

September 18, 2009

081-12152-06

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

Subject: Quarterly Monitoring for Springfield Street School Complex, Springfield Street,  
Providence, RI – August 2009 Monitoring Round

Dear Mr. Crawford:

Quarterly monitoring for soil gas, indoor air and system monitoring was conducted between August 24 and 28, 2009, with an additional round of indoor air monitoring conducted on September 15, 2009. 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**

LFR conducted a visual survey of the site on August 27, 2009 for evidence of significant soil cover erosion, or for any areas where the orange snow fencing indicator barrier was visible. LFR did not observe any areas where the orange indicator barrier was visible during this monitoring event. No significant holes or erosion were observed during this inspection.

## **SUB-SLAB VENTILATION SYSTEM**

The sub-slab ventilation system was inspected by LFR during the quarterly monitoring on August 27, 2009. One of the elementary school blowers and the rear middle school blowers were not operating at the time of the inspection because the blower motors had been removed for repair, as noted in previous correspondence with RIDEM. The front blower at the middle school was found to be off also due to a high water level in the water tank. The tank was drained and the blower was restarted on August 27. LFR notified DEM that the blower was not operating.

Influent and effluent air from the blowers was not measured due to the fact that three blowers were not operating at the time of the inspection. After the two blower motors which are being repaired are reinstalled and restarted, LFR will monitor air from all four blowers and provide a supplemental report of the results.

## INDOOR AIR MONITORING

Indoor air monitoring was conducted on August 27, 2009 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 not occupied by students, and maintenance staff were cleaning the buildings at the time of the inspection. Results of monitoring are provided in the Table 1. Readings for all parameters were below the Remedial Action Work Plan Action Levels.

Indoor air monitoring was repeated on September 15, 2009, when both schools were fully occupied. Monitoring was conducted with the same instruments as on August 27. Results of the September 15, 2009 monitoring are presented on Table 2. Readings for all parameters were below the Remedial Action Work Plan Action Levels.

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.

Carbon dioxide is a colorless, odorless gas which is a trace constituent of our atmosphere. It is emitted by people and other mammals during respiration, by combustion of fossil fuels, and through many other natural and manmade sources. The US Department of Energy's Carbon Dioxide Information Analysis Center (CDIAC) reports that the average concentration of carbon dioxide in the atmosphere is 377 ppm. The actual concentrations are expected to vary locally based on the proximity of carbon dioxide sources to the measuring site, meteorological conditions, and other factors. An ambient carbon dioxide concentration of 418 ppm was measured in the parking lot of the middle school on August 27, 2009, and an ambient carbon dioxide concentration of 382 ppm was measured in the parking lot of the elementary school on September 15, 2009.

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 affects. A discussion regarding carbon dioxide concentrations in indoor air contained in Informative Appendix C of the Standard states: "... maintaining a steady-state CO<sub>2</sub> concentration in a space of no greater than about 700 ppm above outdoor air levels will indicate that a substantial majority of visitors entering a space will be satisfied with respect to human bioeffluents (body odor)." This is the basis for

ASHRAE's recommendations for concentrations of carbon dioxide in indoor air. The average concentrations measured inside the site buildings were less than 700 ppm above the ambient outdoor concentrations.

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

The control panels for the methane monitors at both schools were inspected on August 27, 2009. The methane monitor control panels had stickers that indicated the monitors were last calibrated by Diamond Technical Services personnel on August 27, 2009 (Diamond had performed the calibration in the morning before monitoring began).

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 LFR on August 25, 2009. Two monitoring wells, ATC-2 and ATC-3, were not able to be sampled because they were obstructed on the day of sampling. 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. Depth to groundwater ranged from 11.95 to 18.01 feet below ground surface. 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.

Chlorobenzene (1.0 ug/L) and 1,4-Dichlorobenzene (1.5 ug/l) were detected in the groundwater sample collected from ATC-4. These compounds have been detected previously in this well at similar concentrations. No other target analytes were detected in the three groundwater samples.

## **SOIL GAS MONITORING**

Soil gas monitoring was conducted at 28 locations on August 28, 2009. 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. Carbon monoxide was detected at levels ranging from 0 to 5 ppm. All carbon monoxide results were below the RAWP Action Level of 9 ppm. Methane, hydrogen sulfide, and organic vapors were not detected in soil gas.

Carbon dioxide was detected in soil gas from 26 of 28 locations with detectable concentrations ranging from 0.1% to 13.9%. The carbon dioxide Remedial Action Work Plan Action Level is 0.1% and 26 readings exceeded the action level. 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. Graphs presenting carbon dioxide, oxygen, and methane concentrations over time for seven representative wells are presented in Attachment C. The maximum concentration of carbon dioxide detected during this round of monitoring was 13.9%, compared with a maximum detected concentration of 7.9% in May 2009. The highest concentration of carbon dioxide was found in well MPL-8, located on the northern end of the property adjacent to the parking lot. Concentrations detected during this round of monitoring appear to be consistent with the patterns of higher carbon dioxide concentrations in the summer and fall, and lower carbon dioxide concentrations in the winter and spring.

### ***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. A few compounds were detected for the first time during this monitoring round, however, this may be due to the fact that laboratory reporting limits were lower than during previous monitoring rounds, and the compounds were detected at very low concentrations.

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, carbon monoxide 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 most 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 did not reveal any areas warranting repair.

Two blower motor are being repaired and will be reinstalled after the repairs are complete. Subslab soil gas will be monitored after the blowers are restarted.

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

Sincerely,



Donna Holden Pallister, P.E., L.S.P.  
Senior Engineer

cc: A. Sepe, City of Providence  
S. Tremblay, Providence School Department  
Providence Public Building Authority

## Tables

**Table 1**  
**Indoor Air Monitoring Results**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**August 27, 2009**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
E.S. Front office	0	379	21.2	1	0	0.0
E.S. Elevator	0	376	21.2	1	0	0.0
E.S. Faculty Work Room	0	366	21.2	0	0	0.0
E.S. Hallway Outside Gym	0	380	21.3	1	0	0.0
E.S. Stairway B	0	361	21.3	0	0	0.0
E.S. Stairway C	0	455	21.3	1	0	0.0
E.S. Library	0	364	21.3	1	0	0.0
E.S. Room 107	0	410	21.3	1	0	0.0
E.S. Cafeteria	0	431	21.3	1	0	0.0
E.S. Mechanical Room	0	335	21.3	0	0	0.0

**Table 1**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**August 27, 2009**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S.</b> Front Office	0	650	21.2	0	0	0.0
<b>M.S.</b> Elevator	0	487	21.3	0	0	0.0
<b>M.S.</b> Music Room (now an art room) (Hallway)	0	439	21.3	0	0	0.0
<b>M.S.</b> Stairway near Elem. School GS-01	0	489	21.3	0	0	0.0
<b>M.S.</b> Near sensor #16 in hall outside cafeteria	0	445	21.3	0	0	0.0
<b>M.S.</b> Faculty Work Room	0	433	21.3	0	0	0.0
<b>M.S.</b> Janitor's Office	0	428	21.3	0	0	0.0
<b>M.S.</b> GS-03 Across from Boys Bathroom	0	403	21.3	0	0	0.0



**Table 1**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**August 27, 2009**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S.</b> Cafeteria	0	429	21.3	0	0	0.0
<b>M.S.</b> Front Hall near sensor #4	0	584	21.3	0	0	0.0
<b>M.S.</b> Hallway across from elevator near sensor #9	0	473	21.3	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	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: Fluke 975 Airmeter, Q-RAE plus multigas meter, Mini RAE 2000

PPM = Parts per million

**Table 2**  
**Indoor Air Monitoring Results**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**September 15, 2009**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
E.S. Front office	0	475	20.9	0	0	0.0
E.S. Elevator	0	530	20.9	0	0	0.0
E.S. Faculty Work Room	0	522	20.9	0	0	0.0
E.S. Hallway Outside Gym	0	587	20.9	0	0	0.0
E.S. Stairway B	0	558	20.9	0	0	0.0
<b>Room 104</b>	0	588	20.9	0	0	0.0
E.S. Stairway C	0	445	20.9	0	0	0.0
E.S. Library	0	517	20.9	0	0	0.0
E.S. Music Hallway	0	527	20.9	0	0	0.0
E.S. Cafeteria	0	482	20.9	0	0	0.0
E.S. Mechanical Room	0	526	20.9	0	0	0.0

**Table 2**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**September 15, 2009**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S.</b> Front Office	0	585	20.9	1/0	0	0.0
<b>M.S.</b> Elevator	0	658	20.9	0	0	0.0
<b>M.S.</b> Faculty Work Room	0	670	20.9	0	0	0.0
<b>M.S.</b> Stairway near Elem. School GS-01	0	767	20.9	0	0	0.0
<b>M.S.</b> Near sensor #16 in hall outside cafeteria	0	660	20.9	0	0	0.0
<b>M.S.</b> Outside Comm. Room near Sensor 05	0	676	20.9	0	0	0.0
<b>M.S.</b> Janitor's Office	0	540	20.9	0	0	0.0
<b>M.S.</b> GS-03 Across from Boys Bathroom	0	689	20.9	0	0	0.0

**Table 2**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**September 15, 2009**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S.</b> 2 <sup>nd</sup> Floor Faculty Work Room	0	709	20.9	0	0	0.0
<b>M.S.</b> Cafeteria	0	704	20.9	0	0	0.0
<b>M.S.</b> Front Hall near sensor #4	0	622	20.9	0	0	0.0
<b>M.S.</b> Hallway across from elevator near sensor #9	0	585	20.9	0	0	0.0
<b>M.S.</b> Library	0	676	20.9	0	0	0.0
<b>M.S.</b> Stairway Hartford Ave. (GS-07)	0	659	20.9	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	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: Fluke 975 Airmeter, Q-RAE plus multigas meter, Mini RAE 2000

PPM = Parts per million

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	
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	140
	n-butylbenzene	1.7	ND	2.8	ND	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	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	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	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	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	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	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	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	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	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	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	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	NA		
	1,1,2-Trichloroethane	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	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	NA		
ATC-3	Toluene	ND	ND	ND	ND	NS	ND	ND	ND	ND	3.03	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	1700		
ATC-4	Benzene	ND	ND	2.5	0.6	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	140		
	Chlorobenzene	2.6	ND	57.3	2.7	5.18	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	1	70				
	1,4-dichlorobenzene	4.2	ND	9.2	3.4	3.36	ND	ND	ND	ND	0.80	1.6	2.1	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	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	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	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	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	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			

