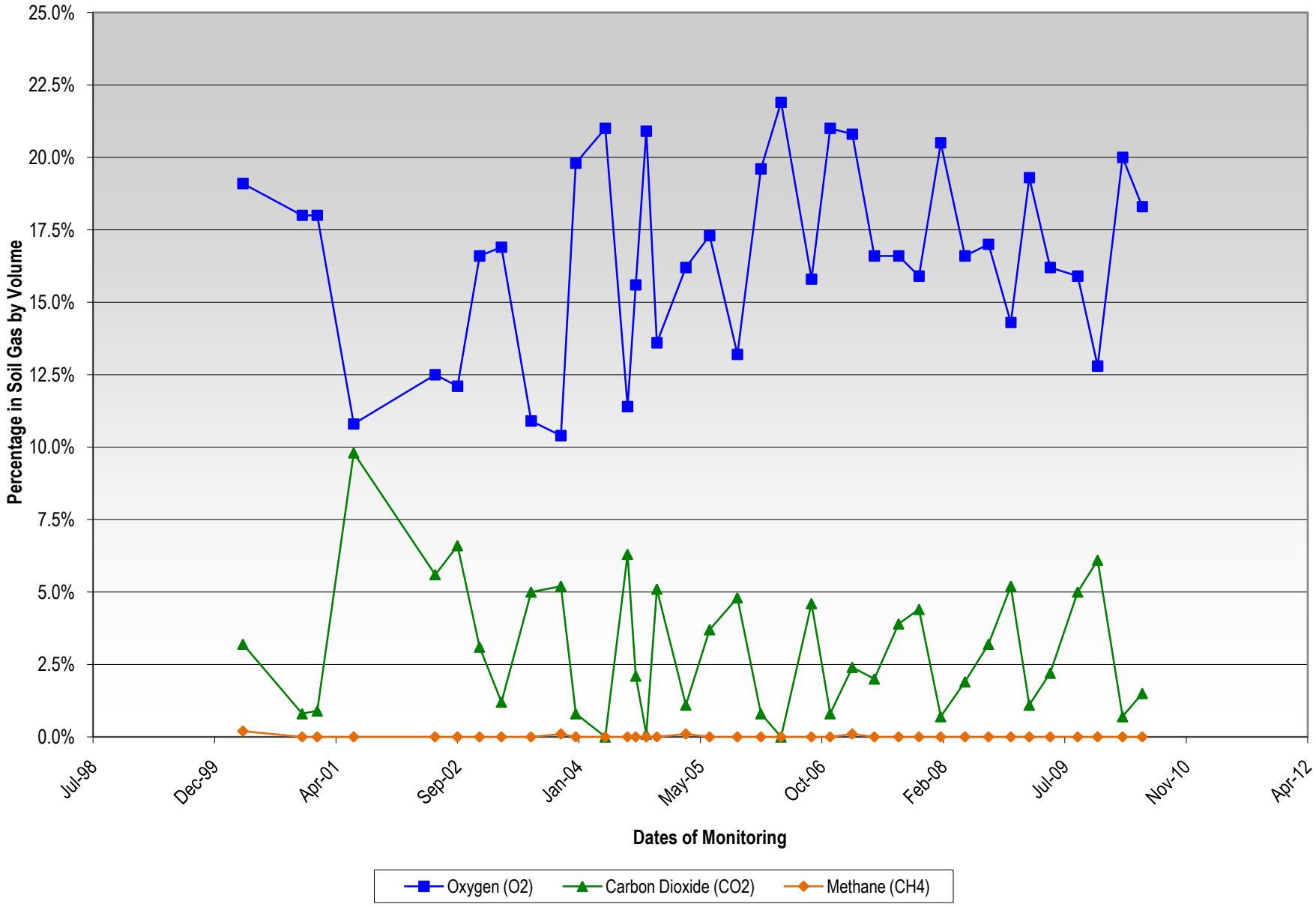
Appendix C

Soil Gas Parameter Graphs

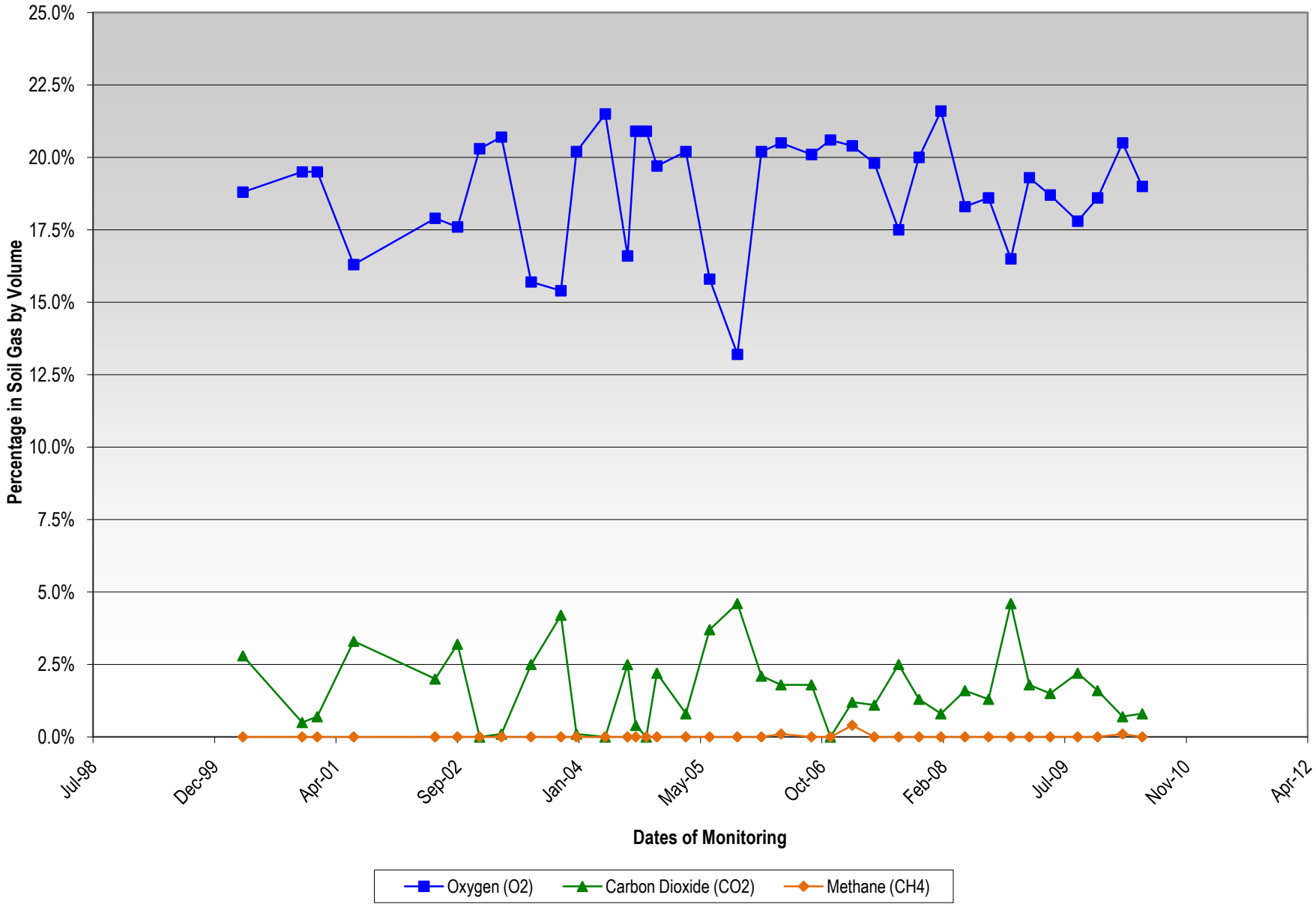
Soil Gas Well EPL1
Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time
Springfield Street School Complex
Providence, Rhode Island



