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REPORT ON RELATIVE ACCURACY TEST AUDIT

Performed for:
WHEELABRATOR SOUTH BROWARD
UNITS 1, 2 AND 3 FF OUTLETS
FT. LAUDERDALE, FL

Client Reference No: 11800237
CleanAir Project No: 10455-3
Revision 0: May 7, 2008

To the best of our knowledge, the data presented in this report are accurate, complete, error free, legible and representative of the actual emissions during the test program.

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REVISION HISTORY

REPORT ON RELATIVE ACCURACY TEST AUDIT

DRAFT REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
D0a	04/24/08	All	Draft version of original document.

FINAL REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
0	05/07/08	All	Final version of original document.

CONTENTS

PROJECT OVERVIEW

INTRODUCTION

Wheelabrator South Broward, Inc. contracted Clean Air Engineering (CleanAir) to perform the relative accuracy test audit (RATA) at the municipal waste combustor (MWC) facility located in Ft. Lauderdale, Florida.

All testing was conducted in accordance with the regulations set-forth by the United States Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (FDEP).

Key Project Participants

Individuals responsible for coordinating and conducting the test program were:

C. Faller – Wheelabrator South Broward
S. Brown – CleanAir
J. Harry – CleanAir

Test Program Parameters

The testing performed at the Units 1, 2 and 3 fabric filter (FF) baghouse outlets from March 24-26, 2008 included the following emissions measurements:

- carbon monoxide (CO)
- nitrogen oxide (NO_X)
- sulfur dioxide (SO_2)
- oxygen (O_2)

TEST PROGRAM SYNOPSIS

Results Summary

Table 1-1 on the following page summarizes the results of the test program. A more detailed presentation of the test conditions and results of analysis are shown in Tables 2-1 through 2-12 on pages 2-1 through 2-12. The O_2 RATA results are presented for comparison purposes only.

PROJECT OVERVIEW

Table 1-1:
Summary of Test Results

Monitor Constituent	CEM Serial Number	RM Avg	CEM Avg	95% CC	Relative Accuracy Result	Limit	Basis of Limit
Unit 1 FF Outlet CEMS (units of RATA)							
SO_2 (ppmdv @ 7% O_2)	278	6.6	8.8	0.164	8.3%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	278	189.5	198.4	0.843	4.7%	10%	S[2]
CO (ppmdv @ 7% O_2)	278	5.7	7.1	0.095	1.5%	5%	S[3]
Unit 2 FF Outlet CEMS (units of RATA)							
SO_2 (ppmdv @ 7% O_2)	277	3.8	6.3	0.623	10.7%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	277	192.5	177.1	0.629	7.8%	10%	S[2]
CO (ppmdv @ 7% O_2)	277	7.8	6.4	0.095	1.6%	5%	S[3]
Unit 3 FF Outlet CEMS (units of RATA)							
SO_2 (ppmdv @ 7% O_2)	279	4.1	1.8	0.565	9.9%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	279	196.1	194.0	0.405	1.2%	10%	S[2]
CO (ppmdv @ 7% O_2)	279	12.8	15.3	0.549	3.1%	5%	S[3]

[1] SO_2 FF Outlet Relative Accuracy calculated as a percentage of the 29 ppm standard as per Performance Specification 2, Section 13.2.
[2] NO_X FF Outlet Relative Accuracy calculated as a percentage of the 205 ppm standard as per Performance Specification 2, Section 13.2.
[3] CO FF Outlet Relative Accuracy calculated as a percentage of the 100 ppm standard as per Performance Specification 4A, Section 13.2.

Basis of Limit: RM = Reference Method S = Standard

Discussion of Test Program

Each boiler was operated at greater than 50% (96,000 lbs/hr steam flow) during each RATA. The steam load is presented in Appendix F with the plant CEM run data.

All RATA runs were 27 minutes in duration. Ten (10) runs were performed on all three (3) units.

A NO_X analyzer converter check was performed before the test program and after the test program. The converter check data is presented in Appendix D.

End of Section 1 – Project Overview

RESULTS

Table 2-1:
Relative Accuracy Unit 1 FF Outlet - Oxygen

Run No.	Start Time	Date (2008)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	6:38	Mar 24	9.22	9.00	0.22	2.35%	
2	7:15	Mar 24	9.49	9.20	0.29	3.06%	
3	7:54	Mar 24	9.39	9.10	0.29	3.13%	
4	8:31	Mar 24	8.92	8.60	0.32	3.56%	*
5	9:10	Mar 24	8.98	8.70	0.28	3.09%	
6	9:47	Mar 24	8.91	8.60	0.31	3.44%	
7	10:24	Mar 24	8.90	8.60	0.30	3.33%	
8	11:02	Mar 24	8.86	8.60	0.26	2.93%	
9	11:40	Mar 24	8.46	8.20	0.26	3.07%	
10	12:17	Mar 24	8.36	8.10	0.26	3.14%	
Average			8.95	8.68	0.27	3.06%	

Standard Deviation	0.0275	
Confidence Coefficient (CC)	0.0211	
		Limit
Avg. Absolute Difference (%dv)	0.27	NA

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-2:
Relative Accuracy Unit 1 FF Outlet - Sulfur Dioxide

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:38	Mar 24	6.8	8.8	-2.01	-29.6%	
2	7:15	Mar 24	8.9	11.2	-2.31	-26.0%	
3	7:54	Mar 24	5.5	7.7	-2.21	-40.3%	
4	8:31	Mar 24	6.4	8.6	-2.24	-35.2%	
5	9:10	Mar 24	14.5	18.7	-4.16	-28.7%	*
6	9:47	Mar 24	10.2	12.9	-2.69	-26.3%	
7	10:24	Mar 24	9.2	11.5	-2.32	-25.2%	
8	11:02	Mar 24	4.2	6.2	-1.99	-47.1%	
9	11:40	Mar 24	4.8	6.9	-2.07	-42.9%	
10	12:17	Mar 24	3.0	5.3	-2.30	-76.9%	
Average			6.6	8.8	-2.24	-34.2%	

Standard Deviation	0.2128	
Confidence Coefficient (CC)	0.1635	
		Limit
Relative Accuracy (as % of App. Std.)	8.3%	20.0%
Standard = 29 (ppm@7%O2)		

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-3:
Relative Accuracy Unit 1 FF Outlet - Nitrogen Oxides

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:38	Mar 24	190.4	199.3	-8.9	-4.7%	
2	7:15	Mar 24	188.2	195.6	-7.4	-3.9%	
3	7:54	Mar 24	189.0	196.3	-7.3	-3.8%	
4	8:31	Mar 24	192.6	201.9	-9.3	-4.8%	
5	9:10	Mar 24	190.5	198.4	-7.9	-4.2%	
6	9:47	Mar 24	190.6	199.7	-9.1	-4.8%	
7	10:24	Mar 24	191.8	201.7	-9.9	-5.2%	
8	11:02	Mar 24	184.8	194.4	-9.6	-5.2%	
9	11:40	Mar 24	187.0	198.7	-11.7	-6.2%	*
10	12:17	Mar 24	188.1	198.4	-10.3	-5.5%	
Average			189.5	198.4	-8.9	-4.7%	

Standard Deviation	1.0968	
Confidence Coefficient (CC)	0.8431	
		Limits
Relative Accuracy (as % of RM)	5.1%	20.0%
Relative Accuracy (as % of App. Std.) Standard = 205 (ppm@7%O2)	4.7%	10.0%

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-4:
Relative Accuracy Unit 1 FF Outlet - Carbon Monoxide

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:38	Mar 24	4.5	6.0	-1.5	-33.7%	
2	7:15	Mar 24	6.0	7.6	-1.6	-26.3%	
3	7:54	Mar 24	7.6	8.8	-1.2	-15.3%	
4	8:31	Mar 24	6.4	7.9	-1.5	-22.9%	
5	9:10	Mar 24	4.5	6.2	-1.7	-37.3%	*
6	9:47	Mar 24	5.4	6.9	-1.5	-28.3%	
7	10:24	Mar 24	6.3	7.7	-1.4	-23.1%	
8	11:02	Mar 24	4.5	6.0	-1.5	-33.3%	
9	11:40	Mar 24	5.3	6.8	-1.5	-27.6%	
10	12:17	Mar 24	5.1	6.4	-1.3	-26.4%	
Average			5.7	7.1	-1.4	-25.5%	

Standard Deviation	0.1241	
Confidence Coefficient (CC)	0.0954	
		Limit
Relative Accuracy (as % of App. Std.)	1.5%	5.0%
Standard = 100 (ppm@7%O2)		

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-5:
Relative Accuracy Unit 2 FF Outlet - Oxygen

Run No.	Start Time	Date (2008)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	6:55	Mar 25	9.50	9.20	0.30	3.12%	
2	7:33	Mar 25	9.23	9.00	0.23	2.49%	
3	8:12	Mar 25	9.40	9.10	0.30	3.14%	
4	8:51	Mar 25	9.58	9.30	0.28	2.87%	
5	9:29	Mar 25	9.40	9.10	0.30	3.23%	
6	10:08	Mar 25	9.45	9.20	0.25	2.60%	
7	10:46	Mar 25	9.21	8.90	0.31	3.35%	*
8	11:24	Mar 25	9.55	9.30	0.25	2.63%	
9	12:02	Mar 25	9.38	9.10	0.28	2.94%	
10	12:42	Mar 25	9.32	9.00	0.32	3.47%	
Average			9.42	9.14	0.28	2.94%	

Standard Deviation	0.0305	
Confidence Coefficient (CC)	0.0234	
		Limit
Avg. Absolute Difference (%dv)	0.28	NA

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-6:
Relative Accuracy Unit 2 FF Outlet - Sulfur Dioxide

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:55	Mar 25	1.9	3.7	-1.8	-91.6%	
2	7:33	Mar 25	8.2	10.8	-2.7	-32.5%	
3	8:12	Mar 25	1.7	3.1	-1.4	-87.4%	
4	8:51	Mar 25	3.1	4.6	-1.5	-49.7%	
5	9:29	Mar 25	1.5	3.4	-1.9	-129.7%	
6	10:08	Mar 25	4.2	7.0	-2.8	-67.1%	
7	10:46	Mar 25	3.0	6.3	-3.3	-110.8%	
8	11:24	Mar 25	8.4	11.7	-3.3	-39.5%	
9	12:02	Mar 25	2.5	6.0	-3.5	-135.6%	
10	12:42	Mar 25	6.7	10.4	-3.7	-55.9%	*
Average			3.8	6.3	-2.5	-64.5%	

Standard Deviation	0.8111	
Confidence Coefficient (CC)	0.6235	
		Limit
Relative Accuracy (as % of App. Std.) Standard = 29 (ppm@7%O2)	10.7%	20.0%

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-7:
Relative Accuracy Unit 2 FF Outlet - Nitrogen Oxides

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:55	Mar 25	200.4	185.2	15.2	7.6%	
2	7:33	Mar 25	192.4	176.8	15.6	8.1%	
3	8:12	Mar 25	191.6	173.9	17.7	9.2%	*
4	8:51	Mar 25	183.4	169.4	14.0	7.6%	
5	9:29	Mar 25	191.6	176.4	15.2	7.9%	
6	10:08	Mar 25	184.9	168.9	16.0	8.6%	
7	10:46	Mar 25	188.3	173.8	14.5	7.7%	
8	11:24	Mar 25	191.3	175.9	15.4	8.1%	
9	12:02	Mar 25	201.1	184.8	16.3	8.1%	
10	12:42	Mar 25	198.9	182.4	16.5	8.3%	
Average			192.5	177.1	15.4	8.0%	

Standard Deviation	0.8179	
Confidence Coefficient (CC)	0.6287	
		Limit
Relative Accuracy (as % of RM)	8.3%	20.0%
Relative Accuracy (as % of App. Std.) Standard = 205 (ppm@7%O2)	7.8%	10.0%

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-8:
Relative Accuracy Unit 2 FF Outlet - Carbon Monoxide

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:55	Mar 25	8.6	7.3	1.3	15.6%	
2	7:33	Mar 25	6.7	5.3	1.4	20.8%	
3	8:12	Mar 25	8.5	7.0	1.5	17.9%	
4	8:51	Mar 25	8.5	7.2	1.3	15.5%	
5	9:29	Mar 25	6.9	5.5	1.4	20.6%	
6	10:08	Mar 25	8.1	6.6	1.5	18.5%	
7	10:46	Mar 25	7.1	5.3	1.8	25.3%	*
8	11:24	Mar 25	8.1	6.5	1.6	19.5%	
9	12:02	Mar 25	7.7	6.0	1.7	22.3%	
10	12:42	Mar 25	7.3	5.8	1.5	20.5%	
Average			7.8	6.4	1.5	18.9%	

Standard Deviation	0.1241	
Confidence Coefficient (CC)	0.0954	
		Limit
Relative Accuracy (as % of App. Std.)	1.6%	5.0%
Standard = 100 (ppm@7%O2)		

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-9:
Relative Accuracy Unit 3 FF Outlet - Oxygen

Run No.	Start Time	Date (2008)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	6:07	Mar 26	9.35	9.20	0.15	1.63%	*
2	7:23	Mar 26	9.01	9.00	0.01	0.06%	
3	8:01	Mar 26	9.84	9.80	0.04	0.39%	
4	8:38	Mar 26	10.39	10.30	0.09	0.88%	
5	9:16	Mar 26	10.87	10.90	-0.03	-0.23%	
6	9:53	Mar 26	10.59	10.50	0.09	0.89%	
7	10:30	Mar 26	9.81	9.70	0.11	1.13%	
8	11:08	Mar 26	9.91	9.80	0.11	1.16%	
9	11:45	Mar 26	9.39	9.30	0.09	1.00%	
10	12:22	Mar 26	9.09	9.00	0.09	1.02%	
Average			9.88	9.81	0.07	0.69%	

Standard Deviation	0.0500	
Confidence Coefficient (CC)	0.0384	
		Limit
Avg. Absolute Difference (%dv)	0.07	NA

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-10:
Relative Accuracy Unit 3 FF Outlet - Sulfur Dioxide

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:07	Mar 26	4.8	1.7	3.1	64.8%	
2	7:23	Mar 26	5.4	1.0	4.4	81.6%	*
3	8:01	Mar 26	9.1	5.6	3.5	38.4%	
4	8:38	Mar 26	2.4	0.4	2.0	83.6%	
5	9:16	Mar 26	2.5	1.1	1.4	56.3%	
6	9:53	Mar 26	5.0	3.2	1.8	36.2%	
7	10:30	Mar 26	3.6	1.1	2.5	69.5%	
8	11:08	Mar 26	4.5	1.7	2.8	62.0%	
9	11:45	Mar 26	1.8	0.4	1.4	77.4%	
10	12:22	Mar 26	3.1	0.8	2.3	74.2%	
Average			4.1	1.8	2.3	56.6%	

Standard Deviation	0.7345	
Confidence Coefficient (CC)	0.5645	
		Limit
Relative Accuracy (as % of App. Std.)	9.9%	20.0%
Standard = 29 (ppm@7%O2)		

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-11:
Relative Accuracy Unit 3 FF Outlet - Nitrogen Oxides

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:07	Mar 26	200.7	199.5	1.2	0.6%	
2	7:23	Mar 26	198.5	196.3	2.2	1.1%	
3	8:01	Mar 26	173.9	171.9	2.0	1.1%	
4	8:38	Mar 26	198.4	196.1	2.3	1.2%	
5	9:16	Mar 26	202.4	198.9	3.5	1.7%	*
6	9:53	Mar 26	201.6	200.5	1.1	0.6%	
7	10:30	Mar 26	201.7	199.2	2.5	1.2%	
8	11:08	Mar 26	199.1	196.6	2.5	1.3%	
9	11:45	Mar 26	195.0	192.5	2.5	1.3%	
10	12:22	Mar 26	196.0	193.8	2.2	1.1%	
Average			196.1	194.0	2.1	1.0%	

Standard Deviation	0.5268	
Confidence Coefficient (CC)	0.4049	
		Limits
Relative Accuracy (as % of RM)	1.3%	20.0%
Relative Accuracy (as % of App. Std.) Standard = 205 (ppm@7%O2)	1.2%	10.0%

* Indicates that the run was not included in the RATA calculations.

RESULTS

Table 2-12:
Relative Accuracy Unit 3 FF Outlet - Carbon Monoxide

Run No.	Start Time	Date (2008)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	6:07	Mar 26	12.7	15.4	-2.7	-21.2%	
2	7:23	Mar 26	12.9	14.0	-1.1	-8.1%	
3	8:01	Mar 26	11.2	14.7	-3.5	-31.0%	
4	8:38	Mar 26	14.4	17.2	-2.8	-19.3%	
5	9:16	Mar 26	18.6	22.7	-4.1	-21.9%	*
6	9:53	Mar 26	15.7	19.1	-3.4	-21.5%	
7	10:30	Mar 26	12.2	14.5	-2.3	-19.2%	
8	11:08	Mar 26	13.7	16.4	-2.7	-19.9%	
9	11:45	Mar 26	13.2	15.8	-2.6	-19.9%	
10	12:22	Mar 26	8.8	11.0	-2.2	-24.6%	
Average			12.8	15.3	-2.6	-20.2%	

Standard Deviation	0.7139	
Confidence Coefficient (CC)	0.5487	
		Limit
Relative Accuracy (as % of App. Std.) Standard = 100 (ppm@7%O2)	3.1%	5.0%

* Indicates that the run was not included in the RATA calculations.

End of Section 2 – Results

DESCRIPTION OF INSTALLATION

PROCESS DESCRIPTION

The South Broward Resource Recovery Facility, located in Ft. Lauderdale, Florida operates three 750 tons per day municipal refuse fired, water wall boiler trains. The trains were manufactured by Babcock and Wilcox to produce electricity for sale to a local utility company. Each boiler is equipped with a spray dryer absorber (SDA) for acid gas removal, followed by a fabric filter (FF) baghouse for the control of particulate emissions. The control equipment is manufactured by Wheelabrator Air Pollution Control, Inc. Each fabric filter baghouse is followed by an induced draft fan, which directs the flue gas to a dedicated flue in a common stack.

CEMS GENERAL DESCRIPTION

The CEMs was supplied by Aldora Technologies and consists of the following major components: Three (3) –Perkin Elmer MCS-100 /e infrared based multi-gas measurement analyzers (one for each Unit) and an Environmental System Corporation (ESC) UNIX based data acquisition system (DAS). The MCS 100 /e analyzers measure pollutant and diluent concentrations on a hot wet basis. Each MCS 100 /e system includes the following: a SICK 100 /e analyzer with integrated zirconium oxide based O_2 analyzer, programmable logic controller (PLC), and heated probe and sample line. The FF outlet 100 /e systems monitor oxygen, carbon dioxide, carbon monoxide, sulfur dioxide and nitrogen oxides from the respective stack ductwork.

