PERFORMANCE TESTING
January 2008
As Defined By The
Code of Federal Regulations; Title 40 Part 60

RMCEINC Project #2008-15096

WASTE MANAGEMENT OF MASSACHUSETTS
FITCHBURG/WESTMINSTER SANITARY LANDFILL
WESTMINSTER, MASSACHUSETTS

PREPARED FOR:
WASTE MANAGEMENT OF MASSACHUSETS
Waste Management Renewable Energy

BY:

RMC ENVIRONMENTAL, INC. – CHICAGO REGIONAL OFFICE

REPORT CERTIFICATION

The sampling, analysis, and data collection performed for this report were carried out under my direction and supervision, and I hereby certify that the test report is authentic and accurate, to the best of my knowledge.

Date 2/20/2008

Signature

Rachel Chleborowicz
Project Manager
RMC ENVIRONMENTAL, INC.

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1.0 PROJECT INFORMATION

1.1 Company Information

Name and Address:	Waste Management of Massachusetts Fitchburg/Westminster Sanitary Landfill 101 Fitchburg Road – State Route 31 Westminster, Massachusetts 01473
Contact:	Mr. Robert Magnusson
Telephone Number:	603-929-5435
NMCPA Number:	TR# W061954
Source Tested:	Two IC Engines (EU1 & EU2) – Landfill Gas Treatment / Electric Generating Plant

1.2 Testing Firm Information

Name and Address:	RMC ENVIRONMENTAL, INC. 9226 North 2nd Street Machesney Park, Illinois 61115
Contact:	Rachel Chleborowicz
Telephone Number:	815-378-6150 Mobile 815-425-1102 Fax RMCE@AirMonitoring.com / RMCEInc@aol.com

1.3 Test Information

Test Requested By:	Waste Management	
Source Contact:	Mr. Robert Magnusson	
Telephone Number:	603-929-5435	
Test Objective:	IC Engine Performance Testing	
Test Methods:	EPA Methods 1-4, 3A, 7E, 10 and 25A/18	
Test Dates:	January 15 & 16, 2008	
Facility Contacts:	Eric Hermanson	Facility Manager, Waste Management of Massachusetts
	Robert Magnusson	Engineering Manager, Waste Management of Massachusetts
Test Personnel:	Rachel Chleborowicz	Sr. Project Manager, RMCEInc
	Gregory Chleborowicz	Project Manager, RMCEInc
Agency Personnel On-site:	Gary Roscoe	Massachusetts DEP

2.0 SOURCE IDENTIFICATION

Name and Address:	Waste Management of Massachusetts Fitchburg/Westminster Sanitary Landfill 101 Fitchburg Road – State Route 31 Westminster, Massachusetts 01473
Contact:	Mr. Robert Magnusson

Telephone Number:	603-929-5435
Fuel:	Landfill Gas
Sampling Location:	~ 60" Downstream and ~ 48" Upstream from any flow disturbance

3.0 SUMMARY AND DISCUSSION OF RESULTS

The compliance testing results for Waste Management of Massachusetts – Fitchburg/Westminster Sanitary Landfill are shown in **Table 3-1**. The indicated pollutants are NMOC, CO and NOx emissions in units of the emission standard (lb/mmBtu & grams/BHP-Hr [for NOx]). This data is an average of the three one-hour test runs conducted on each engine.

The reference test data are enclosed in **Appendices A & B** and the corresponding process data collected from the engine operations screen and the portable GEM 2000 are included in **Appendix D**. Each engine is rated for 2233 horsepower with ~1600 Kw of power produced. Per Waste Management of Massachusetts' correspondence with Mr. Tom Cusson (MADEP), each engine was tested at the heat input listed in the current plan approval and at the maximum achievable heat input. The results of this stack test effort, demonstrating compliance with the existing permit limits, will be utilized to request an increase in the various heat inputs listed throughout the plan approval W061954(A).

Due to the lack of access to the land fill gas coming to the engines, the test team was unable to obtain a fuel sample in order to calculate a site specific F-Factor. The lb/mmBtu emission rates were calculated based on the heat input of the engine. The heat input was calculated based on the fuel flow rate to each engine and the heat input (mmBtu/Hr (HHV)) value during the test. The lb/Hr emission rates that were calculated based on the measured concentrations of each pollutant and the volumetric flow rates

Table 3-1. Summary of Compliance Test Results

Parameter	Result	Permit Limit
Engine #1 [EU01]		
1600 Kw		
NOx lb/mmBtu NOx g/BHP-Hr	0.136 lb/mmBtu 0.47 g/BHP-Hr	0.166 lb/mmBtu 0.60 g/BHP-Hr
CO lb/mmBtu	0.70 lb/mmBtu	0.83 lb/mmBtu
NMOC lb/mmBtu	0.032 lb/mmBtu	0.083 lb/mmBtu
1400 Kw		
NOx lb/mmBtu NOx g/BHP-Hr	0.144 lb/mmBtu 0.52 g/BHP-Hr	0.166 lb/mmBtu 0.60 g/BHP-Hr
CO lb/mmBtu	0.73 lb/mmBtu	0.83 lb/mmBtu
NMOC lb/mmBtu	0.027 lb/mmBtu	0.083 lb/mmBtu
Engine #2 [EU02]		
1600 Kw		
NOx lb/mmBtu NOx g/BHP-Hr	0.145 lb/mmBtu 0.49 g/BHP-Hr	0.166 lb/mmBtu 0.60 g/BHP-Hr
CO lb/mmBtu	0.69 lb/mmBtu	0.83 lb/mmBtu
NMOC lb/mmBtu	0.026 lb/mmBtu	0.083 lb/mmBtu
1400 Kw		
NOx lb/mmBtu NOx g/BHP-Hr	0.156 lb/mmBtu 0.56 g/BHP-Hr	0.166 lb/mmBtu 0.60 g/BHP-Hr
CO lb/mmBtu	0.68 lb/mmBtu	0.83 lb/mmBtu
NMOC lb/mmBtu	0.037 lb/mmBtu	0.083 lb/mmBtu

4.0 POLLUTANTS AND TEST METHODS

Pollutant Tested:	NO_x	EPA Method 7E - 40 CFR 60, Appendix A
	CO	EPA Method 10 - 40 CFR 60, Appendix A
	Total Organinc Compounds	EPA Method 25A – 40 CFR 60, Appendix A
	Methane	EPA Method 18 – 40 CFR 60, Appendix A

5.0 TEST PROCEDURES AND RESULTS

5.10 Sampling Procedures

Testing was completed per EPA test methods 1, 2, 3A, 4, 7E, 10 and 25A/18 defined in 40 CFR Part 60 Appendix A. The test protocol utilized for this test program was submitted to the Massachusetts Department of Environmental Protection on October 22, 2007. Mr. Thomas Cusson of MDEP approved the protocol and extended the deadline for the facility testing via e-mail. Copies of the submission and the e-mailed extension / approval are included in **Appendix E**.

5.11 Volumetric Flow Rates

RMCEINC determined the number and location of the traverse points for volumetric flow rate measurement according to the procedures outlined in EPA Method 1. When determining the location and number of sample points, RMCEINC took into account the number of sample ports, duct configuration, and location of upstream and downstream flow disturbances. **Figure 5-1**, below, is a diagram of the entire engine system. **Figure 5-2** presents the Method 1 data of the sampling location for the determination for the Method 2 flow traverse points.

The flue gas velocity and volumetric flow rate were determined according to the procedures of EPA Method 2. A Type S pitot tube with a Type K thermocouple was used to measure velocity pressure and stack gas temperature at each sample point. Each pitot tube conformed to the geometric specifications of EPA Method 2 and was assigned a coefficient of 0.84. An umbilical cord connected the pitot tube to the meter box inclined manometer and digital temperature readout. RMCEINC leak-checked the pitot tube prior to and after conducting the flow traverse.

RMCEINC determined the flue gas composition and molecular weight using EPA Methods 3A and 4 procedures.

Figure 5-1 – Engine Schematic / Diagram.

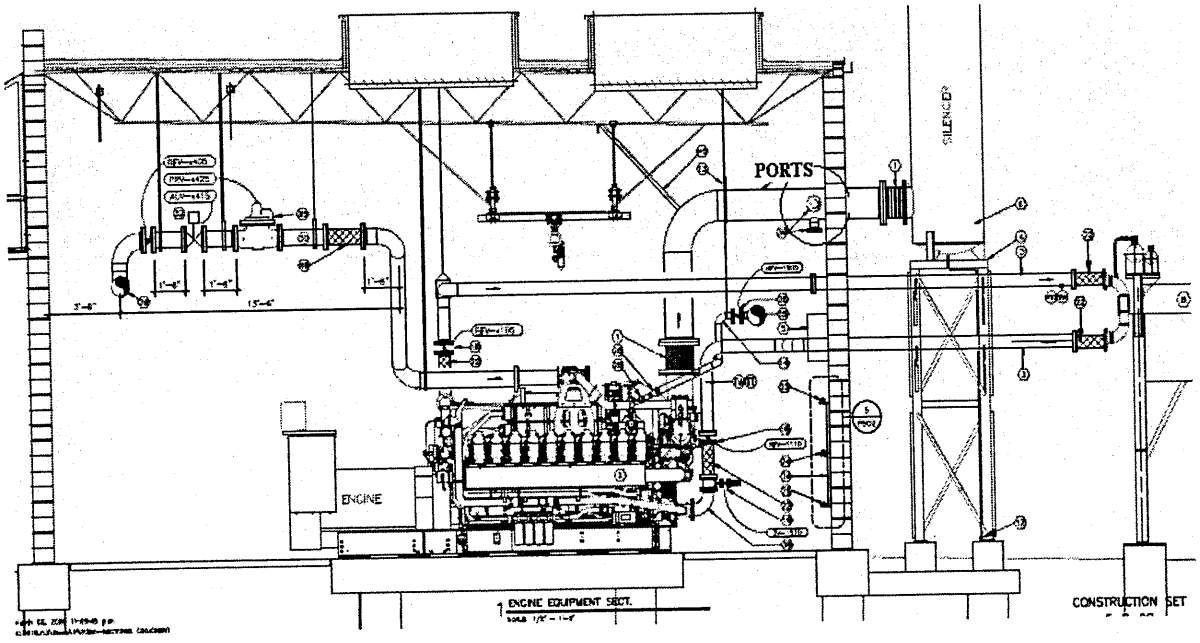
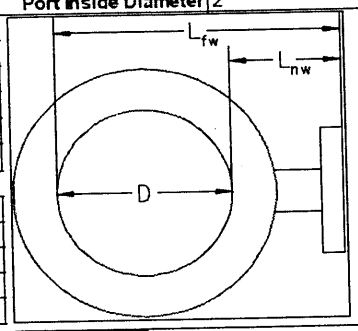


Figure 5-2. EPA Method 1 Information – Engines 1 & 2

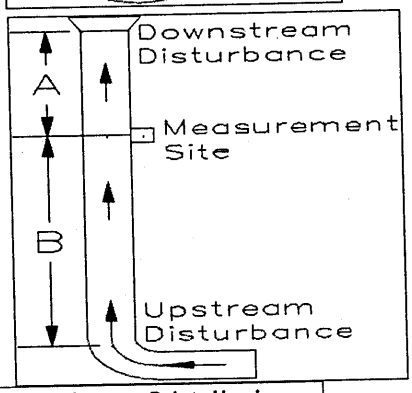
METHOD 1 - SAMPLE AND VELOCITY TRAVERSES FOR CIRCULAR SOURCES

Plant Name	Waste Management of Massachusetts	Date	01/15/08
Sampling Location	Fitchburg/Westminster Landfill	Project #	2008-15096
Operator	RC	# of Ports Available	2
Stack Type	Circular	# of Ports Used	2
Stack Size	Small	Port Inside Diameter	2

Circular Stack or Duct Diameter			
Distance to Far Wall of Stack	(L_{fw})	20.00	in
Distance to Near Wall of Stack	(L_{nw})	4.00	in
(=Lfw - Lnw) Diameter of Stack	(D)	16.00	in
(=3.14(D/2/Cunits)2) Area of Stack	(A_s)	1.40	ft^2



Distance from Port to Disturbances			
Distance Upstream	(B)	60.00	in
(=B/D) Diameters Upstream	(B_D)	3.75	diameters
Distance Downstream	(A)	48.00	in
(=A/D) Diameters Downstream	(A_D)	3.00	diameters



Number of Traverse Points Required			
Diameters to Flow Disturbance		Minimum Number of[1] Traverse Points	
Up Stream	Down Stream	Particulate Points	Velocity Points
2.00-4.99	0.50-1.24	24	16
5.00-5.99	1.25-1.49	20	16
6.00-6.99	1.50-1.74	16	12
7.00-7.99	1.75-1.99	12	12
>= 8.00	>=2.00	8 or 12[2]	8 or 12[2]
Upstream Spec		24	16
Downstream Spec		8	8
Traverse Pts Required		24	16

[1] Check Minimum Number of Points for the Upstream and Downstream conditions, then use the largest.
[2] 8 for Circular Stacks 12 to 24 inches
12 for Circular Stacks over 24 inches

Number of Traverse Points Used			
2	Ports by	8	Across
16	Pts Used	16	Required
☐	Particulate	☑	Velocity

Location of Traverse Points in Circular Stacks						
Traverse Point Number	(Fraction of Stack Diameter from Inside Wall to Traverse Point) Number of Traverse Points on a Diameter					
	2	4	6	8	10	12
1	.146	.067	.044	.032	.026	.021
2	.854	.250	.146	.105	.082	.067
3		.750	.296	.194	.146	.118
4		.933	.704	.323	.226	.177
5			.854	.677	.342	.250
6			.956	.806	.658	.356
7				.895	.774	.644
8				.968	.854	.750
9					.918	.823
10					.974	.882
11						.933
12						.979

Traverse Point Locations			
Traverse Point Number	Fraction of Stack Diameter	Distance from Inside Wall	Distance Including Nipple Length
		in	in
1	0.032	4/8	4 4/8
2	0.105	1 5/8	5 5/8
3	0.194	3 1/8	7 1/8
4	0.323	5 1/8	9 1/8
5	0.677	10 7/8	14 7/8
6	0.806	12 7/8	16 7/8
7	0.895	14 3/8	18 3/8
8	0.968	15 4/8	19 4/8
9			
10			
11			
12			

5.12 Instrumental Test Equipment and Procedures

The test program includes the measurement of exhaust gas concentrations of TOC (Total Organic Compounds), CO, NO_x, and O_2. RMCEINC used the procedures that conform to the requirements of CFR; Title 40 Part 60, Appendix A, Methods 1, 2, 3A, 4, 7E, 10 and 25A. Each of the three test runs include a minimum of one hour of continuous flue gas sampling.

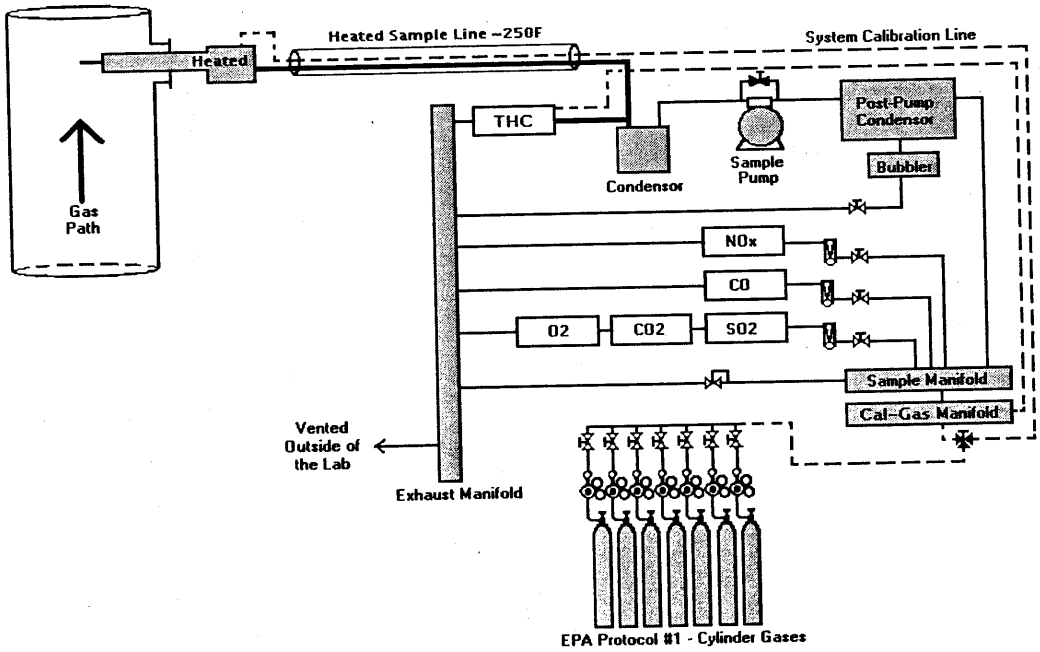
Concentration measurements of O_2, TOC, CO and NO_x, were made according to EPA Methods 3A, 25A, 7E, 10, 18 and 25A using the analyzers listed in **Table 5-1. Figure 5-3** is a schematic of the wet/dry extractive reference measurement gas sampling system used by RMCEINC. All components of the sampling system that contact the sample are stainless steel, glass, or Teflon.