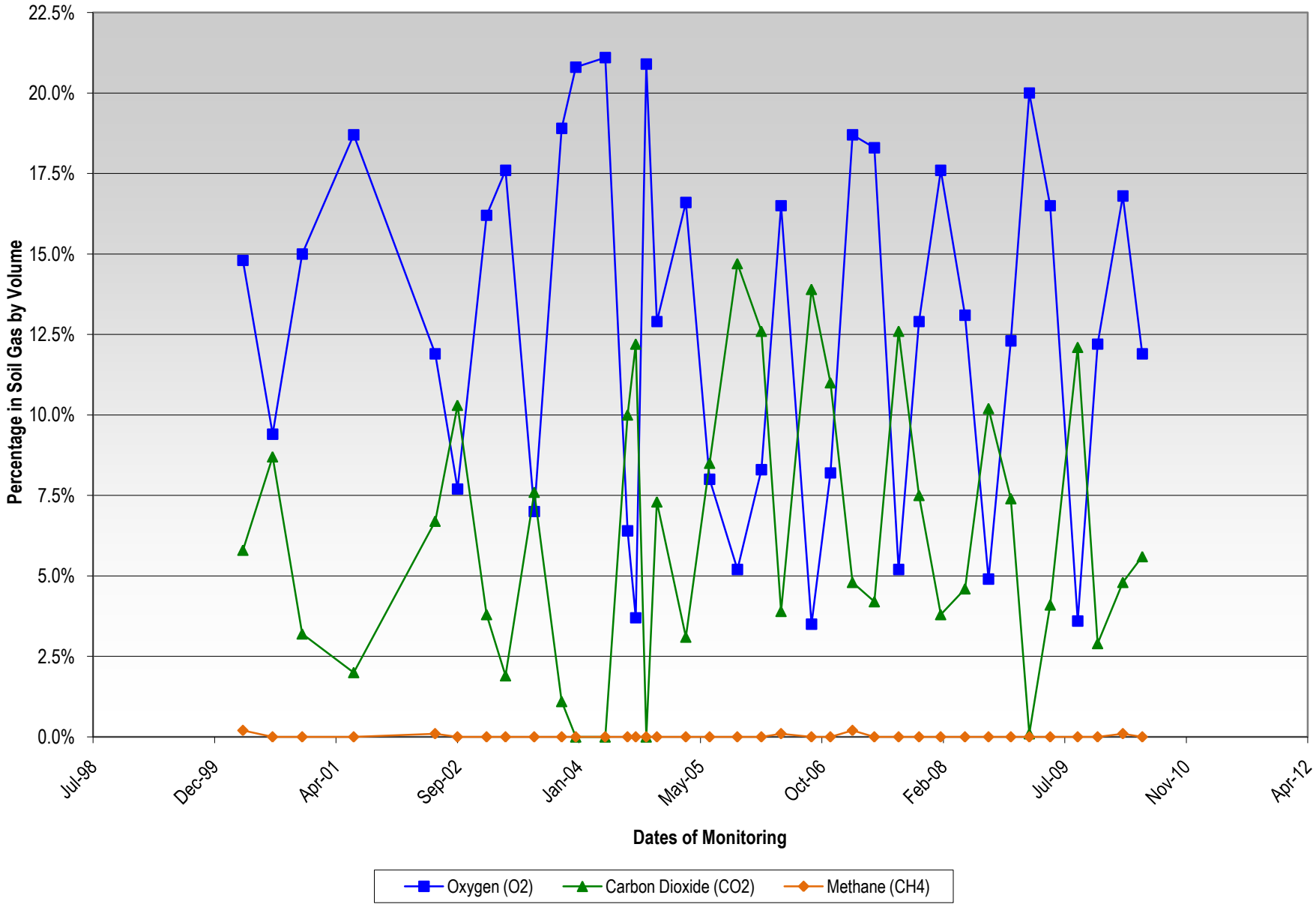
Soil Gas Well EPL4
Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time
Springfield Street School Complex
Providence, Rhode Island