The ESC DAS consists of three (3) Model 8816 data loggers (one for each MWC unit), a central polling (located in the CEM shelter), data archiving and reporting computer, and a remote engineering workstation (located in the control room). An environmentally controlled shelter houses the MCS-100 /e analyzers, calibration gas systems and ESC Model 8816 dataloggers. A general CEMs schematic is shown in Figure 3-1.

PERKIN ELMER MCS-100 /E ANALYZER

The analyzer uses multiple infrared measurements including Gas Filter Correlation for measuring NO_X and CO, a single beam-dual wavelength for SO_2 and H_2O and an integrated heated zirconium oxide (ZrO_2) electrochemical cell for O_2, which is controlled by the 100 /e motherboard. All measurements are performed on a hot-wet basis in a single once through sample cell with common optical bench (infrared source, filters, chopper wheel and detector).

All sampling components (probe, sample line, pump) and measurement cell are maintained at 385 deg. F to prevent condensation. H_2O and CO_2 are measured to correct for the slight interference these two components have on infrared measurement techniques. The H_2O measurement is used to automatically correct wet measurements to a dry basis prior to output of signals to the 8816 loggers. The MSC 100 /e includes an integrated PLC that controls all analyzer functions including optical bench operation, detector signal processing, dynamic gas calibrations, sample system operation and operational status alarms. The dry based SO_2, NO_X, CO, O_2, CO_2 and actual H_2O measurement signals and operational status outputs are sent to the ESC 8816 data logger.

DESCRIPTION OF INSTALLATION

ESC DATA ACQUISITION SYSTEM

The DAS consists of three Model 8816 data loggers, a central data polling and reporting computer and engineering workstation. The 8816 loggers receive the measurement signals from the MCS 100 /e analyzers, and transmit the data to the central computer. The 8816 loggers also receive the necessary status inputs from the MCS 100 /e to properly record analyzer calibrations, provide appropriate status flags to data and generate alarms to alert operators of CEM problems or excess emissions events. The loggers store up to 4 weeks of hourly CEM data, consequently, in the event the central computer goes down, data recording and archiving is not affected. The logger also receives the steam flow rate and fabric filter temperature signals from the control room to provide calculation of appropriate averages and permanent recording.

The Central Polling and Reporting Computer, located in the CEMS building, receives all data from the 8816 loggers, calculates the required emission units and averaging times, generates the daily calibration reports and provides all required Subpart Cb data recording and reporting. Data from this computer is used for the relative accuracy testing and calibration drift determinations. The computer also provides the necessary permanent data storage using data storage tapes. The engineering workstation provides a remote link to the central computer for data review and generation of reports.

CEM CALIBRATION

The outlet CEM systems are calibrated daily using the appropriate calibration gases. Calibration gases are injected at the probes to provide a complete assessment of CEM response. The MCS 100 /e performs an automatic zero adjustment to all measurement channels after the calibration is completed and the zero and span responses recorded by the 8816 logger. No other adjustments or corrections are performed on the data.

DESCRIPTION OF INSTALLATION

CEMS SCHEMATIC

The following Figure 3-1 is a general schematic of each of the outlet CEM systems. Figure 3-2 presents the RM and CEM outlet sampling locations as well as a general facility process flow diagram.

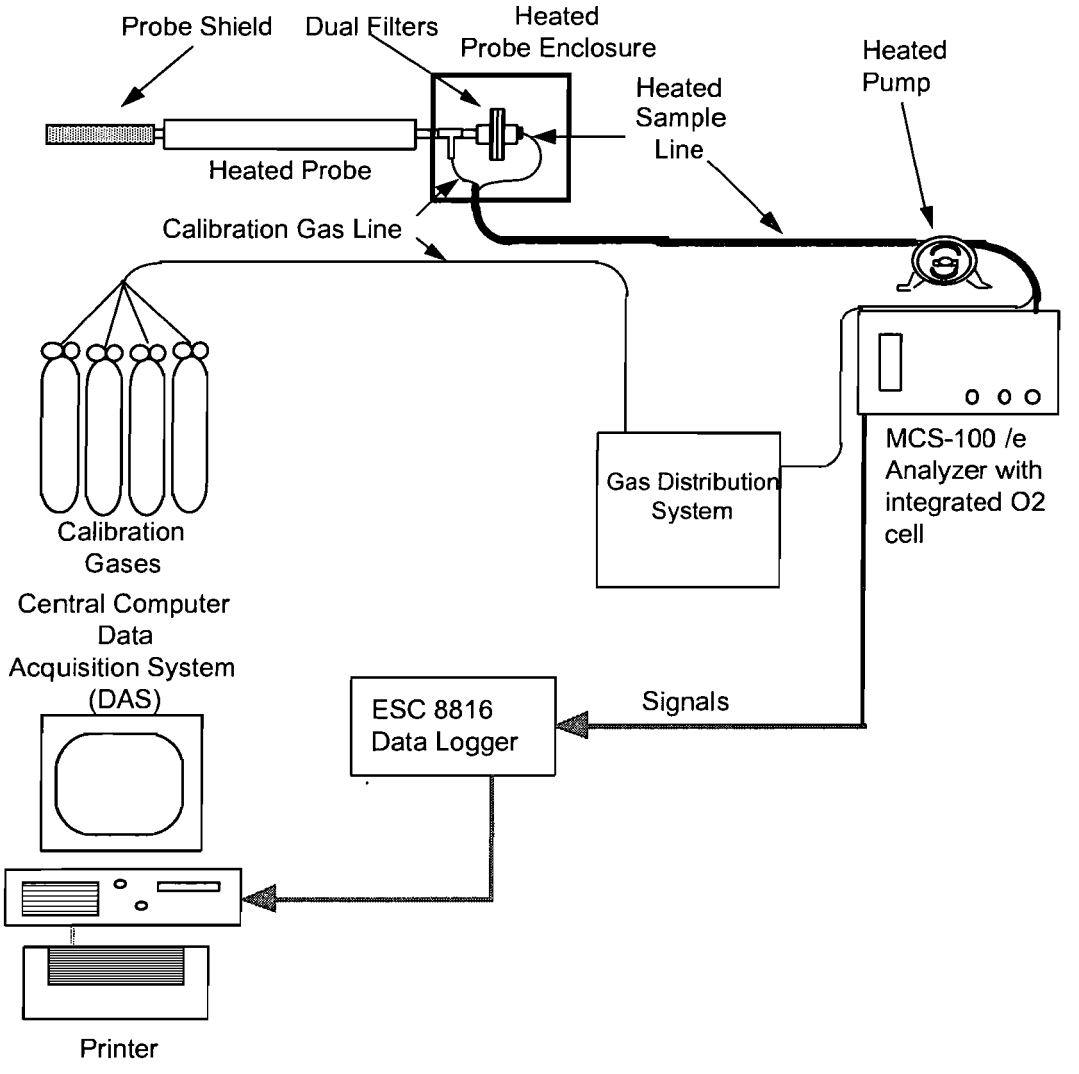


Figure 3-1: General CEMS Schematic

DESCRIPTION OF INSTALLATION

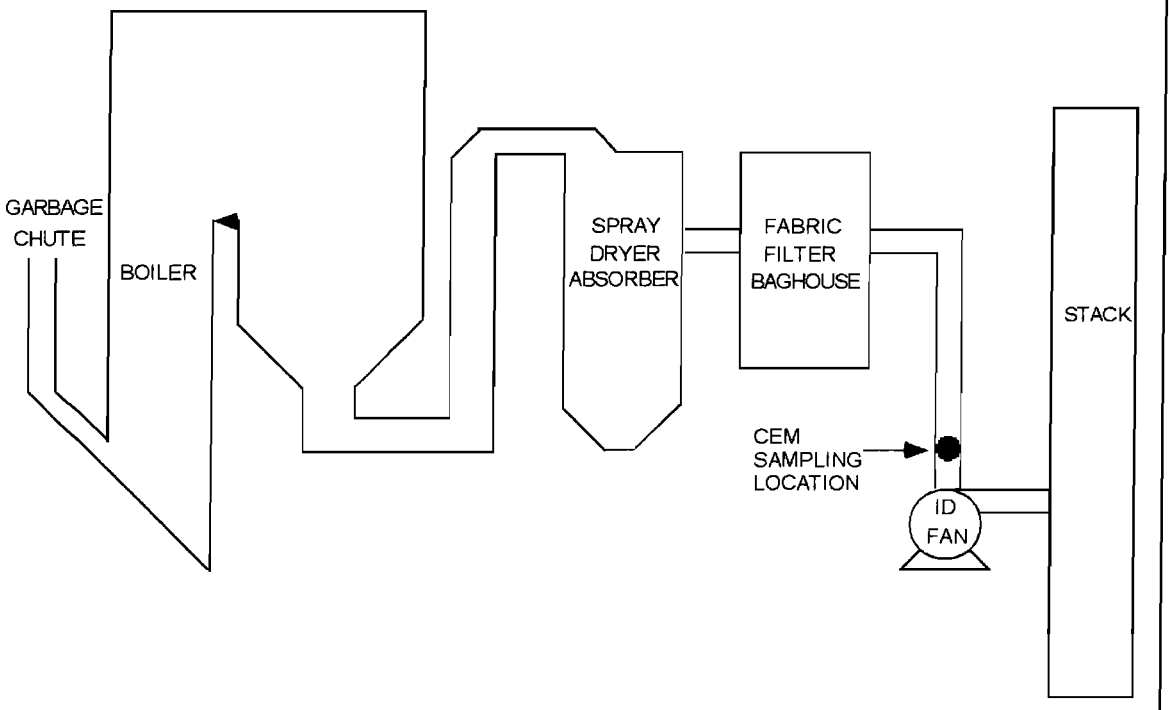


Figure 3-2: Process Flow Diagram and CEM locations

DESCRIPTION OF INSTALLATION

DESCRIPTION OF SAMPLING LOCATION

Sampling point locations were determined according to EPA Method 1.

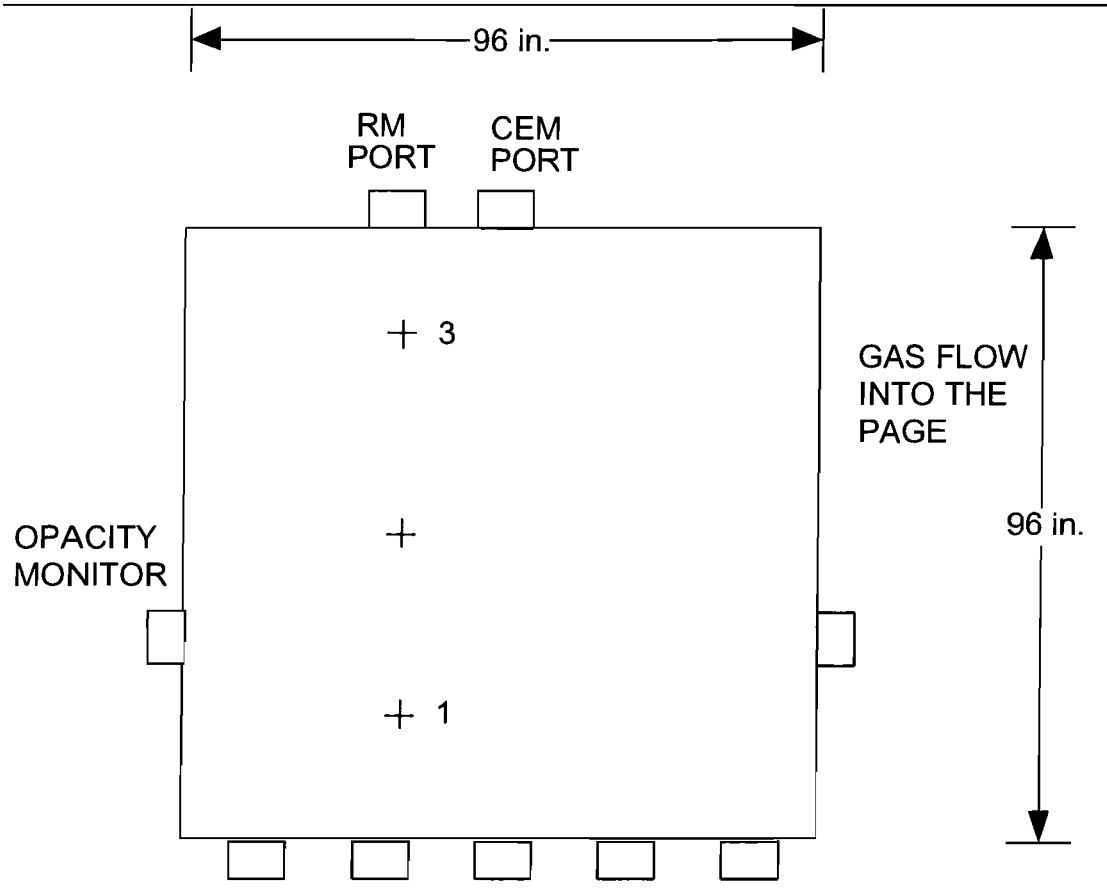
Table 3-1 outlines the sampling point configurations. Figure 3-3 illustrates the sampling points and orientation of sampling ports for each of the sources tested in the program.

Table 3-1:
Sampling Points

Location Constituent	Methods	Run No.	Ports	Points per Port	Minutes per Point	Total Minutes	Figure
Unit 1 FF Outlets							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3
Unit 2 FF Outlet							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3
Unit 3 FF Outlet							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3

DESCRIPTION OF INSTALLATION

DESCRIPTION OF SAMPLING LOCATION (CONTINUED)



Sampling Point	Port to Point Distance (in.)
1	80
2	48
3	16

Equivalent Duct diameters upstream from flow disturbance (A):	0.92	Limit: 0.5
Equivalent Duct diameters downstream from flow disturbance (B):	2.0	Limit: 2.0

Port to point distances are 2.0 m, 1.2 m and 0.4 m as specified in PS 2 Section 3.2.

Figure 3-3: Units 1, 2 and 3 FF Outlets – RATA Sampling Point Determination (PS 2)

End of Section 3 – Description of Installation

METHODOLOGY

Clean Air Engineering followed procedures as detailed in USEPA Methods 3A, 6C, 7E and 10 as well as Performance Specifications 2, 3 and 4A. The following table summarizes the methods and their respective sources.

Table 4-1:
Summary of Sampling Procedures

Title 40 CFR Part 60 Appendix A	
Method 3A	"Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
Method 6C	"Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
Method 7E	"Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
Method 10	"Determination of Carbon Monoxide Emissions from Stationary Sources"
Title 40 CFR Part 60 Appendix B (Performance Specifications (PS))	
PS2	"Specifications and Test Procedures for SO_2 and NO_x Continuous Emission Monitoring Systems in Stationary Sources"
PS3	"Specifications and Test Procedures for O_2 and CO_2 Continuous Emission Monitoring Systems in Stationary Sources"
PS4A	"Specifications and Test Procedures for Carbon Monoxide Continuous Emission Monitoring Systems in Stationary Sources"

These methods appear in detail in Title 40 of the Code of Federal Regulations (CFR) and on the World Wide Web at http://www.cleanair.com.

Diagrams of the sampling apparatus and major specifications of the sampling, recovery and analytical procedures are summarized for each method in Appendix A.

CleanAir followed specific quality assurance and quality control (QA/QC) procedures as outlined in the individual methods and in USEPA "Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III Stationary Source-Specific Methods", EPA/600/R-94/038C. Additional QA/QC methods as prescribed in CleanAir's internal Quality Manual were also followed. Results of all QA/QC activities performed by CleanAir are summarized in Appendix D.

End of Section 4 – Methodology

APPENDIX

TEST METHOD SPECIFICATIONS

A

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Specification Sheet for EPA Methods 6C, 7E and 10

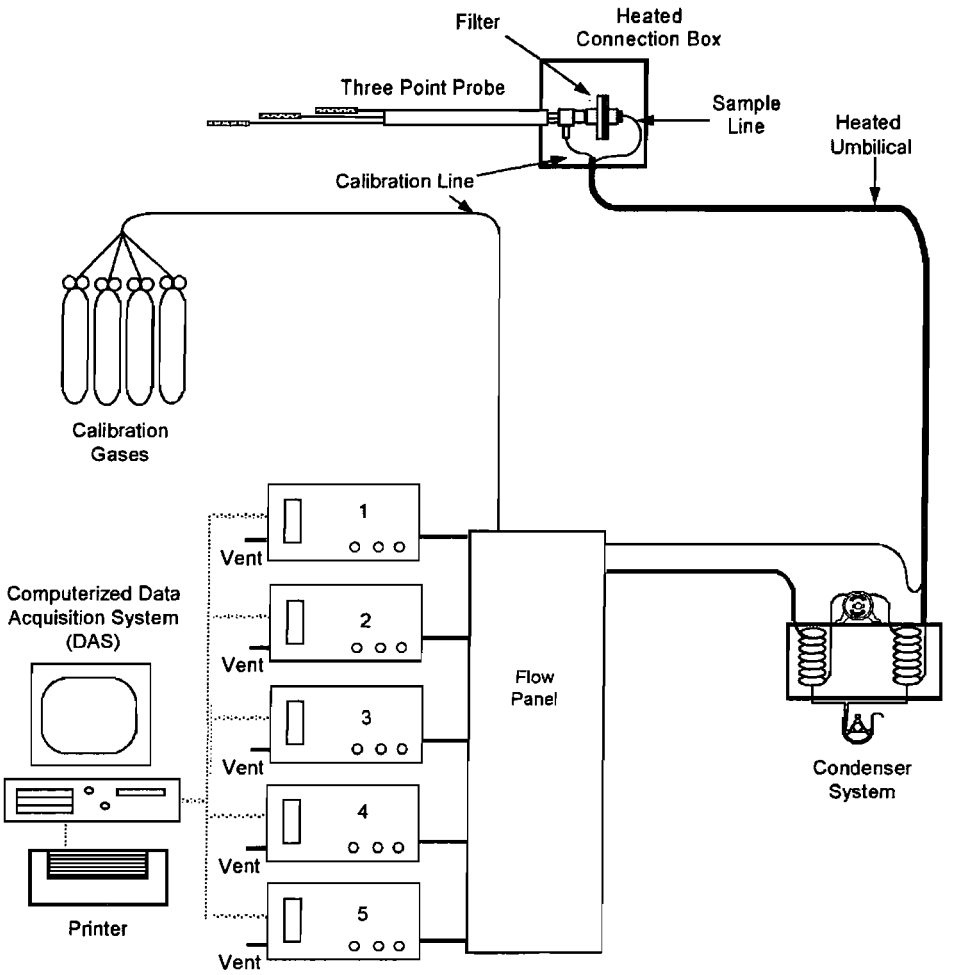
Source Location Name(s)	Units 1, 2 and 3 FF Outlets
Pollutant(s) to be Determined	Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x) and Carbon Monoxide (CO)
Other Parameters to be Determined from Train	O2 and CO2 (EPA Method 3A)