A sampling probe provides a method of drawing a continuous sample of flue gases. The probe assembly is temperature controlled to maintain the sample above the dew point and includes a calibration value and sample filter. A temperature controlled Teflon umbilical connects the probe assembly to an ice bath condenser. The condenser is equipped with a condensate discharge pump to continuously remove the condensate from the condenser traps. The dried sample is then transported to the mobile laboratory's sample manifold.

TABLE 5-1
REFERENCE METHOD ANALYZERS

Parameter	Analyzer	Analytical Technique	Instrument Span
NO_x	Thermo Environmental Instruments Model 42 CHl	Chemiluminescence	0-500, ppm
CO	Thermo Environmental Instruments Model 48	Gas Filter Correlation	0-1000 ppm
TOC	VIG Industries, Inc.	Flame Ionization Detection	0-1000 ppm
O_2	Servomex	Paramagnetic	0-25 %

Figure 5-3. Reference Method Gas Sampling System Diagram



5.13 Instrumental Analytical Data

RMCEINC performed test runs to measures the flue gas for TOC, NO_x and CO in terms of an emission rate (lb/mmBtu & g/bhp-hr [for NOx]).). A three-point (zero, mid-range, and high-range) analyzer calibration error check on each reference analyzer was

performed before initiating the testing. This check is conducted after final calibration adjustments are made by injecting the calibration gases directly into each gas analyzer and recording the responses on the reference data acquisition system.

RMCEINC conducts zero and upscale calibration checks both before and after each test run in order to quantify measurement system calibration drift and sampling system bias. Upscale is either the low-, mid- or high-range gas, whichever most closely approximates the flue gas level. During these checks, the calibration gases are introduced into the sampling system through a 3-way valve assembly at the probe outlet so that the calibration gases are analyzed in the same manner as the flue gas samples.

RMCEINC recorded the reference analyzer measurements as 1-minute and 60-minute averages on its DAS. All test run concentration results were determined from the average gas concentrations measured during the run and adjusted based on the zero and upscale sampling system bias check results (Equation 6C-1 presented in CFR; Title 40 Part 60, Method 6C, Section 8). The reference NMOC, CO and NO_x emission values in terms of pounds per mmBtu and grams per break horsepower hour (for NOx) were computed from each test run average of adjusted, dry basis CO, NO_x and percent O_2 using the CFR Title 40 Part 60 Appendix A Method 19.

5.14 Methane Analytical Data

Tedlar bag samples of the effluent were collected for methane analysis using EPA Method 18. The methane analysis was conducted at the laboratory utilizing a gas chromatograph and is used to convert the total TOC as propane concentrations collected real-time on site to NMOC (non-methane organic compound) concentrations ((Total TOC * 3) – Methane = NMOC). A summary of these data is presented in the summary table presented in **Appendix A**. The methane concentration data is presented in **Appendix B**.

6.0 EQUIPMENT CALIBRATION AND QUALITY ASSURANCE

RMCEINC followed the calibration and quality assurance procedures of EPA Methods 1, 2, 3A, 4, 7E, 10, 18 and 25A throughout the test program. The maintenance for our meterboxes, probes, analyzers and a majority of our other test equipment is performed off site by either Clean Air Engineering or Millenium Instruments. These companies ensure that the equipment is operating correctly and within the specification of the respective methods. All equipment is calibrated in accordance with the EPA Methods and guidelines.

The results of sampling system bias and calibration drift tests for each test run are calculated and presented in the test report. Cylinder gases used during the testing are certified to meet or exceed EPA Protocol 1 requirements. The meter box calibrations, pitot tube inspections, calibration gas certificates of analysis and the analyzer quality assurance checks are included in **Appendix C**.

APPENDIX A. TEST SUMMARY SHEETS

Emissions Summary

REFERENCE DATA SUMMARY

Date: 1/15/2007
Project #: 2008-15098

Company: Waste Management of Massachussetts
Source: Unit 1 & 2

CAL	RUN #	Test Duration 2:40 Start Time	End Time	DATA Link from the DATA Logger O2 %		CO ppm	NOx ppm	CH4 ppm	NMOC ppm	C3H8 ppm	CO ppm @15% O2	NOx	NMOC	C3H8	CO lbs/mmBtu	NOx	NMOC	C3H8	DSCFM	
	1	1/15/2008 16:07	17:07	8.56		603.40	73.56	1145.00	58.11	401.04					0.652	0.131	0.027		4101.0	Engine #2 1600 K\
0:22	2	1/15/2008 17:29	18:29	8.44		623.00	82.24	1085.00	53.99	379.66					0.703	0.153	0.026		4135.0	Engine #2 1600 K\
0:09	3	1/15/2008 18:38	19:38	8.44		625.30	81.14	1202.00	52.98	418.33					0.716	0.153	0.026		4168.0	Engine #2 1600 K\
11:42	4	1/16/2008 7:20	8:20	8.23		617.40	79.10	1251.00	82.94	444.65					0.658	0.139	0.038		4169.0	Engine #2 1400 K\
0:08	5	1/16/2008 8:28	9:28	8.28		618.00	78.07	1203.00	76.47	426.49					0.685	0.142	0.036		4160.0	Engine #2 1400 K\
0:07	6	1/16/2008 9:35	10:35	8.30		615.40	78.03	1195.00	74.99	423.33					0.690	0.144	0.036		4199.0	Engine #2 1400 K\
1:20	7	1/16/2008 11:55	12:55	8.35		588.00	69.53	1300.00	64.42	454.81					0.708	0.138	0.033		4632.0	Engine #1 1600 K\
0:15	8	1/16/2008 13:10	14:10	8.34		591.10	70.04	1295.00	64.47	453.16					0.684	0.133	0.032		4365.0	Engine #1 1600 K\
0:07	9	1/16/2008 14:17	15:17	8.33		588.90	70.14	1305.00	60.59	455.20					0.695	0.136	0.031		4398.0	Engine #1 1600 K\
0:13	10	1/16/2008 15:30	16:30	8.26		579.50	69.75	1215.00	52.09	422.36					0.737	0.146	0.028		4316.0	Engine #1 1400 K\
0:08	11	1/16/2008 16:38	17:38	8.27		579.00	69.50	1180.00	50.03	410.01					0.733	0.145	0.027		4268.0	Engine #1 1400 K\
0:09	12	1/16/2008 17:47	18:47	8.30		579.50	70.00	1195.00	50.72	415.24					0.713	0.142	0.027		4288.0	Engine #1 1400 K\
	13		19:53																	
	14		20:59																	
	15		22:05																	
			AVERAGE	8.34		600.71	74.26	1214.25	61.82	425.36					0.698	0.142	0.031			

	Start Time	End Time	Wet based measurements corrected from DATA Logger O2 %w		CO ppmw	NOx ppmw		NMOC ppmw	C3H8 ppmw	% Load			CO g/BHP-Hr	NOx	CO lbs/Hr	NOx		NMOC	C3H8	Heat Input HHV
1	1/15/2008 16:07	17:07	7.66		539.90	65.82			448.20					0.44	10.78	2.16		0.45		16.54
2	1/15/2008 17:29	18:29	7.56		558.12	73.68			423.80					0.50	11.23	2.44		0.42		15.96
3	1/15/2008 18:38	19:38	7.55		559.53	72.61			467.50					0.51	11.36	2.42		0.41		15.86
4	1/16/2008 7:20	8:20	7.31		548.61	70.29			500.40					0.56	11.22	2.36		0.65		17.04
5	1/16/2008 8:28	9:28	7.36		549.45	69.41			479.70					0.56	11.20	2.33		0.60		16.36
6	1/16/2008 9:35	10:35	7.41		549.15	69.63			474.40					0.56	11.26	2.35		0.59		16.33
7	1/16/2008 11:55	12:55	7.43		522.93	61.84			511.40					0.49	11.87	2.31		0.56		16.77
8	1/16/2008 13:10	14:10	7.43		526.56	62.39			508.70					0.46	11.24	2.19		0.53		16.45
9	1/16/2008 14:17	15:17	7.41		523.26	62.32			512.30					0.47	11.29	2.21		0.50		16.24
10	1/16/2008 15:30	16:30	7.35		515.17	62.01			475.10					0.52	10.90	2.16		0.42		14.78
11	1/16/2008 16:38	17:38	7.34		513.62	61.65			462.20					0.51	10.77	2.13		0.40		14.69
12	1/16/2008 17:47	18:47	7.37		514.94	62.20			467.30					0.52	10.83	2.15		0.41		15.19
13		19:53																		
14		20:59																		
15		22:05																		
		AVERAGE	7.43		535.10	66.15			477.58					0.51	11.16	2.27		0.49		

APPENDIX B. FIELD TEST DATA W/ INSTRUMENTAL TEST DATA

Method 1-4 Field Data

Flow Rate Determinations

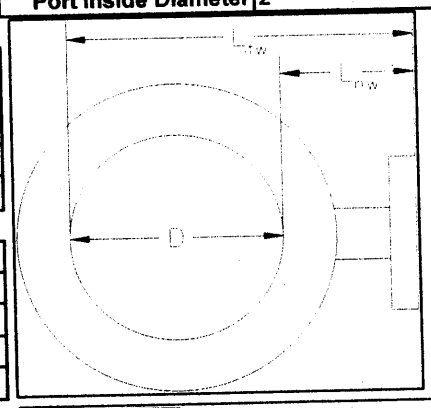
Calibration Summaries

Instrumental Test Run Data

Methane Concentration Data

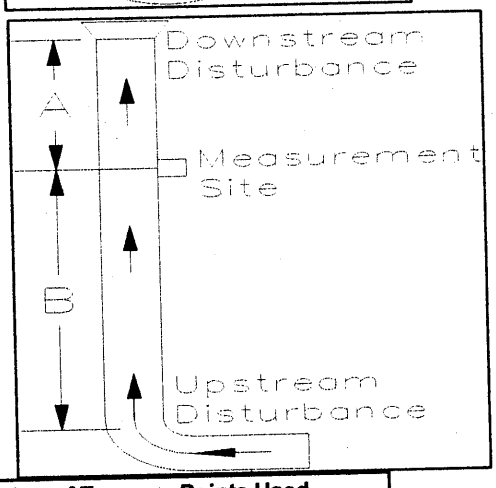
METHOD 1 - SAMPLE AND VELOCITY TRAVERSES FOR CIRCULAR SOURCES

Plant Name	Waste Management of Massachusetts	Date	01/15/08
Sampling Location	Fitchburg/Westminster Landfill	Project #	2008-15096
Operator	RC	# of Ports Available	2
Stack Type	Circular	# of Ports Used	2
Stack Size	Small	Port Inside Diameter	2



Circular Stack or Duct Diameter			
Distance to Far Wall of Stack	(L_{fw})	20.00	in
Distance to Near Wall of Stack	(L_{nw})	4.00	in
(=Lfw - Lnw) Diameter of Stack	(D)	16.00	in
(=3.14(D/2/Cunits)2) Area of Stack	(A_s)	1.40	ft^2

Distance from Port to Disturbances			
Distance Upstream	(B)	60.00	in
(=B/D) Diameters Upstream	(B_D)	3.75	diameters
Distance Downstream	(A)	48.00	in
(=A/D) Diameters Downstream	(A_D)	3.00	diameters



Number of Traverse Points Required			
Diameters to Flow Disturbance		Minimum Number of[1] Traverse Points	
Up Stream	Down Stream	Particulate Points	Velocity Points
2.00-4.99	0.50-1.24	24	16
5.00-5.99	1.25-1.49	20	16
6.00-6.99	1.50-1.74	16	12
7.00-7.99	1.75-1.99	12	12
>= 8.00	>=2.00	8 or 12[2]	8 or 12[2]
Upstream Spec		24	16
Downstream Spec		8	8
Traverse Pts Required		24	16

[1] Check Minimum Number of Points for the Upstream and Downstream conditions, then use the largest.
[2] 8 for Circular Stacks 12 to 24 inches
12 for Circular Stacks over 24 inches

Number of Traverse Points Used			
2	Ports by	8	Across
16	Pts Used	16	Required
☐	Particulate	☑	Velocity

Location of Traverse Points in Circular Stacks						
Traverse Point Number	(Fraction of Stack Diameter from Inside Wall to Traverse Point) Number of Traverse Points on a Diameter					
	2	4	6	8	10	12
1	.146	.067	.044	.032	.026	.021
2	.854	.250	.146	.105	.082	.067
3		.750	.296	.194	.146	.118
4		.933	.704	.323	.226	.177
5			.854	.677	.342	.250
6			.956	.806	.658	.356
7				.895	.774	.644
8				.968	.854	.750
9					.918	.823
10					.974	.882
11						.933
12						.979

Traverse Point Locations			
Traverse Point Number	Fraction of Stack Diameter	Distance from Inside Wall	Distance Including Nipple Length
		in	in
1	0.032	4/8	4 4/8
2	0.105	1 5/8	5 5/8
3	0.194	3 1/8	7 1/8
4	0.323	5 1/8	9 1/8
5	0.677	10 7/8	14 7/8
6	0.806	12 7/8	16 7/8
7	0.895	14 3/8	18 3/8
8	0.968	15 4/8	19 4/8
9			
10			
11			
12			

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1600 KW
Run: 1
Start Time: 1/15/2008 16:07
End Time: 1/15/2008 17:07

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.500	926	B-5	2.200	932
A-2	2.800	928	B-6	2.100	931
A-3	2.400	926	B-7	2.500	935
A-4	2.100	927	B-8	2.700	935
A-5	2.200	929			
A-6	2.300	930			
A-7	2.900	932			
A-8	2.900	931			
B-1	2.400	924			
B-2	2.400	926			
B-3	2.500	929			
B-4	2.700	930			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.75	(Pbar)	inches Hg
Static Pressure:	5.60	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.6	% O2	
Percent CO2:	10.5	% CO2	
Percent Nitrogen:	80.9	% N2	
Percent Moisture:	10.5	$\%H_20$	
Average Delta P:	2.48		inches H2O
Root Mean Sq. Delta P:	2.47	(Pavg)	inches H2O
Mean Temperature:	929.4	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.895	
ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$	Ps =	30.16	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%]$	Md =	30.02	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.76	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	142.8	ft/sec
DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$	Qsd =	4,101	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1600 KW
Run: 2
Start Time: 1/15/2008 17:30
End Time: 1/15/2008 18:30

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.600	929	B-5	2.300	936
A-2	2.900	929	B-6	2.200	938
A-3	2.600	930	B-7	2.600	937
A-4	2.300	932	B-8	2.800	937
A-5	2.200	932			
A-6	2.200	934			
A-7	2.800	932			
A-8	2.700	932			
B-1	2.400	930			
B-2	2.500	933			
B-3	2.600	933			
B-4	2.500	934			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.75	(Pbar)	inches Hg
Static Pressure:	6.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.4	% O2	
Percent CO2:	10.5	% CO2	
Percent Nitrogen:	81.1	% N2	
Percent Moisture:	10.4	$\%H_2O$	
Average Delta P:	2.51		inches H2O
Root Mean Sq. Delta P:	2.51	(Pavg)	inches H2O
Mean Temperature:	933.0	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.896	
ABSOLUTE STACK GAS PRESSURE: Ps = Pbar + (Pg / 13.6)	Ps =	30.19	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.02	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.77	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	144.0	ft/sec
DRY VOLUMETRIC FLOW RATE: Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)	Qsd =	4,135	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1600 KW
Run: 3
Start Time: 1/15/2008 18:40
End Time: 1/15/2008 19:40

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.700	938	B-5	2.400	938
A-2	2.800	940	B-6	2.300	939
A-3	2.500	940	B-7	2.700	940
A-4	2.400	938	B-8	2.900	941
A-5	2.600	938			
A-6	2.300	939			
A-7	2.900	939			
A-8	2.900	938			
B-1	2.500	942			
B-2	2.300	941			
B-3	2.400	940			
B-4	2.600	940			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.75	(Pbar)	inches Hg
Static Pressure:	6.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.4	% O2	
Percent CO2:	11.0	% CO2	
Percent Nitrogen:	80.6	% N2	
Percent Moisture:	10.5	$\%H_20$	
Average Delta P:	2.58		inches H2O
Root Mean Sq. Delta P:	2.57	(Pavg)	inches H2O
Mean Temperature:	939.4	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.895	
ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$	Ps =	30.19	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.10	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.83	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{0.5}$	Vs =	146.0	ft/sec
DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$	Qsd =	4,168	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1400 Kw
Run: 4
Start Time: 1/16/2008 7:20
End Time: 1/16/2008 8:20

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.700	953	B-5	2.500	952
A-2	2.900	954	B-6	2.400	952
A-3	2.800	954	B-7	2.200	951
A-4	2.800	954	B-8	2.500	950
A-5	2.900	953			
A-6	3.300	952			
A-7	3.200	953			
A-8	3.000	953			
B-1	2.300	956			
B-2	2.100	954			
B-3	2.400	955			
B-4	2.300	953			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	6.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.2	% O2	
Percent CO2:	11.0	% CO2	
Percent Nitrogen:	80.8	% N2	
Percent Moisture:	11.1	$\%H_2O$	
Average Delta P:	2.64		inches H2O
Root Mean Sq. Delta P:	2.63	(Pavg)	inches H2O
Mean Temperature:	953.1	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.889	
ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$	Ps =	30.11	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%l$	Md =	30.09	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.75	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{0.5}$	Vs =	148.9	ft/sec
DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$	Qsd =	4,169	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1400 Kw
Run: 5
Start Time: 1/16/2008 8:28
End Time: 1/16/2008 9:28