\*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**  
**August 28, 2009**

<b>Monitoring Well</b>	<b>Methane % by volume</b>	<b>Carbon Dioxide % by volume</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
WB-1	0.0	6.5	9.7	3	0	0.0
WB-2	0.0	4.0	16.3	4	0	0.0
WB-3	0.0	4.1	15.9	3	0	0.0
WB-4	0.0	1.2	19.9	0	0	0.0
WB-5	0.0	0.0	21.3	0	0	0.0
WB-6	0.0	0.6	20.6	0	0	0.0
WB-7	NM	NM	NM	NM	NM	NM
WB-8	0.0	0.0	21.1	0	0	0.0
WB-12	0.0	3.7	17.9	4	0	0.0
WB-13	0.0	3.5	15.4	5	0	0.0
WB-14	0.0	6.2	8.6	4	0	0.0
WB-15	0.0	7.4	9.2	5	0	0.0
EPL-1	0.0	1.7	19.7	0	0	0.0
EPL-2	0.0	4.5	16.2	3	0	0.0
EPL-3	0.0	6.9	14.1	4	0	0.0
EPL-4	0.0	5.0	15.9	4	0	0.0
EPL-5	0.0	6.7	12.6	3	0	0.0
ENE-1	0.0	1.3	19.4	0	0	0.0

**Table 4**  
**Soil Gas Survey Field Notes**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**August 28, 2008**

Monitoring Well	Methane % by volume	Carbon Dioxide % by volume	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
MG1	0.0	5.0	10.8	4	0	0.0
MG2	0.0	2.2	17.8	4	0	0.0
MG3	0.0	2.0	18.5	4	0	0.0
MG4	0.0	3.6	14.1	4	0	0.0
MG5	0.0	2.2	16.5	4	0	0.0
MPL2	0.0	8.1	7.8	5	0	0.0
MPL3	0.0	10.6	6.3	5	0	0.0
MPL5	0.0	12.1	3.6	4	0	0.0
MPL6	0.0	8.7	8.2	4	0	0.0
MPL7	0.0	12.3	5.8	5	0	0.0
MPL8	0.0	13.9	7.3	4	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	<b>0.5%</b>	<b>1,000 PPM</b>	<b>NA</b>	<b>9 PPM</b>	<b>10 PPM</b>	<b>5 PPM</b>

**Sampled by:** Chris Jamison

**Weather Conditions:** Sunny, Temperature 75-80 F

**Sampling Equipment:** Landtec GEM 2000 Plus, MiniRae 2000 PID, QRae 4 gas meter

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											
		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	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
Date Collected:																							
Benzene	1,000	ND	0.36	0.74	ND	ND	0.51	1.0	0.3	0.31	0.31	2.40	ND	0.29	ND	ND	ND	0.21	0.46	0.23	0.24	ND	2.1
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	0.06	
Chlorobenzene	75,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.053	
Chloroethane	1,000,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	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	ND	ND	ND	ND	ND	ND	ND	0.06	ND	0.22	
Chloromethane	100,000	ND	0.24	0.36	ND	ND	0.28	0.88	0.36	0.39	0.16	0.77	ND	0.11	ND	ND	ND	0.2	0.56	0.23	0.54	ND	0.28
Dichlorodifluoromethane (Freon 12)	1,000,000	ND	ND	0.28	ND	ND	0.53	0.78	0.31	0.44	0.44	0.43	ND	0.5	0.57	0.66	0.57	0.49	0.66	0.4	0.51	0.55	0.57
1,3-Dichlorobenzene	None	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31	
1,4-Dichlorobenzene	75,000	ND	ND	0.54	ND	ND	ND	0.65	ND	0.13	ND	0.27	ND	0.16	0.37	ND	ND	ND	ND	ND	0.15	ND	0.3
1,1-Dichloroethane	100,000	ND	ND	0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	29	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	2.5	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	3.5	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	0.36
Ethylbenzene	100,000	ND	0.75	0.7	2.3	0.65	1.3	3.9	0.4	0.36	3.8	5.6	ND	0.55	0.46	3.2	0.78	0.41	1.3	0.33	0.42	2.0	4.6
Methylene Chloride	100,000	ND	ND	0.84	3.5	2	2.6	3.8	2.9	1.7	2.2	1.9	ND	0.53	0.5	4.9	2.5	3.4	3.0	2.3	1.1	2.0	1.8
Styrene	100,000	ND	1.6	1.5	1.4	ND	1.1	3.0	0.3	0.36	2.8	3.2	ND	1	1.1	0.69	ND	0.5	1.5	0.1	0.47	1.3	3.1
Tetrachloroethylene	100,000	ND	0.19	0.27	4.6	1.9	0.99	4.1	0.6	0.33	0.65	4.0	ND	0.16	0.81	3.2	2.7	0.64	1.6	0.8	0.32	16	3.2
Toluene	200,000	4.9	17	7.2	15	6.9	7.7	64	4	4.1	30	21	4.6	12	5.3	10	9.3	3	30	1.8	2.3	12	21
1,1,1-Trichloroethane	350,000	ND	ND	0.36	ND	ND	ND	0.27	ND	ND	ND	ND	ND	ND	38	ND	1.3	ND	ND	ND	ND	ND	ND
Trichloroethylene	100,000	ND	ND	0.25	0.53	1	4.1	3.6	1.7	ND	0.26	0.098	ND	ND	4.6	ND	ND	3	2.8	0.97	0.32	ND	0.095
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	ND	0.41	0.43	ND	ND	0.26	0.54	0.3	0.41	2.8	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	ND	ND	ND	ND	ND	ND	ND	0.07	ND	ND	0.06
1,3,5-Trimethylbenzene	None	ND	0.12	ND	ND	ND	0.28	3.7	0.1	ND	8.1	0.5	ND	ND	ND	0.57	ND	ND	0.67	0.2	0.13	1.4	0.41
1,2,4-Trimethylbenzene	None	ND	ND	0.44	1.6	1.3	1.3	9.1	0.3	0.24	15	2	ND	1	0.26	1.7	1.1	0.66	1.6	0.66	0.52	3.2	1.2
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
M/p-Xylene	100,000	1.4	3.1	2.4	5.3	2.2	3.7	11	1	0.95	11	15	1.2	2.5	1.8	10	2.6	1.3	3.7	0.94	1.4	6.1	13
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	ND	0.56	0.48	3.5	0.8	0.64	1.5	0.43	0.45	2.3	3.3

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



**Figure**

NOTES:

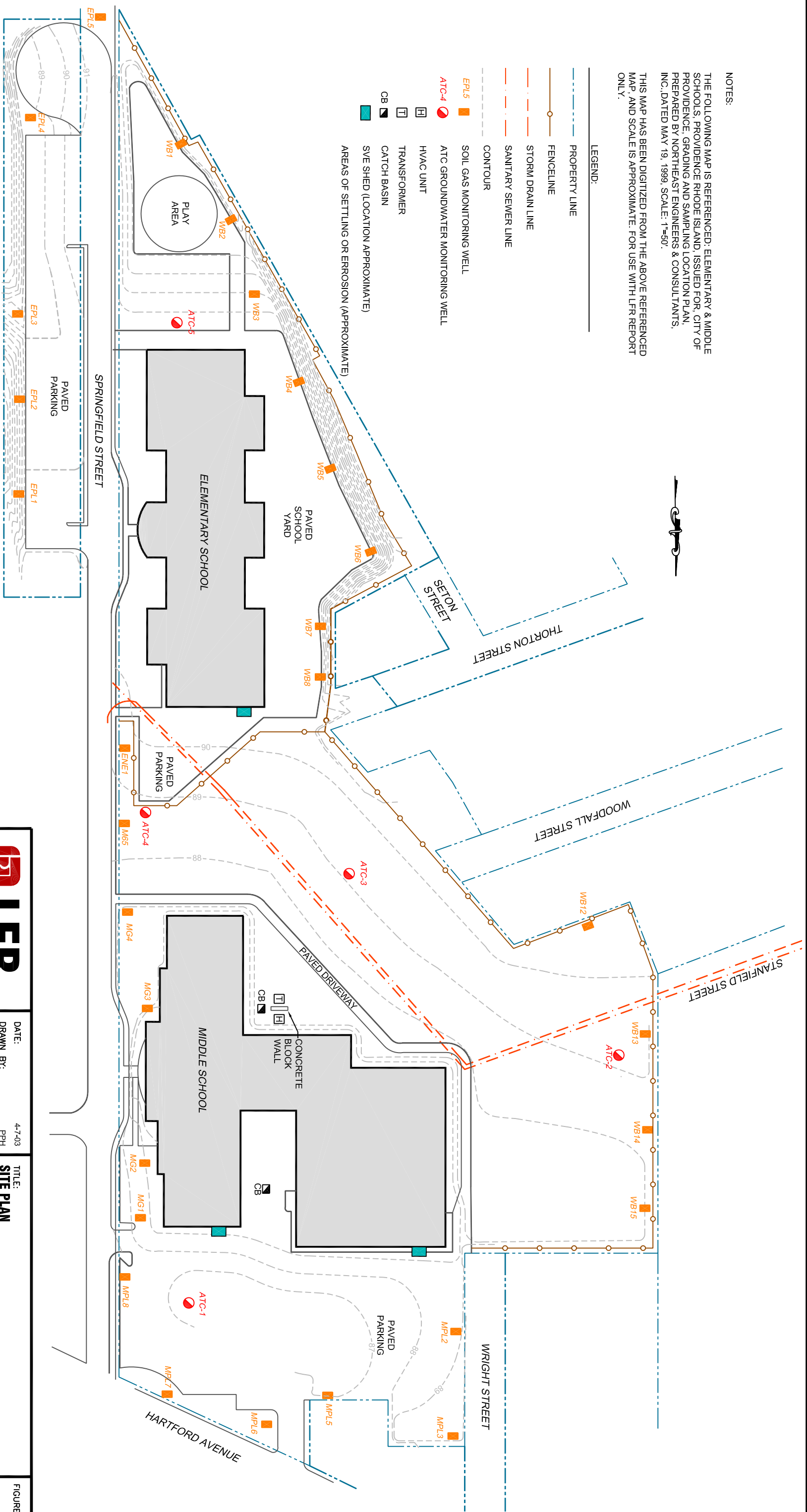
THE FOLLOWING MAP IS REFERENCED: ELEMENTARY & MIDDLE SCHOOLS, PROVIDENCE RHODE ISLAND, ISSUED FOR, CITY OF PROVIDENCE, GRADING AND SAMPLING LOCATION PLAN, PREPARED BY NORTHEAST ENGINEERS & CONSULTANTS, INC., DATED MAY 19, 1999, SCALE: 1"=50'.

THIS MAP HAS BEEN DIGITIZED FROM THE ABOVE REFERENCED MAP, AND SCALE IS APPROXIMATE. FOR USE WITH LFR REPORT ONLY.