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	27 minutes
No. of Sample Traverse Points	N/A	3
Sample Time per Point	N/A	9 minutes
Sampling Rate	Constant Rate	Constant Rate
Sampling Probe		
Nozzle Material	N/A	None
Nozzle Design	N/A	N/A
Probe Liner Material	Stainless Steel or Pyrex Glass	Stainless Steel
Effective Probe Length	Sufficient to Traverse Points	3 points (16", 48" and 80")
Probe Temperature Set-Point	Prevent Condensation	248°F±25°F
Particulate Filter		
In-Stack Filter	Yes	Yes
In-Stack Filter Material	Non-reactive to gas	Fritted Stainless Steel
External Filter	Yes	Yes
External Filter Material	Borosilicate, Quartz Glass Wool or Fiber Mat	Borosilicate Glass Fiber Mat
External Filter Set-Point	Prevent Condensation	248°F±25°F
Sample Delivery System		
Heated Sample Line Material	Stainless Steel or Teflon	Teflon
Heated Sample Line Set-Point	Prevent Condensation	248°F±25°F
Heated Sample Line Connections	Probe Exit to Moisture Removal System	Probe to Moisture Removal System
Moisture Removal System	Refrigerator-type condenser or similar	Refrigerator-type condenser
Sample Pump Type	Leak-Free, minimal response time	Diaphragm
Sample Pump Material	Non-reactive to sample gases	Teflon
Sample Flow Control	Constant Rate	Constant Rate (±10%)
Non-Heated Sample Line Material	Stainless Steel or Teflon	Teflon
Non-Heated Sample Line Connections	Moisture Removal to Sample Gas Manifold	Moisture Removal to Sample Gas Manifold
Additional Filters	Optional	No
Additional Filter Type	N/A	N/A
Additional Filter Location	Optional	N/A
Filter Material	Non-reactive to sample gases	N/A
Analyzer Description		
Oxygen (O_2)	EPA Method 3A (Paramagnetic)	EPA Method 3A (Paramagnetic)
Carbon Dioxide (CO_2)	EPA Method 3A (NDIR)	EPA Method 3A (NDIR)
Sulfur Dioxide (SO_2)	EPA Method 6C (UV, NDIR or Fluorescence)	EPA Method 6C (UV Absorption)
Nitrogen Oxides (NO_x)	EPA Method 7E (Chemiluminescent)	EPA Method 7E (Chemiluminescent)
Carbon Monoxide (CO)	EPA Method 10 (Gas Filter Correlation IR)	EPA Method 10 (Gas Filter Correlation IR)
Total Hydrocarbon (THC)	N/A	
Hydrogen Chloride (HCl)	N/A	
Ammonia (NH_3)	N/A	

Specification Sheet for EPA Methods 6C, 7E and 10

	Standard Method Specification	Actual Specification Used
Instrument Span Range		
Oxygen (O_2)	≤ 1.33 x Expected Maximum	0-20.95%
Carbon Dioxide (CO_2)	≤ 1.33 x Expected Maximum	0-21.27%
Sulfur Dioxide (SO_2)	≤ 1.33 x Expected Maximum	0-82.13 ppm
Nitrogen Oxides (NO_x)	≤ 1.33 x Expected Maximum	0-452.3 ppm
Carbon Monoxide (CO)	1000 ppm maximum	0-94.72 ppm
Total Hydrocarbon (THC)	N/A	N/A
Hydrogen Chloride (HCl)	N/A	N/A
Ammonia (NH_3)	N/A	N/A
Data Acquisition		
Data Recorder	Strip chart, Analog Computer or Digital Recorder	Digital Recorder
Recorder Resolution	0.5 Percent of Span	0.1 Percent of Span
Data Storage	Manually or Automatic	Automatic
Measurement Freq. ≤60 min. Sample Time	1-min. intervals or 30 measurements (less restrictive)	One reading per second
Recording Freq. ≤60 min. Sample Time	1-min. intervals or 30 measurements (less restrictive)	One Minute Average (60, 1 second readings)
Measurement Freq. >60 min. Sample Time	2-min. intervals or 96 measurements (less restrictive)	N/A
Recording Freq. >60 min. Sample Time	2-min. intervals or 96 measurements (less restrictive)	N/A
Calibration Gas Specifications		
Oxygen (O_2)	EPA Protocol 1	EPA Protocol 1
Carbon Dioxide (CO_2)	EPA Protocol 1	EPA Protocol 1
Sulfur Dioxide (SO_2)	EPA Protocol 1	EPA Protocol 1
Nitrogen Oxides (NO_x)	EPA Protocol 1	EPA Protocol 1
Carbon Monoxide (CO)	Certified Standard (±2%)	EPA Protocol 1
Total Hydrocarbon (THC)	N/A	
Hydrogen Chloride (HCl)	N/A	
Ammonia (NH_3)	N/A	

EPA Methods 3A, 6C, 7E and 10
Sampling Train Configuration



Number	Gas	Monitor	Range Used	Calibration Gas Concentrations
1	O_2	Servomex 1420B	0-20.95%	0, 11.8, 20.95
2	CO_2	Servomex 1415B	0-21.27%	0, 10.5, 21.27
3	SO_2	Western Research 921 NMP	0-82.13 ppm	0, 47.93, 82.13
4	NO_X	EcoPhysics CLD70S	0-452.3	0, 250, 452.3
5	CO	T.E.I. 48CHL	0-94.72	0, 44.61, 94.72

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SAMPLE CALCULATIONS

B

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Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

CEM Field Sample Calculations for NOx U1 FF Outlet

Sample data taken from [redacted] and Channel 4

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140031

1. Average of a calibration series

$$C_{mce} = \frac{(C_1 + C_2 + C_3)}{3}$$

Where:

C_1, C_2, C_3	= concentrations of 3 consecutive gas samples that are representative of the calibration gas			
C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 4	=	224.949	ppmdv

2a. Calibration Error Check for Hydrocarbons (5% of actual calibration gas value error allowed by Method 25A)

$$E_{HC} = abs\left|\frac{C_{mce} - C_{ma}}{C_{ma}}\right| \le l_{cal}$$

Where:

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 4	=	224.949	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	225.300	ppmdv
l_{cal}	= limit for calibration error for hydrocarbons	=	5.0%	
E_{HC}	= calibration error check value	=	NA	

2b. Calibration Error Check for non-Hydrocarbons (2% of Instrument Span)

$$E = abs\left|\frac{C_{mce} - C_{ma}}{Span}\right| \le l_{cal}$$

Where:

C_{mca}	= average concentration of a calibration series In this case the low cal series for channel 4	=	224.949	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	225.300	ppmdv
Span	= instrument span value	=	453.900	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.08%	**Pass**

3. System Bias as Percent of Span Value (5% is allowed)

$$E_{Bias} = abs\left|\frac{C_{mf} - C_{mce}}{Span}\right| \le l_{bias}$$

Where:

C_{mce}	= average concentration of a calibration series in this case the Low cal series for channel 4	=	224.949	ppmdv
C_{mf}	= calibration error response concentration for Cal01	=	221.123	ppmdv
Span	= instrument span value	=	453.900	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	0.84%	**Pass**

4. System Drift as Percent of Span Value (3%)

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$$E_{Drift} = abs\left|\frac{C_{mf} - C_{mi}}{Span}\right| \le l_{drift}$$

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	221.123	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	221.525	ppmdv
Span	= instrument span value	=	453.900	ppmdv
l_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.09%	**Pass**

5. Average Concentration for an entire Run

$$C = \frac{\sum_{i=1}^{N} C_i}{N}$$

Where:

			i=1	
C_i	= All concentration readings for the entirety of Run 1 for the monitor looking for NOx on channel 4	=	160.130	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average NOx concentration for Run 1	=	157.357	ppmdv

6. Drift-Corrected Average Concentration for an entire Run

$$C_{DC} = \left(C - \frac{C_{oi} + C_{of}}{2}\right)\left(\frac{C_{ma}}{\frac{C_{mi} + C_{mf}}{2} - \frac{C_{oi} + C_{of}}{2}}\right)$$

C_{ma}	= concentration of actual calibration gas value	=	225.300	ppmdv
C	= average NOx concentration for Run 1	=	157.357	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	221.123	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	221.525	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.537	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.434	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	160.041	ppmdv

CEM Emissions Sample Calculations for NOx U1 FF Outlet

Sample data taken from Run 1 and Channel 4

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140031

1. NOx concentration (ppmdv)

$$C(ppmdv) = k_1 \times C_{DC} \quad if \quad dry \quad gas$$

$$C(ppmdv) = \frac{k_1 \times C_{DC}}{\left(1 - B_w/100\right)} \quad if \quad wet \quad gas$$

Where:

C_{DC}	= drift corrected average concentration	=	160.041	ppmdv
B_w	= actual water vapor in gas (% v/v)	=	0.000	% v/v
100	= conversion factor to change percentage to decimal	=	100	
k_1	= ppm/% to ppm conversion factor for diluent gases	=	1	
C (ppmdv)	= NOx concentration (ppmdv)	=	160.041	ppmdv

2. NOx concentration (lb/dscf)

$$C(lb/dscf) = \frac{C(ppmdv) \times MW(gas)}{10^6 \, ppm \times 385.3}$$

Where:

C (ppmdv)	= NOx concentration (ppmdv)	=	160.041	ppmdv
MW	= Molecular Weight of NOx gas	=	46.0055	lb/lb-mole
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
385.3	= molar volume	=	385.3	dscf/lb-mole
C (lb/dscf)	= NOx concentration (lb/dscf)	=	1.911E-05	lb/dscf

3. NOx concentration (lb/scf)

Where:

C (lb/dscf)	= NOx concentration (lb/dscf)	=	1.911E-05	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	0	dscf/min
Q_s	= volumetric flow rate (standard cubic feet/min)	=	0	scf/min
C (lb/scf)	= NOx concentration (lb/scf)	=	N/A	lb/scf

4. NOx concentration (lb/acf)

Where:

C (lb/dscf)	= NOx concentration (lb/dscf)	=	1.911E-05	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	0	dscf/min
Q_a	= volumetric flow rate (actual cubic feet/min)	=	0	acf/min
C (lb/acf)	= NOx concentration (lb/acf)	=	N/A	lb/acf

5. NOx concentration (%dv)

$$C(\%dv) = C(ppmdv) \times \frac{100}{10^6}$$

Where:

C (ppmdv)	= NOx concentration (ppmdv)	=	160.041	ppmdv
100	= conversion factor from decimal to percentage	=	1.00E+02	
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
C (%dv)	= NOx concentration (%dv)	=	0.0160%	%dv

6. NOx concentration (mg/dscm)

$$C(mg/dscm) = C(lb/dscf) \times k_2 \times 35.31$$

Where:

C (lb/dscf)	= NOx concentration (lb/dscf)	=	1.911E-05	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
C (mg/dscm)	= NOx concentration (mg/dscm)	=	306.006	mg/dscm

7. NOx concentration (mg/Nm3 dry)

$$C \quad (mg/Nm^3\ dry) = C(lb/dscf) \times k_2 \times 35.31 \times \left(\frac{68+460}{32+460}\right)$$

Where:

C (lb/dscf)	= NOx concentration (lb/dscf)	=	1.911E-05	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
68	= standard temperature (°F)	=	68	°F
32	= normal temperature (°F)	=	32	°F
460	= °F to °R conversion constant	=	460	
C (mg/Nm3 dry)	= NOx concentration (mg/Nm3 dry)	=	328.397	mg/Nm^3 dry

8. NOx concentration corrected to 7% O2 (ppmdv example)

$$C(ppmdv@x\%02) = C(ppmdv) \times \left(\frac{20.9-x}{20.9-O_2}\right)$$

Where:

C (ppmdv)	= NOx concentration (ppmdv)	=	160.041	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.217	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2)	= NOx concentration corrected to 7% O2 (ppmdv example)	=	190.408	ppmdv @ 7%O2

9. NOx concentration corrected to 12% CO2 (ppmdv example)

$$C(ppmdv@y\%CO_2) = C(ppmdv) \times \left(\frac{y}{CO_2}\right)$$

Where:

C (ppmdv)	= NOx concentration (ppmdv)	=	160.041	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.393	%
C (ppmdv -CO2)	= NOx concentration corrected to 12% CO2 (ppmdv example)	=	184.783	ppmdv @ 12%CO2

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South Broward
Unit 1 FF Outlet

CEM RATA Sample Calculations for NOx FF Outlet

Sample data taken from Run 1
and Channel 4

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041708 155104

1. NOx value difference between Plant CEM Data and CleanAir RM Data (ppm@7%O2)

$$D = C_R - C_P$$

Where:

C_P	= NOx value from Plant CEM Data	=	199.300	ppm@7%O2
C_R	= NOx value from CleanAir RM Data	=	190.408	ppm@7%O2
D	= NOx value difference between 2 methods	=	-8.892	ppm@7%O2

2. Percent Value Difference (%)

$$D_{\%} = \frac{D}{C_R}$$

Where:

C_R	= NOx value from CleanAir RM Data	=	190.408	ppm@7%O2
D	= NOx value difference between 2 methods	=	-8.892	ppm@7%O2
$D_{\%}$	= NOx value difference as a percentage of RM Data	=	-4.7%	

3. Average NOx Value (Plant CEM Data example) (ppm@7%O2)

$$C_{p,avg} = \frac{\sum_{i=1}^{N} C_{p,i}}{N}$$

Where:

			i=1	
$C_{p,i}$	= NOx value from Plant CEM Data for ith run	=	199.300	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average NOx value from Plant CEM Data	=	198.411	ppm@7%O2

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4. Standard Deviation of Plant CEM data and CleanAir RM data

$$STDEV = \sqrt{\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)^2 - \frac{\left(\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)\right)^2}{N}}{N-1}}$$

Where:

$C_{R,i}$	= NOx value from CleanAir RM Data for ith run	=	190.408	ppm@7%O2
$C_{p,i}$	= NOx value from Plant CEM Data for ith run	=	199.300	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	1.097	ppm@7%O2

5. Confidence Coefficient

$$CC = STDEV \times \frac{t}{\sqrt{N}}$$

Where:

STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	1.097	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.843	ppm@7%O2

6. Relative Accuracy (as a percentage of the reference method)

$$RA = \frac{abs\left|\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)}{N}\right| + abs\left|CC\right|}{\frac{\sum_{i=1}^{N} C_{R,i}}{N}}$$

Where:

$C_{R,i}$	= NOx value from CleanAir RM Data for ith run	=	190.408	ppm@7%O2
$C_{p,i}$	= NOx value from Plant CEM Data for ith run	=	199.300	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.843	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	5.121%	
		Limit =	20.000%	

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South Broward

Unit 1 FF Outlet

7. Relative Accuracy (as a percentage of the applicable standard)

$$RA_{std} = \frac{abs\left|\frac{\sum_{i=1}^{N}(C_{R,i} - C_{p,i})}{N}\right| + abs|CC|}{C_{std}}$$

Where:

$C_{R,i}$	= NOx value from CleanAir RM Data for ith run	=	190.408	ppm@7%O2
$C_{p,i}$	= NOx value from Plant CEM Data for ith run	=	199.300	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.843	
C_{std}	= NOx value of applicable standard	=	205.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	4.735%	
		Limit =	10.000%	

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South Broward
U2 FF Outlet

CEM Field Sample Calculations for SO2 U2 FF Outlet

Sample data taken from [redacted] and Channel 3

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140259

1. Average of a calibration series

$$C_{mce} = \frac{(C_1 + C_2 + C_3)}{3}$$

Where:

C_1, C_2, C_3	= concentrations of 3 consecutive gas samples that are representative of the calibration gas			
C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 3	=	45.016	ppmdv

2a. Calibration Error Check for Hydrocarbons (5% of actual calibration gas value error allowed by Method 25A)

$$E_{HC} = abs\left|\frac{C_{mce} - C_{ma}}{C_{ma}}\right| \le l_{cal}$$

Where:

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 3	=	45.016	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	44.330	ppmdv
l_{cal}	= limit for calibration error for hydrocarbons	=	5.0%	
E_{HC}	= calibration error check value	=	NA	

2b. Calibration Error Check for non-Hydrocarbons (2% of Instrument Span)

$$E = abs\left|\frac{C_{mce} - C_{ma}}{Span}\right| \le l_{cal}$$

Where:

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 3	=	45.016	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	44.330	ppmdv
Span	= instrument span value	=	86.890	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.79%	**Pass**

3. System Bias as Percent of Span Value (5% is allowed)

$$E_{Bias} = abs\left|\frac{C_{mf} - C_{mce}}{Span}\right| \le l_{bias}$$

Where:

C_{mce}	= average concentration of a calibration series in this case the Low cal series for channel 3	=	45.016	ppmdv
C_{mf}	= calibration error response concentration for Cal01	=	42.087	ppmdv
Span	= instrument span value	=	86.890	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	3.37%	**Pass**

4. System Drift as Percent of Span Value (3%)

$$E_{Drift} = abs\left|\frac{C_{mf} - C_{mi}}{Span}\right| \le l_{drift}$$

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	42.087	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	41.797	ppmdv
Span	= instrument span value	=	86.890	ppmdv
I_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.33%	**Pass**

5. Average Concentration for an entire Run

$$C = \frac{\sum_{i=1}^{N} C_i}{N}$$

Where:

			i=1	
C_i	= All concentration readings for the entirety of Run 1 for the monitor looking for SO2 on channel 3	=	0.813	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average SO2 concentration for Run 1	=	1.391	ppmdv

6. Drift-Corrected Average Concentration for an entire Run

$$C_{DC} = \left(C - \frac{C_{oi} + C_{of}}{2}\right)\left(\frac{C_{ma}}{\frac{C_{mi} + C_{mf}}{2} - \frac{C_{oi} + C_{of}}{2}}\right)$$

C_{ma}	= concentration of actual calibration gas value	=	44.330	ppmdv
C	= average SO2 concentration for Run 1	=	1.391	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	42.087	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	41.797	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	-0.049	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	-0.175	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	1.584	ppmdv

CEM Emissions Sample Calculations for SO2 U2 FF Outlet

Sample data taken from Run 1 and Channel 3

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140259

1. SO2 concentration (ppmdv)

$$C(ppmdv) = k_1 \times C_{DC} \quad if \quad dry \quad gas$$

$$C(ppmdv) = \frac{k_1 \times C_{DC}}{\left(1 - B_W/100\right)} \quad if \quad wet \quad gas$$