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	3.100	958	B-5	2.400	955
A-2	2.800	956	B-6	1.900	954
A-3	2.800	955	B-7	2.000	954
A-4	3.200	955	B-8	2.300	954
A-5	3.300	956			
A-6	3.200	954			
A-7	2.900	954			
A-8	2.800	953			
B-1	2.100	960			
B-2	2.400	958			
B-3	2.500	958			
B-4	2.600	957			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	6.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.3	% O2	
Percent CO2:	11.0	% CO2	
Percent Nitrogen:	80.7	% N2	
Percent Moisture:	11.1	$\%H_2O$	
Average Delta P:	2.64		inches H2O
Root Mean Sq. Delta P:	2.63	(Pavg)	inches H2O
Mean Temperature:	955.7	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.889	
ABSOLUTE STACK GAS PRESSURE: Ps = Pbar + (Pg / 13.6)	Ps =	30.11	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.09	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.75	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	148.8	ft/sec
DRY VOLUMETRIC FLOW RATE: Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)	Qsd =	4,160	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1400 Kw
Run: 6
Start Time: 1/16/2008 9:35
End Time: 1/16/2007 10:35

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.800	952	B-5	2.400	954
A-2	2.700	953	B-6	2.300	952
A-3	2.800	953	B-7	2.400	953
A-4	2.600	953	B-8	2.200	952
A-5	2.800	952			
A-6	3.200	951			
A-7	3.300	950			
A-8	3.800	953			
B-1	1.800	953			
B-2	2.500	954			
B-3	2.600	955			
B-4	2.500	955			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	5.80	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.3	% O2	
Percent CO2:	10.5	% CO2	
Percent Nitrogen:	81.2	% N2	
Percent Moisture:	10.8	$\%H_20$	
Average Delta P:	2.67		inches H2O
Root Mean Sq. Delta P:	2.65	(Pavg)	inches H2O
Mean Temperature:	952.8	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.892	
ABSOLUTE STACK GAS PRESSURE: Ps = Pbar + (Pg / 13.6)	Ps =	30.10	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.01	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.71	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	149.5	ft/sec
DRY VOLUMETRIC FLOW RATE: Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)	Qsd =	4,199	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 1

Conducted By: GC/RC

Load: 1600 KW
Run: 7
Start Time: 1/16/2008 11:55
End Time: 1/16/2008 12:55

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.900	952	B-5	3.200	953
A-2	4.300	953	B-6	3.300	952
A-3	3.500	953	B-7	2.700	950
A-4	3.600	953	B-8	2.800	948
A-5	3.400	952			
A-6	2.800	955			
A-7	2.600	955			
A-8	2.500	954			
B-1	2.200	954			
B-2	3.900	952			
B-3	4.200	953			
B-4	4.300	955			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	8.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.4	% O2	
Percent CO2:	10.8	% CO2	
Percent Nitrogen:	80.9	% N2	
Percent Moisture:	11.1	$\%H_2O$	
Average Delta P:	3.26		inches H2O
Root Mean Sq. Delta P:	3.23	(Pavg)	inches H2O
Mean Temperature:	952.8	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.889	
ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$	Ps =	30.26	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.06	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.72	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	164.6	ft/sec
DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$	Qsd =	4,632	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 1

Conducted By: GC/RC

Load: 1600 KW
Run: 8
Start Time: 1/16/2008 13:10
End Time: 1/16/2008 14:10

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.900	952	B-5	2.700	951
A-2	3.400	953	B-6	2.600	953
A-3	3.300	954	B-7	2.200	953
A-4	3.200	954	B-8	2.000	954
A-5	2.900	955			
A-6	3.200	956			
A-7	2.700	955			
A-8	2.400	953			
B-1	3.000	953			
B-2	3.000	954			
B-3	3.200	955			
B-4	3.300	952			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	8.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.3	% O2	
Percent CO2:	10.8	% CO2	
Percent Nitrogen:	80.9	% N2	
Percent Moisture:	10.9	$\%H_2O$	
Average Delta P:	2.88		inches H2O
Root Mean Sq. Delta P:	2.86	(Pavg)	inches H2O
Mean Temperature:	953.6	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.891	
ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$	Ps =	30.26	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.06	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.75	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{0.5}$	Vs =	154.8	ft/sec
DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$	Qsd =	4,365	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 1

Conducted By: GC/RC

Load: 1600 KW
Run: 9
Start Time: 1/16/2008 14:17
End Time: 1/16/2008 15:17

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.700	955	B-5	2.800	955
A-2	3.300	955	B-6	2.700	954
A-3	3.200	956	B-7	2.400	955
A-4	3.100	956	B-8	2.100	954
A-5	3.000	596			
A-6	3.100	957			
A-7	2.800	956			
A-8	2.500	956			
B-1	3.100	955			
B-2	2.800	955			
B-3	3.400	955			
B-4	3.100	956			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	8.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.3	% O2	
Percent CO2:	10.8	% CO2	
Percent Nitrogen:	80.9	% N2	
Percent Moisture:	11.1	$\%H_20$	
Average Delta P:	2.88		inches H2O
Root Mean Sq. Delta P:	2.87	(Pavg)	inches H2O
Mean Temperature:	932.9	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.889	
ABSOLUTE STACK GAS PRESSURE: Ps = Pbar + (Pg / 13.6)	Ps =	30.26	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.06	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.72	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	154.0	ft/sec
DRY VOLUMETRIC FLOW RATE: Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)	Qsd =	4,398	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 1

Conducted By: GC/RC

Load: 1400 Kw
Run: 10
Start Time: 1/16/2008 15:30
End Time: 1/16/2008 16:30

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	3.100	959	B-5	3.000	960
A-2	2.900	958	B-6	3.100	961
A-3	2.700	958	B-7	2.900	961
A-4	2.400	959	B-8	3.000	960
A-5	2.400	960			
A-6	2.300	960			
A-7	2.400	961			
A-8	2.500	961			
B-1	3.200	959			
B-2	3.400	958			
B-3	3.000	958			
B-4	3.100	959			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	7.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.3	% O2	
Percent CO2:	11.0	% CO2	
Percent Nitrogen:	80.7	% N2	
Percent Moisture:	11.1	$\%H_20$	
Average Delta P:	2.84		inches H2O
Root Mean Sq. Delta P:	2.83	(Pavg)	inches H2O
Mean Temperature:	959.5	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.889	
ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$	Ps =	30.18	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.09	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.75	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{0.5}$	Vs =	154.4	ft/sec
DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$	Qsd =	4,316	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1400 Kw
Run: 11
Start Time: 1/16/2008 16:38
End Time: 1/16/2008 17:38

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	3.000	960	B-5	3.000	960
A-2	3.000	960	B-6	2.900	961
A-3	2.900	961	B-7	2.800	961
A-4	2.400	961	B-8	2.600	961
A-5	2.300	962			
A-6	2.200	962			
A-7	2.500	962			
A-8	2.300	959			
B-1	3.200	959			
B-2	3.500	959			
B-3	3.100	958			
B-4	2.900	960			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	7.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.3	% O2	
Percent CO2:	11.0	% CO2	
Percent Nitrogen:	80.7	% N2	
Percent Moisture:	11.3	$\%H_2O$	
Average Delta P:	2.79		inches H2O
Root Mean Sq. Delta P:	2.78	(Pavg)	inches H2O
Mean Temperature:	960.4	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.887	
ABSOLUTE STACK GAS PRESSURE: Ps = Pbar + (Pg / 13.6)	Ps =	30.18	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%l$	Md =	30.09	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.72	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	153.1	ft/sec
DRY VOLUMETRIC FLOW RATE: Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)	Qsd =	4,268	DSCFM (DRY)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Massachusetts
Source: WMI - Fitchburg/Westminster Landfill
Test Location: Engine 2

Conducted By: GC/RC

Load: 1400 Kw
Run: 12
Start Time: 1/16/2008 17:47
End Time: 1/16/2008 18:47

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	2.900	963	B-5	3.000	961
A-2	3.300	963	B-6	3.100	960
A-3	2.800	963	B-7	3.000	963
A-4	2.500	964	B-8	2.900	963
A-5	2.300	964			
A-6	2.300	965			
A-7	2.300	965			
A-8	2.100	962			
B-1	2.600	962			
B-2	3.100	960			
B-3	3.600	960			
B-4	3.300	961			

Duct Area:	201.1	(A)	sq. inches
Barometric Pressure:	29.67	(Pbar)	inches Hg
Static Pressure:	7.00	(PG)	inches H2O
Pitot Tube Coefficient:	0.84	(Cp)	
Percent O2:	8.3	% O2	
Percent CO2:	11.5	% CO2	
Percent Nitrogen:	80.2	% N2	
Percent Moisture:	11.1	$\%H_2O$	
Average Delta P:	2.82		inches H2O
Root Mean Sq. Delta P:	2.80	(Pavg)	inches H2O
Mean Temperature:	962.4	(Ts)	Degrees F
Number Of Traverse Points:	16		

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$	Mfd =	0.889	
ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$	Ps =	30.18	in. Hg
DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%$	Md =	30.17	lb/lb-mole
WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$	Ms =	28.82	lb/lb-mole
AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{\wedge 0.5}$	Vs =	153.7	ft/sec
DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$	Qsd =	4,288	DSCFM (DRY)

REFERENCE M4 DATA SUMMARY

Company: Waste Management, Inc.
Source: Unit 1 & 2
Operating Level: MID LOAD

Date: 1/15/2007
Project #: 2008-15098

Run #	Start Time	End Time	Meter Volume Start	Meter Volume Finish	Meter Cal Value (y)	BP ("Hg)	Delt-H ("H20)	Gas Meter Temp (F)	Sil-Gel H20 wt (Grams)	Impinger Total Vol H2O (ml)	Gas Volume Sampled (dscf)*	Water Vapor Vol. (scf)*	Moisure Content (% Volume)
1	1/15/2008 16:07	17:07	275.000	298.755	0.9830	29.67	1.890	93.0	7.5	48	22.213	2.612	10.5%
2	1/15/2008 17:29	18:29	299.000	323.249	0.9830	29.67	1.890	95.0	6.8	49	22.593	2.627	10.4%
3	1/15/2008 18:38	19:38	323.350	347.719	0.9830	29.67	1.890	96.0	3.6	53	22.664	2.664	10.5%
4	1/16/2008 7:20	8:20	348.000	372.047	0.9830	29.67	1.890	93.0	4.9	55	22.486	2.819	11.1%
5	1/16/2008 8:28	9:28	372.500	396.315	0.9830	29.67	1.890	84.0	5.0	55	22.637	2.824	11.1%
6	1/16/2008 9:35	10:35	396.551	420.195	0.9830	29.67	1.890	84.0	4.6	53	22.475	2.711	10.8%
7	1/16/2008 11:55	12:55	420.500	444.375	0.9830	29.67	1.890	96.0	4.7	54	22.205	2.763	11.1%
8	1/16/2008 13:10	14:10	444.550	468.251	0.9830	29.67	1.890	96.0	3.4	54	22.043	2.702	10.9%
9	1/16/2008 14:17	15:17	468.451	492.135	0.9830	29.67	1.890	97.0	4.6	54	21.987	2.758	11.1%
10	1/16/2008 15:30	16:30	492.305	516.265	0.9830	29.67	1.890	98.0	4.9	54	22.204	2.772	11.1%
11	1/16/2008 16:38	17:38	516.500	540.325	0.9830	29.67	1.890	99.0	5.6	54	22.039	2.805	11.3%
12	1/16/2008 17:47	18:47	540.500	564.408	0.9830	29.67	1.890	100.0	5.8	53	22.076	2.768	11.1%
13													
14													
15													

* 68 Degrees F (20 Degrees C) - 29.92 "HG

Calibration Error Test at Run 1 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2	SG913238bal		SG0147111BAL	ALM051950
CO	SG0147111BAL	CC195391	CC164983	CX026080B
NOx	SG0147111BAL		SG913238bal	SG9169328bal
VOC-O	SG0147111BAL	CC20456	CC75298	CC5230

Date/Time	1/15/2008	9:20:35 PASSED			
Analyte	O2	CO	NOx	VOC-I	VOC-O
Units	%	ppm	ppm	%	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00
Zero Avg	0.02	-1.40	2.34	-0.01	-0.10
Zero Error%	0.10	0.10	0.50	0.10	0.00
Low Ref Cyl		299.70		1.30	310.10
Low Avg		298.50		1.19	310.50
Low Error%		0.10		1.10	0.00
Mid Ref Cyl	12.13	606.60	252.10	3.20	518.90
Mid Avg	12.11	606.80	254.91	3.22	516.90
Mid Error%	0.10	0.00	0.60	0.20	0.20
High Ref Cyl	20.90	898.90	452.80	5.10	854.90
High Avg	20.87	913.00	453.37	4.95	851.60
High Error%	0.10	1.40	0.10	1.50	0.30

Initial System Bias Check for Run 1 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 1

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-I	SG0147111BAL	CC178869
VOC-O	SG0147111BAL	CC75298

Date/Time	1/15/2008	10:54:36 PASSED			
Analyte	O2	CO	NOx	VOC-I	VOC-O
Units	%	ppm	ppm	%	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.01	-0.10
Zero Avg	0.20	-1.50	4.27	-0.01	12.10
Zero Bias%	0.70	0.00	0.40	0.00	1.20
Zero Drift%					
Span Ref Cyl	12.13	606.60	252.10	3.20	518.90
Span Cal	12.11	606.80	254.91	3.22	516.90
Span Avg	11.91	606.60	242.93	3.28	516.90
Span Bias%	0.80	0.00	2.40	0.60	0.00
Span Drift%					

Initial System Bias Check for Run 1 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time 1/15/2008 15:12:14 PASSED

Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	0.01	-1.70	9.59	-3.00
Zero Bias%	0.10	0.00	1.40	0.30
Zero Drift%				
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	12.02	602.50	247.15	520.70
Span Bias%	0.40	0.40	1.60	0.40
Span Drift%				

Test Run 1 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

		O2 %	CO ppm	NOx ppm	VOC-O ppm
Begin calculating run averages					
1/15/2008	16:08:04	8.843	567.7	71.78	469.7
1/15/2008	16:09:04	8.844	568	71.71	468.3
1/15/2008	16:10:03	8.866	568.6	71.82	472.9
1/15/2008	16:11:03	8.839	568.8	72.65	468.8
1/15/2008	16:12:03	8.832	569.9	73.09	467.7
1/15/2008	16:13:03	8.836	570.6	73.47	466.4
1/15/2008	16:14:03	8.832	571.5	73.32	452.5
1/15/2008	16:15:03	8.734	563.9	65.32	423.6
1/15/2008	16:16:02	8.702	569.8	67.89	419.3
1/15/2008	16:17:02	8.714	578.4	68.34	429.9
1/15/2008	16:18:04	8.778	586.9	74.01	450.8
1/15/2008	16:19:02	8.84	586.8	73.95	466.2
1/15/2008	16:20:02	8.84	574.1	72.49	467.1
1/15/2008	16:21:04	8.857	571.4	73.05	467.5
1/15/2008	16:22:04	8.857	568.9	72.52	465.7
1/15/2008	16:23:04	8.856	567.1	72.65	469.6
1/15/2008	16:24:03	8.849	566.2	71.93	461.9
Pause					
1/15/2008	16:25:03	8.875	565.9	72.54	468.1
1/15/2008	16:26:03	8.861	565.6	72.28	443.2
1/15/2008	16:27:03	8.864	562.8	70.96	419.6
1/15/2008	16:28:03	8.872	562.6	70.67	433.2
1/15/2008	16:29:02	8.878	562.8	69.93	429
1/15/2008	16:30:02	8.887	562.8	69.2	426
1/15/2008	16:31:02	8.902	562.4	68.52	436.1
1/15/2008	16:32:04	8.91	563.3	67.86	446.5
1/15/2008	16:33:04	8.917	563.2	67.15	429.4
1/15/2008	16:34:04	8.927	562.5	66.49	429.6
End Pause					
1/15/2008	16:35:03	8.945	562.5	65.74	437.4
1/15/2008	16:36:03	8.953	563	65	435.3
1/15/2008	16:37:03	8.369	595.9	69.84	441.3
1/15/2008	16:38:03	8.128	610.9	73.9	425.7
1/15/2008	16:39:03	8.198	620.9	79.91	445.9
1/15/2008	16:40:02	8.251	621.8	83.02	456.8
1/15/2008	16:41:02	8.22	610.2	80.61	439.2
1/15/2008	16:42:02	8.106	604.2	75.22	412.9
1/15/2008	16:43:04	8.113	618.3	79.27	415
1/15/2008	16:44:04	8.237	631.1	85.23	445.2
1/15/2008	16:45:02	8.295	629.5	85.44	447.9
1/15/2008	16:46:04	8.258	615.3	79.79	434.3
1/15/2008	16:47:04	8.195	613.6	78.95	419
1/15/2008	16:48:04	8.185	618.4	79.37	416.8
1/15/2008	16:49:04	8.275	629.8	84.2	434.2
1/15/2008	16:50:04	8.344	630.8	85.51	447.6