LEGEND:

- PROPERTY LINE
- FENCELINE
- STORM DRAIN LINE
- SANITARY SEWER LINE
- CONTOUR
- SOIL GAS MONITORING WELL
- ATC-4
- ATC-5
- ATC-3
- ATC-2
- ATC-1
- WB1
- WB2
- WB3
- WB4
- WB5
- WB6
- WB7
- WB8
- WB12
- WB13
- WB14
- WB15
- MG1
- MG2
- MG3
- MG4
- MG5
- EN1
- MGL1
- MGL2
- MGL3
- MGL4
- MGL5
- MGL6
- MGL7
- MGL8
- HVAC UNIT
- TRANSFORMER
- CATCH BASIN
- SVE SHED (LOCATION APPROXIMATE)
- AREAS OF SETTLING OR EROSION (APPROXIMATE)



250 Centerville Road  
 Building E, Suite 12  
 Warwick, Rhode Island 02886  
 Phone: (401) 738-3887  
 Fax: (401) 732-1686

DATE:	4-7-03
DRAWN BY:	PPH
REVIEWED BY:	DP
APPROVED BY:	DP
SCALE:	AS NOTED
FILE NO.:	081-12027-00
JOB NO.:	081-12027-00

TITLE:  
**SITE PLAN**

LOCATION:  
**SPRINGFIELD STREET SCHOOL COMPLEX  
 SPRINGFIELD STREET  
 PROVIDENCE, RHODE ISLAND**

FIGURE:  
**1**

## **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 LFR 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 LFR relied upon any information prepared by other parties not under contract to LFR, LFR 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 LFR'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. LFR'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.

LFR, 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.

## **Appendix B**

### **Laboratory Report**



September 2, 2009

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

Project Location: Springfield St  
Client Job Number:  
Project Number: 081-12152-06  
Laboratory Work Order Number: 09H0621

Enclosed are results of analyses for samples received by the laboratory on August 26, 2009. 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

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

REPORT DATE: 9/2/2009

PURCHASE ORDER NUMBER: 5131

PROJECT NUMBER: 081-12152-06

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 09H0621

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

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
ATC-1	09H0621-01	Ground Water		SW-846 8260B	
ATC-4	09H0621-02	Ground Water		SW-846 8260B	
ATC-5	09H0621-03	Ground Water		SW-846 8260B	
Trip Blank	09H0621-04	Trip Blank Water		SW-846 8260B	
WB-2	09H0621-05	Air		EPA TO-14A	
MPL-6	09H0621-06	Air		EPA TO-14A	

CASE NARRATIVE SUMMARY

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

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:**

**Carbon Disulfide**

B004124-BS1, B004124-BSD1

---

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

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

**Methylene Chloride**

09H0621-01[ATC-1], 09H0621-02[ATC-4], 09H0621-03[ATC-5], 09H0621-04[Trip Blank], B004124-BLK1, B004124-BS1, B004124-BSD1

---

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. Analysis is in control.

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

**1,2,4-Trichlorobenzene, Bromomethane, Isopropylbenzene (Cumene), trans-1,3-Dichloropropene**

B004124-BS1

---

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

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

**Bromomethane**

09H0621-01[ATC-1], 09H0621-02[ATC-4], 09H0621-03[ATC-5], 09H0621-04[Trip Blank], B004124-BLK1, B004124-BS1, B004124-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:**

**Chloromethane, Methylene Chloride**

09H0621-01[ATC-1], 09H0621-02[ATC-4], 09H0621-03[ATC-5], 09H0621-04[Trip Blank], B004124-BLK1, B004124-BS1, B004124-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:**

**1,2,4-Trichlorobenzene, Hexachlorobutadiene**

B004124-BS1, B004124-BSD1

---

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

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

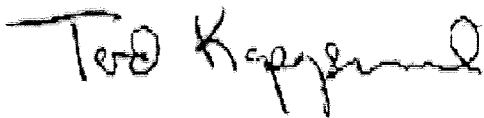
**1,4-Dioxane**

09H0621-01[ATC-1], 09H0621-02[ATC-4], 09H0621-03[ATC-5], 09H0621-04[Trip Blank], B004124-BLK1, B004124-BS1, B004124-BSD1

---



The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing. I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopycinski". The signature is written in a cursive, somewhat stylized script.

Tod E. Kopycinski  
Air Lab Director

**ANALYTICAL RESULTS**

Project Location: Springfield St  
 Date Received: 8/26/2009  
 Field Sample #: WB-2  
 Sample ID: 09H0621-05  
 Sample Matrix: Air  
 Sampled: 8/25/2009 12:30

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

Work Order: 09H0621  
 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		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	2.1	0.050		6.7	0.16	1	8/27/09	12:24	WSD
Bromomethane	ND	0.050		ND	0.19	1	8/27/09	12:24	WSD
Carbon Tetrachloride	0.060	0.050		0.38	0.31	1	8/27/09	12:24	WSD
Chlorobenzene	0.053	0.050		0.24	0.23	1	8/27/09	12:24	WSD
Chloroethane	ND	0.050		ND	0.13	1	8/27/09	12:24	WSD
Chloroform	0.22	0.050		1.1	0.24	1	8/27/09	12:24	WSD
Chloromethane	0.28	0.050		0.58	0.10	1	8/27/09	12:24	WSD
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	8/27/09	12:24	WSD
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	8/27/09	12:24	WSD
1,3-Dichlorobenzene	0.31	0.050		1.9	0.30	1	8/27/09	12:24	WSD
1,4-Dichlorobenzene	0.30	0.050		1.8	0.30	1	8/27/09	12:24	WSD
Dichlorodifluoromethane (Freon 12)	0.57	0.050		2.8	0.25	1	8/27/09	12:24	WSD
1,1-Dichloroethane	ND	0.050		ND	0.20	1	8/27/09	12:24	WSD
1,2-Dichloroethane	ND	0.050		ND	0.20	1	8/27/09	12:24	WSD
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	8/27/09	12:24	WSD
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	8/27/09	12:24	WSD
1,2-Dichloropropane	ND	0.050		ND	0.23	1	8/27/09	12:24	WSD
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	8/27/09	12:24	WSD
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	8/27/09	12:24	WSD
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	0.36	0.050		2.5	0.35	1	8/27/09	12:24	WSD
Ethylbenzene	4.6	0.050		20	0.22	1	8/27/09	12:24	WSD
Hexachlorobutadiene	ND	0.050		ND	0.53	1	8/27/09	12:24	WSD
Methylene Chloride	1.8	0.20		6.3	0.69	1	8/27/09	12:24	WSD
Styrene	3.1	0.050		13	0.21	1	8/27/09	12:24	WSD
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	8/27/09	12:24	WSD
Tetrachloroethylene	3.2	0.050		21	0.34	1	8/27/09	12:24	WSD
Toluene	21	0.050		81	0.19	1	8/27/09	12:24	WSD
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	8/27/09	12:24	WSD
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	8/27/09	12:24	WSD
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	8/27/09	12:24	WSD
Trichloroethylene	0.095	0.050		0.51	0.27	1	8/27/09	12:24	WSD
Trichlorofluoromethane (Freon 11)	2.0	0.050		11	0.28	1	8/27/09	12:24	WSD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.060	0.050		0.46	0.38	1	8/27/09	12:24	WSD
1,2,4-Trimethylbenzene	1.2	0.050		6.1	0.25	1	8/27/09	12:24	WSD
1,3,5-Trimethylbenzene	0.41	0.050		2.0	0.25	1	8/27/09	12:24	WSD
Vinyl Chloride	ND	0.050		ND	0.13	1	8/27/09	12:24	WSD
m&p-Xylene	13	0.10		56	0.43	1	8/27/09	12:24	WSD
o-Xylene	3.3	0.050		14	0.22	1	8/27/09	12:24	WSD
Surrogates	% Recovery			% REC Limits					

**ANALYTICAL RESULTS**

Project Location: Springfield St  
 Date Received: 8/26/2009  
 Field Sample #: WB-2  
 Sample ID: 09H0621-05  
 Sample Matrix: Air  
 Sampled: 8/25/2009 12:30

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

Work Order: 09H0621  
 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		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
4-Bromofluorobenzene (1)	96.6			70-130			8/27/09 12:24	

ANALYTICAL RESULTS

Project Location: Springfield St  
 Date Received: 8/26/2009  
 Field Sample #: MPL-6  
 Sample ID: 09H0621-06  
 Sample Matrix: Air  
 Sampled: 8/25/2009 14:00

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

Work Order: 09H0621  
 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		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Benzene	2.4	0.050		7.7	0.16	1	8/27/09 13:04	WSD
Bromomethane	ND	0.050		ND	0.19	1	8/27/09 13:04	WSD
Carbon Tetrachloride	0.093	0.050		0.59	0.31	1	8/27/09 13:04	WSD
Chlorobenzene	ND	0.050		ND	0.23	1	8/27/09 13:04	WSD
Chloroethane	ND	0.050		ND	0.13	1	8/27/09 13:04	WSD
Chloroform	0.15	0.050		0.74	0.24	1	8/27/09 13:04	WSD
Chloromethane	0.77	0.050		1.6	0.10	1	8/27/09 13:04	WSD
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	8/27/09 13:04	WSD
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	8/27/09 13:04	WSD
1,3-Dichlorobenzene	0.30	0.050		1.8	0.30	1	8/27/09 13:04	WSD
1,4-Dichlorobenzene	0.27	0.050		1.6	0.30	1	8/27/09 13:04	WSD
Dichlorodifluoromethane (Freon 12)	0.43	0.050		2.1	0.25	1	8/27/09 13:04	WSD
1,1-Dichloroethane	ND	0.050		ND	0.20	1	8/27/09 13:04	WSD
1,2-Dichloroethane	ND	0.050		ND	0.20	1	8/27/09 13:04	WSD
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	8/27/09 13:04	WSD
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	8/27/09 13:04	WSD
1,2-Dichloropropane	ND	0.050		ND	0.23	1	8/27/09 13:04	WSD
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	8/27/09 13:04	WSD
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	8/27/09 13:04	WSD
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.050		ND	0.35	1	8/27/09 13:04	WSD
Ethylbenzene	5.6	0.050		24	0.22	1	8/27/09 13:04	WSD
Hexachlorobutadiene	ND	0.050		ND	0.53	1	8/27/09 13:04	WSD
Methylene Chloride	1.9	0.20		6.7	0.69	1	8/27/09 13:04	WSD
Styrene	3.2	0.050		14	0.21	1	8/27/09 13:04	WSD
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	8/27/09 13:04	WSD
Tetrachloroethylene	4.0	0.050		27	0.34	1	8/27/09 13:04	WSD
Toluene	21	0.050		80	0.19	1	8/27/09 13:04	WSD
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	8/27/09 13:04	WSD
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	8/27/09 13:04	WSD
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	8/27/09 13:04	WSD
Trichloroethylene	0.098	0.050		0.53	0.27	1	8/27/09 13:04	WSD
Trichlorofluoromethane (Freon 11)	0.96	0.050		5.4	0.28	1	8/27/09 13:04	WSD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.058	0.050		0.44	0.38	1	8/27/09 13:04	WSD
1,2,4-Trimethylbenzene	1.6	0.050		7.7	0.25	1	8/27/09 13:04	WSD
1,3,5-Trimethylbenzene	0.54	0.050		2.7	0.25	1	8/27/09 13:04	WSD
Vinyl Chloride	0.087	0.050		0.22	0.13	1	8/27/09 13:04	WSD
m&p-Xylene	15	0.10		67	0.43	1	8/27/09 13:04	WSD
o-Xylene	4.3	0.050		18	0.22	1	8/27/09 13:04	WSD
Surrogates	% Recovery			% REC Limits				