Where:

C_{DC}	= drift corrected average concentration	=	1.584	ppmdv
B_w	= actual water vapor in gas (% v/v)	=	0.000	% v/v
100	= conversion factor to change percentage to decimal	=	100	
k_1	= ppm/% to ppm conversion factor for diluent gases	=	1	
C (ppmdv)	= SO2 concentration (ppmdv)	=	1.584	ppmdv

2. SO2 concentration (lb/dscf)

$$C(lb/dscf) = \frac{C(ppmdv) \times MW(gas)}{10^6\ ppm \times 385.3}$$

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	1.584	ppmdv
MW	= Molecular Weight of SO2 gas	=	64.0628	lb/lb-mole
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
385.3	= molar volume	=	385.3	dscf/lb-mole
C (lb/dscf)	= SO2 concentration (lb/dscf)	=	2.634E-07	lb/dscf

3. SO2 concentration (lb/scf)

$$C(lb/scf) = C(lb/dscf) \times \frac{Q_{std}}{Q_s}$$

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	2.634E-07	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	0	dscf/min
Q_s	= volumetric flow rate (standard cubic feet/min)	=	0	scf/min
C (lb/scf)	= SO2 concentration (lb/scf)	=	N/A	lb/scf

4. SO2 concentration (lb/acf)

$$C(lb/acf) = C(lb/dscf) \times \frac{Q_{std}}{Q_a}$$

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	2.634E-07	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	0	dscf/min
Q_a	= volumetric flow rate (actual cubic feet/min)	=	0	acf/min
C (lb/acf)	= SO2 concentration (lb/acf)	=	N/A	lb/acf

5. SO2 concentration (%dv)

$$C(\%dv) = C(ppmdv) \times \frac{100}{10^6}$$

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	1.584	ppmdv
100	= conversion factor from decimal to percentage	=	1.00E+02	
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
C (%dv)	= SO2 concentration (%dv)	=	0.0002%	%dv

6. SO2 concentration (mg/dscm)

$$C(mg/dscm) = C(lb/dscf) \times k_2 \times 35.31$$

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	2.634E-07	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
C (mg/dscm)	= SO2 concentration (mg/dscm)	=	4.218	mg/dscm

7. SO2 concentration (mg/Nm3 dry)

$$C \quad (mg/Nm^3\ dry) = C(lb/dscf) \times k_2 \times 35.31 \times \left(\frac{68+460}{32+460}\right)$$

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	2.634E-07	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
68	= standard temperature (°F)	=	68	°F
32	= normal temperature (°F)	=	32	°F
460	= °F to °R conversion constant	=	460	
C (mg/Nm3 dry)	= SO2 concentration (mg/Nm3 dry)	=	4.527	mg/Nm^3 dry

8. SO2 concentration corrected to 7% O2 (ppmdv example)

$$C(ppmdv@x\%02) = C(ppmdv) \times \left(\frac{20.9-x}{20.9-O_2}\right)$$

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	1.584	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.496	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2)	= SO2 concentration corrected to 7% O2 (ppmdv example)	=	1.931	ppmdv @ 7%O2

9. SO2 concentration corrected to 12% CO2 (ppmdv example)

$$C(ppmdv@y\%C0_2) = C(ppmdv) \times \left(\frac{y}{CO_2}\right)$$

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	1.584	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.168	%
C (ppmdv -CO2)	= SO2 concentration corrected to 12% CO2 (ppmdv example)	=	1.870	ppmdv @ 12%CO2

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U2 FF Outlet

CEM RATA Sample Calculations for SO2 U2 FF Outlet

Sample data taken from Run 1
and Channel 3

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140327

1. SO2 value difference between Plant CEM Data and CleanAir RM Data (ppm@7%O2)

$$D = C_R - C_P$$

Where:

C_P	= SO2 value from Plant CEM Data	=	3.700	ppm@7%O2
C_R	= SO2 value from CleanAir RM Data	=	1.931	ppm@7%O2
D	= SO2 value difference between 2 methods	=	-1.769	ppm@7%O2

2. Percent Value Difference (%)

$$D_{\%} = \frac{D}{C_R}$$

Where:

C_R	= SO2 value from CleanAir RM Data	=	1.931	ppm@7%O2
D	= SO2 value difference between 2 methods	=	-1.769	ppm@7%O2
$D_{\%}$	= SO2 value difference as a percentage of RM Data	=	-91.6%	

3. Average SO2 Value (Plant CEM Data example) (ppm@7%O2)

$$C_{p,avg} = \frac{\sum_{i=1}^{N} C_{p,i}}{N}$$

Where:

			i=1	
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	3.700	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average SO2 value from Plant CEM Data	=	6.289	ppm@7%O2

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4. Standard Deviation of Plant CEM data and CleanAir RM data

$$STDEV = \sqrt{\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)^2 - \frac{\left(\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)\right)^2}{N}}{N-1}}$$

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	1.931	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	3.700	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.811	ppm@7%O2

5. Confidence Coefficient

$$CC = STDEV \times \frac{t}{\sqrt{N}}$$

Where:

STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.811	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.623	ppm@7%O2

6. Relative Accuracy (as a percentage of the reference method)

$$RA = \frac{abs\left|\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)}{N}\right| + abs\left|CC\right|}{\frac{\sum_{i=1}^{N} C_{R,i}}{N}}$$

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	1.931	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	3.700	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.623	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	80.828%	
		Limit =	20.000%	

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7. Relative Accuracy (as a percentage of the applicable standard)

$$RA_{std} = \frac{abs\left|\frac{\sum_{i=1}^{N}(C_{R,i} - C_{p,i})}{N}\right| + abs|CC|}{C_{std}}$$

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	1.931	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	3.700	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.623	
C_{std}	= SO2 value of applicable standard	=	29.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	10.654%	
		Limit =	20.000%	

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CEM Field Sample Calculations for CO U3 FF Outlet

Sample data taken from [redacted] and Channel 5

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140440

1. Average of a calibration series

$$C_{mce} = \frac{(C_1 + C_2 + C_3)}{3}$$

Where:

C_1, C_2, C_3	= concentrations of 3 consecutive gas samples that are representative of the calibration gas			
C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 5	=	24.231	ppmdv

2a. Calibration Error Check for Hydrocarbons (5% of actual calibration gas value error allowed by Method 25A)

$$E_{HC} = abs\left|\frac{C_{mce} - C_{ma}}{C_{ma}}\right| \le l_{cal}$$

Where:

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 5	=	24.231	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	24.830	ppmdv
l_{cal}	= limit for calibration error for hydrocarbons	=	5.0%	
E_{HC}	= calibration error check value	=	NA	

2b. Calibration Error Check for non-Hydrocarbons (2% of Instrument Span)

$$E = abs\left|\frac{C_{mce} - C_{ma}}{Span}\right| \le l_{cal}$$

Where:

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 5	=	24.231	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	24.830	ppmdv
Span	= instrument span value	=	96.570	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.62%	**Pass**

3. System Bias as Percent of Span Value (5% is allowed)

$$E_{Bias} = abs\left|\frac{C_{mf} - C_{mce}}{Span}\right| \le l_{bias}$$

Where:

C_{mce}	= average concentration of a calibration series in this case the Low cal series for channel 5	=	24.231	ppmdv
C_{mf}	= calibration error response concentration for Cal01	=	24.214	ppmdv
Span	= instrument span value	=	96.570	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	0.02%	**Pass**

4. System Drift as Percent of Span Value (3%)

$$E_{Drift} = abs\left|\frac{C_{mf} - C_{mi}}{Span}\right| \leq l_{drift}$$

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	24.214	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	24.234	ppmdv
Span	= instrument span value	=	96.570	ppmdv
I_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.02%	**Pass**

5. Average Concentration for an entire Run

$$C = \frac{\sum_{i=1}^{N} C_i}{N}$$

Where: i=1

C_i	= All concentration readings for the entirety of Run 1 for the monitor looking for CO on channel 5	=	9.519	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average CO concentration for Run 1	=	10.508	ppmdv

6. Drift-Corrected Average Concentration for an entire Run

$$C_{DC} = \left(C - \frac{C_{oi} + C_{of}}{2}\right)\left(\frac{C_{ma}}{\frac{C_{mi} + C_{mf}}{2} - \frac{C_{oi} + C_{of}}{2}}\right)$$

C_{ma}	= concentration of actual calibration gas value	=	24.830	ppmdv
C	= average CO concentration for Run 1	=	10.508	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	24.214	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	24.234	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.375	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.354	ppmdv
C_{pc}	= drift corrected average concentration for Run 1	=	10.556	ppmdv

CEM Emissions Sample Calculations for CO U3 FF Outlet

Sample data taken from Run 1 and Channel 5

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140440

1. CO concentration (ppmdv)

$$C(ppmdv) = k_1 \times C_{DC} \quad if \quad dry \quad gas$$

$$C(ppmdv) = \frac{k_1 \times C_{DC}}{\left(1 - B_W/100\right)} \quad if \quad wet \quad gas$$

Where:

C_{DC}	= drift corrected average concentration	=	10.556	ppmdv
B_w	= actual water vapor in gas (% v/v)	=	0.000	% v/v
100	= conversion factor to change percentage to decimal	=	100	
k_1	= ppm/% to ppm conversion factor for diluent gases	=	1	
C (ppmdv)	= CO concentration (ppmdv)	=	10.556	ppmdv

2. CO concentration (lb/dscf)

$$C(lb/dscf) = \frac{C(ppmdv) \times MW(gas)}{10^6\ ppm \times 385.3}$$

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	10.556	ppmdv
MW	= Molecular Weight of CO gas	=	28.0106	lb/lb-mole
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
385.3	= molar volume	=	385.3	dscf/lb-mole
C (lb/dscf)	= CO concentration (lb/dscf)	=	7.674E-07	lb/dscf

3. CO concentration (lb/scf)

$$C(lb/scf) = C(lb/dscf) \times \frac{Q_{std}}{Q_s}$$

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	7.674E-07	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	0	dscf/min
Q_s	= volumetric flow rate (standard cubic feet/min)	=	0	scf/min
C (lb/scf)	= CO concentration (lb/scf)	=	N/A	lb/scf

4. CO concentration (lb/acf)

$$C(lb/acf) = C(lb/dscf) \times \frac{Q_{std}}{Q_a}$$

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	7.674E-07	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	0	dscf/min
Q_a	= volumetric flow rate (actual cubic feet/min)	=	0	acf/min
C (lb/acf)	= CO concentration (lb/acf)	=	N/A	lb/acf

5. CO concentration (%dv)

$$C(\%dv) = C(ppmdv) \times \frac{100}{10^6}$$

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	10.556	ppmdv
100	= conversion factor from decimal to percentage	=	1.00E+02	
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
C (%dv)	= CO concentration (%dv)	=	0.0011%	%dv

6. CO concentration (mg/dscm)

$$C(mg/dscm) = C(lb/dscf) \times k_2 \times 35.31$$

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	7.674E-07	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
C (mg/dscm)	= CO concentration (mg/dscm)	=	12.289	mg/dscm

7. CO concentration (mg/Nm3 dry)

$$C \quad (mg/Nm^3\ dry) = C(lb/dscf) \times k_2 \times 35.31 \times \left(\frac{68+460}{32+460}\right)$$

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	7.674E-07	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
68	= standard temperature (°F)	=	68	°F
32	= normal temperature (°F)	=	32	°F
460	= °F to °R conversion constant	=	460	
C (mg/Nm3 dry)	= CO concentration (mg/Nm3 dry)	=	13.188	mg/Nm^3 dry

8. CO concentration corrected to 7% O2 (ppmdv example)

$$C(ppmdv@x\%02) = C(ppmdv) \times \left(\frac{20.9-x}{20.9-O_2}\right)$$

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	10.556	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.353	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2)	= CO concentration corrected to 7% O2 (ppmdv example)	=	12.707	ppmdv @ 7%O2

9. CO concentration corrected to 12% CO2 (ppmdv example)

$$C(ppmdv@y\%C0_2) = C(ppmdv) \times \left(\frac{y}{CO_2}\right)$$

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	10.556	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.230	%
C (ppmdv -CO2)	= CO concentration corrected to 12% CO2 (ppmdv example)	=	12.382	ppmdv @ 12%CO2

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CEM RATA Sample Calculations for CO U3 FF Outlet

Sample data taken from Run 1
and Channel 5

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041508 140528

1. CO value difference between Plant CEM Data and CleanAir RM Data (ppm@7%O2)

$$D = C_R - C_P$$

Where:

C_P	= CO value from Plant CEM Data	=	15.400	ppm@7%O2
C_R	= CO value from CleanAir RM Data	=	12.707	ppm@7%O2
D	= CO value difference between 2 methods	=	-2.693	ppm@7%O2

2. Percent Value Difference (%)

$$D_{\%} = \frac{D}{C_R}$$

Where:

C_R	= CO value from CleanAir RM Data	=	12.707	ppm@7%O2
D	= CO value difference between 2 methods	=	-2.693	ppm@7%O2
$D_{\%}$	= CO value difference as a percentage of RM Data	=	-21.2%	

3. Average CO Value (Plant CEM Data example) (ppm@7%O2)

$$C_{p,avg} = \frac{\sum_{i=1}^{N} C_{p,i}}{N}$$

Where:

			i=1	
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	15.400	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average CO value from Plant CEM Data	=	15.344	ppm@7%O2

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4. Standard Deviation of Plant CEM data and CleanAir RM data

$$STDEV = \sqrt{\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)^2 - \frac{\left(\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)\right)^2}{N}}{N-1}}$$

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	12.707	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	15.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.714	ppm@7%O2

5. Confidence Coefficient

$$CC = STDEV \times \frac{t}{\sqrt{N}}$$

Where:

STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.714	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.549	ppm@7%O2

6. Relative Accuracy (as a percentage of the reference method)

$$RA = \frac{abs\left|\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)}{N}\right| + abs|CC|}{\frac{\sum_{i=1}^{N} C_{R,i}}{N}}$$

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	12.707	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	15.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.549	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	24.543%	
		Limit =	10.000%	

Wheelabrator

Clean Air Project No. 10455

South Broward

U3 FF Outlet

7. Relative Accuracy (as a percentage of the applicable standard)

$$RA_{std} = \frac{abs\left|\frac{\sum_{i=1}^{N}(C_{R,i} - C_{p,i})}{N}\right| + abs|CC|}{C_{std}}$$

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	12.707	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	15.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.549	
C_{std}	= CO value of applicable standard	=	100.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	3.132%	
		Limit =	5.000%	

PARAMETERS

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Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2008)	Mar 24				
Start Time	6:38				
End Time	7:05				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.22	10.39	5.71	160.04	3.77
Concentration (ppmdv)			5.71	160.04	3.77
Concentration (lb/dscf)			9.486E-07	1.911E-05	2.742E-07
Concentration (%dv)	9.217	10.393	0.00057	0.01600	0.00038
Concentration (mg/dscm)			15.19	306.01	4.39
Concentration @7%O2 (ppm)			6.79	190.41	4.49
Concentration @12%CO2 (ppm)			6.59	184.78	4.36

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2008)	Mar 24				
Start Time	7:15				
End Time	7:42				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.49	10.20	7.30	154.47	4.94
Concentration (ppmdv)			7.30	154.47	4.94
Concentration (lb/dscf)			1.213E-06	1.844E-05	3.591E-07
Concentration (%dv)	9.490	10.199	0.00073	0.01545	0.00049
Concentration (mg/dscm)			19.43	295.35	5.75
Concentration @7%O2 (ppm)			8.89	188.19	6.02
Concentration @12%CO2 (ppm)			8.59	181.74	5.81

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2008)	Mar 24				
Start Time	7:54				
End Time	8:21				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.39	10.27	4.54	156.48	6.32
Concentration (ppmdv)			4.54	156.48	6.32
Concentration (lb/dscf)			7.552E-07	1.868E-05	4.594E-07
Concentration (%dv)	9.394	10.268	0.00045	0.01565	0.00063
Concentration (mg/dscm)			12.09	299.19	7.36
Concentration @7%O2 (ppm)			5.49	189.03	7.63
Concentration @12%CO2 (ppm)			5.31	182.87	7.38

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2008)	Mar 24				
Start Time	8:31				
End Time	8:58				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.92	10.72	5.48	166.01	5.54
Concentration (ppmdv)			5.48	166.01	5.54
Concentration (lb/dscf)			9.117E-07	1.982E-05	4.029E-07
Concentration (%dv)	8.917	10.724	0.00055	0.01660	0.00055
Concentration (mg/dscm)			14.60	317.43	6.45
Concentration @7%O2 (ppm)			6.36	192.58	6.43
Concentration @12%CO2 (ppm)			6.14	185.76	6.20

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2008)	Mar 24				
Start Time	9:10				
End Time	9:37				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.98	10.71	12.47	163.39	3.87
Concentration (ppmdv)			12.47	163.39	3.87
Concentration (lb/dscf)			2.073E-06	1.951E-05	2.816E-07
Concentration (%dv)	8.977	10.714	0.00125	0.01634	0.00039
Concentration (mg/dscm)			33.20	312.41	4.51
Concentration @7%O2 (ppm)			14.54	190.49	4.52
Concentration @12%CO2 (ppm)			13.96	183.01	4.34

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2008)	Mar 24				
Start Time	9:47				
End Time	10:14				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.91	10.81	8.81	164.44	4.64
Concentration (ppmdv)			8.81	164.44	4.64
Concentration (lb/dscf)			1.465E-06	1.963E-05	3.373E-07
Concentration (%dv)	8.907	10.814	0.00088	0.01644	0.00046
Concentration (mg/dscm)			23.46	314.42	5.40
Concentration @7%O2 (ppm)			10.21	190.58	5.38
Concentration @12%CO2 (ppm)			9.78	182.48	5.15

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2008)	Mar 24				
Start Time	10:24				
End Time	10:51				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.90	10.79	7.93	165.64	5.40
Concentration (ppmdv)			7.93	165.64	5.40
Concentration (lb/dscf)			1.318E-06	1.978E-05	3.929E-07
Concentration (%dv)	8.896	10.787	0.00079	0.01656	0.00054
Concentration (mg/dscm)			21.11	316.72	6.29
Concentration @7%O2 (ppm)			9.18	191.80	6.26
Concentration @12%CO2 (ppm)			8.82	184.27	6.01

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2008)	Mar 24				
Start Time	11:02				
End Time	11:29				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.86	10.68	3.65	160.06	3.90
Concentration (ppmdv)			3.65	160.06	3.90
Concentration (lb/dscf)			6.069E-07	1.911E-05	2.834E-07
Concentration (%dv)	8.859	10.677	0.00036	0.01601	0.00039
Concentration (mg/dscm)			9.72	306.04	4.54
Concentration @7%O2 (ppm)			4.21	184.78	4.50
Concentration @12%CO2 (ppm)			4.10	179.90	4.38