1/15/2008	16:51:03	8.31	619.1	81.71	431.1
1/15/2008	16:52:03	8.244	613.1	79.43	414.9
1/15/2008	16:53:03	8.228	620.6	81.38	418.7
1/15/2008	16:54:03	8.317	632.6	86.16	439
1/15/2008	16:55:03	8.365	629.1	86.45	444.6
1/15/2008	16:56:03	8.264	615	78.83	416.4
1/15/2008	16:57:02	8.246	618	80.65	425.5
1/15/2008	16:58:02	8.401	629.9	85.03	454.7
1/15/2008	16:59:02	8.359	617.9	81.48	435.7
1/15/2008	17:00:04	8.235	611.2	77.45	414.9
1/15/2008	17:01:04	8.255	625.3	83.31	419
1/15/2008	17:02:04	8.338	633.8	86.73	439.6
1/15/2008	17:03:04	8.361	628.6	85.24	439.4
1/15/2008	17:04:04	8.29	615.2	79.57	419.5
1/15/2008	17:05:04	8.258	617.5	80.36	419.9
1/15/2008	17:06:04	8.37	632	88.36	449.2
1/15/2008	17:07:04	8.41	628.2	86.84	451.3
1/15/2008	17:08:03	8.42	615	82.04	448.8
1/15/2008	17:09:03	8.278	606.8	78.66	415.7
1/15/2008	17:10:03	8.226	614.8	80.35	411.8
1/15/2008	17:11:03	8.334	631.4	87.71	441.3
1/15/2008	17:12:03	8.396	632.6	88.63	447.6
1/15/2008	17:13:03	8.266	614.7	79.1	415.2
1/15/2008	17:14:03	8.28	618.6	84.16	424.5
1/15/2008	17:15:02	8.351	633	88.77	436.5
1/15/2008	17:16:02	8.349	624.3	85.59	434.2
Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/15/2008	17:16:27	8.462	604.3	78.56	440.2

Test Run 1 End

Final System Bias Check for Run 1 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/15/2008	17:26:09 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	-0.01	-2.00	8.17	-3.00
Zero Bias%	0.10	0.10	1.20	0.30
Zero Drift%	-0.10	0.00	-0.30	0.00
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	11.97	612.60	248.18	499.50
Span Bias%	0.60	0.60	1.30	1.70
Span Drift%	-0.20	1.00	0.20	-2.10
Ini Zero Avg	0.01	-1.70	9.59	-3.00
Ini Span Avg	12.02	602.50	247.15	520.70
Run Avg	8.46	604.30	78.56	440.20
Co	0.00	-1.90	8.88	-3.00
Cm	11.99	607.50	247.66	510.10
Correct Avg	8.56	603.40	73.56	448.20

Test Run 2 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/15/2008	17:30:03	8.323	615.9	81.84	409
1/15/2008	17:31:03	8.242	613.3	81.05	396
1/15/2008	17:32:03	8.328	630.2	88.42	418.8
1/15/2008	17:33:03	8.423	632.3	90.14	433.6
1/15/2008	17:34:02	8.313	614.7	82.62	397.1
1/15/2008	17:35:02	8.238	615.1	81.73	386.6
1/15/2008	17:36:02	8.348	632.4	90.01	412.9
1/15/2008	17:37:02	8.412	633.6	91.16	424.2
1/15/2008	17:38:02	8.307	616.9	83.28	405.3
1/15/2008	17:39:01	8.252	611.7	80.8	391.9
1/15/2008	17:40:01	8.306	627.8	87.54	406.7
1/15/2008	17:41:01	8.402	635.4	91.61	426.5
1/15/2008	17:42:01	8.401	625.3	88.74	423.2
1/15/2008	17:43:03	8.258	611.6	80.6	394.8
1/15/2008	17:44:03	8.292	623.3	86.28	409.1
1/15/2008	17:45:03	8.416	636.9	93.56	429.8
1/15/2008	17:46:03	8.378	622.3	86.99	415.3
1/15/2008	17:47:02	8.251	611.9	81.99	394.4
1/15/2008	17:48:02	8.307	625.3	87.85	413.1
1/15/2008	17:49:02	8.397	633.2	90.67	426.3
1/15/2008	17:50:02	8.368	621.1	86.61	415.4
1/15/2008	17:51:02	8.256	614.3	81.34	395.7
1/15/2008	17:52:02	8.309	625.9	88.53	415.4
1/15/2008	17:53:01	8.404	636.3	92.58	431.7
1/15/2008	17:54:01	8.36	621.5	85.94	413
1/15/2008	17:55:01	8.251	613.2	81.42	399.9
1/15/2008	17:56:03	8.352	628.6	89.34	422.7
1/15/2008	17:57:03	8.414	629.2	88.53	432.2
1/15/2008	17:58:03	8.352	616.4	86	408.5
1/15/2008	17:59:03	8.239	612.6	81.76	391.3
1/15/2008	18:00:03	8.276	627.8	86.94	408.1
1/15/2008	18:01:02	8.407	638.9	94.19	434.8
1/15/2008	18:02:02	8.388	623.9	87.99	416.6
1/15/2008	18:03:02	8.258	611.1	80.38	395.7
1/15/2008	18:04:02	8.259	622.8	84.58	399.1
1/15/2008	18:05:02	8.364	635	90.75	422.7
1/15/2008	18:06:02	8.392	628.8	88.5	422.4
1/15/2008	18:07:02	8.308	614.8	82.55	398.9
1/15/2008	18:08:02	8.29	616.6	83.17	404.3
1/15/2008	18:09:02	8.378	628.8	88.58	428.9
1/15/2008	18:10:01	8.387	623.7	86.73	425
1/15/2008	18:11:01	8.329	615.7	83.3	406.5
1/15/2008	18:12:01	8.285	616.1	82.34	406.7
1/15/2008	18:13:01	8.37	630.1	90.3	424.7
1/15/2008	18:14:03	8.41	627.8	89.66	433.9

1/15/2008	18:15:03	8.355	616.7	84.6	410.2
1/15/2008	18:16:03	8.278	612.9	81.58	398.8
1/15/2008	18:17:03	8.314	626.9	86.87	408.7
1/15/2008	18:18:03	8.419	632.1	90.4	436.5
1/15/2008	18:19:03	8.436	621.5	87.58	437.3
1/15/2008	18:20:02	8.353	610.9	82.97	411.6
1/15/2008	18:21:02	8.259	609.7	80.49	398.8
1/15/2008	18:22:02	8.332	626.3	88.17	421
1/15/2008	18:23:02	8.427	632.2	91	434.8
1/15/2008	18:24:02	8.37	616.9	84.5	415.8
1/15/2008	18:25:02	8.258	610	80.6	398.3
1/15/2008	18:26:02	8.318	626.1	87	418.9
1/15/2008	18:27:02	8.429	634.5	91.91	438.7
1/15/2008	18:28:01	8.385	619.4	86.43	416.1
1/15/2008	18:29:01	8.266	610.4	80.62	398.2

Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/15/2008	18:29:01	8.337	622.6	86.22	413.5

Test Run 2 End

Final System Bias Check for Run 2 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 2 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/15/2008	18:35:27 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	0.00	-1.40	4.60	-3.70
Zero Bias%	0.10	0.00	0.50	0.40
Zero Drift%	0.10	0.10	-0.70	-0.10
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	12.00	599.70	254.09	514.80
Span Bias%	0.40	0.70	0.20	0.20
Span Drift%	0.10	-1.30	1.20	1.50
Ini Zero Avg	-0.01	-2.00	8.17	-3.00
Ini Span Avg	11.97	612.60	248.18	499.50
Run Avg	8.34	622.60	86.22	413.50
Co	-0.01	-1.70	6.38	-3.40
Cm	11.98	606.10	251.13	507.20
Correct Avg	8.44	623.00	82.24	423.80

Test Run 3 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/15/2008	18:39:03	8.423	627.7	88.47	486.5
1/15/2008	18:40:03	8.33	615.7	80.7	452.2
1/15/2008	18:41:03	8.279	613.7	81.88	446.7
1/15/2008	18:42:03	8.353	627.8	87.93	469.1
1/15/2008	18:43:02	8.435	630.6	90.07	477.7
1/15/2008	18:44:02	8.395	617	85.18	456.9
1/15/2008	18:45:02	8.279	609	79.91	438.2
1/15/2008	18:46:02	8.308	623.9	85.8	448.7
1/15/2008	18:47:02	8.403	631.3	90.16	472.8
1/15/2008	18:48:02	8.413	623.5	86.71	470.1
1/15/2008	18:49:02	8.315	609.4	80.98	446.5
1/15/2008	18:50:02	8.287	616.3	83.33	451.1
1/15/2008	18:51:02	8.412	632.4	92.41	476.9
1/15/2008	18:52:02	8.374	621.7	84.49	461.1
1/15/2008	18:53:01	8.289	611.2	80.95	447.7
1/15/2008	18:54:01	8.297	623.8	85.06	450.5
1/15/2008	18:55:01	8.372	631	88.69	475.8
1/15/2008	18:56:01	8.396	628.7	88.2	469.7
1/15/2008	18:57:01	8.308	614.9	81.93	448.2
1/15/2008	18:58:01	8.266	620.7	84.39	448.8
1/15/2008	18:59:03	8.375	635	90.62	469.9
1/15/2008	19:00:03	8.415	624.9	86.23	485.5
1/15/2008	19:01:03	8.398	615.8	84.03	473.5
1/15/2008	19:02:03	8.285	609.9	80.48	456.7
1/15/2008	19:03:02	8.3	621.6	84.94	463.7
1/15/2008	19:04:02	8.408	631.7	90.42	488.6
1/15/2008	19:05:02	8.408	623.9	86.51	474.6
1/15/2008	19:06:02	8.281	609.8	79.56	446.7
1/15/2008	19:07:02	8.285	621.5	84.73	455.6
1/15/2008	19:08:01	8.387	634	90.93	481.2
1/15/2008	19:09:01	8.35	626	85.11	465
1/15/2008	19:10:01	8.295	617.6	83.43	453.5
1/15/2008	19:11:01	8.361	626.8	89.04	472.6
1/15/2008	19:12:01	8.322	624	83.52	457.6
1/15/2008	19:13:01	8.393	624	89.79	475.6
1/15/2008	19:14:03	8.364	624.2	85.14	464.6
1/15/2008	19:15:03	8.307	616.3	82.72	453
1/15/2008	19:16:03	8.321	622.5	85.35	464.3
1/15/2008	19:17:02	8.393	631.7	90.36	483.5
1/15/2008	19:18:02	8.356	621.1	84.08	459.9
1/15/2008	19:19:02	8.258	613.2	81.1	445.9
1/15/2008	19:20:02	8.312	628.5	86.97	462
1/15/2008	19:21:02	8.409	635	90.88	486.1
1/15/2008	19:22:02	8.407	624.5	87.66	474.4
1/15/2008	19:23:01	8.293	610.7	79.52	453.4

1/15/2008	19:24:01	8.327	621	85.35	469.8
1/15/2008	19:25:01	8.376	627.6	86.38	487.6
1/15/2008	19:26:01	8.417	623.4	88.43	488.5
1/15/2008	19:27:03	8.298	612.4	80.48	463.3
1/15/2008	19:28:03	8.323	621.4	85.13	473
1/15/2008	19:29:02	8.38	629.6	87.3	489.2
1/15/2008	19:30:02	8.41	625.1	87.92	490.9
1/15/2008	19:31:02	8.356	614.1	82.81	476.8
1/15/2008	19:32:02	8.305	615.1	82.71	467.3
1/15/2008	19:33:02	8.318	623.3	85.2	474.5
1/15/2008	19:34:02	8.384	628.3	87.75	492
1/15/2008	19:35:01	8.39	623.6	87.08	488.5
1/15/2008	19:36:01	8.365	614.1	83.1	479.7
1/15/2008	19:37:01	8.291	612.5	79.58	465.5
1/15/2008	19:38:01	8.355	625.2	86.57	483.4

Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/15/2008	19:38:01	8.349	622	85.44	467.5

Test Run 3 End

Final System Bias Check for Run 3 . STRATA Version 2.01

Final System Bias Check for Run 3

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 2 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/15/2008	19:44:13 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	-0.01	-1.10	6.04	-3.90
Zero Bias%	0.10	0.00	0.70	0.40
Zero Drift%	0.00	0.00	0.30	0.00
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	12.01	607.00	254.42	524.00
Span Bias%	0.40	0.00	0.10	0.70
Span Drift%	0.00	0.70	0.10	0.90
Ini Zero Avg	0.00	-1.40	4.60	-3.70
Ini Span Avg	12.00	599.70	254.09	514.80
Run Avg	8.35	622.00	85.44	467.50
Co	0.00	-1.30	5.32	-3.80
Cm	12.00	603.40	254.26	519.40
Correct Avg	8.44	625.30	81.14	467.50

Initial System Bias Check for Run 4 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	7:10:12 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	-0.05	-1.20	1.82	-3.40
Zero Bias%	0.30	0.00	0.10	0.30
Zero Drift%				
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	12.16	598.40	253.15	514.20
Span Bias%	0.20	0.80	0.40	0.30
Span Drift%				

Test Run 4 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	7:21:33	8.198	613.2	81.61	481
1/16/2008	7:22:33	8.21	614.1	83.75	482
1/16/2008	7:23:33	8.2	609.3	82.09	481.3
1/16/2008	7:24:33	8.195	610.2	82.19	480
1/16/2008	7:25:32	8.204	610.6	81.73	482.9
1/16/2008	7:26:32	8.194	608.7	82.06	485.6
1/16/2008	7:27:32	8.198	611.4	80.82	485.3
1/16/2008	7:28:32	8.192	607.2	80.81	485.5
1/16/2008	7:29:32	8.191	609	82.11	487.5
1/16/2008	7:30:32	8.187	609.5	80.51	486.5
1/16/2008	7:31:33	8.199	607.3	80.26	493.4
1/16/2008	7:32:33	8.177	605.1	79.44	489.5
1/16/2008	7:33:33	8.169	610.8	83.28	488.6
1/16/2008	7:34:33	8.178	612.9	82.75	492.4
1/16/2008	7:35:33	8.171	612.3	82.36	490
1/16/2008	7:36:33	8.179	613.1	82.93	492.4
1/16/2008	7:37:33	8.192	611.4	83.06	494.2
1/16/2008	7:38:33	8.191	607.6	81.09	496.3
1/16/2008	7:39:33	8.171	607.8	81.74	485.7
1/16/2008	7:40:33	8.185	612.3	82.86	484.9
1/16/2008	7:41:32	8.181	608.3	81.6	490.5
1/16/2008	7:42:32	8.185	609.7	81.74	488.2
1/16/2008	7:43:32	8.189	610.4	82.22	493.5
1/16/2008	7:44:32	8.192	609.8	82.03	490.8
1/16/2008	7:45:32	8.185	610	81.92	494.5
1/16/2008	7:46:32	8.188	611	82.08	497
1/16/2008	7:47:31	8.198	612.7	83.76	494.6
1/16/2008	7:48:33	8.193	611.8	82.24	494.3
1/16/2008	7:49:33	8.205	610.7	83.18	497
1/16/2008	7:50:33	8.203	608.4	82.09	496.8
1/16/2008	7:51:33	8.211	607.6	81.58	497.6
1/16/2008	7:52:33	8.202	606.7	80.86	501.8
1/16/2008	7:53:32	8.199	609.5	82.42	500.4
1/16/2008	7:54:32	8.192	611.6	83.16	497.8
1/16/2008	7:55:32	8.211	613	84.09	501.6
1/16/2008	7:56:32	8.215	610.5	82.47	497.7
1/16/2008	7:57:32	8.24	607	82.1	504.2
1/16/2008	7:58:31	8.24	599.9	78.05	503.8
1/16/2008	7:59:33	8.204	602.3	80.62	497.2
1/16/2008	8:00:33	8.199	609.1	82.73	496.2
1/16/2008	8:01:33	8.197	612.2	83.04	497.2
1/16/2008	8:02:33	8.22	614.2	83.54	502.1
1/16/2008	8:03:33	8.214	610.2	83	500.4
1/16/2008	8:04:32	8.211	608.8	81.7	495.6
1/16/2008	8:05:32	8.206	608.3	81.95	496.1

1/16/2008	8:06:32	8.218	611.3	83.45	501.6
1/16/2008	8:07:32	8.215	612.8	83.9	500.6
1/16/2008	8:08:32	8.215	613.1	84.6	499
1/16/2008	8:09:32	8.221	609.1	81.76	498.5
1/16/2008	8:10:31	8.219	607.6	82.23	499.3
1/16/2008	8:11:33	8.21	610.1	82.15	498.4
1/16/2008	8:12:33	8.213	610.6	82.89	498.9
1/16/2008	8:13:33	8.219	608.5	81.76	502.6
1/16/2008	8:14:33	8.213	607.1	81.37	505.1
1/16/2008	8:15:32	8.202	611.1	82.77	498.1
1/16/2008	8:16:32	8.212	613.9	84.07	497.7
1/16/2008	8:17:32	8.22	610.7	82.08	501.4
1/16/2008	8:18:32	8.222	606.9	81.52	501.2
1/16/2008	8:19:32	8.218	606.6	81.26	504.4
1/16/2008	8:20:32	8.21	609.1	83.49	508.2

Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	8:20:32	8.202	609.8	82.18	494.8

Test Run 4 End

Final System Bias Check for Run 4 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 2 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	8:26:37 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	-0.06	-1.00	4.30	-3.50
Zero Bias%	0.30	0.00	0.40	0.30
Zero Drift%	0.00	0.00	0.50	0.00
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	12.08	599.80	257.25	512.20
Span Bias%	0.10	0.70	0.50	0.50
Span Drift%	-0.30	0.10	0.80	-0.20
Ini Zero Avg	-0.05	-1.20	1.82	-3.40
Ini Span Avg	12.16	598.40	253.15	514.20
Run Avg	8.20	609.80	82.18	494.80
Co	-0.06	-1.10	3.06	-3.50
Cm	12.12	599.10	255.20	513.20
Correct Avg	8.23	617.40	79.10	500.40

Test Run 5 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	8:29:06	8.208	610.2	79.71	480.8
1/16/2008	8:30:06	8.215	609.7	80.81	478.6
1/16/2008	8:31:06	8.209	609	81.13	473.6
1/16/2008	8:32:06	8.206	611.1	82.06	468.7
1/16/2008	8:33:05	8.223	612.8	83.48	466.2
1/16/2008	8:34:05	8.219	610.1	81.73	467.3
1/16/2008	8:35:05	8.215	608.9	81.09	466.4
1/16/2008	8:36:05	8.201	608.1	80.81	464.5
1/16/2008	8:37:05	8.223	613.4	83.32	464.8
1/16/2008	8:38:05	8.217	612.2	83.01	464.5
1/16/2008	8:39:05	8.217	615.8	85.26	467
1/16/2008	8:40:04	8.22	614.1	84.4	463.7
1/16/2008	8:41:04	8.226	611.8	84.02	470
1/16/2008	8:42:06	8.22	611.2	83.16	471.8
1/16/2008	8:43:06	8.22	612.4	83.06	471.9
1/16/2008	8:44:06	8.224	611.3	83.11	474.9
1/16/2008	8:45:06	8.227	613.3	84.63	476.6
1/16/2008	8:46:05	8.231	612.4	83.85	477.5
1/16/2008	8:47:05	8.242	610.6	83.27	478.4
1/16/2008	8:48:05	8.236	606.5	80.81	477.5
1/16/2008	8:49:05	8.221	607.2	82.2	476.8
1/16/2008	8:50:05	8.207	609.6	82.94	473.9
1/16/2008	8:51:05	8.217	612.8	82.8	473.8
1/16/2008	8:52:04	8.223	612.3	84	475.3
1/16/2008	8:53:06	8.234	610.8	82.43	472.2
1/16/2008	8:54:06	8.233	608.1	82.74	471.8
1/16/2008	8:55:06	8.226	610.3	81.86	469.1
1/16/2008	8:56:06	8.223	610	82.39	470
1/16/2008	8:57:05	8.226	611.7	84.44	472.1
1/16/2008	8:58:05	8.237	612.3	83.11	472.3
1/16/2008	8:59:05	8.234	610.9	84.54	475.9
1/16/2008	9:00:05	8.227	613.4	82.89	474.7
1/16/2008	9:01:05	8.23	612.7	84.92	476.4
1/16/2008	9:02:05	8.24	613.3	83.84	476.2
1/16/2008	9:03:04	8.234	609.8	83.2	474.2
1/16/2008	9:04:06	8.234	608.5	83.07	476.5
1/16/2008	9:05:06	8.217	610.1	83.59	474.7
1/16/2008	9:06:06	8.238	613.2	83.88	475.5
1/16/2008	9:07:06	8.217	608.9	82.57	471
1/16/2008	9:08:06	8.22	614.9	86.11	475.6
1/16/2008	9:09:06	8.231	614	83.96	475.3
1/16/2008	9:10:05	8.233	612.6	83.94	477.2
1/16/2008	9:11:05	8.226	612.2	83.91	475.5
1/16/2008	9:12:05	8.221	612.9	84.81	476.3
1/16/2008	9:13:05	8.247	614.6	85	479.2

1/16/2008	9:14:05	8.244	607.9	81.41	477.4
1/16/2008	9:15:04	8.24	609.2	83.45	476.8
1/16/2008	9:16:04	8.239	612	84.09	476.6
1/16/2008	9:17:06	8.219	611	83.49	473.5
1/16/2008	9:18:06	8.226	613.1	84.31	474.5
1/16/2008	9:19:06	8.22	612	84.08	473.6
1/16/2008	9:20:06	8.218	612.4	84.23	473.7
1/16/2008	9:21:06	8.241	613.1	83.57	476.6
1/16/2008	9:22:04	8.237	609.8	83.44	475.1
1/16/2008	9:23:04	8.235	609.3	83.17	475.3
1/16/2008	9:24:04	8.226	611.6	84.58	476.4
1/16/2008	9:25:04	8.238	613	83.46	473.6
1/16/2008	9:26:04	8.249	609.4	82.54	477
1/16/2008	9:27:04	8.252	609.5	83	476.2
1/16/2008	9:28:05	8.255	610.2	83.74	475.1
Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	9:28:05	8.227	611.3	83.24	473.6

Test Run 5 End

Final System Bias Check for Run 5 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 2 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	9:34:23 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	-0.07	-1.10	5.64	-2.90
Zero Bias%	0.30	0.00	0.70	0.30
Zero Drift%	0.00	0.00	0.30	0.10
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	12.09	600.10	258.14	513.00
Span Bias%	0.10	0.70	0.60	0.40
Span Drift%	0.00	0.00	0.20	0.10
Ini Zero Avg	-0.06	-1.00	4.30	-3.50
Ini Span Avg	12.08	599.80	257.25	512.20
Run Avg	8.23	611.30	83.24	473.60
Co	-0.06	-1.10	4.97	-3.20
Cm	12.09	599.90	257.69	512.60
Correct Avg	8.28	618.00	78.07	479.70

Test Run 6 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 2 - High & High mid

		O2 %	CO ppm	NOx ppm	VOC-O ppm
Begin calculating run averages					
1/16/2008	9:36:23	8.253	611.3	79.13	476.9
1/16/2008	9:37:23	8.229	606.6	80.42	467.2
1/16/2008	9:38:23	8.228	611.9	84.14	465.4
1/16/2008	9:39:23	8.277	611.8	82.95	470.5
1/16/2008	9:40:22	8.27	604	80.77	465.8
1/16/2008	9:41:22	8.266	604	81.62	461.5
1/16/2008	9:42:22	8.246	605.6	81.82	458.5
1/16/2008	9:43:22	8.245	608.7	83.33	458.1
1/16/2008	9:44:22	8.232	611.1	84.17	457.2
1/16/2008	9:45:21	8.246	612	84.26	459.3
1/16/2008	9:46:21	8.259	611.8	84.8	460.1
1/16/2008	9:47:23	8.253	608.9	83.76	459
1/16/2008	9:48:23	8.255	607.5	81.95	461.1
1/16/2008	9:49:23	8.252	606.4	82.51	463.8
1/16/2008	9:50:23	8.252	608.8	83.88	465.3
1/16/2008	9:51:22	8.239	607.7	82.55	465.1
1/16/2008	9:52:22	8.25	611.8	85.11	466.5
1/16/2008	9:53:22	8.237	608.7	82.44	467.4
1/16/2008	9:54:22	8.229	611.3	84.56	466.9
1/16/2008	9:55:22	8.251	612.3	84.81	471.9
1/16/2008	9:56:22	8.246	610.8	84.28	467.4
1/16/2008	9:57:21	8.263	610.9	84.18	468.4
1/16/2008	9:58:21	8.268	608.5	83.33	465.7
1/16/2008	9:59:22	8.269	605.5	82.05	465.9
1/16/2008	10:00:22	8.267	602.2	79.93	468.4*
1/16/2008	10:01:22	8.25	602.8	80.85	466.2
1/16/2008	10:02:22	8.231	609.7	84.38	463.7
1/16/2008	10:03:22	8.239	618	87.61	465.8
1/16/2008	10:04:21	8.253	616	85.95	466.9
1/16/2008	10:05:21	8.261	611.3	83.59	471
1/16/2008	10:06:21	8.258	605	81.45	472.2
1/16/2008	10:07:21	8.247	608.1	83.5	468.3
1/16/2008	10:08:23	8.238	612.2	84.97	466.7
1/16/2008	10:09:21	8.248	612.3	83.81	466.2
1/16/2008	10:10:21	8.254	609.1	84.83	468.4
1/16/2008	10:11:21	8.244	609.1	82.94	469.1
1/16/2008	10:12:22	8.241	611.5	85.1	471.4
1/16/2008	10:13:22	8.255	612.7	85.06	471.2
1/16/2008	10:14:22	8.26	608.1	83.37	472.4
1/16/2008	10:15:22	8.262	607.5	82.91	473.7
1/16/2008	10:16:21	8.259	606.6	82.95	474.1
1/16/2008	10:17:21	8.253	607.7	83.57	473.1
1/16/2008	10:18:21	8.271	609.4	83.53	474.8
1/16/2008	10:19:21	8.264	602.8	80.54	474.8
1/16/2008	10:20:21	8.261	606	83.12	474.5

1/16/2008	10:21:21	8.266	608.2	83.71	473.6
1/16/2008	10:22:21	8.253	607.8	83.56	470.3
1/16/2008	10:23:22	8.231	608.6	83.29	468.2
1/16/2008	10:24:22	8.245	614.4	86.99	470.6
1/16/2008	10:25:22	8.251	616	87.02	469.3
1/16/2008	10:26:22	8.257	612.7	85.75	472.8
1/16/2008	10:27:22	8.289	610.5	84.27	477.4
1/16/2008	10:28:21	8.273	601.7	80.62	473.3
1/16/2008	10:29:21	8.259	604.6	82.21	474.4
1/16/2008	10:30:23	8.258	607.6	83.24	474.2
1/16/2008	10:31:23	8.237	605.4	82.24	469.5
1/16/2008	10:32:23	8.254	611.7	85.35	472.7
1/16/2008	10:33:23	8.241	609.9	82.93	469.4
1/16/2008	10:34:22	8.252	610	84.64	471
1/16/2008	10:35:22	8.241	606.6	82.5	471.8

Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	10:35:22	8.252	609	83.42	468.4*

Test Run 6 End

Final System Bias Check for Run 6 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.	
Plant Name:	Waste Management - Fitchburg	
Location:	Engine 2 - High & High mid	
	Reference Cylinder Numbers	
	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	10:41:38 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	0.02	-1.40	2.34	-0.10
Zero Avg	-0.06	-1.70	5.30	-0.90
Zero Bias%	0.30	0.00	0.60	0.10
Zero Drift%	0.00	-0.10	-0.10	0.20
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.11	606.80	254.91	516.90
Span Avg	12.08	600.60	256.44	512.10
Span Bias%	0.10	0.60	0.30	0.50
Span Drift%	0.00	0.10	-0.30	-0.10
Ini Zero Avg	-0.07	-1.10	5.64	-2.90
Ini Span Avg	12.09	600.10	258.14	513.00
Run Avg	8.25	609.00	83.42	468.40
Co	-0.06	-1.40	5.47	-1.90
Cm	12.09	600.30	257.29	512.50
Correct Avg	8.30	615.40	78.03	474.40

Calibration Error Test at Run 7 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2	SG913238bal		SG0147111BAL	ALM051950
CO	SG0147111BAL	CC195391	CC164983	CX026080B
NOx	SG0147111BAL		SG913238bal	SG9169328bal
VOC-O	SG0147111BAL	CC20456	CC75298	CC5230

Date/Time	1/16/2008	11:03:01 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Avg	-0.07	-2.10	4.68	-0.90
Zero Error%	0.30	0.20	0.90	0.10
Low Ref Cyl		299.70		310.10
Low Avg		296.70		309.50
Low Error%		0.30		0.10
Mid Ref Cyl	12.13	606.60	252.10	518.90
Mid Avg	12.08	600.70	255.67	517.50
Mid Error%	0.20	0.60	0.70	0.10
High Ref Cyl	20.90	898.90	452.80	854.90
High Avg	20.91	884.30	456.54	851.10
High Error%	0.00	1.50	0.70	0.40

Initial System Bias Check for Run 7 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	11:09:15 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.06	-2.00	2.34	-2.70
Zero Bias%	0.00	0.00	0.50	0.20
Zero Drift%				
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.09	597.80	250.91	509.00
Span Bias%	0.00	0.30	1.00	0.90
Span Drift%				

Test Run 7 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

		O2 %	CO ppm	NOx ppm	VOC-O ppm
Begin calculating run averages					
1/16/2008	11:56:05	8.301	579.3	73.72	504.6
1/16/2008	11:57:05	8.286	576.5	72.77	504.5
1/16/2008	11:58:04	8.251	578	73.56	494.8
1/16/2008	11:59:04	8.273	578	73.41	499.7
1/16/2008	12:00:04	8.319	582.2	74.78	500.9
1/16/2008	12:01:04	8.308	576.8	72.38	490.9
1/16/2008	12:02:04	8.314	575.3	71.79	501.4
1/16/2008	12:03:03	8.326	580	74.31	498.1
Pause					
1/16/2008	12:04:03	10.752	575	71.29	343.1
1/16/2008	12:05:03	20.672	346.4	30.65	7.3
1/16/2008	12:06:05	20.824	33.1	7.07	6.2
1/16/2008	12:07:05	17.562	9.7	6.42	135.8
1/16/2008	12:08:05	20.526	129.2	21.54	8.8
1/16/2008	12:09:04	20.808	29.3	4.56	7.3
1/16/2008	12:10:04	12.637	45.9	17.99	407.1
End Pause					
1/16/2008	12:11:04	8.319	431	62.86	503.4
1/16/2008	12:12:04	8.277	571.8	66	490.6
1/16/2008	12:13:04	8.309	582.3	71.19	490.6
1/16/2008	12:14:04	8.302	578.8	70.21	494.5
1/16/2008	12:15:03	8.298	575.3	69.56	501.9
1/16/2008	12:16:03	8.301	576.3	70.56	489.3
1/16/2008	12:17:03	8.25	573.9	69.2	488.2
1/16/2008	12:18:05	8.285	583.9	73.55	492.2
1/16/2008	12:19:03	8.288	579.8	72.42	498.4
1/16/2008	12:20:03	8.284	578.7	70.97	501.9
1/16/2008	12:21:05	8.275	572.8	69.25	499.1
1/16/2008	12:22:03	8.293	577.6	71.14	500.7
1/16/2008	12:23:05	8.292	576.9	72.12	498.6
1/16/2008	12:24:05	8.228	575.8	69.66	480.4
1/16/2008	12:25:03	8.258	577.1	70.41	487.9
1/16/2008	12:26:05	8.331	582.4	72.31	526.6
1/16/2008	12:27:03	8.316	579.9	73.06	511.8
1/16/2008	12:28:03	8.247	577.8	72.2	492.2
1/16/2008	12:29:05	8.282	582.6	74.01	500.8
1/16/2008	12:30:05	8.283	577.4	71.27	511.5
1/16/2008	12:31:05	8.281	578.1	71.9	500.9
1/16/2008	12:32:05	8.268	576.5	71.18	494.6
1/16/2008	12:33:05	8.249	576	70.3	483.2
1/16/2008	12:34:05	8.287	579.7	72.14	499.9
1/16/2008	12:35:04	8.306	583.5	73.83	499.3
1/16/2008	12:36:04	8.301	579.4	72.02	497.5
1/16/2008	12:37:04	8.328	579	73.84	510.1
1/16/2008	12:38:04	8.304	578	72.34	497.3

1/16/2008	12:39:04	8.31	576.1	72.3	498.9
1/16/2008	12:40:04	8.322	579.7	73.46	509.1
1/16/2008	12:41:04	8.317	578.6	73.55	503.6
1/16/2008	12:42:03	8.316	576.8	72.29	505.9
1/16/2008	12:43:03	8.325	575.8	72.2	516
1/16/2008	12:44:03	8.292	577.8	73.65	498.8
1/16/2008	12:45:03	8.303	580.8	75.06	498.7
1/16/2008	12:46:03	8.301	578.4	73.39	497.5
1/16/2008	12:47:03	8.318	577.8	73.53	512.2
1/16/2008	12:48:03	8.325	576	73.63	537.1
1/16/2008	12:49:05	8.344	579	76.36	545.8
1/16/2008	12:50:05	8.291	574.2	71.83	530
1/16/2008	12:51:05	8.265	571.7	70.99	520.4
1/16/2008	12:52:05	8.251	577	72.89	520
1/16/2008	12:53:05	8.28	579.2	73.95	532.1
1/16/2008	12:54:05	8.281	584.2	75.42	516.3
1/16/2008	12:55:05	8.248	573.4	70.21	515.6
1/16/2008	12:56:05	8.32	581.7	73.67	535.1
1/16/2008	12:57:04	8.3	575.8	70.84	539.6
1/16/2008	12:58:04	8.278	577.9	72.93	529.8
1/16/2008	12:59:04	8.289	580.5	73.14	530.1
1/16/2008	13:00:04	8.309	578.7	73.51	536.7
1/16/2008	13:01:04	8.297	577.2	72.62	528.8
1/16/2008	13:02:04	8.301	576.1	72.6	537.4
Average of Test Run		O2	CO	NOx	VOC-O
		%	ppm	ppm	ppm
1/16/2008	13:02:14	8.3	578	72.31	506.2