**ANALYTICAL RESULTS**

Project Location: Springfield St  
 Date Received: 8/26/2009  
 Field Sample #: MPL-6  
 Sample ID: 09H0621-06  
 Sample Matrix: Air  
 Sampled: 8/25/2009 14:00

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

Work Order: 09H0621  
 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			ug/m3		Dilution	Date/Time	
	Results	RL	Flag	Results	RL		Analyzed	Analyst
4-Bromofluorobenzene (1)	96.4			70-130			8/27/09 13:04	



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

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: ATC-1

Sampled: 8/25/2009 10:20

Sample ID: 09H0621-01

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	8/27/09	8/27/09 15:04	LBD
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Benzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Bromoforn	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Bromomethane	ND	5.0	µg/L	1	R-05	SW-846 8260B	8/27/09	8/27/09 15:04	LBD
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Carbon Disulfide	ND	6.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	8/27/09	8/27/09 15:04	LBD
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
trans-1,3-Dichloropropene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: ATC-1

Sampled: 8/25/2009 10:20

Sample ID: 09H0621-01

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	8/27/09	8/27/09 15:04	LBD
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Methylene Chloride	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260B	8/27/09	8/27/09 15:04	LBD
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Naphthalene	ND	3.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Styrene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Toluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:04	LBD

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	82.6	70-130	8/27/09 15:04
Toluene-d8	99.0	70-130	8/27/09 15:04
4-Bromofluorobenzene	102	70-130	8/27/09 15:04

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: ATC-4

Sampled: 8/25/2009 11:20

Sample ID: 09H0621-02

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	8/27/09	8/27/09 15:34	LBD
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Benzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Bromoform	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Bromomethane	ND	5.0	µg/L	1	R-05	SW-846 8260B	8/27/09	8/27/09 15:34	LBD
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Carbon Disulfide	ND	6.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Chlorobenzene	1.0	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	8/27/09	8/27/09 15:34	LBD
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,4-Dichlorobenzene	1.5	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
trans-1,3-Dichloropropene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD





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

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: ATC-4

Sampled: 8/25/2009 11:20

Sample ID: 09H0621-02

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	8/27/09	8/27/09 15:34	LBD
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Methylene Chloride	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260B	8/27/09	8/27/09 15:34	LBD
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Naphthalene	ND	3.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Styrene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Toluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 15:34	LBD

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	77.2	70-130	8/27/09 15:34
Toluene-d8	105	70-130	8/27/09 15:34
4-Bromofluorobenzene	96.0	70-130	8/27/09 15:34



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

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: ATC-5

Sampled: 8/25/2009 12:00

Sample ID: 09H0621-03

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	8/27/09	8/27/09 16:05	LBD
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Benzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Bromoform	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Bromomethane	ND	5.0	µg/L	1	R-05	SW-846 8260B	8/27/09	8/27/09 16:05	LBD
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Carbon Disulfide	ND	6.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	8/27/09	8/27/09 16:05	LBD
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
trans-1,3-Dichloropropene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: ATC-5

Sampled: 8/25/2009 12:00

Sample ID: 09H0621-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date	Date/Time	Analyst
							Prepared	Analyzed	
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Methylene Chloride	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260B	8/27/09	8/27/09 16:05	LBD
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Naphthalene	ND	3.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Styrene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Toluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 16:05	LBD
Surrogates	% Recovery	Recovery Limits			Flag				
1,2-Dichloroethane-d4	83.0	70-130						8/27/09 16:05	
Toluene-d8	102	70-130						8/27/09 16:05	
4-Bromofluorobenzene	101	70-130						8/27/09 16:05	

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: Trip Blank

Sampled: 8/25/2009 00:00

Sample ID: 09H0621-04

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	930	50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Benzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Bromoform	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Bromomethane	ND	5.0	µg/L	1	R-05	SW-846 8260B	8/27/09	8/27/09 14:34	LBD
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Carbon Disulfide	ND	6.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Chlorodibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Chloroethane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Chloroform	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Chloromethane	ND	2.0	µg/L	1	V-05	SW-846 8260B	8/27/09	8/27/09 14:34	LBD
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,4-Dichlorobenzene	1.4	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
trans-1,3-Dichloropropene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD



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

Project Location: Springfield St

Sample Description:

Work Order: 09H0621

Date Received: 8/26/2009

Field Sample #: Trip Blank

Sampled: 8/25/2009 00:00

Sample ID: 09H0621-04

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	8/27/09	8/27/09 14:34	LBD
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Methylene Chloride	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260B	8/27/09	8/27/09 14:34	LBD
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Naphthalene	ND	3.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Styrene	1.2	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Toluene	2.4	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
o-Xylene	ND	1.0	µg/L	1		SW-846 8260B	8/27/09	8/27/09 14:34	LBD
<b>Surrogates</b>		<b>% Recovery</b>		<b>Recovery Limits</b>	<b>Flag</b>				
1,2-Dichloroethane-d4		81.7		70-130			8/27/09	14:34	
Toluene-d8		102		70-130			8/27/09	14:34	
4-Bromofluorobenzene		103		70-130			8/27/09	14:34	

**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
09H0621-05 [WB-2]	B004262	1	1	N/A	1000	400	400	08/26/09
09H0621-06 [MPL-6]	B004262	1	1	N/A	1000	400	400	08/26/09

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
09H0621-01 [ATC-1]	B004124	5	5	08/27/09
09H0621-02 [ATC-4]	B004124	5	5	08/27/09
09H0621-03 [ATC-5]	B004124	5	5	08/27/09
09H0621-04 [Trip Blank]	B004124	5	5	08/27/09

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	Limits	RPD	
Batch B004262 - TO-15 Prep										
Blank (B004262-BLK1)					Prepared & Analyzed: 08/26/09					
Benzene	ND	0.025								
Bromomethane	ND	0.025								
Carbon Tetrachloride	ND	0.025								
Chlorobenzene	ND	0.025								
Chloroethane	ND	0.025								
Chloroform	ND	0.025								
Chloromethane	ND	0.025								
1,2-Dibromoethane (EDB)	ND	0.025								
1,2-Dichlorobenzene	ND	0.025								
1,3-Dichlorobenzene	ND	0.025								
1,4-Dichlorobenzene	ND	0.025								
Dichlorodifluoromethane (Freon 12)	ND	0.025								
1,1-Dichloroethane	ND	0.025								
1,2-Dichloroethane	ND	0.025								
1,1-Dichloroethylene	ND	0.025								
cis-1,2-Dichloroethylene	ND	0.025								
1,2-Dichloropropane	ND	0.025								
cis-1,3-Dichloropropene	ND	0.025								
trans-1,3-Dichloropropene	ND	0.025								
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.025								
Ethylbenzene	ND	0.025								
Hexachlorobutadiene	ND	0.025								
Methylene Chloride	ND	0.10								
Styrene	ND	0.025								
1,1,2,2-Tetrachloroethane	ND	0.025								
Tetrachloroethylene	ND	0.025								
Toluene	ND	0.025								
1,2,4-Trichlorobenzene	ND	0.025								
1,1,1-Trichloroethane	ND	0.025								
1,1,2-Trichloroethane	ND	0.025								
Trichloroethylene	ND	0.025								
Trichlorofluoromethane (Freon 11)	ND	0.025								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.025								
1,2,4-Trimethylbenzene	ND	0.025								
1,3,5-Trimethylbenzene	ND	0.025								
Vinyl Chloride	ND	0.025								
m&p-Xylene	ND	0.050								
o-Xylene	ND	0.025								
Surrogate: 4-Bromofluorobenzene (1)	7.87				8.00		98.4	70-130		