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

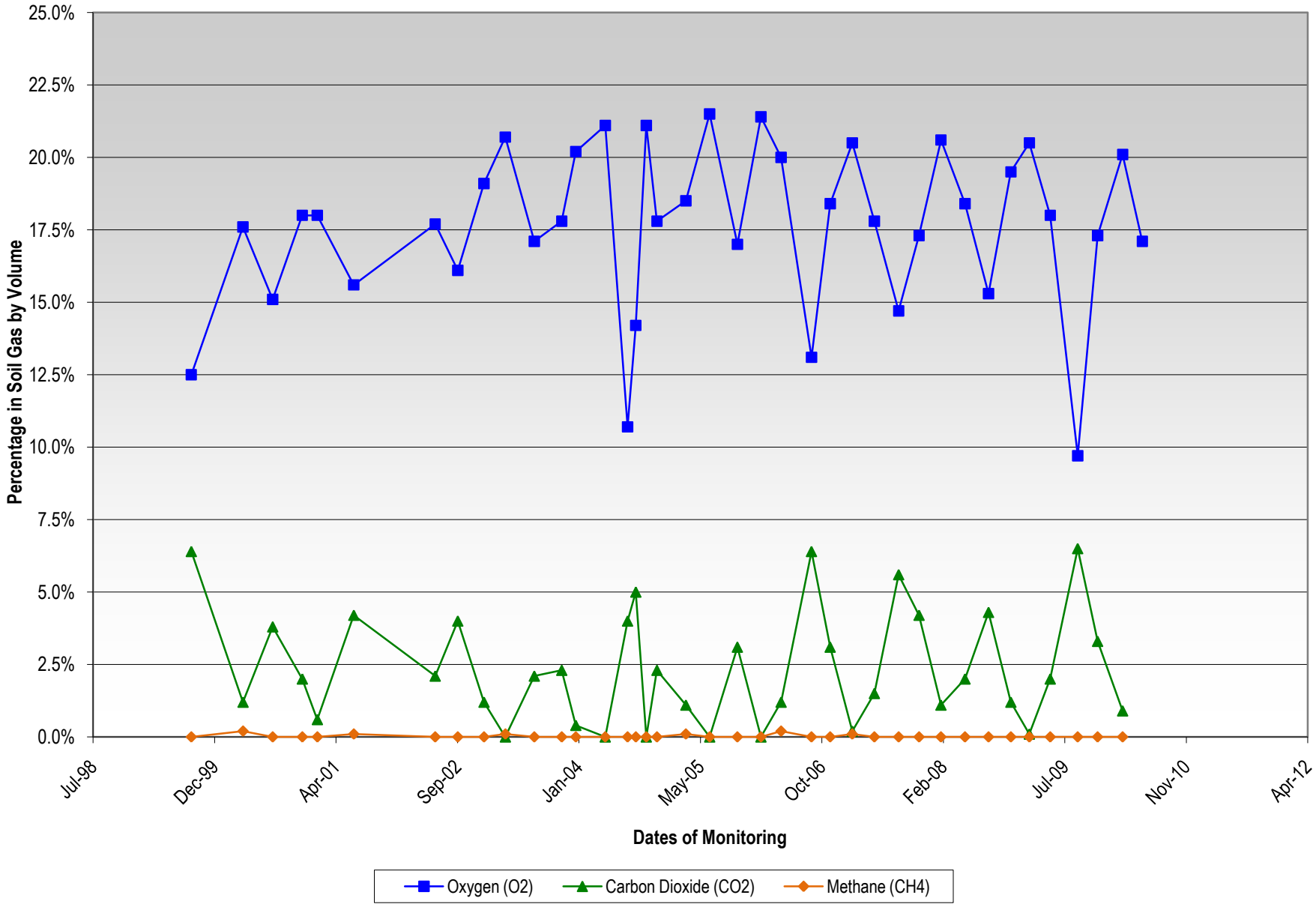


Soil Gas Well MPL5
Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time
Springfield Street School Complex
Providence, Rhode Island