Test Run 7 End

Final System Bias Check for Run 7 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time 1/16/2008 13:08:40 PASSED

Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.07	-1.90	4.97	2.40
Zero Bias%	0.00	0.00	0.10	0.30
Zero Drift%	0.00	0.00	0.50	0.50
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.08	594.70	254.25	518.10
Span Bias%	0.00	0.60	0.30	0.10
Span Drift%	0.00	-0.30	0.70	0.90
Ini Zero Avg	-0.06	-2.00	2.34	-2.70
Ini Span Avg	12.09	597.80	250.91	509.00
Run Avg	8.30	578.00	72.31	506.20
Co	-0.07	-1.90	3.66	-0.20
Cm	12.08	596.30	252.58	513.60
Correct Avg	8.35	588.00	69.53	511.40

Test Run 8 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	13:11:19	8.265	578.6	70.35	518.8
1/16/2008	13:12:19	8.29	580.7	71.6	517.7
1/16/2008	13:13:19	8.302	578.7	72.23	521.4
1/16/2008	13:14:19	8.306	576.4	71.62	519.2
1/16/2008	13:15:18	8.202	570.9	68.05	478.8
1/16/2008	13:16:18	8.25	584.7	75.43	495.9
1/16/2008	13:17:18	8.295	589.5	76.29	512.2
1/16/2008	13:18:18	8.291	582.4	74.87	510.8
1/16/2008	13:19:18	8.317	581.3	74.62	512
1/16/2008	13:20:17	8.297	576.4	72.37	508.4
1/16/2008	13:21:17	8.297	577.2	73.6	509.9
1/16/2008	13:22:19	8.285	580.4	74.85	514.3
1/16/2008	13:23:19	8.264	582.3	76.27	524.7
1/16/2008	13:24:19	8.258	581.2	74.67	499.8
1/16/2008	13:25:19	8.293	577.7	72.96	507
1/16/2008	13:26:18	8.295	576.8	72.55	512.9
1/16/2008	13:27:18	8.251	577.3	72.8	495.7
1/16/2008	13:28:18	8.253	587.3	78.38	496.2
1/16/2008	13:29:18	8.29	587.5	75.66	504
1/16/2008	13:30:18	8.291	578.9	73.77	504
1/16/2008	13:31:18	8.288	578.1	73.93	508.4
1/16/2008	13:32:18	8.291	579	74.67	511.5
1/16/2008	13:33:17	8.274	581.9	76.86	512.1
1/16/2008	13:34:17	8.282	583.5	76.15	516.5
1/16/2008	13:35:19	8.271	579.5	75.52	515.6
1/16/2008	13:36:19	8.231	578.3	73.67	493.7
1/16/2008	13:37:19	8.247	581	75.14	497.9
1/16/2008	13:38:19	8.278	580.5	74.7	510.3
1/16/2008	13:39:19	8.248	579.8	73.32	496.2
1/16/2008	13:40:19	8.238	577.9	72.32	484
1/16/2008	13:41:19	8.269	581.4	74.53	500.1
1/16/2008	13:42:19	8.303	583.3	74.36	505.6
1/16/2008	13:43:19	8.295	576.8	72.07	500.9
1/16/2008	13:44:19	8.305	577.9	73.16	507.8
1/16/2008	13:45:19	8.278	577.1	72.79	507.2
1/16/2008	13:46:19	8.265	577.8	74	501
1/16/2008	13:47:19	8.283	583.2	76.16	501.9
1/16/2008	13:48:19	8.292	581.9	74.97	504.5
1/16/2008	13:49:19	8.274	581.4	75.29	495.6
1/16/2008	13:50:19	8.302	582.7	76.08	508.1
1/16/2008	13:51:19	8.292	579.6	74.42	517.5
1/16/2008	13:52:19	8.307	582.6	77.12	522.5
1/16/2008	13:53:19	8.284	580.3	74.73	517.7
1/16/2008	13:54:19	8.266	578.6	74.18	509.3
1/16/2008	13:55:19	8.275	582.4	74.7	499.5

1/16/2008	13:56:19	8.286	578.9	73.83	503.6
1/16/2008	13:57:19	8.289	578.2	73.02	505.7
1/16/2008	13:58:19	8.289	577.8	72.96	511.3
1/16/2008	13:59:19	8.269	578.3	72.47	512.7
1/16/2008	14:00:19	8.249	579.9	74.06	487.8
1/16/2008	14:01:19	8.253	577.6	72.33	496.9
1/16/2008	14:02:19	8.3	586	75.61	507.4
1/16/2008	14:03:19	8.318	581.1	73.6	515.8
1/16/2008	14:04:17	8.301	577	72.77	505
1/16/2008	14:05:19	8.275	576.5	72.71	502.1
1/16/2008	14:06:19	8.274	579.9	75.1	502.1
1/16/2008	14:07:19	8.272	583.2	76.26	504.5
1/16/2008	14:08:19	8.296	583.6	75.99	509.1
1/16/2008	14:09:18	8.289	578.9	75.07	504.8
1/16/2008	14:10:18	8.317	578.2	74.28	520.1

Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	14:10:18	8.28	580.1	74.13	506.7

Test Run 8 End

Final System Bias Check for Run 8 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	14:16:44 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.08	-1.50	6.28	3.30
Zero Bias%	0.00	0.10	0.30	0.40
Zero Drift%	0.00	0.00	0.30	0.10
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.07	596.10	250.15	515.40
Span Bias%	0.10	0.50	1.10	0.20
Span Drift%	0.00	0.10	-0.80	-0.30
Ini Zero Avg	-0.07	-1.90	4.97	2.40
Ini Span Avg	12.08	594.70	254.25	518.10
Run Avg	8.28	580.10	74.13	506.70
Co	-0.08	-1.70	5.63	2.80
Cm	12.07	595.40	252.20	516.80
Correct Avg	8.34	591.10	70.04	508.70

Test Run 9 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	14:18:21	8.241	581.6	70.98	509.9
1/16/2008	14:19:21	8.224	577.4	68.18	492.3
1/16/2008	14:20:21	8.293	583.6	73.77	505.6
1/16/2008	14:21:21	8.301	580.3	72.92	504.4
1/16/2008	14:22:20	8.281	578.2	73.13	500.1
1/16/2008	14:23:20	8.316	583.1	76.88	505.3
1/16/2008	14:24:20	8.287	577.3	73.06	503.7
1/16/2008	14:25:20	8.295	578.9	75.73	512.9
1/16/2008	14:26:20	8.199	576.8	71.91	504.8
1/16/2008	14:27:20	8.245	577.8	72.43	499.3
1/16/2008	14:28:21	8.274	576.8	72.32	507.2
1/16/2008	14:29:21	8.28	578.6	73.61	510.6
1/16/2008	14:30:21	8.27	579	74.27	511.8
1/16/2008	14:31:21	8.275	580.2	73.62	511.6
1/16/2008	14:32:21	8.262	577.7	73.16	506.4
1/16/2008	14:33:21	8.28	581.8	75.35	511
1/16/2008	14:34:20	8.277	580.6	74.04	505.3
1/16/2008	14:35:20	8.264	578.5	74.02	503.3
1/16/2008	14:36:20	8.275	580.3	74.53	501.5
1/16/2008	14:37:20	8.273	579.5	74.31	502.1
1/16/2008	14:38:20	8.26	584.1	76.35	498.8
1/16/2008	14:39:20	8.287	584	76.08	515.7
1/16/2008	14:40:20	8.267	579.6	74.33	502.1
1/16/2008	14:41:20	8.264	578.3	73.77	503
1/16/2008	14:42:20	8.276	580.2	75.64	505.4
1/16/2008	14:43:21	8.261	580.9	75.25	503.1
1/16/2008	14:44:21	8.279	582.5	75.76	506.1
1/16/2008	14:45:21	8.284	580.5	75.06	508
1/16/2008	14:46:21	8.296	579.4	75.73	508.6
1/16/2008	14:47:21	8.26	582	76.5	494.8
1/16/2008	14:48:20	8.28	587.3	79.85	499.8
1/16/2008	14:49:20	8.318	583.5	76.84	510.3
1/16/2008	14:50:20	8.317	577.6	74.71	508.1
1/16/2008	14:51:20	8.309	575	73.74	519.1
1/16/2008	14:52:20	8.303	576.6	74.67	517.2
1/16/2008	14:53:19	8.294	576.3	75.31	512.1
1/16/2008	14:54:21	8.225	574	70.89	498.6
1/16/2008	14:55:21	8.264	579.5	74.94	517.8
1/16/2008	14:56:21	8.222	578.7	72.17	493.1
1/16/2008	14:57:21	8.194	578.7	73.36	482.5
1/16/2008	14:58:21	8.261	591.3	77.26	497.4
1/16/2008	14:59:20	8.27	588.6	76.3	497.2
1/16/2008	15:00:20	8.294	585.3	76.1	514
1/16/2008	15:01:20	8.3	581.9	74.7	511.4
1/16/2008	15:02:20	8.291	579	75.08	499.3

1/16/2008	15:03:20	8.314	580.3	76.36	507
1/16/2008	15:04:20	8.304	577.6	74.16	507.5
1/16/2008	15:05:19	8.309	576.5	74.01	518
1/16/2008	15:06:21	8.307	573.6	71.55	509.2
1/16/2008	15:07:21	8.299	573.7	72.3	519.6
1/16/2008	15:08:21	8.287	577.7	74.27	525.6
1/16/2008	15:09:21	8.26	582.3	75.83	508.3
1/16/2008	15:10:21	8.258	579.8	74.47	516.8
1/16/2008	15:11:21	8.287	581.3	75.94	523
1/16/2008	15:12:21	8.244	576.6	72.24	507.2
1/16/2008	15:13:21	8.252	582.1	75.39	503.9
1/16/2008	15:14:21	8.244	579.9	73.46	496.8
1/16/2008	15:15:21	8.229	580.1	72.15	497.1
1/16/2008	15:16:21	8.282	587.1	77.3	511.8
1/16/2008	15:17:21	8.288	583.7	75.64	518.6
Average of Test Run		O2	CO	NOx	VOC-O
		%	ppm	ppm	ppm
1/16/2008	15:17:21	8.274	580.1	74.39	506.7

Test Run 9 End

Final System Bias Check for Run 9 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	15:23:27 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.08	-1.90	5.55	4.40
Zero Bias%	0.10	0.00	0.20	0.50
Zero Drift%	0.00	0.00	-0.10	0.10
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.09	599.10	253.90	511.00
Span Bias%	0.00	0.20	0.40	0.70
Span Drift%	0.10	0.30	0.70	-0.40
Ini Zero Avg	-0.08	-1.50	6.28	3.30
Ini Span Avg	12.07	596.10	250.15	515.40
Run Avg	8.27	580.10	74.39	506.70
Co	-0.08	-1.70	5.92	3.80
Cm	12.08	597.60	252.03	513.20
Correct Avg	8.33	588.90	70.14	512.30

Test Run 10 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	15:31:05	8.21	573.6	73.68	465.8
1/16/2008	15:32:05	8.212	574.7	75.91	469.1
1/16/2008	15:33:05	8.201	573	74.16	461.8
1/16/2008	15:34:04	8.205	570.6	72.76	458.9
1/16/2008	15:35:04	8.242	577.1	76.96	460
1/16/2008	15:36:04	8.247	573.4	75.57	461.6
1/16/2008	15:37:04	8.249	571.1	75.48	472.5
1/16/2008	15:38:04	8.259	570.9	76.33	485.9
1/16/2008	15:39:03	8.23	568.2	74.35	470.1
1/16/2008	15:40:03	8.206	565.4	72.62	466.9
1/16/2008	15:41:05	8.232	571	76.5	476.5
1/16/2008	15:42:05	8.234	571.2	74.12	470.4
1/16/2008	15:43:05	8.217	566.4	72.77	465.7
1/16/2008	15:44:05	8.215	568.8	73.45	468.5
1/16/2008	15:45:04	8.2	568.4	72.42	455.4
1/16/2008	15:46:04	8.202	568.6	73.29	458.7
1/16/2008	15:47:04	8.251	575.4	75.97	465.6
1/16/2008	15:48:04	8.24	571.1	75.56	469.6
1/16/2008	15:49:04	8.247	571.7	75.2	481.5
1/16/2008	15:50:03	8.272	571.1	75.65	492.3
1/16/2008	15:51:03	8.203	564.3	71.92	467.2
1/16/2008	15:52:05	8.216	568.7	74.41	467.1
1/16/2008	15:53:05	8.199	570.8	74.36	464.4
1/16/2008	15:54:05	8.231	573.4	76.27	465.8
1/16/2008	15:55:05	8.184	565.3	71.09	453
1/16/2008	15:56:05	8.226	570.4	74.76	464.8
1/16/2008	15:57:05	8.232	570.2	74.35	463.1
1/16/2008	15:58:04	8.242	568.7	73.68	460.4
1/16/2008	15:59:04	8.244	569.6	74.79	471.8
1/16/2008	16:00:04	8.258	569.2	74.45	486.7
1/16/2008	16:01:04	8.211	565.2	72.94	465.1
1/16/2008	16:02:04	8.213	566.8	73.96	476.1
1/16/2008	16:03:03	8.23	572.6	76.53	477.3
1/16/2008	16:04:03	8.205	567.3	73.5	467.2
1/16/2008	16:05:05	8.21	568.3	74.76	467.1
1/16/2008	16:06:05	8.189	568.2	72.38	456
1/16/2008	16:07:05	8.23	576.8	77.5	463.6
1/16/2008	16:08:05	8.235	574.2	76.57	469.5
1/16/2008	16:09:04	8.254	574.9	77.14	482.8
1/16/2008	16:10:04	8.25	572.3	76.3	480.6
1/16/2008	16:11:04	8.236	567.6	74.07	473.7
1/16/2008	16:12:04	8.229	565.3	72.58	479.8
1/16/2008	16:13:04	8.188	566.6	72.31	459.4*
1/16/2008	16:14:04	8.192	569	74.23	467.3
1/16/2008	16:15:04	8.2	576.3	74.86	471

1/16/2008	16:16:04	8.206	572	74.6	466.8
1/16/2008	16:17:04	8.191	571.3	73.33	452.8
1/16/2008	16:18:04	8.22	574.3	76.03	464.4
1/16/2008	16:19:04	8.254	575.4	76.24	473.8
1/16/2008	16:20:04	8.233	570.4	73.59	463.6*
1/16/2008	16:21:04	8.256	570	75.39	475.9
1/16/2008	16:22:04	8.25	569.8	73.88	482.5
1/16/2008	16:23:04	8.23	569.8	74.54	465.9
1/16/2008	16:24:03	8.218	566.9	72.67	476.3
1/16/2008	16:25:03	8.211	571.8	74.1	464.7
1/16/2008	16:26:03	8.223	571.9*	75.27	467.2
1/16/2008	16:27:03	8.23	572.5	74.47	473.6
1/16/2008	16:28:05	8.206	568.4	71.36	453.1
1/16/2008	16:29:05	8.214	568.8	74.07	459.5
1/16/2008	16:30:05	8.236	575.9	75.52	455.9

Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	16:30:05	8.224	570.5*	74.46	468.2*

Test Run 10 End

Final System Bias Check for Run 10 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	16:36:31 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.08	-2.10	4.58	2.60
Zero Bias%	0.00	0.00	0.00	0.30
Zero Drift%	0.00	0.00	-0.20	-0.20
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.13	595.70	257.85	511.10
Span Bias%	0.20	0.50	0.40	0.60
Span Drift%	0.20	-0.30	0.80	0.00
Ini Zero Avg	-0.08	-1.90	5.55	4.40
Ini Span Avg	12.09	599.10	253.90	511.00
Run Avg	8.22	570.50	74.46	468.20
Co	-0.08	-2.00	5.06	3.50
Cm	12.11	597.40	255.87	511.10
Correct Avg	8.26	579.50	69.75	475.10

Final System Bias Check for Run 10 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	16:36:31 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.08	-2.10	4.58	2.60
Zero Bias%	0.00	0.00	0.00	0.30
Zero Drift%	0.00	0.00	-0.20	-0.20
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.13	595.70	257.85	511.10
Span Bias%	0.20	0.50	0.40	0.60
Span Drift%	0.20	-0.30	0.80	0.00
Ini Zero Avg	-0.08	-1.90	5.55	4.40
Ini Span Avg	12.09	599.10	253.90	511.00
Run Avg	8.22	570.50	74.46	468.20
Co	-0.08	-2.00	5.06	3.50
Cm	12.11	597.40	255.87	511.10
Correct Avg	8.26	579.50	69.75	475.10