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	Limits	Limit		
Batch B004262 - TO-15 Prep											
LCS (B004262-BS1)						Prepared & Analyzed: 08/26/09					
Benzene	4.72				5.00		94.5	70-130			
Bromomethane	4.24				5.00		84.9	70-130			
Carbon Tetrachloride	4.47				5.00		89.4	70-130			
Chlorobenzene	4.77				5.00		95.4	70-130			
Chloroethane	4.47				5.00		89.4	70-130			
Chloroform	4.26				5.00		85.1	70-130			
Chloromethane	4.63				5.00		92.6	70-130			
1,2-Dibromoethane (EDB)	4.71				5.00		94.3	70-130			
1,2-Dichlorobenzene	4.81				5.00		96.1	70-130			
1,3-Dichlorobenzene	4.81				5.00		96.1	70-130			
1,4-Dichlorobenzene	4.80				5.00		96.0	70-130			
Dichlorodifluoromethane (Freon 12)	3.94				5.00		78.9	70-130			
1,1-Dichloroethane	4.45				5.00		89.0	70-130			
1,2-Dichloroethane	4.17				5.00		83.4	70-130			
1,1-Dichloroethylene	4.00				5.00		80.0	70-130			
cis-1,2-Dichloroethylene	4.51				5.00		90.1	70-130			
1,2-Dichloropropane	4.77				5.00		95.5	70-130			
cis-1,3-Dichloropropene	4.82				5.00		96.4	70-130			
trans-1,3-Dichloropropene	4.88				5.00		97.6	70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.08				5.00		81.6	70-130			
Ethylbenzene	4.83				5.00		96.7	70-130			
Hexachlorobutadiene	4.71				5.00		94.2	70-130			
Methylene Chloride	4.90				5.00		97.9	70-130			
Styrene	5.18				5.00		104	70-130			
1,1,2,2-Tetrachloroethane	4.78				5.00		95.6	70-130			
Tetrachloroethylene	4.70				5.00		94.0	70-130			
Toluene	4.91				5.00		98.2	70-130			
1,2,4-Trichlorobenzene	4.96				5.00		99.2	70-130			
1,1,1-Trichloroethane	4.40				5.00		87.9	70-130			
1,1,2-Trichloroethane	4.72				5.00		94.4	70-130			
Trichloroethylene	4.64				5.00		92.8	70-130			
Trichlorofluoromethane (Freon 11)	3.96				5.00		79.3	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	3.86				5.00		77.2	70-130			
1,2,4-Trimethylbenzene	4.94				5.00		98.8	70-130			
1,3,5-Trimethylbenzene	4.88				5.00		97.6	70-130			
Vinyl Chloride	4.31				5.00		86.2	70-130			
m&p-Xylene	9.79				10.0		97.9	70-130			
o-Xylene	4.80				5.00		95.9	70-130			
Surrogate: 4-Bromofluorobenzene (1)	7.76				8.00		97.0	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 B004124 - SW-846 5030B										
Blank (B004124-BLK1) Prepared & Analyzed: 08/27/09										
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	2.0	µg/L							
Bromomethane	ND	5.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							R-05
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
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	6.0	µg/L							
Carbon Tetrachloride	ND	1.0	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							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	1.0	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B004124 - SW-846 5030B										
Blank (B004124-BLK1) Prepared & Analyzed: 08/27/09										
Methylene Chloride	ND	5.0	µg/L							L-04, V-05
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	3.0	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	20.5		µg/L	25.0		81.9	70-130			
Surrogate: Toluene-d8	26.4		µg/L	25.0		106	70-130			
Surrogate: 4-Bromofluorobenzene	25.1		µg/L	25.0		100	70-130			
LCS (B004124-BS1) Prepared & Analyzed: 08/27/09										
Acetone	91.1	50	µg/L	100		91.1	70-160			†
Acrylonitrile	9.93	5.0	µg/L	10.0		99.3	70-130			
tert-Amyl Methyl Ether (TAME)	12.8	0.50	µg/L	10.0		128	70-130			
Benzene	10.8	1.0	µg/L	10.0		108	70-130			
Bromobenzene	10.5	1.0	µg/L	10.0		105	70-130			
Bromochloromethane	11.6	1.0	µg/L	10.0		116	70-130			
Bromodichloromethane	10.4	0.50	µg/L	10.0		104	70-130			
Bromoform	12.4	2.0	µg/L	10.0		124	70-130			
Bromomethane	3.93	5.0	µg/L	10.0		39.3 *	40-160			L-07, R-05 †
2-Butanone (MEK)	83.6	20	µg/L	100		83.6	40-160			†
tert-Butyl Alcohol (TBA)	95.3	20	µg/L	100		95.3	40-160			†
n-Butylbenzene	9.97	1.0	µg/L	10.0		99.7	70-130			
sec-Butylbenzene	10.9	1.0	µg/L	10.0		109	70-130			
tert-Butylbenzene	10.4	1.0	µg/L	10.0		104	70-130			
tert-Butyl Ethyl Ether (TBEE)	10.9	0.50	µg/L	10.0		109	70-130			
Carbon Disulfide	15.8	6.0	µg/L	10.0		158 *	70-130			L-02
Carbon Tetrachloride	11.1	1.0	µg/L	10.0		111	70-130			
Chlorobenzene	11.8	1.0	µg/L	10.0		118	70-130			
Chlorodibromomethane	10.7	1.0	µg/L	10.0		107	70-130			
Chloroethane	11.9	2.0	µg/L	10.0		119	70-130			
Chloroform	9.38	2.0	µg/L	10.0		93.8	70-130			
Chloromethane	6.13	2.0	µg/L	10.0		61.3	40-160			V-05 †
2-Chlorotoluene	10.7	1.0	µg/L	10.0		107	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 B004124 - SW-846 5030B										
LCS (B004124-BS1) <span style="float: right;">Prepared &amp; Analyzed: 08/27/09</span>										
4-Chlorotoluene	11.3	1.0	µg/L	10.0		113	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	11.0	5.0	µg/L	10.0		110	70-130			
1,2-Dibromoethane (EDB)	10.6	0.50	µg/L	10.0		106	70-130			
Dibromomethane	10.0	1.0	µg/L	10.0		100	70-130			
1,2-Dichlorobenzene	10.6	1.0	µg/L	10.0		106	70-130			
1,3-Dichlorobenzene	10.8	1.0	µg/L	10.0		108	70-130			
1,4-Dichlorobenzene	9.89	1.0	µg/L	10.0		98.9	70-130			
trans-1,4-Dichloro-2-butene	10.3	2.0	µg/L	10.0		103	70-130			
Dichlorodifluoromethane (Freon 12)	8.53	2.0	µg/L	10.0		85.3	40-160			†
1,1-Dichloroethane	10.2	1.0	µg/L	10.0		102	70-130			
1,2-Dichloroethane	8.77	1.0	µg/L	10.0		87.7	70-130			
1,1-Dichloroethylene	10.2	1.0	µg/L	10.0		102	70-130			
cis-1,2-Dichloroethylene	9.47	1.0	µg/L	10.0		94.7	70-130			
trans-1,2-Dichloroethylene	9.86	1.0	µg/L	10.0		98.6	70-130			
1,2-Dichloropropane	11.0	1.0	µg/L	10.0		110	70-130			
1,3-Dichloropropane	10.1	0.50	µg/L	10.0		101	70-130			
2,2-Dichloropropane	11.8	1.0	µg/L	10.0		118	40-130			†
1,1-Dichloropropene	10.2	2.0	µg/L	10.0		102	70-130			
cis-1,3-Dichloropropene	12.4	0.50	µg/L	10.0		124	70-130			
trans-1,3-Dichloropropene	13.8	1.0	µg/L	10.0		138 *	70-130			L-07
Diethyl Ether	10.6	2.0	µg/L	10.0		106	70-130			
Diisopropyl Ether (DIPE)	9.70	0.50	µg/L	10.0		97.0	70-130			
1,4-Dioxane	110	50	µg/L	100		110	40-130			V-16 †
Ethylbenzene	11.1	1.0	µg/L	10.0		111	70-130			
Hexachlorobutadiene	12.0	0.50	µg/L	10.0		120	70-130			V-06
2-Hexanone (MBK)	92.5	10	µg/L	100		92.5	70-160			†
Isopropylbenzene (Cumene)	13.1	1.0	µg/L	10.0		131 *	70-130			L-07
p-Isopropyltoluene (p-Cymene)	10.7	1.0	µg/L	10.0		107	70-130			
Methyl tert-Butyl Ether (MTBE)	10.9	1.0	µg/L	10.0		109	70-130			
Methylene Chloride	6.41	5.0	µg/L	10.0		64.1 *	70-130			L-04, V-05
4-Methyl-2-pentanone (MIBK)	95.2	10	µg/L	100		95.2	70-160			†
Naphthalene	12.5	3.0	µg/L	10.0		125	40-130			†
n-Propylbenzene	11.8	1.0	µg/L	10.0		118	70-130			
Styrene	11.7	1.0	µg/L	10.0		117	70-130			
1,1,1,2-Tetrachloroethane	12.8	1.0	µg/L	10.0		128	70-130			
1,1,1,2,2-Tetrachloroethane	11.2	0.50	µg/L	10.0		112	70-130			
Tetrachloroethylene	11.3	1.0	µg/L	10.0		113	70-160			†
Tetrahydrofuran	9.16	10	µg/L	10.0		91.6	70-130			
Toluene	11.0	1.0	µg/L	10.0		110	70-130			
1,2,3-Trichlorobenzene	10.3	5.0	µg/L	10.0		103	70-130			
1,2,4-Trichlorobenzene	13.1	1.0	µg/L	10.0		131 *	70-130			L-07, V-06
1,3,5-Trichlorobenzene	11.6	1.0	µg/L	10.0		116	70-130			
1,1,1-Trichloroethane	10.4	1.0	µg/L	10.0		104	70-130			
1,1,2-Trichloroethane	10.1	1.0	µg/L	10.0		101	70-130			
Trichloroethylene	9.97	1.0	µg/L	10.0		99.7	70-130			
Trichlorofluoromethane (Freon 11)	10.4	2.0	µg/L	10.0		104	70-130			
1,2,3-Trichloropropane	9.79	2.0	µg/L	10.0		97.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.9	1.0	µg/L	10.0		119	70-130			
1,2,4-Trimethylbenzene	10.0	1.0	µg/L	10.0		100	70-130			
1,3,5-Trimethylbenzene	11.1	1.0	µg/L	10.0		111	70-130			
Vinyl Chloride	8.29	2.0	µg/L	10.0		82.9	40-160			†

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B004124 - SW-846 5030B										
LCS (B004124-BS1) Prepared & Analyzed: 08/27/09										
m+p Xylene	21.8	2.0	µg/L	20.0		109	70-130			
o-Xylene	11.2	1.0	µg/L	10.0		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	21.1		µg/L	25.0		84.2	70-130			
Surrogate: Toluene-d8	26.1		µg/L	25.0		104	70-130			
Surrogate: 4-Bromofluorobenzene	26.5		µg/L	25.0		106	70-130			
LCS Dup (B004124-BS1) Prepared & Analyzed: 08/27/09										
Acetone	89.4	50	µg/L	100		89.4	70-160	1.90	25	†
Acrylonitrile	8.68	5.0	µg/L	10.0		86.8	70-130	13.4	25	
tert-Amyl Methyl Ether (TAME)	12.1	0.50	µg/L	10.0		121	70-130	5.53	25	
Benzene	10.1	1.0	µg/L	10.0		101	70-130	7.28	25	
Bromobenzene	10.1	1.0	µg/L	10.0		101	70-130	4.37	25	
Bromochloromethane	11.5	1.0	µg/L	10.0		115	70-130	1.13	25	
Bromodichloromethane	9.44	0.50	µg/L	10.0		94.4	70-130	9.58	25	
Bromoform	11.3	2.0	µg/L	10.0		113	70-130	9.03	25	
Bromomethane	5.09	5.0	µg/L	10.0		50.9	40-160	25.7 *	25	R-05 †
2-Butanone (MEK)	82.6	20	µg/L	100		82.6	40-160	1.26	25	†
tert-Butyl Alcohol (TBA)	90.6	20	µg/L	100		90.6	40-160	4.97	25	†
n-Butylbenzene	8.82	1.0	µg/L	10.0		88.2	70-130	12.2	25	
sec-Butylbenzene	9.88	1.0	µg/L	10.0		98.8	70-130	10.0	25	
tert-Butylbenzene	9.37	1.0	µg/L	10.0		93.7	70-130	9.94	25	
tert-Butyl Ethyl Ether (TBEE)	10.4	0.50	µg/L	10.0		104	70-130	4.52	25	
Carbon Disulfide	14.3	6.0	µg/L	10.0		143 *	70-130	9.71	25	L-02
Carbon Tetrachloride	9.93	1.0	µg/L	10.0		99.3	70-130	10.8	25	
Chlorobenzene	11.1	1.0	µg/L	10.0		111	70-130	6.81	25	
Chlorodibromomethane	9.97	1.0	µg/L	10.0		99.7	70-130	6.78	25	
Chloroethane	10.4	2.0	µg/L	10.0		104	70-130	13.8	25	
Chloroform	8.83	2.0	µg/L	10.0		88.3	70-130	6.04	25	
Chloromethane	5.73	2.0	µg/L	10.0		57.3	40-160	6.75	25	V-05 †
2-Chlorotoluene	10.2	1.0	µg/L	10.0		102	70-130	4.20	25	
4-Chlorotoluene	10.7	1.0	µg/L	10.0		107	70-130	5.37	25	
1,2-Dibromo-3-chloropropane (DBCP)	9.20	5.0	µg/L	10.0		92.0	70-130	17.4	25	
1,2-Dibromoethane (EDB)	9.65	0.50	µg/L	10.0		96.5	70-130	9.19	25	
Dibromomethane	9.55	1.0	µg/L	10.0		95.5	70-130	4.80	25	
1,2-Dichlorobenzene	9.94	1.0	µg/L	10.0		99.4	70-130	5.95	25	
1,3-Dichlorobenzene	9.52	1.0	µg/L	10.0		95.2	70-130	12.5	25	
1,4-Dichlorobenzene	9.10	1.0	µg/L	10.0		91.0	70-130	8.32	25	
trans-1,4-Dichloro-2-butene	10.2	2.0	µg/L	10.0		102	70-130	1.37	25	
Dichlorodifluoromethane (Freon 12)	7.69	2.0	µg/L	10.0		76.9	40-160	10.4	25	†
1,1-Dichloroethane	9.58	1.0	µg/L	10.0		95.8	70-130	5.97	25	
1,2-Dichloroethane	8.24	1.0	µg/L	10.0		82.4	70-130	6.23	25	
1,1-Dichloroethylene	9.27	1.0	µg/L	10.0		92.7	70-130	9.75	25	
cis-1,2-Dichloroethylene	9.34	1.0	µg/L	10.0		93.4	70-130	1.38	25	
trans-1,2-Dichloroethylene	8.99	1.0	µg/L	10.0		89.9	70-130	9.23	25	
1,2-Dichloropropane	10.5	1.0	µg/L	10.0		105	70-130	5.40	25	
1,3-Dichloropropane	9.28	0.50	µg/L	10.0		92.8	70-130	8.66	25	
2,2-Dichloropropane	10.9	1.0	µg/L	10.0		109	40-130	8.21	25	†
1,1-Dichloropropene	9.37	2.0	µg/L	10.0		93.7	70-130	8.48	25	
cis-1,3-Dichloropropene	11.5	0.50	µg/L	10.0		115	70-130	8.12	25	
trans-1,3-Dichloropropene	12.5	1.0	µg/L	10.0		125	70-130	9.50	25	
Diethyl Ether	10.4	2.0	µg/L	10.0		104	70-130	1.43	25	
Diisopropyl Ether (DIPE)	9.44	0.50	µg/L	10.0		94.4	70-130	2.72	25	