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2008)	Mar 24				
Start Time	11:40				
End Time	12:07				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.46	11.09	4.32	167.40	4.77
Concentration (ppmdv)			4.32	167.40	4.77
Concentration (lb/dscf)			7.187E-07	1.999E-05	3.468E-07
Concentration (%dv)	8.459	11.095	0.00043	0.01674	0.00048
Concentration (mg/dscm)			11.51	320.08	5.55
Concentration @7%O2 (ppm)			4.83	187.04	5.33
Concentration @12%CO2 (ppm)			4.67	181.06	5.16

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2008)	Mar 24				
Start Time	12:17				
End Time	12:44				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet	U1 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.36	11.16	2.70	169.63	4.57
Concentration (ppmdv)			2.70	169.63	4.57
Concentration (lb/dscf)			4.493E-07	2.025E-05	3.320E-07
Concentration (%dv)	8.363	11.160	0.00027	0.01696	0.00046
Concentration (mg/dscm)			7.19	324.35	5.32
Concentration @7%O2 (ppm)			3.00	188.07	5.06
Concentration @12%CO2 (ppm)			2.91	182.40	4.91

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2008)	Mar 25				
Start Time	6:55				
End Time	7:22				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.50	10.17	1.58	164.39	7.09
Concentration (ppmdv)			1.58	164.39	7.09
Concentration (lb/dscf)			2.634E-07	1.963E-05	5.157E-07
Concentration (%dv)	9.496	10.168	0.00016	0.01644	0.00071
Concentration (mg/dscm)			4.22	314.32	8.26
Concentration @7%O2 (ppm)			1.93	200.38	8.65
Concentration @12%CO2 (ppm)			1.87	194.01	8.37

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2008)	Mar 25				
Start Time	7:33				
End Time	8:00				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.23	10.36	6.85	161.57	5.62
Concentration (ppmdv)			6.85	161.57	5.62
Concentration (lb/dscf)			1.138E-06	1.929E-05	4.086E-07
Concentration (%dv)	9.227	10.355	0.00068	0.01616	0.00056
Concentration (mg/dscm)			18.23	308.93	6.54
Concentration @7%O2 (ppm)			8.15	192.39	6.69
Concentration @12%CO2 (ppm)			7.93	187.24	6.51

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2008)	Mar 25				
Start Time	8:12				
End Time	8:39				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.40	10.16	1.37	158.57	7.05
Concentration (ppmdv)			1.37	158.57	7.05
Concentration (lb/dscf)			2.277E-07	1.893E-05	5.129E-07
Concentration (%dv)	9.395	10.164	0.00014	0.01586	0.00071
Concentration (mg/dscm)			3.65	303.20	8.21
Concentration @7%O2 (ppm)			1.65	191.59	8.52
Concentration @12%CO2 (ppm)			1.62	187.22	8.33

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2008)	Mar 25				
Start Time	8:51				
End Time	9:18				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.58	10.04	2.50	149.39	6.95
Concentration (ppmdv)			2.50	149.39	6.95
Concentration (lb/dscf)			4.163E-07	1.784E-05	5.049E-07
Concentration (%dv)	9.575	10.040	0.00025	0.01494	0.00069
Concentration (mg/dscm)			6.67	285.64	8.09
Concentration @7%O2 (ppm)			3.07	183.36	8.52
Concentration @12%CO2 (ppm)			2.99	178.55	8.30

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2008)	Mar 25				
Start Time	9:29				
End Time	9:56				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.40	10.18	1.22	158.46	5.73
Concentration (ppmdv)			1.22	158.46	5.73
Concentration (lb/dscf)			2.035E-07	1.892E-05	4.166E-07
Concentration (%dv)	9.404	10.178	0.00012	0.01585	0.00057
Concentration (mg/dscm)			3.26	302.98	6.67
Concentration @7%O2 (ppm)			1.48	191.59	6.93
Concentration @12%CO2 (ppm)			1.44	186.82	6.76

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2008)	Mar 25				
Start Time	10:08				
End Time	10:35				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.45	10.17	3.46	152.33	6.68
Concentration (ppmdv)			3.46	152.33	6.68
Concentration (lb/dscf)			5.745E-07	1.819E-05	4.853E-07
Concentration (%dv)	9.446	10.167	0.00035	0.01523	0.00067
Concentration (mg/dscm)			9.20	291.27	7.77
Concentration @7%O2 (ppm)			4.19	184.86	8.10
Concentration @12%CO2 (ppm)			4.08	179.79	7.88

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2008)	Mar 25				
Start Time	10:46				
End Time	11:13				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.21	10.34	2.51	158.37	5.97
Concentration (ppmdv)			2.51	158.37	5.97
Concentration (lb/dscf)			4.179E-07	1.891E-05	4.340E-07
Concentration (%dv)	9.209	10.341	0.00025	0.01584	0.00060
Concentration (mg/dscm)			6.69	302.81	6.95
Concentration @7%O2 (ppm)			2.99	188.29	7.10
Concentration @12%CO2 (ppm)			2.92	183.77	6.93

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2008)	Mar 25				
Start Time	11:24				
End Time	11:51				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.55	10.07	6.85	156.20	6.59
Concentration (ppmdv)			6.85	156.20	6.59
Concentration (lb/dscf)			1.139E-06	1.865E-05	4.792E-07
Concentration (%dv)	9.551	10.073	0.00069	0.01562	0.00066
Concentration (mg/dscm)			18.25	298.67	7.67
Concentration @7%O2 (ppm)			8.39	191.31	8.07
Concentration @12%CO2 (ppm)			8.16	186.08	7.85

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SS CEM Version 01-2003

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2008)	Mar 25				
Start Time	12:02				
End Time	12:29				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.38	10.21	2.11	166.70	6.40
Concentration (ppmdv)			2.11	166.70	6.40
Concentration (lb/dscf)			3.510E-07	1.990E-05	4.656E-07
Concentration (%dv)	9.375	10.206	0.00021	0.01667	0.00064
Concentration (mg/dscm)			5.62	318.74	7.46
Concentration @7%O2 (ppm)			2.55	201.06	7.72
Concentration @12%CO2 (ppm)			2.48	196.00	7.53

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2008)	Mar 25				
Start Time	12:42				
End Time	13:09				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet	U2 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.32	10.30	5.56	165.67	6.08
Concentration (ppmdv)			5.56	165.67	6.08
Concentration (lb/dscf)			9.237E-07	1.978E-05	4.420E-07
Concentration (%dv)	9.323	10.299	0.00056	0.01657	0.00061
Concentration (mg/dscm)			14.79	316.78	7.08
Concentration @7%O2 (ppm)			6.67	198.92	7.30
Concentration @12%CO2 (ppm)			6.47	193.03	7.08

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2008)	Mar 26				
Start Time	6:07				
End Time	6:34				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.35	10.23	4.01	166.76	10.56
Concentration (ppmdv)			4.01	166.76	10.56
Concentration (lb/dscf)			6.665E-07	1.991E-05	7.674E-07
Concentration (%dv)	9.353	10.230	0.00040	0.01668	0.00106
Concentration (mg/dscm)			10.67	318.85	12.29
Concentration @7%O2 (ppm)			4.83	200.73	12.71
Concentration @12%CO2 (ppm)			4.70	195.60	12.38

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2008)	Mar 26				
Start Time	7:23				
End Time	7:50				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.01	10.49	4.65	169.86	11.08
Concentration (ppmdv)			4.65	169.86	11.08
Concentration (lb/dscf)			7.732E-07	2.028E-05	8.053E-07
Concentration (%dv)	9.005	10.487	0.00047	0.01699	0.00111
Concentration (mg/dscm)			12.38	324.78	12.90
Concentration @7%O2 (ppm)			5.43	198.49	12.95
Concentration @12%CO2 (ppm)			5.32	194.37	12.68

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2008)	Mar 26				
Start Time	8:01				
End Time	8:28				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.84	9.58	7.24	138.35	8.93
Concentration (ppmdv)			7.24	138.35	8.93
Concentration (lb/dscf)			1.203E-06	1.652E-05	6.492E-07
Concentration (%dv)	9.839	9.579	0.00072	0.01383	0.00089
Concentration (mg/dscm)			19.27	264.53	10.40
Concentration @7%O2 (ppm)			9.10	173.85	11.22
Concentration @12%CO2 (ppm)			9.07	173.32	11.19

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2008)	Mar 26				
Start Time	8:38				
End Time	9:05				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.39	9.25	1.84	149.99	10.90
Concentration (ppmdv)			1.84	149.99	10.90
Concentration (lb/dscf)			3.060E-07	1.791E-05	7.923E-07
Concentration (%dv)	10.391	9.247	0.00018	0.01500	0.00109
Concentration (mg/dscm)			4.90	286.78	12.69
Concentration @7%O2 (ppm)			2.43	198.39	14.41
Concentration @12%CO2 (ppm)			2.39	194.65	14.14

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2008)	Mar 26				
Start Time	9:16				
End Time	9:43				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.87	8.89	1.82	145.99	13.43
Concentration (ppmdv)			1.82	145.99	13.43
Concentration (lb/dscf)			3.021E-07	1.743E-05	9.760E-07
Concentration (%dv)	10.875	8.888	0.00018	0.01460	0.00134
Concentration (mg/dscm)			4.84	279.14	15.63
Concentration @7%O2 (ppm)			2.52	202.42	18.62
Concentration @12%CO2 (ppm)			2.45	197.10	18.13

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2008)	Mar 26				
Start Time	9:53				
End Time	10:20				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.59	9.13	3.72	149.50	11.66
Concentration (ppmdv)			3.72	149.50	11.66
Concentration (lb/dscf)			6.184E-07	1.785E-05	8.473E-07
Concentration (%dv)	10.594	9.133	0.00037	0.01495	0.00117
Concentration (mg/dscm)			9.90	285.85	13.57
Concentration @7%O2 (ppm)			5.02	201.63	15.72
Concentration @12%CO2 (ppm)			4.89	196.43	15.31

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2008)	Mar 26				
Start Time	10:30				
End Time	10:57				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.81	9.81	2.87	160.88	9.70
Concentration (ppmdv)			2.87	160.88	9.70
Concentration (lb/dscf)			4.776E-07	1.921E-05	7.055E-07
Concentration (%dv)	9.811	9.815	0.00029	0.01609	0.00097
Concentration (mg/dscm)			7.65	307.60	11.30
Concentration @7%O2 (ppm)			3.60	201.65	12.16
Concentration @12%CO2 (ppm)			3.51	196.70	11.87

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2008)	Mar 26				
Start Time	11:08				
End Time	11:35				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.91	9.73	3.54	157.36	10.81
Concentration (ppmdv)			3.54	157.36	10.81
Concentration (lb/dscf)			5.881E-07	1.879E-05	7.857E-07
Concentration (%dv)	9.915	9.726	0.00035	0.01574	0.00108
Concentration (mg/dscm)			9.42	300.87	12.58
Concentration @7%O2 (ppm)			4.48	199.11	13.67
Concentration @12%CO2 (ppm)			4.36	194.15	13.33

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2008)	Mar 26				
Start Time	11:45				
End Time	12:12				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.39	10.13	1.47	161.45	10.91
Concentration (ppmdv)			1.47	161.45	10.91
Concentration (lb/dscf)			2.439E-07	1.928E-05	7.928E-07
Concentration (%dv)	9.394	10.131	0.00015	0.01614	0.00109
Concentration (mg/dscm)			3.91	308.70	12.70
Concentration @7%O2 (ppm)			1.77	195.04	13.17
Concentration @12%CO2 (ppm)			1.74	191.23	12.92

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2008)	Mar 26				
Start Time	12:22				
End Time	12:49				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	SO2	NOx	CO
Location	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet	U3 FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.09	10.38	2.63	166.45	7.50
Concentration (ppmdv)			2.63	166.45	7.50
Concentration (lb/dscf)			4.377E-07	1.987E-05	5.452E-07
Concentration (%dv)	9.093	10.383	0.00026	0.01665	0.00075
Concentration (mg/dscm)			7.01	318.27	8.73
Concentration @7%O2 (ppm)			3.10	195.95	8.83
Concentration @12%CO2 (ppm)			3.04	192.38	8.67

QA/QC_____
Date_____

QA/QC DATA

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RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: 55647-71-65000
Project No.: 05-53475-001

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM026535 **Certification Date:** 05Apr2007 **Exp. Date:** 04Apr2010
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	6.058	%	+/- 1%	Direct NIST and NMi
OXYGEN	14.02	%	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Nov2010	ID002807	23.04 %	CARBON DIOXIDE
NTRM 2350	01May2009	K026542	23.48 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/10693	04Apr2007	THERMAL CONDUCTIVITY
CALIFORNIA/110P/S02041	05Apr2007	PARAMAGNETIC

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis | Second Triad Analysis | Calibration Curve

CARBON DIOXIDE

First Triad Analysis			Second Triad Analysis	Calibration Curve
Date: 04Apr2007	Response Unit:AREA			Concentration = A + Bx + Cx2 + Dx3 + Ex4
Z1 = 0.00000	R1 = 1165892.	T1 = 306033.0		r = 0.999996
R2 = 1166031.	Z2 = 0.00000	T2 = 305928.0		Constants: A = 0.010560
Z3 = 0.00000	T3 = 305959.0	R3 = 1166669.		B = 0.000020 C = 0
Avg. Concentration:	6.058	%		D = 0 E = 0

OXYGEN

First Triad Analysis			Second Triad Analysis	Calibration Curve
Date: 05Apr2007	Response Unit:%			Concentration = A + Bx + Cx2 + Dx3 + Ex4
Z1 = 0.00000	R1 = 23.48000	T1 = 14.03000		r = 0.999999
R2 = 23.48000	Z2 = 0.00000	T2 = 14.03000		Constants: A = -0.002923
Z3 = 0.00000	T3 = 14.02000	R3 = 23.49000		B = 0.999759 C = 0
Avg. Concentration:	14.02	%		D = 0 E = 0

APPROVED BY: _____

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: 55647-71-65000
Project No.: 05-53475-002

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM015424 **Certification Date:** 05Apr2007 **Exp. Date:** 04Apr2010
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	14.03	%	+/- 1%	Direct NIST and NMi
OXYGEN	5.986	%	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE			

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Nov2010	1D002807	23.04 %	CARBON DIOXIDE
NTRM 2350	01May2009	K026542	23.48 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/10693	30Mar2007	THERMAL CONDUCTIVITY
CALIFORNIA/110P/S02041	22Mar2007	PARAMAGNETIC

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 03Apr2007	Response Unit:AREA	
Z1 = 0.00000	R1 = 1161725.	T1 = 706523.0
R2 = 116182.0	Z2 = 0.00000	T2 = 706670.0
Z3 = 0.00000	T3 = 706686.0	R3 = 1160799.
Avg. Concentration:	14.03	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999993

Constants:	A = -0.080082
B = 0.000020	C = 0
D = 0	E = 0

OXYGEN

Date: 05Apr2007	Response Unit:%	
Z1 = 0.00000	R1 = 23.48000	T1 = 5.99000
R2 = 23.48000	Z2 = 0.00000	T2 = 5.99000
Z3 = 0.00000	T3 = 5.99000	R3 = 23.48000
Avg. Concentration:	5.986	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999999

Constants:	A = -0.002923
B = 0.999759	C = 0
D = 0	E = 0

APPROVED BY: _____

Scott Specialty Gases

Shipped From: 1290 COMBERMERE STREET
TROY MI 48083
Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ANALYSIS

WAREHOUSE/STOCK
WAREHOUSE/STOCK/
CHICAGO WAREHOUSE
868 SIVERT
WOOD DALE IL 60191

PROJECT #: 05-59066-002
PO#: GEN STOCK
ITEM #: 0501813 AL
DATE: 17Sep2007

CYLINDER #: ALM021476
FILL PRESSURE: 02000 PSIG

PURE MATERIAL: NITROGEN CAS# 7727-37-9

GRADE: ZERO GAS

PURITY: 99.998%

IMPURITY	MAXIMUM CONCENTRATIONS
THC	0.5 PPM

ANALYST:

AIR LIQUIDE Scott Specialty Gases
Air Liquide America Specialty Gases LLC

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 66-65000
Project No.: 05-62553-002

Customer
CLEAN AIR ENGINEERING

DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM002114 **Certification Date:** 12Feb2008 **Exp. Date:** 11Feb2010
Cylinder Pressure:*** 1774 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.09	%	+/- 1%	Direct NIST and NMi
NITRIC OXIDE	225.3	PPM	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	44.33	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	225.3	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.
* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Pr

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1800	01Mar2009	K027180	17.87 %	CARBON DIOXIDE
NTRM 1685	01Sep2010	KAL003463	247.1 PPM	NITRIC OXIDE
NTRM 1694	15Aug2009	ALM043477	97.81 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	24Jan2008	FTIR
FTIR//0928621	17Jan2008	FTIR
FTIR//0928621	07Feb2008	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

CARBON DIOXIDE

Date: 05Feb2008 Response Unit: %
Z1 = -0.01489 R1 = 17.66329 T1 = 9.99069
R2 = 17.74783 Z2 = 0.01115 T2 = 9.99745
Z3 = 0.01230 T3 = 10.04121 R3 = 17.75156
Avg. Concentration: 10.09 %

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99995E-1
Constants: A = 0.00000E+0
B = 5.93062E-1 C = 4.33100E-3
D = 0.00000E+0 E = 0.00000E+0

NITRIC OXIDE

Date: 05Feb2008 Response Unit: PPM
Z1 = -0.25650 R1 = 492.2479 T1 = 223.6142
R2 = 494.4330 Z2 = 0.32315 T2 = 224.2679
Z3 = 0.42698 T3 = 224.8234 R3 = 497.1497
Avg. Concentration: 225.5 PPM

Date: 12Feb2008 Response Unit: PPM
Z1 = -0.14227 R1 = 247.0216 T1 = 224.5543
R2 = 247.1263 Z2 = 0.46688 T2 = 225.3643
Z3 = 0.51162 T3 = 225.6001 R3 = 247.1490
Avg. Concentration: 225.1 PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99999E-1
Constants: A = 0.00000E+0
B = 1.00236E+0 C = 5.10000E-5
D = 0.00000E+0 E = 0.00000E+0

SULFUR DIOXIDE *

Date: 05Feb2008 Response Unit: PPM
Z1 = -0.01068 R1 = 99.05542 T1 = 44.66696
R2 = 99.08011 Z2 = 0.08325 T2 = 44.74909
Z3 = 0.09255 T3 = 44.85242 R3 = 99.24430
Avg. Concentration: 44.13 PPM