Test Run 11 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	16:39:04	8.221	569.4	70.48	459.5
1/16/2008	16:40:04	8.198	564.4	68.23	439.2
1/16/2008	16:41:04	8.252	572.6	74.35	450.8
1/16/2008	16:42:03	8.265	573.9	73.86	451.9
1/16/2008	16:43:03	8.258	572.1	75.84	454.8
1/16/2008	16:44:03	8.184	570.8	73.85	443
1/16/2008	16:45:03	8.222	567.3	73.08	446
1/16/2008	16:46:03	8.245	573.6	75.02	456.3
1/16/2008	16:47:03	8.245	571.5	74.79	451.6
1/16/2008	16:48:02	8.236	570.3	75.22	452.7
1/16/2008	16:49:02	8.252	571.7	76.41	465.9
1/16/2008	16:50:04	8.219	569.1	74.36	458.3
1/16/2008	16:51:04	8.193	566.9	72.99	451
1/16/2008	16:52:04	8.217	570.8	74.5	458.5
1/16/2008	16:53:04	8.199	569.8	72.73	461.4
1/16/2008	16:54:04	8.194	572.1	75.58	449
1/16/2008	16:55:03	8.174	571.1	72.75	437.9
1/16/2008	16:56:03	8.219	578.3	76.94	449.4
1/16/2008	16:57:03	8.249	577	76.66	452.3
1/16/2008	16:58:03	8.25	572.6	73.89	454.1
1/16/2008	16:59:03	8.275	572.6	77.15	472.9
1/16/2008	17:00:03	8.244	568.4	73.98	455.6
1/16/2008	17:01:02	8.238	567.4	74.54	459.1
1/16/2008	17:02:02	8.205	567.3	73.05	448.4
1/16/2008	17:03:02	8.227	571.6	74.8	456
1/16/2008	17:04:04	8.223	570	73.81	452.2
1/16/2008	17:05:04	8.201	568.4	72.94	436.4
1/16/2008	17:06:04	8.222	570.4	74.22	445.4
1/16/2008	17:07:04	8.269	577.4	76.24	460.1
1/16/2008	17:08:04	8.3	568.8	72.48	463.3
1/16/2008	17:09:03	8.273	565.6	74.37	459.6
1/16/2008	17:10:03	8.258	568.6	73.95	457.4
1/16/2008	17:11:03	8.246	567.9	73.87	454.5
1/16/2008	17:12:03	8.239	567.8	73.61	458.9
1/16/2008	17:13:03	8.254	570.9	73.88	458.6
1/16/2008	17:14:02	8.251	569.8	74.39	458.2
1/16/2008	17:15:02	8.251	568.1	73.64	455.8
1/16/2008	17:16:04	8.261	570.2	75.37	458
1/16/2008	17:17:04	8.253	567.3	72.77	451.4
1/16/2008	17:18:04	8.269	561.6	70.42	446.4
1/16/2008	17:19:04	8.272	567.6	73.5	449.8
1/16/2008	17:20:03	8.281	572.7	76.27	460.4
1/16/2008	17:21:03	8.304	574	77.35	470
1/16/2008	17:22:03	8.289	568.7	74.6	467.6
1/16/2008	17:23:03	8.263	568	74.19	461.4

1/16/2008	17:24:03	8.264	571.3	75.47	456.5
1/16/2008	17:25:02	8.255	567.7	73.96	458.7
1/16/2008	17:26:02	8.252	569.3	73.99	458.8
1/16/2008	17:27:04	8.282	571.8	75.02	465.2
1/16/2008	17:28:04	8.3	566.5	72.15	460
1/16/2008	17:29:04	8.243	560.8	70.24	447
1/16/2008	17:30:04	8.281	569.1	74.79	456.8
1/16/2008	17:31:03	8.292	570.7	74.51	459.4
1/16/2008	17:32:03	8.304	569.7	75.74	470.5
1/16/2008	17:33:03	8.299	568.9	74.99	464.9
1/16/2008	17:34:03	8.264	564.4	73.19	459.7
1/16/2008	17:35:03	8.244	564.7	72.82	454.1
1/16/2008	17:36:02	8.297	569.8	74.41	461.3
1/16/2008	17:37:02	8.265	568	72.21	452
1/16/2008	17:38:02	8.284	564.1	70.87	461.1

Average of Test Run		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	17:38:02	8.25	569.6	74.02	455.8

Test Run 11 End

Final System Bias Check for Run 11 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.	
Plant Name:	Waste Management - Fitchburg	
Location:	Engine 1 - High & High mid	
	Reference Cylinder Numbers	
	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	17:45:51 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.08	-2.30	3.55	2.70
Zero Bias%	0.00	0.00	0.20	0.40
Zero Drift%	0.00	0.00	-0.20	0.00
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.15	597.90	257.80	511.70
Span Bias%	0.30	0.30	0.40	0.60
Span Drift%	0.10	0.20	0.00	0.10
Ini Zero Avg	-0.08	-2.10	4.58	2.60
Ini Span Avg	12.13	595.70	257.85	511.10
Run Avg	8.25	569.60	74.02	455.80
Co	-0.08	-2.20	4.06	2.70
Cm	12.14	596.80	257.82	511.40
Correct Avg	8.27	579.00	69.50	462.20

Test Run 12 Begin. STRATA Version 2.01
Operator: RMC Environmental, Inc.
Plant Name: Waste Management - Fitchburg
Location: Engine 1 - High & High mid

Begin calculating run averages

		O2 %	CO ppm	NOx ppm	VOC-O ppm
1/16/2008	17:48:09	8.266	567.8	71.39	470.1
1/16/2008	17:49:09	8.252	566.8	71.19	465.4
1/16/2008	17:50:09	8.286	570.8	73.87	474.2
1/16/2008	17:51:09	8.267	568.6	72.7	455.8
1/16/2008	17:52:09	8.246	565.7	71.34	451.8
1/16/2008	17:53:09	8.297	576.6	75.92	459.3
1/16/2008	17:54:09	8.304	570.9	74.4	455.9
1/16/2008	17:55:08	8.331	569	75.13	474.5
1/16/2008	17:56:08	8.292	566.7	73.17	463
1/16/2008	17:57:08	8.291	566.1	74.07	468.3
1/16/2008	17:58:08	8.285	564.8	71.12	454.8
1/16/2008	17:59:08	8.283	567.1	74.9	464.8
1/16/2008	18:00:08	8.277	570.3	74.55	467.7
1/16/2008	18:01:08	8.292	572.3	74.69	470.7
1/16/2008	18:02:08	8.257	566.5	72.63	458.4
1/16/2008	18:03:08	8.294	571.4	74.77	470.1
1/16/2008	18:04:08	8.255	565.4	70.5	444.2
1/16/2008	18:05:08	8.28	570.5	75.42	447.4
1/16/2008	18:06:08	8.296	572.1	73.82	459.7
1/16/2008	18:07:08	8.306	570.8	75.12	469.5
1/16/2008	18:08:07	8.295	569.3	73.68	467.3
1/16/2008	18:09:09	8.295	566.1	73.37	462.8
1/16/2008	18:10:09	8.296	567.9	73.96	468.6
1/16/2008	18:11:09	8.273	565.6	72.18	465
1/16/2008	18:12:09	8.277	569.6	74.28	469.8
1/16/2008	18:13:09	8.273	572	74.76	461.1
1/16/2008	18:14:09	8.268	568.7	73.38	465.8
1/16/2008	18:15:09	8.288	572.3	74.56	462.1
1/16/2008	18:16:09	8.267	566.2	72.21	462.6
1/16/2008	18:17:09	8.273	571.2	74.93	460.5
1/16/2008	18:18:08	8.283	567.7	72.72	457.2
1/16/2008	18:19:08	8.27	565.3	71.58	455.4
1/16/2008	18:20:08	8.309	570.6	75.13	458.4
1/16/2008	18:21:08	8.32	568.3	73.86	470.7
1/16/2008	18:22:08	8.33	569	75.25	486
1/16/2008	18:23:08	8.312	569.7	74.43	470.5
1/16/2008	18:24:08	8.311	566.3	74.69	473
1/16/2008	18:25:08	8.294	566.6	73.56	470.3
1/16/2008	18:26:07	8.276	566.9	73.88	465.8
1/16/2008	18:27:09	8.303	571.6	75.58	471.2
1/16/2008	18:28:09	8.269	567.3	73.5	470.4
1/16/2008	18:29:09	8.247	567.8	72.7	451.8
1/16/2008	18:30:09	8.277	571.7	75.38	453.2
1/16/2008	18:31:09	8.313	573.5	74.98	461.9
1/16/2008	18:32:09	8.317	568.2	74.35	476

1/16/2008	18:33:09	8.323	569.5	75.27	481
1/16/2008	18:34:08	8.283	565.4	72.73	464.7
1/16/2008	18:35:08	8.297	566.7	74.63	471.4
1/16/2008	18:36:08	8.274	567.1	73.15	460.4
1/16/2008	18:37:08	8.284	567.2	74.03	472.4
1/16/2008	18:38:08	8.271	569.5	72.45	451.4
1/16/2008	18:39:08	8.273	566.1	73.4	454
1/16/2008	18:40:09	8.321	576.1	76.62	467
1/16/2008	18:41:09	8.298	569	74.85	464.5
1/16/2008	18:42:09	8.328	571.7	76.31	483.2
1/16/2008	18:43:09	8.297	566.5	73.98	466.2
1/16/2008	18:44:09	8.3	565.7	73.26	469.9
1/16/2008	18:45:09	8.278	566.2	73.2	463.9
1/16/2008	18:46:09	8.287	570.2	74.36	461.8
1/16/2008	18:47:08	8.25	566.1	71.76	442.7
Average of Test Run		O2	CO	NOx	VOC-O
		%	ppm	ppm	ppm
1/16/2008	18:47:08	8.288	568.7	73.83	464.3

Test Run 12 End

Final System Bias Check for Run 12 . STRATA Version 2.01

Operator:	RMC Environmental, Inc.
Plant Name:	Waste Management - Fitchburg
Location:	Engine 1 - High & High mid

Reference Cylinder Numbers

	Zero	Span
O2	SG913238bal	SG0147111BAL
CO	SG0147111BAL	CC164983
NOx	SG0147111BAL	SG913238bal
VOC-O	SG0147111BAL	CC75298

Date/Time	1/16/2008	18:53:22 PASSED		
Analyte	O2	CO	NOx	VOC-O
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00
Zero Cal	-0.07	-2.10	4.68	-0.90
Zero Avg	-0.08	-2.10	5.00	1.90
Zero Bias%	0.00	0.00	0.10	0.30
Zero Drift%	0.00	0.00	0.30	-0.10
Span Ref Cyl	12.13	606.60	252.10	518.90
Span Cal	12.08	600.70	255.67	517.50
Span Avg	12.16	593.10	251.74	518.90
Span Bias%	0.30	0.80	0.80	0.10
Span Drift%	0.00	-0.50	-1.20	0.70
Ini Zero Avg	-0.08	-2.30	3.55	2.70
Ini Span Avg	12.15	597.90	257.80	511.70
Run Avg	8.29	568.70	73.83	464.30
Co	-0.08	-2.20	4.27	2.30
Cm	12.15	595.50	254.77	515.30
Correct Avg	8.30	579.50	70.00	467.30

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-01A

Client Sample ID: E1-M18-01
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	RMC Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1145.	0.25	C	ppmv	1/18/2008 1:27:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-02A

Client Sample ID: E1-M18-02
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1085.	0.25	C	ppmv	1/18/2008 1:33:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-03A

Client Sample ID: E1-M18-03
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1202.	0.25	C	ppmv	1/18/2008 1:40:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT:	RMC ENVIRONMENTAL	**Client Sample ID:**	E1-M18-04
Lab Order:	0815096	**Report Date:**	1/18/2008
Project:	RMC Methane Analysis	**Collection Date:**	1/16/2008
Lab ID:	0815096-04A	**Matrix:**	Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1251.	0.25	C	ppmv	1/18/2008 1:50:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-05A

Client Sample ID: E1-M18-05
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1203.	0.25	C	ppmv	1/18/2008 1:58:00 PM	GC

Qualifiers:
B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-06A

Client Sample ID: E1-M18-06
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	EMT Reporting Limit	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1195.	0.25	C	ppmv	1/18/2008 2:08:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-07A

Client Sample ID: E2-M18-01
Report Date: 1/18/2008
Collection Date: 1/15/2008
Matrix: Air

Analyses	Result	EMT Reporting Limit	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1300.	0.25	C	ppmv	1/18/2008 2:15:00 PM	GC

Qualifiers: B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Estimated
R - RPD outside accepted recovery limits
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-08A

Client Sample ID: E2-M18-02
Report Date: 1/18/2008
Collection Date: 1/15/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1295.	0.23	C	ppmv	1/18/2008 2:24:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-09A

Client Sample ID: E2-M18-03
Report Date: 1/18/2008
Collection Date: 1/15/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1305.	0.23	C	ppmv	1/18/2008 2:30:00 PM	GC

Qualifiers:
B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-10A

Client Sample ID: E2-M18-04
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1215.	0.23	C	ppmv	1/18/2008 2:40:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-11A

Client Sample ID: E2-M18-05
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1180.	0.23	C	ppmv	1/18/2008 2:49:00 PM	GC

Qualifiers:
B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

Report of Laboratory Analysis

CLIENT: RMC ENVIRONMENTAL
Lab Order: 0815096
Project: RMC Methane Analysis
Lab ID: 0815096-12A

Client Sample ID: E2-M18-06
Report Date: 1/18/2008
Collection Date: 1/16/2008
Matrix: Air

Analyses	Result	EMT Limit Reporting	Qual	Units	Date Analyzed	Analyst
Gaseous Organic Compounds by GC/FID		**Method: METHOD 18**				
Methane	1195.	0.23	C	ppmv	1/18/2008 2:57:00 PM	GC

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
C - Laboratory not accredited for this parameter
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

APPENDIX C. TEST QA/ QC FORMS

Calibration Gas Certificates of Analysis

Example Calculations

Meterbox Calibrations

Pitot Calibrations

EXAMPLE CALCULATIONS
Instrumental Methods

Company: Waste Management of Massachussetts
Source: Unit 1 & 2
Test Location: Stack Exit
RMCEInc Project #: 2008-15098

Normal Load: MID LOAD
Run: 1
Start Time: 1/15/2008 16:07
End Time: 1/15/2008 17:07
Run Duration (Min.) : 1:00

Emission Rate (lbs/mmBtu)

NO_xlbs/mmbtu = lb/Hr / Heat Input

NO_xlbs/mmbtu = 2.16116072784 / 16.54

NO_xlbs/mmbtu = 0.131

Emission Rate (lbs/Hr)

NO_xlbs/Hr = 60 * Conv-Factor * NOxppmd * Flowrate

NOxlbs/Hr = 73.56 * 60 * 0.0000001194 * 4101

NO_xlbs/Hr = 2.161

Emission Rate (g/BHP-Hr)

NO_xg/BHP-Hr = 456.593/(% Load *2233) * lb/Hr

NOxg/BHP-Hr = 2.16116072784 * 453.593 / 2233*0.99

NO_xg/BHP-Hr = 0.44

NMOC Concentration

ppm NMOC = ppm CH4 - (3 * ppm C3H8)

ppm NMOC = 1145 - 3*401.035302550513

ppm NMOC = 58.11

PreTest Meterbox Audit

Plant: Waste Management of Massachusetts
Location: Fitchburg/Westminster Landfill

Test Date: 01/15/08
Auditor: RC/GC
Project #: 2008-15096

Meterbox I.D.:	1	**Level Manometer:**	Yes
Gamma:	0.983	**Zero Manometer:**	Yes
Delta H@	1.890	**Barometric Pressure:**	29.79

	Audit Time (Min)	Dry Gas Meter Reading (Ft^3)	Dry Gas Meter Temperature (^oF)
Initial Readings =	0.0	270.952	82
Final Readings =	5.0	274.870	85

Run Time (Minutes) **Theta** =	5
Gas Volume Sampled V_m =	3.9180
Average T_m =	83.5

	Audit Gamma Limits
Lower Gamma Limit **LGL**=	*0.96 * Y =* 0.944
Upper Gamma Limit **UGL**=	*1.04 * Y =* 1.022

Audit Gamma Y_c =	**0.9732**
Meter Box Audit =	**Passed**

Ideal Sampling Rate = 0.75

$$Y_c = (Theta/V_m) * [\{(29.92/(460+68) * 0.75^2) * (T_m + 460)\} / P_{bar}]^{0.5}$$

Passed = $LGL < Y_c < UGL$

Failed = $LGL > Y_c$ *or* $Y_c > UGL$

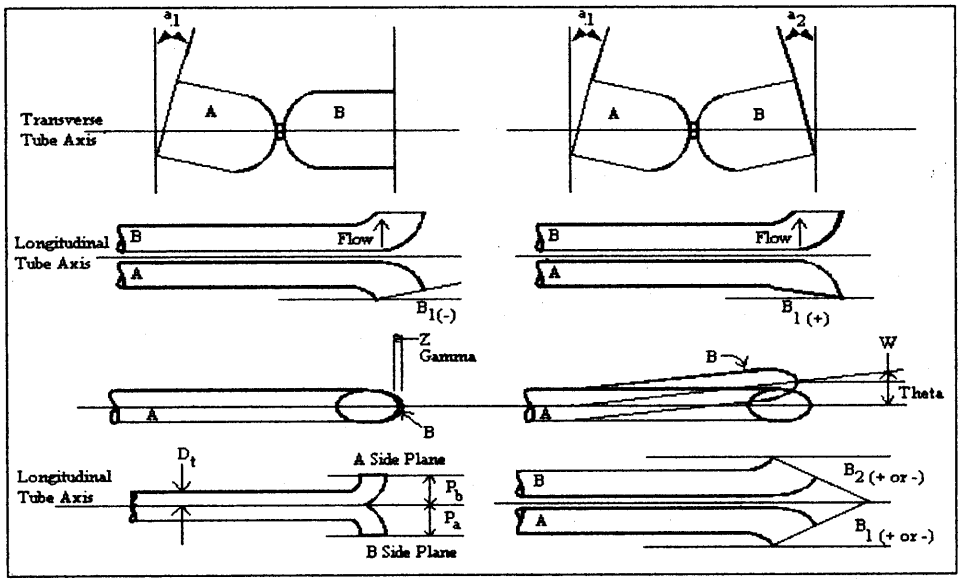
Audit Performed By: _____

RMC Environmental, Inc.