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B004124 - SW-846 5030B										
LCS Dup (B004124-BSD1) <span style="float: right;">Prepared &amp; Analyzed: 08/27/09</span>										
1,4-Dioxane	82.5	50	µg/L	100		82.5	40-130	28.2	50	V-16 † ‡
Ethylbenzene	10.3	1.0	µg/L	10.0		103	70-130	7.56	25	
Hexachlorobutadiene	10.7	0.50	µg/L	10.0		107	70-130	11.4	25	V-06
2-Hexanone (MBK)	89.0	10	µg/L	100		89.0	70-160	3.83	25	†
Isopropylbenzene (Cumene)	12.2	1.0	µg/L	10.0		122	70-130	7.67	25	
p-Isopropyltoluene (p-Cymene)	9.71	1.0	µg/L	10.0		97.1	70-130	9.42	25	
Methyl tert-Butyl Ether (MTBE)	10.2	1.0	µg/L	10.0		102	70-130	6.54	25	
Methylene Chloride	6.11	5.0	µg/L	10.0		61.1 *	70-130	4.79	25	L-04, V-05
4-Methyl-2-pentanone (MIBK)	89.9	10	µg/L	100		89.9	70-160	5.78	25	†
Naphthalene	12.0	3.0	µg/L	10.0		120	40-130	4.00	25	†
n-Propylbenzene	11.0	1.0	µg/L	10.0		110	70-130	7.17	25	
Styrene	11.1	1.0	µg/L	10.0		111	70-130	5.19	25	
1,1,1,2-Tetrachloroethane	12.2	1.0	µg/L	10.0		122	70-130	5.21	25	
1,1,2,2-Tetrachloroethane	11.4	0.50	µg/L	10.0		114	70-130	1.94	25	
Tetrachloroethylene	10.2	1.0	µg/L	10.0		102	70-160	11.1	25	†
Tetrahydrofuran	9.22	10	µg/L	10.0		92.2	70-130	0.653	25	
Toluene	10.2	1.0	µg/L	10.0		102	70-130	6.99	25	
1,2,3-Trichlorobenzene	10.0	5.0	µg/L	10.0		100	70-130	3.04	25	
1,2,4-Trichlorobenzene	12.3	1.0	µg/L	10.0		123	70-130	5.98	25	V-06
1,3,5-Trichlorobenzene	10.8	1.0	µg/L	10.0		108	70-130	6.62	25	
1,1,1-Trichloroethane	9.73	1.0	µg/L	10.0		97.3	70-130	6.37	25	
1,1,2-Trichloroethane	9.86	1.0	µg/L	10.0		98.6	70-130	2.60	25	
Trichloroethylene	8.83	1.0	µg/L	10.0		88.3	70-130	12.1	25	
Trichlorofluoromethane (Freon 11)	9.18	2.0	µg/L	10.0		91.8	70-130	12.9	25	
1,2,3-Trichloropropane	9.44	2.0	µg/L	10.0		94.4	70-130	3.64	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.9	1.0	µg/L	10.0		109	70-130	8.60	25	
1,2,4-Trimethylbenzene	8.96	1.0	µg/L	10.0		89.6	70-130	11.4	25	
1,3,5-Trimethylbenzene	10.5	1.0	µg/L	10.0		105	70-130	5.28	25	
Vinyl Chloride	7.57	2.0	µg/L	10.0		75.7	40-160	9.08	25	†
m+p Xylene	20.2	2.0	µg/L	20.0		101	70-130	7.56	25	
o-Xylene	10.6	1.0	µg/L	10.0		106	70-130	5.59	25	
Surrogate: 1,2-Dichloroethane-d4	20.7		µg/L	25.0		82.8	70-130			
Surrogate: Toluene-d8	25.5		µg/L	25.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	26.0		µg/L	25.0		104	70-130			

FLAG/QUALIFIER SUMMARY

- \* QC result is outside of established limits.
  - † Wide recovery limits established for difficult compound.
  - ‡ Wide RPD limits established for difficult compound.
  - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- 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.
  - L-04 Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
  - L-07 Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. Analysis is in control.
  - R-05 Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
  - 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.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA TO-14A in Air</i>	
Benzene	AIHA,FL,NY
Bromomethane	AIHA,FL,NY
Carbon Tetrachloride	AIHA,FL,NY
Chlorobenzene	AIHA,FL,NY
Chloroethane	AIHA,FL,NY
Chloroform	AIHA,FL,NY
Chloromethane	AIHA,FL,NY
1,2-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
<i>SW-846 8260B in Water</i>	
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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260B in Water</i>	
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



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	01/1/2010
MA	Massachusetts DEP	M-MA100	06/30/2010
CT	Connecticut Department of Public Health	PH-0567	09/30/2009
NY	New York State Department of Health	10899 NELAP	04/1/2010
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2010
RI	Rhode Island Department of Health	LAO00112	12/30/2009
NC	North Carolina Div. of Water Quality	652	12/31/2009
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	03/23/2010



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

**CHAIN OF CUSTODY RECORD**

39 SPRUCE ST, 2ND FLOOR  
 EAST LONGMEADOW, MA 01028

Company Name: LFR INC  
 Address: 300 MERO CENTER BLD  
WARWICK RI 02886  
 Attention: DOMINA PAULSTER  
 Project Location: SPRINGFIELD ST  
 Sampled By: CHRIS JAWORSKI

Telephone: (401) 388-3887  
 Project # 081-12152-06  
 Client PO # 102

DATA DELIVERY (check one):  
 FAX  EMAIL  WEBSITE CLIENT  
 Fax #:  
 Email:  
 Format:  EXCEL  PDF  GIS KEY  OTHER

Proposal Provided? (For Billing purposes)  
 yes  no  
 State Form Required?  yes  no

Field ID	Sample Description	Lab #	Date Sampled		Comp. site	Matrix Code	Conc. Code
			Start Date/Time	Stop Date/Time			
	ATC-1	-01	8/25/09	10:20	X	GW	L
	ATC-4	-04	8/25/09	11:20	X	GW	L
	ATC-5	-03	8/25/09	12:00	X	GW	L
	TRIP BLANK	-04	8/25/09				
	WB-2	-05	8/25/09	12:30	X	A	L
	MPL-6	-06	8/25/09	14:00	X	A	L

Laboratory Comments:

Relinquished by (signature) [Signature] Date/Time: 8/25/09 15:00  
 Received by (signature) [Signature] Date/Time: 8/25/09 10:00  
 Relinquished by (signature) [Signature] Date/Time: 8/25/09 15:15  
 Received by (signature) [Signature] Date/Time: 8/26/09 15:11

Cont. Code	ANALYSIS REQUESTED	Client	Comments
A=amber glass			
G=glass			
P=plastic			
ST=sterile			
V=Vial			
S=summary car			
T=regular bag			
O=Other			
			Handwritten notes: 0928 TO-14, Not left for 3060

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

Detection Limit Requirements  
 Regulations? RI 6B  
 Data Enhancement Project/RCP?  Y  N  
 Special Requirements or DL's:

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

\*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



### Sample Receipt Checklist

CLIENT NAME: LFR RECEIVED BY: TS DATE: 8-26-09

- 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  Direct from Sampling  Ambient  In Cooler(s)

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

Temperature °C by Temp blank 4.0°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	10	Brass Sleeves	
Colisure / bacteria bottle		Tubes	
Dissolved Oxygen bottle		Summa Cans	
Flashpoint bottle		Regulators	
Encore		Other <u>6 clear bags</u>	