Date: 12Feb2008 Response Unit: PPM
Z1 = 0.02251 R1 = 98.53427 T1 = 44.90239
R2 = 98.64226 Z2 = 0.08956 T2 = 44.95225
Z3 = 0.09485 T3 = 44.95373 R3 = 98.65797
Avg. Concentration: 44.53 PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99986E-1
Constants: A = 0.00000E+0
B = 9.98271E-1 C = 5.00000E-6
D = 0.00000E+0 E = 0.00000E+0

APPROVED BY: _____
Rob McCrandall

AIR LIQUIDE | Scott Specialty Gases, Air Liquide America Specialty Gases LLC

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 66-65000
Project No.: 05-62553-001

Customer
CLEAN AIR ENGINEERING

DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM013846 **Certification Date:** 12Feb2008 **Exp. Date:** 11Feb2010
Cylinder Pressure*:** 1764 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.05	%	+/- 1%	Direct NIST and NMi
NITRIC OXIDE	453.7	PPM	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	86.89	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	453.9	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.
* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Prot

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1800	01Mar2009	K027180	17.87 %	CARBON DIOXIDE
NTRM 1685	01Sep2010	KAL003463	247.1 PPM	NITRIC OXIDE
NTRM 1694	15Aug2009	ALM043477	97.81 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	24Jan2008	FTIR
FTIR//0928621	17Jan2008	FTIR
FTIR//0928621	07Feb2008	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

CARBON DIOXIDE

First Triad Analysis	Second Triad Analysis	Calibration Curve
Date: 05Feb2008 Response Unit:%		Concentration = A + Bx + Cx2 + Dx3 + Ex4
Z1 = -0.01489 R1 = 17.66329 T1 = 9.94413		r = 9.99995E-1
R2 = 17.74783 Z2 = 0.01115 T2 = 9.96169		Constants: A = 0.00000E+0
Z3 = 0.01230 T3 = 10.00345 R3 = 17.75156		B = 5.93062E-1 C = 4.33100E-3
Avg. Concentration: 10.05 %		D = 0.00000E+0 E = 0.00000E+0

NITRIC OXIDE

First Triad Analysis	Second Triad Analysis	Calibration Curve
Date: 05Feb2008 Response Unit:PPM	Date: 12Feb2008 Response Unit: PPM	Concentration = A + Bx + Cx2 + Dx3 + Ex4
Z1 = -0.25650 R1 = 492.2479 T1 = 451.8905	Z1 = -0.14227 R1 = 247.0216 T1 = 451.2214	r = 9.99999E-1
R2 = 494.4330 Z2 = 0.32315 T2 = 452.2656	R2 = 247.1263 Z2 = 0.46688 T2 = 451.8494	Constants: A = 0.00000E+0
Z3 = 0.42698 T3 = 454.0023 R3 = 497.1497	Z3 = 0.51162 T3 = 451.9505 R3 = 247.1490	B = 1.00236E+0 C = 5.10000E-5
Avg. Concentration: 455.5 PPM	Avg. Concentration: 451.9 PPM	D = 0.00000E+0 E = 0.00000E+0

SULFUR DIOXIDE *

First Triad Analysis	Second Triad Analysis	Calibration Curve
Date: 05Feb2008 Response Unit:PPM	Date: 12Feb2008 Response Unit: PPM	Concentration = A + Bx + Cx2 + Dx3 + Ex4
Z1 = -0.01068 R1 = 99.05542 T1 = 87.44545	Z1 = 0.02251 R1 = 98.53427 T1 = 87.84141	r = 9.99986E-1
R2 = 99.08011 Z2 = 0.08325 T2 = 87.77479	R2 = 98.64226 Z2 = 0.08956 T2 = 87.98949	Constants: A = 0.00000E+0
Z3 = 0.09255 T3 = 87.94551 R3 = 99.24430	Z3 = 0.09485 T3 = 88.00758 R3 = 98.65797	B = 9.98271E-1 C = 5.00000E-6
Avg. Concentration: 86.55 PPM	Avg. Concentration: 87.22 PPM	D = 0.00000E+0 E = 0.00000E+0

APPROVED BY: _____
Rob McCrandall

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: 55791-71-65000
Project No.: 05-55610-003

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: 1L2234 **Certification Date:** 11Jun2007 **Exp. Date:** 10Jun2010
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	24.83	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1679	01May2011	ALM038059	94.90 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/A1A-220/57297601	06Jun2007	NDIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 06Jun2007 Response Unit:MV
Z1 = 0.00000 R1 = 100.0000 T1 = 26.70000
R2 = 99.80000 Z2 = 0.00000 T2 = 26.60000
Z3 = 0.00000 T3 = 26.60000 R3 = 100.0000
Avg. Concentration: 24.77 PPM

Second Triad Analysis

Date: 13Jun2007 Response Unit: MV
Z1 = 0.00000 R1 = 100.0000 T1 = 26.80000
R2 = 100.0000 Z2 = 0.00000 T2 = 26.80000
Z3 = 0.00000 T3 = 26.80000 R3 = 100.1000
Avg. Concentration: 24.90 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999982
Constants: A = 0.085703
B = 0.920105 C = 0.000202
D = 0.000001 E = 0

APPROVED BY: _____

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: 55678-71-65000
Project No.: 05-54266-006

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM013959 **Certification Date:** 08May2007 **Exp. Date:** 07May2010
Cylinder Pressure*:** 1684 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	49.53	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1679	01May2011	ALM038059	94.90 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//092862 1	30Apr2007	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 30Apr2007 Response Unit:PPM

Z1=-0.05751	R1=51.49847	T1=49.74687
R2=51.50695	Z2=-0.05359	T2=49.76013
Z3=0.00230	T3=49.76175	R3=51.52992

Avg. Concentration: 49.39 PPM

Second Triad Analysis

Date: 08May2007 Response Unit: PPM

Z1=0.05092	R1=94.93137	T1=49.74196
R2=95.00434	Z2=0.12382	T2=49.75344
Z3=0.15043	T3=49.86079	R3=95.07496

Avg. Concentration: 49.68 PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4

r=9.99995E-1

Constants:	A=0.00000E+0
B=7.22110E-1	C=3.32000E-4
D=1.00000E-6	E=0.00000E+0

APPROVED BY: _____
Scott King

AIR LIQUIDE Scott Specialty Gases
Air Liquide America Specialty Gases LLC

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 56306-71-65000
Project No.: 05-62048-001

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM025195 **Certification Date:** 30Jan2008 **Exp. Date:** 29Jan2011
Cylinder Pressure*:** 1914 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	96.57	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1679	01May2011	ALM038072	94.90 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	17Jan2008	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 23Jan2008 Response Unit:PPM

Z1 = -0.04200	R1 = 95.06290	T1 = 96.70524
R2 = 95.06480	Z2 = 0.07018	T2 = 96.70618
Z3 = 0.12164	T3 = 96.85674	R3 = 95.06811

Avg. Concentration: 96.59 PPM

Second Triad Analysis

Date: 30Jan2008 Response Unit: PPM

Z1 = 0.03240	R1 = 95.01948	T1 = 96.75378
R2 = 95.14558	Z2 = 0.08646	T2 = 96.76719
Z3 = 0.10629	T3 = 96.82839	R3 = 95.22909

Avg. Concentration: 96.55 PPM

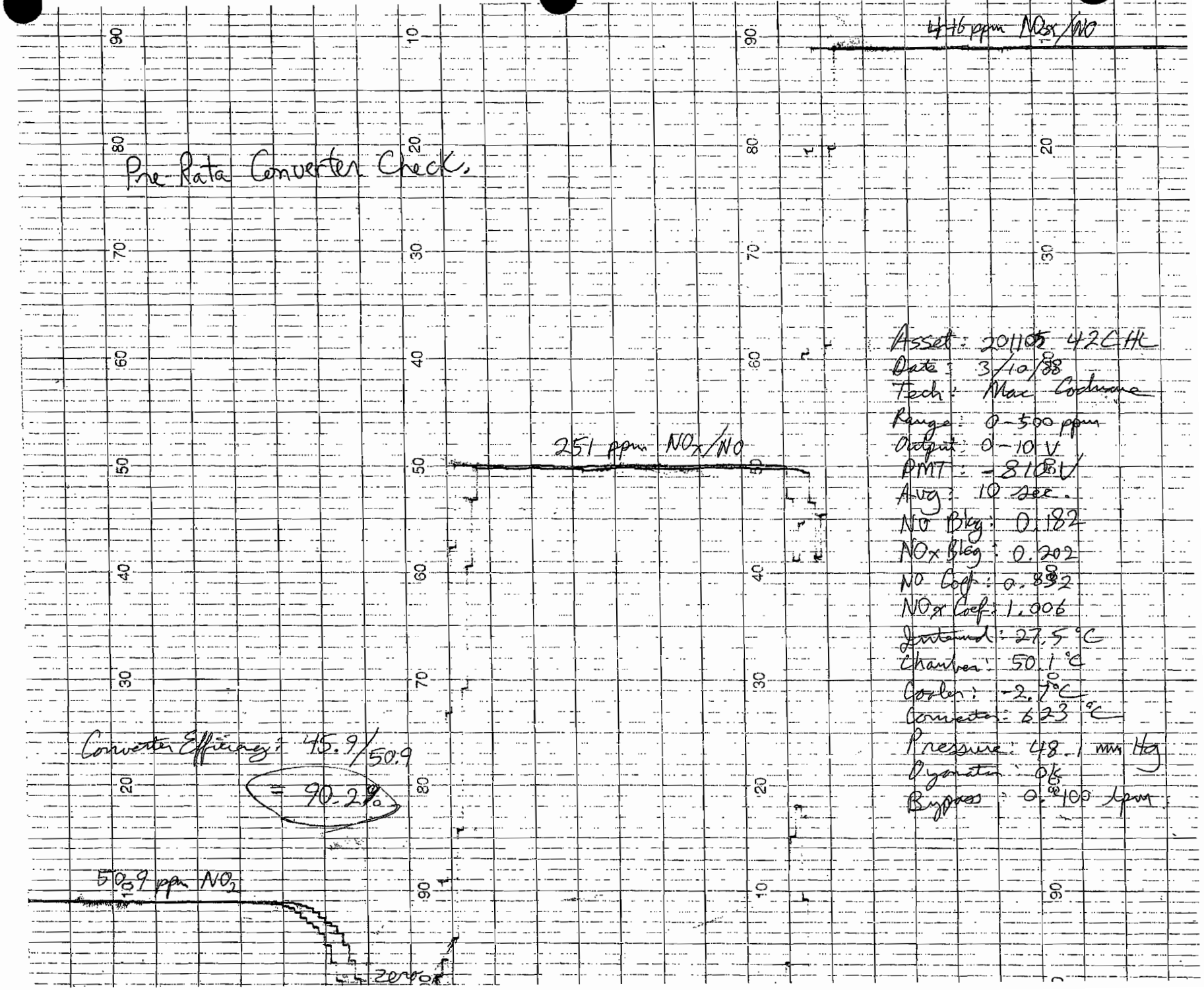
Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4

r = 9.99998E-1

Constants:	A = 0.00000E+0
B = 7.07540E-1	C = 3.38000E-4
D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: _____
JEFF CROTEAU


Pre Rata Converter Check.
416 ppm NOx/NO
251 ppm NOx/NO
509 ppm NO2
Converter Efficiency: 45.9/50.9
= 90.2%
Asset: 201105 42C-HL
Date: 3/10/88
Tech: Max Costume
Range: 0-500 ppm
Output: 0-10 V
PMT: -810 V
Avg: 10 sec.
NO Bkg: 0.182
NOx Bkg: 0.202
NO Coef: 0.892
NOx Coef: 1.006
Ambient: 27.5 °C
Chamber: 50.1 °C
Cooler: -2.7 °C
Converter: 623 °C
Pressure: 48.1 mm Hg
Dynamic: 0%
Bypass: 0-100 lpm

Wheelabrator
Clean Air Project No.
North and South Broward
FF Outlet

Date: **April 1, 2008**
Start Time 15:51
Stop Time 16:11

CALIBRATION ERROR

	Channel 3 NOx	Channel 4 NO2	Channel 5	Channel 6	Channel 7
	Stack ppmdv	Stack ppmdv			
Instrument Information					
Manufacturer:	T.E.I.	T.E.I.			
Model:	42C-HL	42C-HL			
Detection:	Chemilumi.	Chemilumi.			
Asset or Serial No:	201105	201105			
Instrument Span Value	455	50.9			
System Response Time (seconds)					
Actual Value of Calibration Gasses					
Zero	0	0			
Low	251.3				
Mid					
High	445.0	50.9			
Actual gas to be used for bias checks	445.000				
Cylinder ID					
Zero					
Low					
Mid					
High		AAL21497			
Instrument Response to Calibration Gas					
Zero	0.000				
Low	251.502				
Mid	NA				
High	446.466				
Calibration Error as Percent of Span Value (Limit = 2%, EPA Method 25A limit = 5% of actual calibration gas value)					
Zero	0.0%	NA			
Low	0.0%	NA			
Mid	NA	NA			
High	0.3%	NA			
Calibration Error Status					
Zero	OK	NA			
Low	OK	NA			
Mid	NA	NA			
High	OK	NA			

Coverter Efficiency
Instrument Response to NO2 Calibration Gas
45.937
90.2%

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No.
North and South Broward
FF Outlet

Date: **April 1, 2008**
Start Time 15:51
Stop Time 16:11

CALIBRATION ERROR

	Channel 3 NOx Stack ppmdv	Channel 4 NO2 Stack ppmdv	Channel 5	Channel 6	Channel 7
041508 141604					
15:51:36	0.000	0.000			
15:51:36	0.000	0.000			
15:51:51	0.000	0.000			
15:52:06	0.000	0.000			
15:52:21	0.000	0.000			
15:52:36	4.469	-6.634			
15:52:51	120.847	33.871			
15:53:06	311.290	65.364			
15:53:21	430.566	18.869			
15:53:36	444.591	-2.735			
15:53:51	447.717	-0.993			
15:54:06	447.114	-0.553			
15:54:21	446.195	0.488			
15:54:36	446.479	0.130			
15:54:51	446.471	0.195			
15:55:06	446.447	0.512			
15:55:21	445.934	0.195			
15:55:36	440.130	37.485			
15:55:51	381.767	120.171			
15:56:06	297.232	95.076			
15:56:21	252.389	14.750			
15:56:36	252.031	3.533			
15:56:51	251.706	2.735			
15:57:06	251.404	2.458			
15:57:21	251.396	2.458			
15:57:36	251.363	2.442			
15:57:51	250.851	10.647			
15:58:06	217.452	24.168			
15:58:21	102.931	3.565			
15:58:36	21.530	-9.190			
15:58:51	3.053	2.238			
15:59:06	0.944	0.439			
15:59:21	0.480	0.447			
15:59:36	0.472	0.382			
15:59:51	0.480	0.000			
16:00:06	0.480	0.000			
16:00:21	0.488	0.000			
16:00:36	0.130	0.000			
16:00:51	0.000	-1.807			
16:01:06	9.068	-2.011			
16:01:21	38.241	22.035			
16:01:36	52.389	44.428			
16:01:51	47.579	45.901			
16:02:06	45.673	44.803			
16:02:21	45.543	44.933			
16:02:36	45.543	44.933			
16:02:51	45.543	44.933			
16:03:06	45.543	44.933			
16:03:21	45.543	44.933			
16:03:36	45.543	44.933			
16:03:51	45.543	44.933			
16:04:06	45.543	44.933			
16:04:21	45.543	44.933			
16:04:36	45.543	44.933			

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No.
North and South Broward
FF Outlet

Date: **April 1, 2008**
Start Time 15:51
Stop Time 16:11

			CALIBRATION ERROR		
	Channel 3 NOx	**Channel 4 NO2**	**Channel 5**	**Channel 6**	**Channel 7**
	Stack ppmdv	**Stack ppmdv**			
16:04:51	45.543	44.933			
16:05:06	45.543	44.933			
16:06:34	45.543	45.421			
16:06:49	46.040	45.421			
16:07:04	46.040	45.421			
16:07:19	46.032	45.421			
16:07:34	46.032	45.421			
16:07:49	46.032	45.421			
16:08:04	46.032	45.421			
16:08:19	46.032	45.421			
16:08:34	46.032	45.421			
16:08:49	46.032	45.429			
16:09:04	46.032	45.421			
16:09:29	46.040	45.421			
16:09:44	46.040	45.421			
16:09:59	46.032	45.584			
16:10:14	46.040	45.918			
16:10:29	46.032	45.918			
16:10:44	46.032	45.943			
16:10:59	46.040	45.934			
16:11:14	46.048	45.934			

QA/QC_____
Date_____

REFERENCE METHOD FIELD DATA

E

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Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Date: March 24, 2008
Start Time 5:50
Stop Time 6:31

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
Instrument Information					
Manufacturer:	Servomex		Western Research	T.E.I.	T.E.I.
Model:	1420C	Servomex 1415C NDIR	921NMP UV	42C-HL Chemilumi.	48C GFC/NDIR
Detection:	Paramagnet				
Asset or Serial No:	201170	203504	205247	201105	205209
Instrument Span Value	14.02	14.05	86.89	453.9	96.57
System Response Time (seconds)					
Actual Value of Calibration Gasses					
Zero	0	0	0	0	0
Low	5.986	6.058	44.33	225.3	24.83
Mid					49.53
High	14.02	14.03	86.89	453.9	96.57
Actual gas to be used for bias checks	14.020	6.058	44.330	225.300	24.830
Cylinder ID					
Zero	ALM21476-1007	ALM21476-1007	ALM21476-1007	ALM21476-1007	ALM21476-1007
Low	ALM54884-0407	ALM26535-0407	ALM002114	ALM002114	1L2234-0607
Mid					ALM13959-0507
High	ALM26535-0407	ALM54884-0407	ALM013846	ALM013846	ALM25195-0208
Instrument Response to Calibration Gas					
Zero	-0.046	0.038	0.045	0.114	-0.062
Low	5.968	5.993	44.791	224.949	24.156
Mid		NA	NA	NA	49.593
High	14.013	13.930	87.237	452.411	97.636
Calibration Error as Percent of Span Value (Limit = 2%, EPA Method 25A limit = 5% of actual calibration gas value)					
Zero	-0.3%	0.3%	0.1%	0.0%	-0.1%
Low	-0.1%	-0.5%	0.5%	-0.1%	-0.7%
Mid	NA	NA	NA	NA	0.1%
High	-0.1%	-0.7%	0.4%	-0.3%	1.1%
Calibration Error Status					
Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	NA	NA	NA	NA	OK
High	OK	OK	OK	OK	OK