H:\Active Jobs\081-12152\Monitoring Trends\Soil Gas Trends-5-2010.xls\MPL5

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



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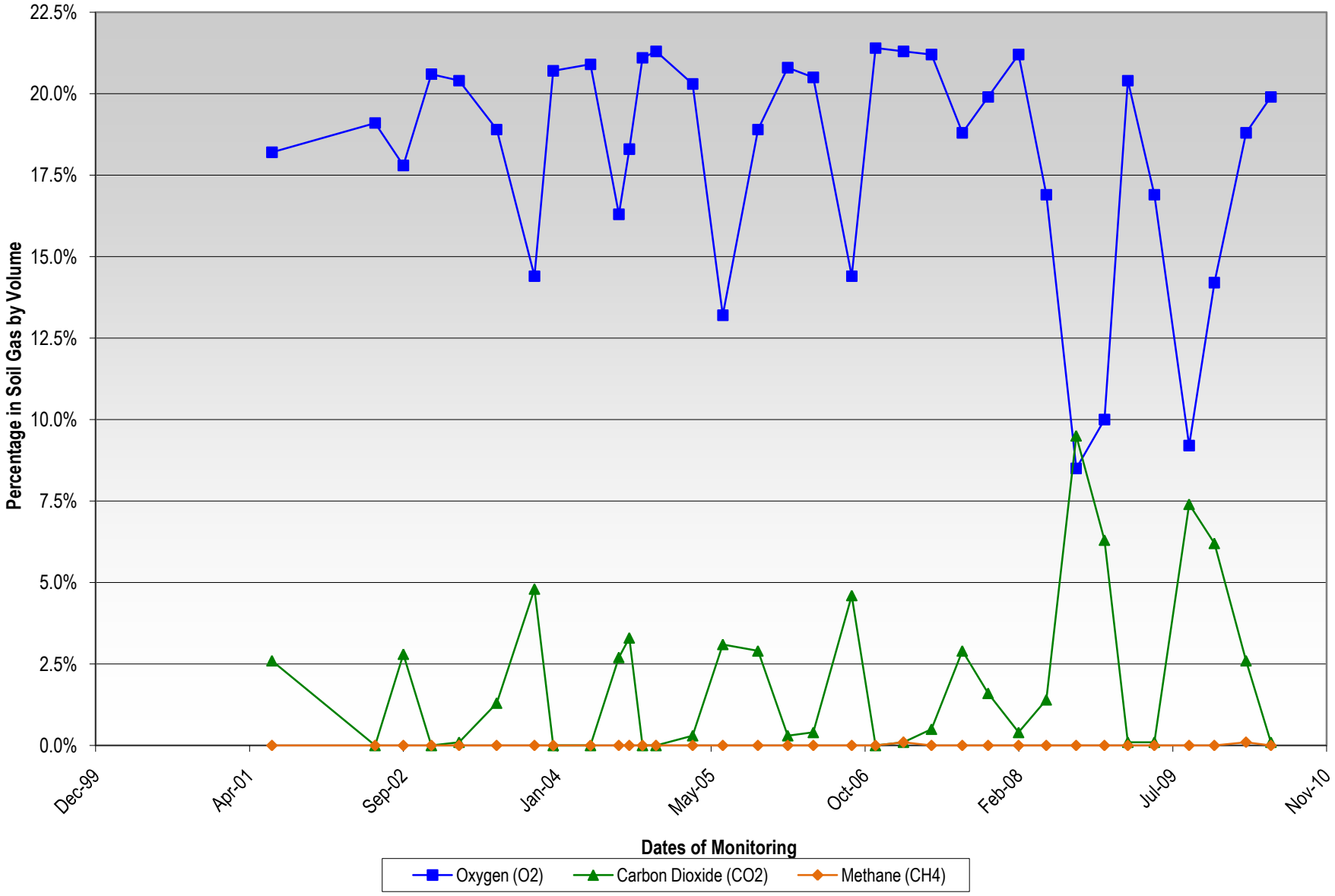
Soil Gas Well WB15
Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time
Springfield Street School Complex
Providence, Rhode Island



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