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

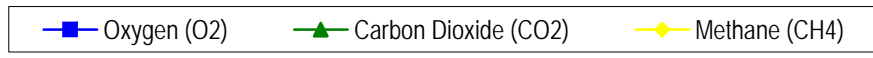
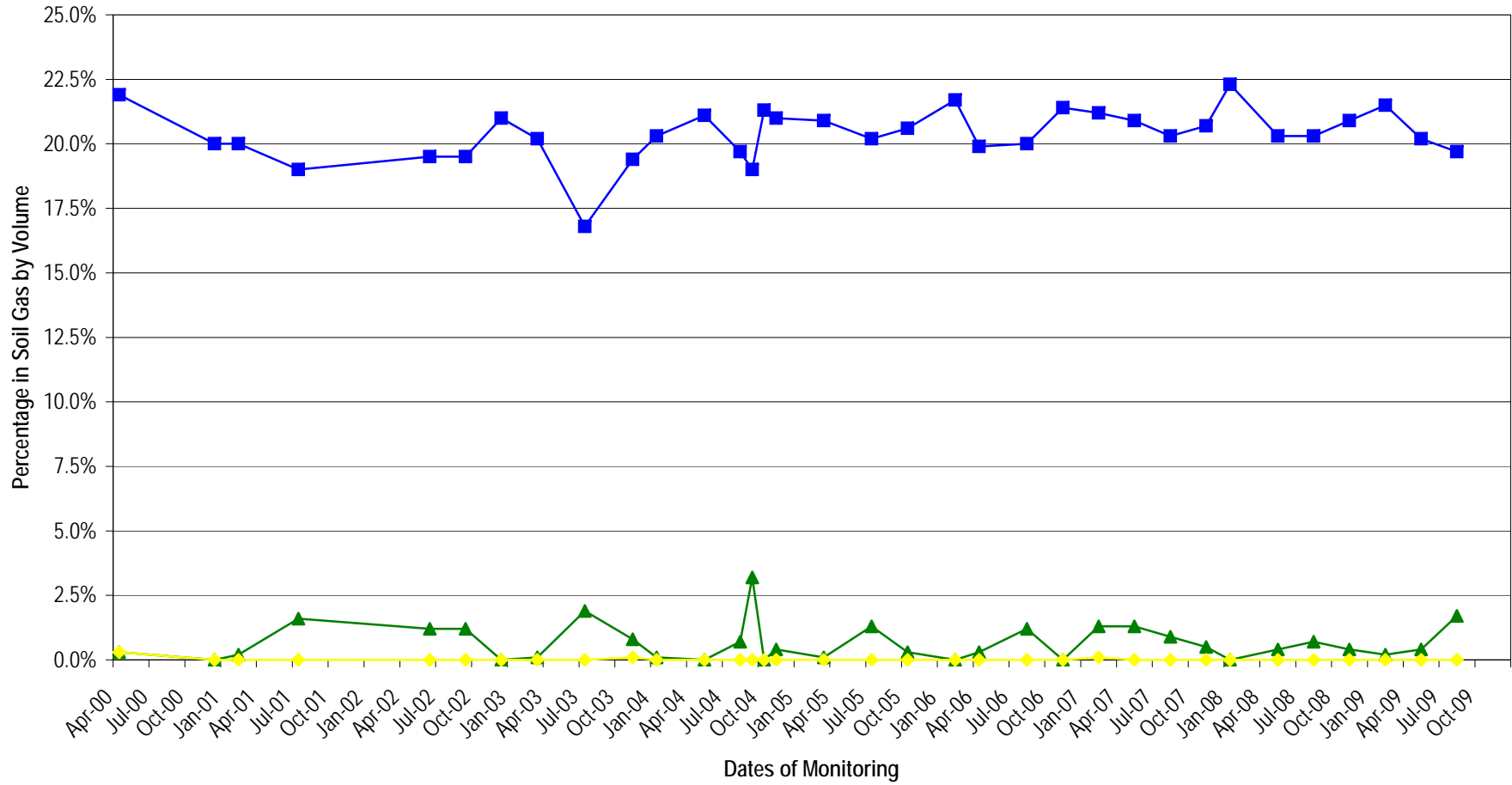
40 mL vials: # HCl 10 # Methanol \_\_\_\_\_  
# Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_ Time and Date Frozen: \_\_\_\_\_  
# Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_

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

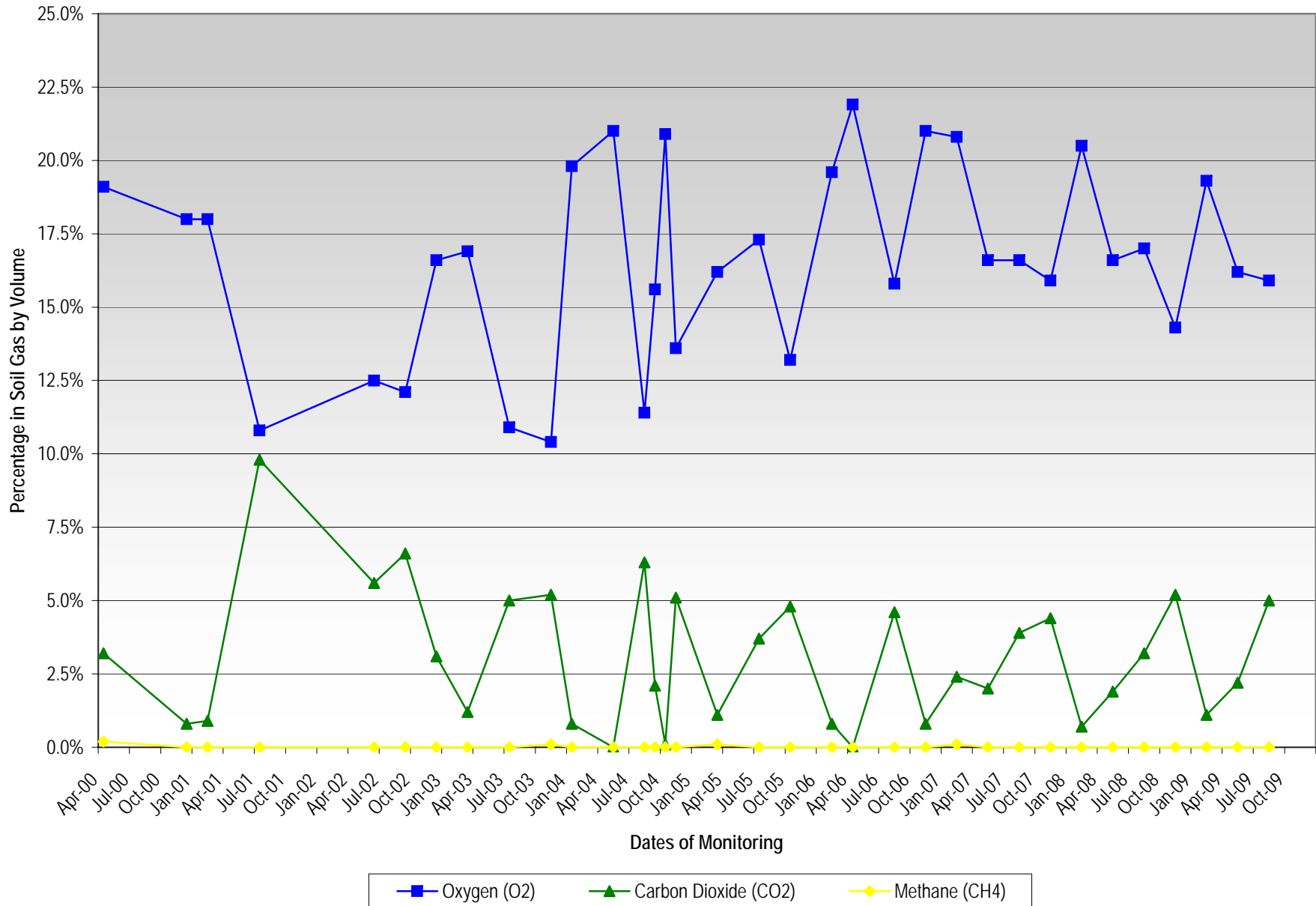
## **Appendix C**

### **Soil Gas Graphs**

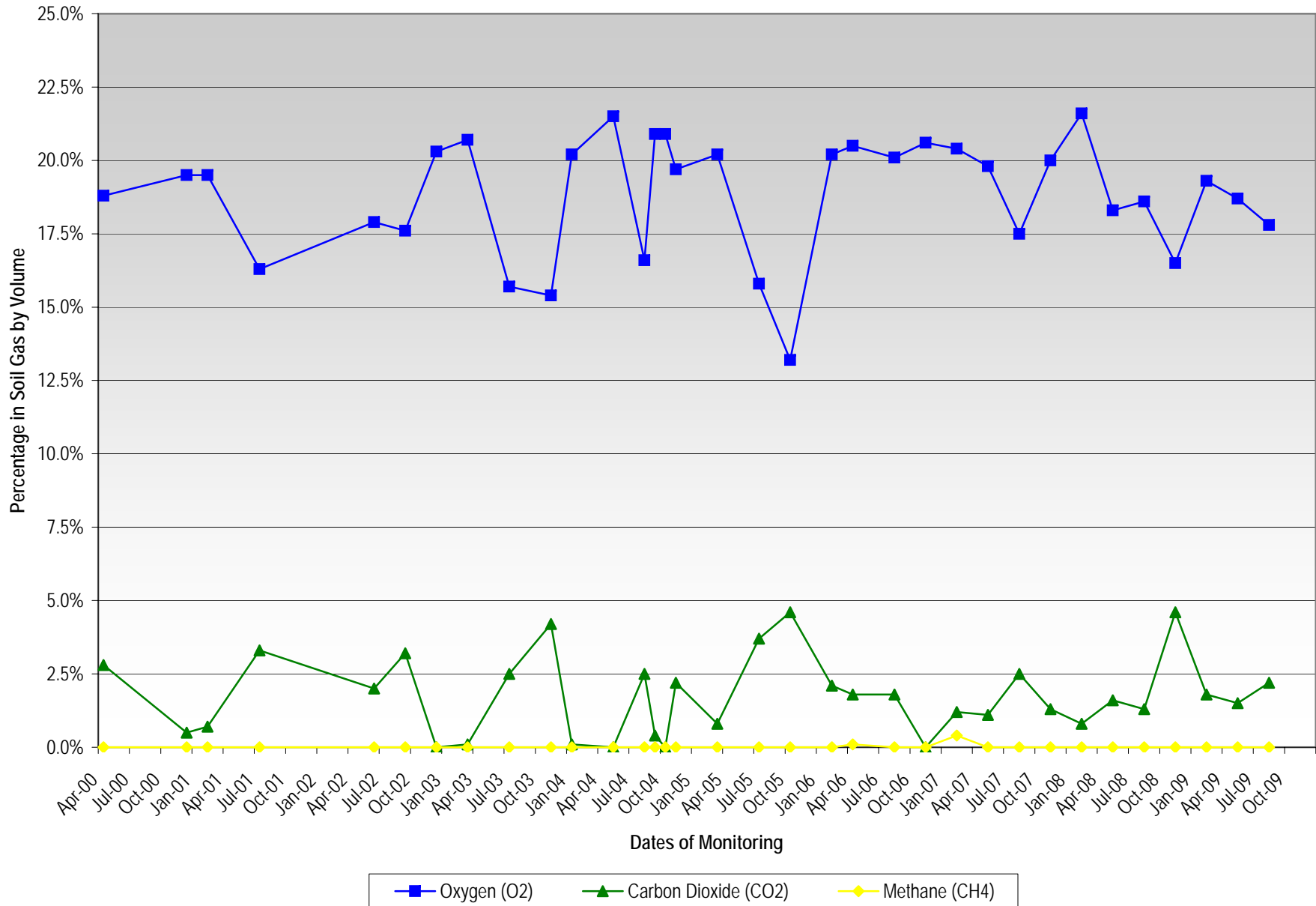
Soil Gas Well EPL1  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