041508 141604

05:50:20	13.908	5.993	3.205	-0.676	-0.072
05:50:20	13.908	5.993	3.205	-0.676	-0.072
05:50:35	13.911	5.993	3.227	-0.619	-0.062
05:50:50	13.906	5.993	3.236	-0.757	-0.067
05:51:05	13.939	5.993	2.921	-0.635	-0.057
05:51:20	14.013	5.994	0.562	-0.700	-0.060

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Date: March 24, 2008
Start Time 5:50
Stop Time 6:31

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
05:51:35	14.013	5.994	0.129	-0.594	-0.067
05:51:50	14.011	5.993	0.044	-0.627	-0.062
05:52:05	14.014	5.993	0.036	-0.676	-0.059
05:52:20	14.011	5.992	0.055	-0.659	-0.065
05:52:35	14.010	5.993	0.063	-0.660	-0.068
05:52:50	14.010	5.993	0.073	-0.603	-0.063
05:53:05	13.997	5.988	0.026	-0.676	-0.060
05:53:20	8.602	9.562	-0.011	-0.545	-0.060
05:53:35	6.082	13.682	0.022	-0.578	-0.055
05:53:50	5.977	13.909	0.083	-0.627	-0.062
05:54:05	5.971	13.919	0.109	-0.627	-0.067
05:54:20	5.970	13.929	0.109	-0.635	-0.065
05:54:35	5.968	13.930	0.129	-0.586	-0.062
05:54:50	5.966	13.932	0.060	-0.521	-0.063
05:55:05	6.051	13.906	0.114	-0.603	-0.065
05:55:20	2.764	10.687	52.210	-0.611	-0.063
05:55:35	0.087	10.033	85.972	-0.619	-0.065
05:55:50	-0.017	10.025	88.658	-0.594	-0.059
05:56:05	-0.041	10.024	88.933	-0.603	-0.062
05:56:20	-0.040	10.026	89.040	-0.619	-0.063
05:56:35	-0.046	10.026	88.104	-0.513	-0.062
05:56:50	-0.079	10.029	87.331	-0.611	-0.067
05:57:05	-0.063	10.033	87.384	-0.562	-0.068
05:57:20	-0.025	10.034	87.385	1.408	-0.075
05:57:35	-0.032	10.033	87.427	40.537	-0.065
05:57:50	-0.052	10.033	87.458	49.744	-0.063
05:58:05	-0.052	10.034	87.455	34.253	-0.060
05:58:20	-0.044	10.034	87.406	22.377	-0.059
05:58:35	-0.048	10.033	87.425	18.861	-0.065
05:58:50	-0.060	10.035	87.393	18.055	-0.064
05:59:05	-0.045	10.032	87.394	17.819	-0.062
05:59:20	-0.051	10.035	87.401	23.028	-0.067
05:59:35	-0.051	10.032	87.367	2.613	-0.059
06:05:01	-0.041	10.018	86.663	452.308	-0.070
06:05:16	-0.048	10.022	86.963	452.275	-0.065
06:05:31	-0.047	10.025	87.280	452.609	-0.060
06:05:46	-0.046	10.026	87.466	452.348	-0.072
06:06:01	-0.047	9.987	87.515	452.283	-0.063
06:06:16	1.002	9.612	58.857	437.322	-0.072
06:06:31	-0.005	10.007	46.670	364.502	-0.060
06:06:46	-0.053	10.052	45.351	272.503	-0.059
06:07:01	-0.055	10.060	45.044	225.698	-0.070
06:07:16	-0.055	10.062	44.858	225.275	-0.075
06:07:31	-0.055	10.060	44.768	224.900	-0.068
06:07:46	-0.052	10.062	44.745	224.672	-0.070
06:08:01	0.353	9.994	43.582	224.697	-0.068
06:08:16	0.552	2.490	10.719	202.654	0.663
06:08:31	-0.021	0.158	1.818	95.173	12.000
06:08:46	-0.033	0.068	0.711	26.154	41.700
06:09:01	-0.030	0.048	0.407	1.294	78.620
06:09:16	-0.044	0.037	0.312	0.871	92.970
06:09:31	-0.047	0.037	0.225	0.553	97.245
06:09:46	-0.046	0.039	0.202	0.203	97.622
06:10:01	-0.051	0.020	0.161	0.138	97.622
06:10:16	-0.049	0.023	0.169	0.065	97.666
06:10:31	-0.060	0.030	0.189	0.138	97.721
06:10:46	0.715	0.168	0.524	0.187	97.622
06:11:01	0.176	0.089	0.625	2.809	92.746
06:11:16	-0.016	0.032	0.298	6.919	74.789
06:11:31	-0.037	0.023	0.191	1.661	45.760
06:11:46	-0.046	0.019	0.205	0.244	30.494
06:12:01	-0.033	0.023	0.176	0.260	24.894
06:12:16	-0.046	0.019	0.186	0.212	24.185
06:12:31	-0.036	0.022	0.150	0.171	24.114

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

Date: March 24, 2008
Start Time 5:50
Stop Time 6:31

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
06:12:46	-0.049	0.014	0.176	0.065	24.168
06:13:01	0.021	0.019	0.217	0.073	24.115
06:13:16	0.010	0.017	0.218	0.155	25.607
06:13:31	-0.020	0.014	0.293	0.065	32.671
06:13:46	-0.024	0.012	0.199	0.106	41.825
06:14:01	-0.028	0.010	0.235	0.106	48.200
06:14:16	-0.028	0.013	0.239	0.163	49.449
06:14:31	-0.032	0.015	0.246	0.065	49.581
06:14:46	-0.018	0.008	0.249	0.049	49.600
06:15:01	-0.022	0.006	0.252	0.049	49.597

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 6:18
Stop Time 6:26

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.012	0.096	0.412	0.434	-0.274
C_{mf} Upscale gas	13.870	5.953	42.349	221.525	24.168
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.2%	0.4%	0.4%	0.1%	0.3%
Upscale gas	-1.0%	-0.3%	-2.8%	-0.8%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	NA	NA	NA	NA	NA
C_{mi} Upscale gas	NA	NA	NA	NA	NA
System Drift as Percent of Span Value (3%)					
Zero gas	NA	NA	NA	NA	NA
Upscale gas	NA	NA	NA	NA	NA
Calibration Drift Status					
Zero gas	NA	NA	NA	NA	NA
Upscale gas	NA	NA	NA	NA	NA

041508 1416C4

06:18:01	13.865	5.945	1.796	14.514	46.686
06:18:16	13.878	5.955	1.131	1.881	34.604
06:18:31	13.864	5.952	0.744	1.636	11.165
06:18:46	13.867	5.952	0.593	0.798	2.572
06:19:01	13.878	5.956	0.474	0.831	0.438
06:19:16	13.874	5.953	0.440	0.831	0.319
06:19:31	13.884	5.954	0.397	0.358	0.264
06:19:46	13.879	5.955	0.399	0.114	0.239
06:20:01	13.858	5.953	0.373	0.106	0.186
06:20:16	13.869	5.953	0.324	0.171	0.194
06:20:31	13.875	5.953	0.262	0.155	0.223
06:20:46	13.552	5.965	0.259	0.098	0.252
06:21:01	3.412	8.439	6.309	1.547	0.244
06:21:16	0.186	9.841	27.707	39.560	0.189
06:21:31	0.046	9.931	35.389	177.851	0.156
06:21:46	0.011	9.952	37.915	216.826	0.077
06:22:01	0.017	9.960	39.243	219.918	-0.059
06:22:16	0.013	9.967	40.059	220.643	-0.068
06:22:31	0.006	9.970	40.638	220.960	-0.065
06:22:46	-0.004	9.975	41.026	221.131	-0.070
06:23:01	0.000	9.972	41.376	221.139	-0.070
06:23:16	-0.005	9.976	41.657	221.294	-0.078
06:23:31	-0.003	9.978	41.937	221.661	-0.068
06:23:46	-0.010	9.980	42.169	221.433	-0.071
06:24:01	-0.016	9.977	42.338	221.490	-0.073
06:24:16	-0.014	9.980	42.540	221.653	-0.067
06:24:31	-0.003	5.074	33.247	216.248	0.091
06:24:46	0.010	0.482	11.989	106.137	2.224
06:25:01	0.001	0.197	5.677	34.693	8.216
06:25:16	0.004	0.117	3.606	1.970	16.163
06:25:31	-0.002	0.100	2.584	1.677	22.097
06:25:46	-0.026	0.098	1.989	1.343	23.756
06:26:01	0.005	0.098	1.641	1.018	24.119
06:26:16	-0.037	0.097	1.374	0.961	24.171
06:26:31	-0.005	0.092	1.244	0.839	24.213

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 6:38
Stop time 7:05
REFERENCE METHOD RUN 1

		Channel 1 O2 U1 FF Outlet %dv	Channel 2 CO2 U1 FF Outlet %dv	Channel 3 SO2 U1 FF Outlet ppmdv	Channel 4 NOx U1 FF Outlet ppmdv	Channel 5 CO U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.012	0.096	0.412	0.434	0.274
C_{mi}	Initial upscale gas	13.870	5.953	42.349	221.525	24.168
C_{of}	Final zero gas	-0.005	0.096	0.723	0.537	0.192
C_{mf}	Final upscale gas	13.877	5.964	42.223	221.123	24.240
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Monitor Averages (concentrations)						
C	Average concentration, uncorrected	9.117	10.154	5.937	157.357	3.874
C_{dc}	**concentration, drift corrected**	**9.217**	**10.393**	**5.706**	**160.041**	**3.772**

Clock Time (at end of 1 minute period)

041508 141604

06:39	8.708	10.379	5.881	160.130	3.867
06:40	8.711	10.414	5.800	159.440	3.985
06:41	9.005	10.168	5.621	155.153	4.005
06:42	9.291	9.955	5.360	147.550	4.160
06:43	9.092	10.104	5.481	147.627	4.366
06:44	9.137	10.122	5.743	153.262	3.893
06:45	9.448	9.829	5.457	153.917	3.942
06:46	8.924	10.295	5.760	169.255	3.527
06:47	9.153	10.117	5.799	173.248	3.191
06:48	9.312	9.944	5.827	170.555	5.679
06:49	9.174	10.109	5.359	162.222	3.653
06:50	8.525	10.624	5.972	153.311	4.109
06:51	9.004	10.285	6.676	152.863	3.986
06:52	8.871	10.350	6.042	152.338	3.149
06:53	8.789	10.420	5.876	156.260	2.954
06:54	8.617	10.613	6.512	163.219	3.712
06:55	9.459	9.880	6.225	160.989	3.118
06:56	9.304	10.022	5.904	161.705	3.111
06:57	9.008	10.281	6.111	155.688	3.403
06:58	9.693	9.734	6.013	154.123	3.818
06:59	9.545	9.834	5.725	146.302	4.276
07:00	9.294	10.070	5.832	150.810	4.442
07:01	9.334	10.034	6.069	154.302	4.495
07:02	9.059	10.267	6.324	156.685	4.018
07:03	9.385	9.986	6.674	157.401	4.055
07:04	9.149	10.170	6.137	159.288	4.179
07:05	9.176	10.163	6.112	160.997	3.514

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 7:05
Stop Time 7:14

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.005	0.096	0.723	0.537	0.192
C_{mf} Upscale gas	13.877	5.964	42.223	221.123	24.240
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.8%	0.1%	0.3%
Upscale gas	-1.0%	-0.2%	-3.0%	-0.8%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.012	0.096	0.412	0.434	0.274
C_{mi} Upscale gas	13.870	5.953	42.349	221.525	24.168
System Drift as Percent of Span Value (3%)					
Zero gas	0.1%	0.0%	0.4%	0.0%	-0.1%
Upscale gas	0.1%	0.1%	-0.1%	-0.1%	0.1%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141604

07:05:57	9.374	10.024	5.937	158.168	3.674
07:06:12	6.946	7.131	5.885	155.596	3.784
07:06:27	11.829	5.043	4.378	133.944	5.008
07:06:42	13.702	5.899	2.629	60.456	6.632
07:06:57	13.840	5.965	1.779	2.475	5.646
07:07:12	13.857	5.969	1.289	1.571	2.531
07:07:27	13.860	5.970	1.079	0.944	0.778
07:07:42	13.842	5.966	0.977	0.782	0.332
07:07:57	13.894	5.965	0.874	0.700	0.257
07:08:12	13.861	5.964	0.736	0.652	0.207
07:08:27	13.875	5.964	0.710	0.774	0.189
07:08:42	11.929	6.201	0.723	0.187	0.179
07:08:57	1.819	9.067	7.559	37.745	0.195
07:09:12	0.140	9.871	28.260	140.008	0.153
07:09:27	0.037	9.943	35.557	199.894	0.081
07:09:42	0.018	9.960	38.017	218.641	0.021
07:09:57	0.002	9.972	39.145	219.837	-0.060
07:10:12	0.006	9.978	40.046	220.570	-0.065
07:10:27	-0.002	9.980	40.716	220.635	-0.062
07:10:42	-0.010	9.982	41.240	220.724	-0.065
07:10:57	-0.014	9.986	41.636	221.123	-0.062
07:11:12	-0.015	9.986	41.959	221.123	-0.068
07:11:27	-0.015	9.988	42.250	221.123	-0.057
07:11:42	-0.016	9.988	42.460	221.123	-0.065
07:11:57	0.003	7.284	40.091	221.376	0.002
07:12:12	-0.004	0.884	19.754	200.448	1.288
07:12:27	0.003	0.237	9.016	58.665	6.872
07:12:42	-0.004	0.147	5.447	5.047	15.450
07:12:57	0.001	0.105	3.949	1.930	21.322
07:13:12	-0.007	0.100	3.048	1.538	23.686
07:13:27	0.000	0.098	2.502	1.099	24.168
07:13:42	-0.011	0.098	2.147	0.652	24.267
07:13:57	-0.009	0.096	1.856	0.790	24.285
07:14:12	0.005	0.093	1.657	0.774	24.274

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 7:15
Stop time 7:42
REFERENCE METHOD RUN 2

		Channel 1 O2 U1 FF Outlet %dv	Channel 2 CO2 U1 FF Outlet %dv	Channel 3 SO2 U1 FF Outlet ppmdv	Channel 4 NOx U1 FF Outlet ppmdv	Channel 5 CO U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.005	0.096	0.723	0.537	0.192
C_{mi}	Initial upscale gas	13.877	5.964	42.223	221.123	24.240
C_{of}	Final zero gas	-0.004	0.097	0.749	0.301	0.145
C_{mf}	Final upscale gas	13.885	5.987	42.098	221.435	24.251
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.395	9.995	7.555	151.844	4.958
C_{dc}	**concentration, drift corrected**	**9.490**	**10.199**	**7.297**	**154.469**	**4.939**

Clock Time (at end of 1 minute period)					
041508 141604					
07:16	9.531	9.896	6.277	154.841	4.669
07:17	9.648	9.809	5.994	156.046	4.835
07:18	9.889	9.620	5.719	142.017	5.712
07:19	9.810	9.664	5.743	137.861	6.319
07:20	9.662	9.808	6.011	137.731	6.918
07:21	9.119	10.264	6.620	146.709	7.929
07:22	9.312	10.062	6.690	147.908	5.424
07:23	8.998	10.312	6.728	152.645	4.171
07:24	9.163	10.200	6.824	154.788	4.353
07:25	9.323	10.002	8.737	150.989	4.678
07:26	9.205	10.157	9.492	149.967	4.253
07:27	8.822	10.477	9.220	155.897	5.446
07:28	8.962	10.364	8.095	158.539	5.784
07:29	9.716	9.687	6.555	164.206	4.301
07:30	9.494	9.892	6.276	163.688	4.110
07:31	9.381	10.011	6.881	165.289	4.858
07:32	9.408	9.982	7.219	165.028	5.025
07:33	9.163	10.187	8.139	160.291	4.504
07:34	9.404	9.979	9.888	151.929	3.801
07:35	9.353	10.002	8.362	144.337	3.416
07:36	8.739	10.549	8.701	145.641	3.963
07:37	9.498	9.883	8.915	143.193	4.031
07:38	9.564	9.829	7.743	146.223	4.369
07:39	9.775	9.679	7.549	148.647	4.734
07:40	9.872	9.593	8.037	148.924	4.878
07:41	9.588	9.833	8.482	149.579	5.382
07:42	9.262	10.118	9.083	156.876	5.997

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 7:43
Stop Time 7:51

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.004	-0.097	-0.749	0.301	0.145
C_{mf} Upscale gas	13.885	5.987	42.098	221.435	24.251
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.8%	0.0%	0.2%
Upscale gas	-0.9%	0.0%	-3.1%	-0.8%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.005	0.096	0.723	0.537	0.192
C_{mi} Upscale gas	13.877	5.964	42.223	221.123	24.240
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	0.0%	-0.1%	0.0%
Upscale gas	0.1%	0.2%	-0.1%	0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141504

07:43:58	8.684	4.566	7.577	147.424	4.373
07:44:13	13.523	5.802	3.948	106.618	5.923
07:44:28	13.863	5.977	2.208	20.220	6.315
07:44:43	13.881	5.989	1.539	1.864	3.813
07:44:58	13.878	5.987	1.265	1.644	1.374
07:45:13	13.882	5.987	1.086	0.904	0.381
07:45:28	13.897	5.986	0.908	0.953	0.241
07:45:43	13.904	5.983	0.798	0.847	0.174
07:45:58	13.892	5.981	0.786	0.863	0.135
07:46:13	13.907	5.985	0.747	0.000	0.168
07:46:28	13.897	5.981	0.715	0.041	0.132
07:46:43	11.856	6.245	0.679	0.122	0.126
07:46:58	1.616	9.178	8.736	22.800	0.140
07:47:13	0.119	9.909	29.898	88.490	0.127
07:47:28	0.025	9.966	36.467	195.775	0.068
07:47:43	0.016	9.975	38.676	218.966	-0.021
07:47:58	0.008	9.988	39.894	220.016	-0.060
07:48:13	0.015	9.992	40.684	220.830	-0.070

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 7:43
Stop Time 7:51

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
07:48:28	0.006	9.996	41.309	221.131	-0.065
07:48:43	0.003	10.000	41.742	221.123	-0.065
07:48:58	-0.005	10.002	42.121	221.514	-0.060
07:49:13	-0.010	9.974	42.431	221.669	-0.065
07:49:28	0.011	3.848	33.107	215.328	0.171
07:49:43	0.007	0.432	13.330	87.847	2.704
07:49:58	0.004	0.193	6.696	18.755	10.022
07:50:13	0.012	0.121	4.477	1.970	18.027
07:50:28	0.004	0.101	3.285	1.742	22.603
07:50:43	0.003	0.098	2.657	1.327	23.940
07:50:58	-0.005	0.098	2.227	1.010	24.200
07:51:13	-0.005	0.098	1.876	0.814	24.262
07:51:28	0.000	0.097	1.664	0.896	24.292
07:51:43	-0.009	0.096	1.467	0.847	24.322