S-TYPE PITOT TUBE INSPECTION

Project Number	2008-15096		
Pitot Tube Number	M2-36		
Level	Y	(Y/N)	PASS
Obstructions	N	(Y/N)	PASS
Damaged	N	(Y/N)	PASS
Type of material	SS		
-10 < alpha1 < +10	0.5	Degrees	PASS
-10 < alpha2 < +10	0.5	Degrees	PASS
-5 < Beta1 < +5	0.0	Degrees	PASS
-5 < Beta2 < +5	0.0	Degrees	PASS
z or Gamma	0.0	Degrees	
w or Theta	0.5	Degrees	
A	0.795	Inches	
{z = A Tan (Gamma)} < 0.125	0.004	Inches	PASS
{w = A Tan (Theta)} < 0.03125	0.008	Inches	PASS
$0.1875 < D_t < 0.375$	0.375	Inches	PASS
$1.05\ D_t < P_a < 1.5\ D_t$	0.395	Inches	PASS
$1.05\ D_t < P_b < 1.5\ D_t$	0.394	Inches	PASS
$\lvert P_a - P_b \rvert < 0.0625$	0.001	Inches	PASS
Distance T/C set back > 2.0	2.440	Inches	PASS

alpha1 & alpha 2	are the angles of deflection that faces of the pitot tube are off from the perpendicular line of the traverse axis.
Beta1 & Beta2	are the angles of deflection that faces of the pitot tube from the line parallel to the longitudinal tube axis.
Gamma	is the angle between the line between the two pitot tips and the theoretical level line between the tips.
Theta	is the angle between the two center lines of the pitot faces.
A	is the distance between the two pitot tips.
z	is the distance between the two lengths of the pitot tips.
w	is the distance between the two center lines of each of the pitot tubes.
D_t	is the outside diameter of the tubing used.
P_a & P_b	is the distance between the pitot tube face and the longitudinal tube axis.



COMMENTS: _____

_____

_____

_____

I certify that this pitot tube meets or exceeds all specifications, criteria and/ or applicable design features and is hereby assigned a pitot tube calibration factor of 0.84.

Signature: _____

Date: _____

RMC ENvironmental, Inc.

APPENDIX D. PROCESS DATA

PROCESS DATA

Company: Waste Management - Fitchburg
Source: Engine 2 - High & High Mid

Calculated Data

Start Time		% Load	KW	Fuel Flow	Fuel Flow	Heating value	Heat Input	Heat Input	Heat Rate	Air Flow ppm	BTU	Tuning	Air/Fuel Ratio	Fuel Position	Throttle Position	CH4 %	O2 %	CO2 %	N2 %	H2S %	ENGINE #
					SCFM at 50% methane	Btu/scf HHV	MMBtu/hr HHV	MMBtu/hr LHV	Btu/kWhr LHV												
1/15/2008 15:10	Run 1	97	1533	508	549	546	16.66	14.99	9,781	4419	476	28.0	8.6	54	73	52.7	0.54	41.3	9.0	0.018	2
1/15/2008 15:30		99	1618	501	541	546	16.43	14.79	9,140	4420	476										2
1/15/2008 15:50		99	1608	507	548	546	16.62	14.96	9,306	4428	476										2
1/15/2008 16:10		99	1598	502	542	546	16.46	14.82	9,272	4482	476										2
	Average	99	1589	505	545	546	16.54	14.89	9,375	4437	476										
1/15/2008 17:30	Run 2	98	1595	499	529	536	16.06	14.46	9,063	4376	476	28.0	8.8	53	71	53.8	0.31	42.0	9.0	0.017	2
1/15/2008 17:45		98	1602	497	527	536	15.99	14.40	8,988	4365	476										2
1/15/2008 18:00		98	1596	495	525	536	15.93	14.34	8,985	4369	476										2
1/15/2008 13:15		98	1508	493	523	536	15.87	14.28	9,471	4368	476										2
	Average	98	1575	496	526	536	15.96	14.37	9,127	4370	476										
1/15/2008 18:38	Run 3	96	1584	494	524	536	15.90	14.31	9,035	4415	476	28.0	8.7	53	66	53.7	0.32	41.9	9.0	0.017	2
1/15/2008 18:43		96	1611	486	515	536	15.64	14.08	8,739	4377	476										2
1/15/2008 18:58		96	1584	494	524	536	15.90	14.31	9,035	4370	476										2
1/15/2008 18:13		96	1597	497	527	536	15.99	14.40	9,016	4407	476										2
	Average	96	1594	493	522	536	15.86	14.27	8,956	4392	476										
1/16/2008 7:20	Run 1	86	1427	533	554	526	16.83	15.15	10,616	3904	476	28.0	8.1	52	58	50.7	0.85	40.0	8.5	0.021	2
1/16/2008 7:40		86	1404	523	544	526	16.51	14.87	10,588	3868	476										2
1/16/2008 8:00		85	1405	577	600	526	18.22	16.40	11,673	3869	476										2
1/16/2008 8:20		85	1382	526	547	526	16.61	14.95	10,818	3920	476										2
	Average	86	1405	540	561	526	17.04	15.34	10,924	3890	476										
1/16/2008 8:30	Run 2	84	1435	517	538	526	16.32	14.69	10,240	3928	473	28.0	8.2	52	57	51.3	0.78	40.3	9.0	0.024	2
1/16/2008 8:50		84	1396	521	542	526	16.45	14.81	10,608	3922	476										2
1/16/2008 9:00		86	1410	514	535	526	16.23	14.61	10,361	3871	476										2
1/16/2008 9:20		85	1373	520	541	526	16.42	14.78	10,765	3899	476										2
	Average	85	1404	518	539	526	16.36	14.72	10,494	3905	475										
1/16/2008 9:40	Run 3	87	1400	515	536	526	16.26	14.64	10,456	3900	476	28.0	8.1	52	57	51.2	0.80	40.2	9.2	0.015	2
1/16/2008 9:55		85	1380	518	539	526	16.36	14.72	10,669	3875	476										2
1/16/2008 10:10		86	1402	520	541	526	16.42	14.78	10,542	3887	476										2
1/16/2008 10:30		84	1376	516	537	526	16.29	14.67	10,659	3902	476										2
	Average	86	1390	517	538	526	16.33	14.70	10,581	4156	476										
Calculated:					531		16.11														

Heat Rate = mmBtu/Hr

$$\text{Heat Rate} = \frac{HHV_{ch4} * \text{Fuel Flow}}{1{,}000{,}000}$$

$$\text{Heat Rate} = \frac{476 * (508*60)}{1{,}000{,}000}$$

Heat Rate = #REF! mmBtu/Hr

PROCESS DATA

Company: Waste Management - Fitchburg
Source: Engine 1 - High & High Mid

Calculated Data

Start Time		% Load	KW	Fuel Flow	Fuel Flow	Heating value	Heat Input	Heat Input	Heat Rate	Air Flow ppm	BTU	Timing	Air/Fuel Ratio	Fuel Position	Throttle Position	CH4 % v/v wet	O2 %	CO2 %	N2 %	H2S %	ENGINE #
				SCFM	SCFM at 50% methane	Btu/scf HHV	MMBtu/hr HHV	MMBtu/hr LHV	Btu/kWhr LHV												
1/16/2008 11:55	Run 1	97	1546	543	560	522	17.01	15.32	9,906	4442	475	28.0	8.2	56	57	51.6	0.71	40.4	9.0	0.025	1
1/16/2008 12:10		96	1612	533	550	522	16.70	15.03	9,326	4439	475										1
1/16/2008 12:30		97	1602	526	543	522	16.48	14.84	9,261	4416	475										1
1/16/2008 12:40		96	1592	539	556	522	16.89	15.20	9,549	4446	475										1
	Average	97	1588	535	552	522	16.77	15.10	9,510	4436	475										
1/16/2008 13:10	Run 2	96	1852	538	551	518	16.73	15.06	8,130	4390	475	28.0	8.2	56	56	51.2	0.81	40.2	9.0	0.017	1
1/16/2008 13:30		97	1593	526	539	518	16.35	14.72	9,241	4363	475										1
1/16/2008 13:45		96	1602	528	541	518	16.41	14.78	9,224	4342	475										1
1/16/2008 14:05		95	1620	524	537	518	16.29	14.66	9,052	4336	475										1
	Average	96	1667	529	542	518	16.45	14.80	8,912	4358	475										
1/16/2008 14:20	Run 3	96	1598	539	544	511	16.53	14.88	9,310	4401	475	28.0	8.3	55	53	50.5	0.88	39.8	9.0	0.022	1
1/16/2008 14:43		94	1581	524	529	511	16.07	14.46	9,149	4352	475										1
1/16/2008 14:50		95	1616	521	526	511	15.98	14.38	8,899	4352	475										1
1/16/2008 15:10		94	1504	534	539	511	16.37	14.74	9,801	4386	475										1
	Average	95	1575	530	535	511	16.24	14.62	9,290												
1/16/2008 15:30	Run 1	84	1418	488	492	510	14.92	13.43	9,473	3844	475	28.0	8.1	52	52	50.4	0.97	39.6	9.0	0.024	1
1/16/2008 15:45		85	1379	476	479	510	14.56	13.10	9,502	3905	475										1
1/16/2008 16:00		86	1359	484	487	510	14.80	13.32	9,804	3893	475										1
1/16/2008 16:15		84	1397	486	489	510	14.86	13.38	9,576	3864	475										1
	Average	85	1388	484	487	510	14.78	13.31	9,589												
1/16/2008 16:40	Run 2	84	1421	485	487	508	14.79	13.31	9,369	3900	475	28.0	8.2	53	52	50.2	0.98	39.5	9.0	0.023	1
1/16/2008 16:55		85	1390	470	472	508	14.33	12.90	9,282	3895	475										1
1/16/2008 17:10		84	1411	484	486	508	14.76	13.29	9,416	3910	475										1
1/16/2008 17:25		85	1419	488	490	508	14.88	13.40	9,440	3887	475										1
	Average	85	1410	482	484	508	14.69	13.22	9,377	3898	475										
1/16/2008 17:50	Run 3	83	1395	462	487	533	14.78	13.30	9,536	3809	475	28.0	8.4	51	50	52.7	0.96	41.0	9.0	0.025	1
1/16/2008 18:05		84	1408	501	528	533	16.03	14.43	10,246	3910	475										1
1/16/2008 18:20		84	1343	466	491	533	14.91	13.42	9,991	3820	475										1
1/16/2008 18:35		83	1418	471	496	533	15.07	13.56	9,564	3952	475										1
	Average	84	1391	475	500	533	15.19	13.68	9834.5	4146	475					51.09	0.89	40.09	9.00	0.023	
	Permit limits				531		16.11														

APPENDIX E. AGENCY DOCUMENTATION

From: rmceinc@aol.com
To: Gary.Roscoe@state.ma.us
Subject: Re: Request for 702 approval letter
Date: Tue, 23 Oct 2007 12:11 am
Attachments: 2007-15096Protocol-EnginePerformance.doc (124K)

Gary -

Attached is the Protocol to perform the source testing at the WMI Fitchburg LFG-to-Energy facility. I believe that the plan outlines the needed test methods in accordance with the approved 7.02 Approval Letter.

The test dates have not been decided upon as of today - but should be decided soon and will be within the necessary timeframe.

If you have any questions, please do not hesitate to contact me at any time.

Rachel Chleborowicz
Sr. Project Manager
RMC Environmental, Inc.
9226 North 2nd Street
Machesney Park, IL 61115

815-378-6150 Direct
815-425-1102 Fax

RMCE@AirMonitoring.com / RMCEInc@aol.com

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-----Original Message-----
From: Roscoe, Gary (DEP) <Gary.Roscoe@state.ma.us>
To: rmceinc@aol.com
Sent: Fri, 19 Oct 2007 10:42 am
Subject: RE: Request for 702 approval letter

As requested, attached is the 7.02 air plan approval.

From: rmceinc@aol.com [mailto:rmceinc@aol.com]
Sent: Thursday, October 18, 2007 8:48 PM
To: Roscoe, Gary (DEP)
Subject: Request for 702 approval letter

Gary -

It was a pleasure finally speaking to you this afternoon. Per our conversation could you please forward a copy of the 702 Approval letter we spoke about, after which, I will forward on our Test Plan for the Fitchburg LFG to Energy Facility.

Best Regards,

Rachel Chleborowicz
Sr. Project Manager
RMC Environmental, Inc.
9226 North 2nd Street

Machesney Park, IL 61115

815-378-6150 Direct
800-532-3391 Office
815-425-1102 Fax

RMCE@AirMonitoring.com / RMCEInc@aol.com

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Email and AIM finally together. You've gotta check out free AOL Mail!

From: Cusson, Thomas (DEP) <Thomas.Cusson@state.ma.us>
To: Magnusson, Bob <bmagnusson@wm.com>; Roscoe, Gary (DEP) <Gary.Roscoe@state.ma.us>
Cc: Sepiol, Frank <fsepiol@wm.com>; Hermanson, Eric <EHermans@wm.com>; rmceinc@aol.com
Subject: RE: Fitch Engine Plant Emission Testing
Date: Tue, 18 Dec 2007 11:46 am

Bob -

Per this email we are accepting the proposed testing protocol for the engine emission testing at the Fitchburg/Westminster landfill. Each engine will be tested at load currently approved in the air plan approval
First Amendment to Air Plan Approval BWPAQ 02 - Tr # W061954 - 16.11 MMBtu/hr and also at maximum achievable load [which is higher then the currently approved operating load].

All test data shall be submitted to MassDEP - CERO Bureau of Waste Prevention, Permit Section within 30 days of completion of the testing.

From: Magnusson, Bob [mailto:bmagnusson@wm.com]
Sent: Tuesday, December 18, 2007 11:20 AM
To: Cusson, Thomas (DEP); Roscoe, Gary (DEP)
Cc: Sepiol, Frank; Hermanson, Eric; rmceinc@aol.com
Subject: RE: Fitch Engine Plant Emission Testing

Tom,

I appreciate your understanding, our plan at this point is to postpone the testing by two weeks since the testing company is still having truck problems this morning, therefore we now plan on the following:

- Wednesday January 2-arrive and set up
- Thursday January 3-Test
- Friday January 4-Test if necessary

Also, I would appreciate written confirmation from the Department on the test protocol and testing of the engines at current permit loads and at 100%.

If you need to contact me this afternoon or over the next two days, please call my cell phone at 508-450-8522.

Thanks Again,

Bob Magnusson

From: Cusson, Thomas (DEP) [mailto:Thomas.Cusson@state.ma.us]
Sent: Tuesday, December 18, 2007 10:54 AM
To: Magnusson, Bob; Roscoe, Gary (DEP)
Cc: Sepiol, Frank; Hermanson, Eric
Subject: RE: Fitch Engine Plant Emission Testing

Bob - Things happen that are our of our control. Per this email I am extending the testing deadline to February 1, 2008.

Please keep us informed of your plans.

Have a good holiday.

From: Magnusson, Bob [mailto:bmagnusson@wm.com]
Sent: Tuesday, December 18, 2007 10:06 AM
To: Cusson, Thomas (DEP); Roscoe, Gary (DEP)
Cc: Sepiol, Frank; Hermanson, Eric
Subject: Fitch Engine Plant Emission Testing

Tom/Gary,

We have the emission testing scheduled to start tomorrow (set up) and testing Thursday and Friday (if necessary). The testing company is en-route and has run into truck problems. Our deadline is December 23. The testing company is willing to test over the weekend but that could be a problem with our staffing and DEP oversight. I should hear from the this morning if they are back on track, but if not, would the Department rather us test over the weekend to meet the 90 day from start up deadline or test after the holidays, ie starting on or about January 2?

Bob M