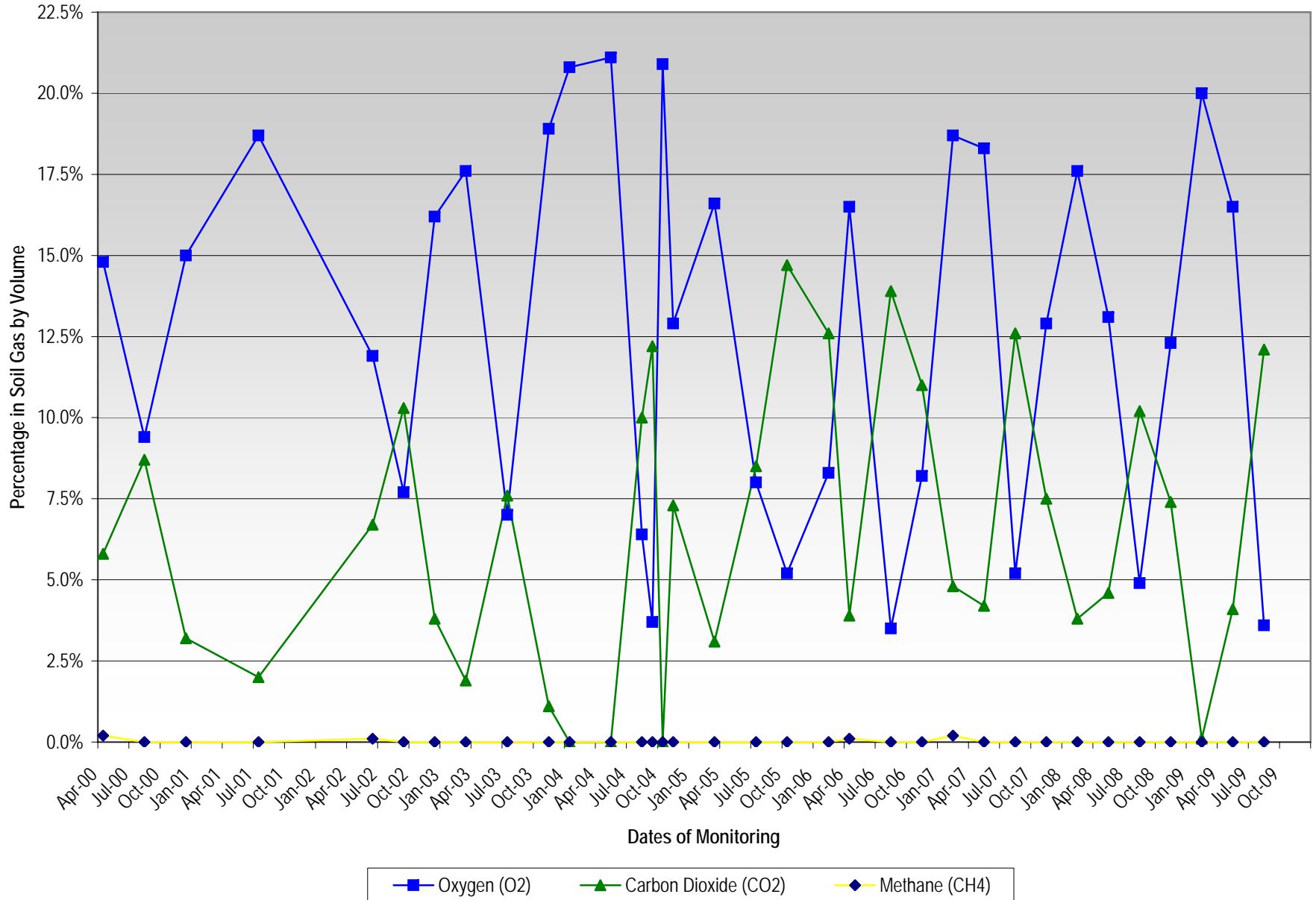
**Soil Gas Well EPL4**  
**Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time**  
**Springfield Street School Complex**  
**Providence, Rhode Island**



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

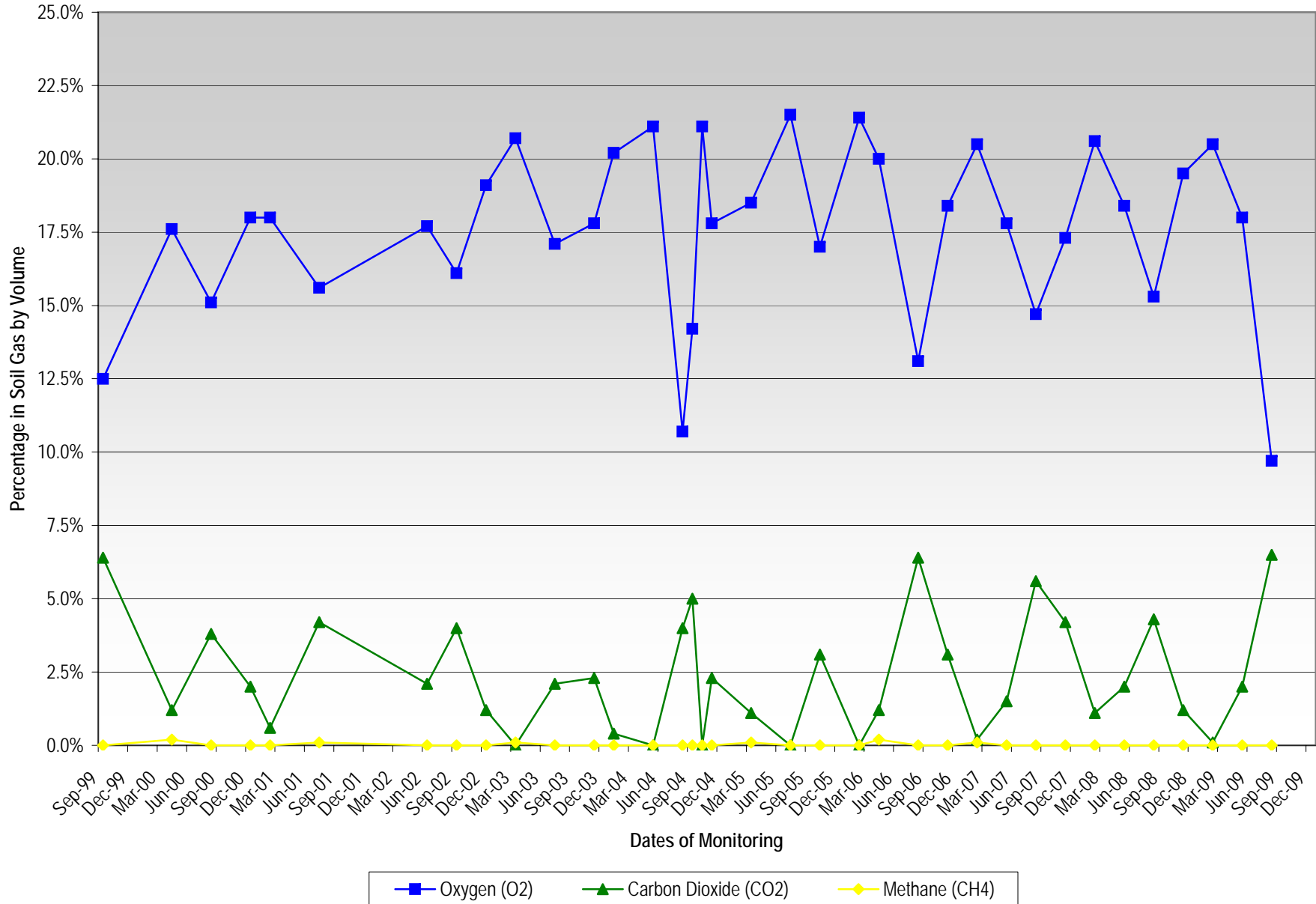


Soil Gas Well MPL5  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island

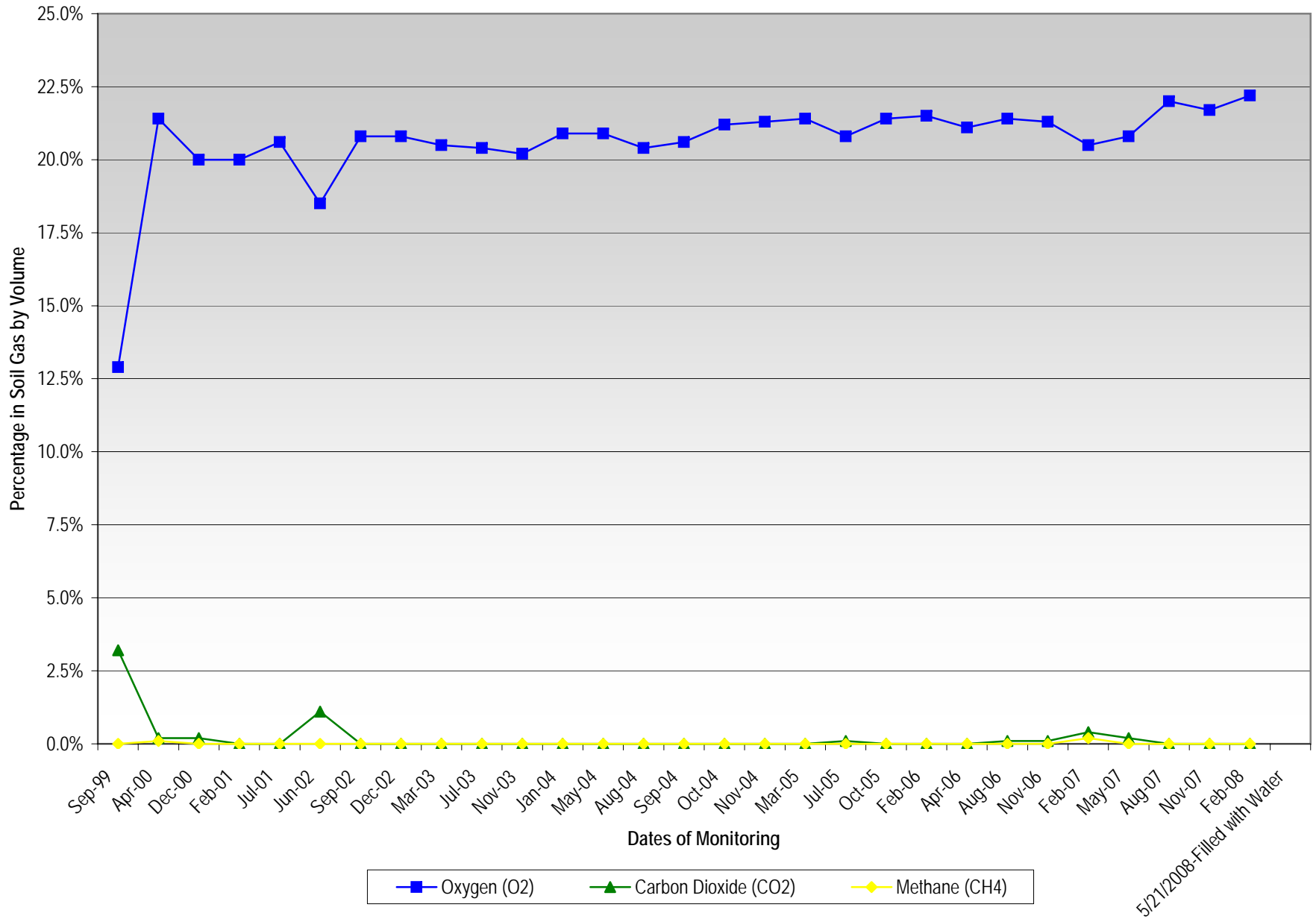




Soil Gas Well WB1  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



Soil Gas Well WB7  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



5/21/2008-Filled with Water

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