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 7:54
Stop time 8:21
REFERENCE METHOD RUN 3

		Channel 1 O2 U1 FF Outlet %dv	Channel 2 CO2 U1 FF Outlet %dv	Channel 3 SO2 U1 FF Outlet ppmdv	Channel 4 NOx U1 FF Outlet ppmdv	Channel 5 CO U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.004	0.097	0.749	0.301	0.145
C_{mi}	Initial upscale gas	13.885	5.987	42.098	221.435	24.251
C_{of}	Final zero gas	0.001	0.097	0.673	0.418	0.153
C_{mf}	Final upscale gas	13.884	5.993	42.233	221.620	24.280
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.303	10.085	4.959	153.966	6.286
C_{dc}	**concentration, drift corrected**	**9.394**	**10.268**	**4.542**	**156.476**	**6.319**

Clock Time (at end of 1 minute period)

041508 141604

07:55	10.357	9.091	5.484	141.382	6.979
07:56	9.325	10.096	5.583	149.878	11.842
07:57	10.266	9.290	5.279	142.924	9.558
07:58	9.668	9.825	5.255	140.199	8.671
07:59	9.121	10.275	5.053	146.518	9.221
08:00	9.136	10.316	5.066	158.661	9.525
08:01	10.185	9.339	4.684	163.034	5.613
08:02	8.698	10.608	4.968	167.094	7.350
08:03	8.661	10.629	5.378	172.161	7.671
08:04	8.545	10.747	5.855	167.705	7.244
08:05	9.353	10.090	5.327	158.136	6.941
08:06	9.749	9.706	4.755	142.670	7.435
08:07	9.450	9.959	4.905	137.342	7.915
08:08	8.864	10.463	5.295	147.676	6.689
08:09	9.298	10.103	5.015	155.842	5.220
08:10	9.249	10.099	4.672	157.959	4.081
08:11	8.934	10.367	4.494	165.411	4.155
08:12	9.365	10.001	4.490	165.267	4.367
08:13	9.277	10.050	4.748	158.683	4.187
08:14	8.741	10.525	4.646	157.070	4.304
08:15	9.604	9.806	4.526	156.093	3.615
08:16	9.358	9.980	4.235	150.944	3.555
08:17	8.661	10.614	4.586	154.679	4.679
08:18	8.907	10.434	5.336	151.197	4.967
08:19	9.602	9.839	5.009	147.345	4.022
08:20	9.606	9.824	4.466	149.646	4.157
08:21	9.189	10.223	4.780	151.559	5.769

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 8:21
Stop Time 8:29

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.001	0.097	0.673	0.418	0.153
C_{mf} Upscale gas	13.884	5.993	42.233	221.620	24.280
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mca} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.7%	0.1%	0.2%
Upscale gas	-0.9%	0.0%	-2.9%	-0.7%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.004	0.097	0.749	0.301	0.145
C_{mi} Upscale gas	13.885	5.987	42.098	221.435	24.251
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.2%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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08:21:59	9.621	9.828	5.439	150.883	5.636
08:22:14	6.957	6.919	5.330	149.711	5.558
08:22:29	12.183	5.184	4.223	130.297	6.911
08:22:44	13.771	5.932	2.590	35.295	7.870
08:22:59	13.856	5.991	1.726	3.834	5.754
08:23:14	13.883	5.994	1.275	1.734	2.693
08:23:29	13.882	5.993	1.042	1.066	0.710
08:23:44	13.887	5.992	0.856	1.066	0.301
08:23:59	13.890	5.991	0.734	1.018	0.202
08:24:14	13.892	5.991	0.664	0.904	0.148
08:24:29	13.461	6.005	0.622	0.203	0.140
08:24:44	3.313	8.508	2.893	0.146	0.171
08:24:59	0.198	9.860	24.135	122.523	0.109
08:25:14	0.035	9.962	34.711	208.726	0.083
08:25:29	0.010	9.982	37.828	218.347	0.024
08:25:44	0.012	9.987	39.378	219.878	-0.068
08:25:59	0.002	9.995	40.327	220.741	-0.065
08:26:14	0.002	9.998	40.975	221.139	-0.065

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 8:21
Stop Time 8:29

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
08:26:29	-0.007	9.996	41.457	221.164	-0.059
08:26:44	-0.025	10.003	41.890	221.481	-0.062
08:26:59	-0.012	10.004	42.248	221.685	-0.060
08:27:14	-0.014	10.006	42.561	221.693	-0.063
08:27:29	0.003	5.049	36.796	209.915	0.134
08:27:44	0.004	0.524	16.407	151.461	2.180
08:27:59	0.008	0.218	7.961	55.547	9.179
08:28:14	0.001	0.136	5.003	2.060	17.125
08:28:29	0.003	0.105	3.603	1.750	22.397
08:28:44	-0.004	0.099	2.782	1.660	23.855
08:28:59	-0.002	0.098	2.266	1.026	24.225
08:29:14	0.000	0.098	1.871	0.888	24.294
08:29:29	-0.008	0.097	1.603	0.855	24.322
08:29:44	0.009	0.096	1.434	0.888	24.301

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 8:31
Stop time 8:58
REFERENCE METHOD RUN 4

		Channel 1 O2 U1 FF Outlet %dv	Channel 2 CO2 U1 FF Outlet %dv	Channel 3 SO2 U1 FF Outlet ppmdv	Channel 4 NOx U1 FF Outlet ppmdv	Channel 5 CO U1 FF Outlet ppmdv
Calibration Checks						
C_{ci}	Initial zero gas	0.001	0.097	0.673	0.418	0.153
C_{mi}	Initial upscale gas	13.884	5.993	42.233	221.620	24.280
C_{cf}	Final zero gas	0.000	0.098	0.510	0.035	0.159
C_{mf}	Final upscale gas	13.896	5.994	42.358	220.968	24.256
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.834	10.535	5.750	163.121	5.538
C_{dc}	**concentration, drift corrected**	**8.917**	**10.724**	**5.483**	**166.014**	**5.542**

Clock Time (at end of 1 minute period)

041508 141604

08:32	8.578	10.659	6.372	157.646	6.550
08:33	8.831	10.509	7.260	161.740	7.358
08:34	9.388	10.006	6.403	159.786	6.796
08:35	9.239	10.116	5.906	161.758	5.747
08:36	8.584	10.712	6.238	165.427	5.296
08:37	9.096	10.306	6.344	162.930	4.657
08:38	9.066	10.313	6.046	157.851	4.679
08:39	8.265	10.993	5.908	166.581	5.270
08:40	8.514	10.836	5.943	172.792	5.113
08:41	8.743	10.576	6.084	165.661	5.305
08:42	8.559	10.784	5.826	171.247	4.655
08:43	9.066	10.377	6.010	168.795	4.738
08:44	8.949	10.453	5.653	165.659	4.973
08:45	8.914	10.506	5.549	167.857	5.590
08:46	9.288	10.186	5.655	159.013	5.816
08:47	9.122	10.313	5.360	155.790	6.249
08:48	8.599	10.750	5.642	163.250	6.311
08:49	8.900	10.498	5.516	161.950	5.585
08:50	8.945	10.424	5.571	155.316	5.600
08:51	8.609	10.734	5.482	163.148	6.480
08:52	8.867	10.523	5.657	160.179	5.998
08:53	8.842	10.539	5.362	158.521	4.830
08:54	8.556	10.778	5.251	166.398	5.083
08:55	8.811	10.586	5.121	168.763	5.615
08:56	8.819	10.603	5.119	164.805	4.910
08:57	8.695	10.680	5.052	162.731	5.127
08:58	8.685	10.698	4.929	158.685	5.194

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 9:00
Stop Time 9:07

CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.000	0.098	0.510	0.035	0.159
C_{mf} Upscale gas	13.896	5.994	42.358	220.968	24.256
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Perc	3.00000				
Zero gas	0.3%	0.4%	0.5%	0.0%	0.2%
Upscale gas	-0.8%	0.0%	-2.8%	-0.9%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.001	0.097	0.673	0.418	0.153
C_{mi} Upscale gas	13.884	5.993	42.233	221.620	24.280
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.2%	-0.1%	0.0%
Upscale gas	0.1%	0.0%	0.1%	-0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:00:34	13.869	5.993	1.921	6.235	7.056
09:00:49	13.865	5.995	1.364	1.579	3.642
09:01:04	13.884	5.995	1.035	1.026	1.245
09:01:19	13.894	5.995	0.864	0.790	0.363
09:01:34	13.896	5.994	0.752	0.790	0.212
09:01:49	13.898	5.995	0.711	0.749	0.166
09:02:04	13.893	5.993	0.624	0.741	0.119
09:02:19	13.890	5.985	0.544	-0.049	0.121
09:02:34	13.889	5.992	0.519	0.033	0.192
09:02:49	9.652	6.748	0.467	0.024	0.168
09:03:04	0.848	9.551	11.108	0.049	0.117
09:03:19	0.071	9.944	30.792	141.628	0.103
09:03:34	0.019	9.979	36.597	212.283	0.073
09:03:49	0.001	9.990	38.706	218.698	-0.020
09:04:04	0.006	9.998	39.836	219.422	-0.062
09:04:19	0.008	9.999	40.716	220.098	-0.063
09:04:34	-0.021	10.006	41.289	220.448	-0.065
09:04:49	0.000	10.008	41.740	220.952	-0.063
09:05:04	-0.016	10.003	42.100	220.659	-0.067
09:05:19	-0.014	10.012	42.377	221.123	-0.065
09:05:34	-0.016	9.999	42.598	221.123	-0.063
09:05:49	0.028	4.132	34.611	204.306	0.156
09:06:04	-0.009	0.449	14.919	143.533	2.567
09:06:19	0.023	0.209	7.495	43.305	9.427
09:06:34	0.006	0.142	4.690	2.239	17.784
09:06:49	0.010	0.106	3.453	1.563	22.704
09:07:04	-0.012	0.099	2.758	1.498	24.005
09:07:19	0.003	0.099	2.250	0.782	24.233
09:07:34	0.003	0.098	1.866	0.733	24.257
09:07:49	-0.007	0.098	1.587	0.782	24.277

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 9:10
Stop time 9:37
REFERENCE METHOD RUN 5

		Channel 1 O2 U1 FF Outlet %dv	Channel 2 CO2 U1 FF Outlet %dv	Channel 3 SO2 U1 FF Outlet ppmdv	Channel 4 NOx U1 FF Outlet ppmdv	Channel 5 CO U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	0.000	0.098	0.510	0.035	0.159
C_{mi}	Initial upscale gas	13.896	5.994	42.358	220.968	24.256
C_{of}	Final zero gas	-0.005	0.098	0.805	0.714	0.194
C_{mf}	Final upscale gas	13.883	5.993	42.155	220.827	24.230
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.892	10.524	12.357	160.300	3.930
C_{dc}	**concentration, drift corrected**	**8.977**	**10.714**	**12.468**	**163.389**	**3.873**

Clock Time (at end of 1 minute period)

041508 141604

09:11	8.370	10.908	8.190	161.329	3.196
09:12	8.768	10.620	8.645	169.273	2.907
09:13	8.660	10.733	8.682	170.529	3.053
09:14	8.753	10.630	8.901	163.260	3.501
09:15	8.493	10.880	11.434	157.175	4.614
09:16	8.985	10.447	12.398	147.773	3.234
09:17	8.760	10.666	13.770	145.324	3.789
09:18	8.919	10.523	12.834	149.542	3.552
09:19	8.937	10.508	13.411	154.003	3.954
09:20	8.640	10.702	13.613	160.173	4.613
09:21	9.178	10.295	13.470	162.623	4.193
09:22	8.555	10.801	12.716	162.808	3.624
09:23	8.865	10.572	12.717	159.845	3.647
09:24	9.153	10.342	12.671	156.475	3.219
09:25	9.162	10.292	13.188	157.509	3.487
09:26	8.831	10.605	15.565	165.786	3.585
09:27	8.934	10.504	15.518	162.469	3.809
09:28	9.030	10.407	13.189	161.276	3.818
09:29	8.814	10.578	12.640	162.430	4.561
09:30	8.742	10.640	13.418	163.500	4.495
09:31	8.820	10.576	13.275	167.827	4.013
09:32	9.066	10.393	12.852	168.048	4.354
09:33	9.063	10.348	14.343	160.832	5.292
09:34	8.992	10.423	12.948	161.642	5.364
09:35	9.072	10.345	11.292	157.998	3.976
09:36	9.100	10.349	10.845	158.620	4.180
09:37	9.431	10.073	11.114	160.030	4.093

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 9:37
Stop Time 9:45

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.005	0.098	0.805	0.714	0.194
C_{mf} Upscale gas	13.883	5.993	42.155	220.827	24.230
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.9%	0.1%	0.3%
Upscale gas	-0.9%	0.0%	-3.0%	-0.9%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.000	0.098	0.510	0.035	0.159
C_{mi} Upscale gas	13.896	5.994	42.358	220.968	24.256
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	0.3%	0.1%	0.0%
Upscale gas	-0.1%	0.0%	-0.2%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141604

09:37:44	9.415	10.082	10.921	153.146	4.142
09:37:59	6.823	7.168	10.465	150.411	4.405
09:38:14	12.141	5.201	7.009	91.030	5.345
09:38:29	13.763	5.947	3.671	28.824	6.675
09:38:44	13.863	5.995	2.271	4.160	5.586
09:38:59	13.877	5.995	1.617	1.506	2.413
09:39:14	13.870	5.995	1.278	0.871	0.720
09:39:29	13.882	5.995	1.016	0.782	0.317
09:39:44	13.885	5.995	0.871	0.692	0.197
09:39:59	13.881	5.991	0.819	0.798	0.205
09:40:14	12.193	6.192	0.724	0.651	0.181
09:40:29	1.797	9.104	6.416	32.275	0.187
09:40:44	0.121	9.912	27.840	122.597	0.138
09:40:59	0.030	9.973	35.720	194.709	0.086
09:41:14	0.018	9.987	38.340	218.047	0.010
09:41:29	0.010	9.993	39.619	219.048	-0.060
09:41:44	0.006	9.998	40.461	219.601	-0.067
09:41:59	-0.001	10.001	41.115	220.040	-0.063

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 9:37
Stop Time 9:45

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
09:42:14	-0.011	10.005	41.631	220.545	-0.059
09:42:29	-0.008	10.006	42.009	220.635	-0.067
09:42:44	-0.028	10.009	42.258	220.724	-0.062
09:42:59	-0.025	8.825	42.198	221.123	-0.067
09:43:14	0.008	1.516	25.648	192.137	0.583
09:43:29	0.001	0.293	10.842	123.289	5.234
09:43:44	0.007	0.170	6.034	14.343	12.939
09:43:59	0.003	0.127	4.101	2.084	20.431
09:44:14	-0.007	0.102	3.124	1.579	23.364
09:44:29	0.001	0.099	2.522	1.140	24.148
09:44:44	-0.002	0.098	2.092	0.741	24.252
09:44:59	-0.014	0.098	1.742	0.725	24.288
09:45:14	0.000	0.098	1.551	0.692	24.322

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 9:47
Stop time 10:14
REFERENCE METHOD RUN 6

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.005	0.098	0.805	0.714	0.194
C_{mi}	Initial upscale gas	13.883	5.993	42.155	220.827	24.230
C_{of}	Final zero gas	-0.003	0.098	0.647	0.453	0.174
C_{mf}	Final upscale gas	13.891	5.995	42.317	221.107	24.294
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.821	10.623	8.976	161.437	4.683
C_{dc}	**concentration, drift corrected**	**8.907**	**10.814**	**8.811**	**164.442**	**4.640**

Clock Time (at end of 1 minute period)

041508 141604

09:48	8.500	10.818	10.564	172.379	5.068
09:49	8.371	10.939	9.788	167.873	4.325
09:50	8.558	10.832	9.880	162.841	4.580
09:51	8.584	10.780	9.332	152.890	3.798
09:52	8.360	10.963	9.102	151.266	3.412
09:53	8.966	10.523	9.986	150.680	3.495
09:54	9.004	10.480	9.271	154.154	3.501
09:55	8.834	10.626	8.735	162.446	3.629
09:56	8.964	10.504	8.633	159.849	4.612
09:57	8.738	10.699	9.024	158.899	5.648
09:58	8.504	10.901	9.184	157.849	4.949
09:59	8.516	10.896	9.141	156.907	4.033
10:00	8.821	10.669	9.703	159.192	4.342
10:01	9.186	10.319	8.781	153.834	4.484
10:02	9.042	10.423	8.436	158.228	4.665
10:03	9.197	10.332	7.951	157.442	6.122
10:04	9.127	10.394	7.665	159.420	6.561
10:05	9.292	10.243	8.372	156.343	6.587
10:06	9.445	10.126	8.351	155.136	5.966
10:07	9.263	10.253	7.670	161.956	5.974
10:08	8.624	10.771	8.001	170.189	6.553
10:09	8.218	11.136	9.205	176.095	5.535
10:10	8.728	10.731	9.533	172.066	4.637
10:11	8.780	10.663	8.793	172.501	3.713
10:12	8.593	10.808	8.951	170.035	3.376
10:13	8.828	10.625	9.291	168.744	3.483
10:14	9.114	10.375	9.007	159.597	3.392

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 10:14
Stop Time 10:22

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.003	0.098	0.647	0.453	0.174
C_{mf} Upscale gas	13.891	5.995	42.317	221.107	24.294
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.7%	0.1%	0.2%
Upscale gas	-0.9%	0.0%	-2.8%	-0.8%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.005	0.098	0.805	0.714	0.194
C_{mi} Upscale gas	13.883	5.993	42.155	220.827	24.230
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.2%	-0.1%	0.0%
Upscale gas	0.1%	0.0%	0.2%	0.1%	0.1%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141604

10:14:51	8.518	10.797	8.428	159.438	3.332
10:15:06	7.051	5.860	8.029	159.390	3.946
10:15:21	13.131	5.672	5.060	127.912	5.532
10:15:36	13.832	5.986	2.774	39.577	6.499
10:15:51	13.865	5.995	1.765	1.995	4.334
10:16:06	13.885	5.995	1.299	1.579	1.807
10:16:21	13.910	5.995	1.032	0.888	0.487
10:16:36	13.883	5.995	0.920	0.652	0.234
10:16:51	13.890	5.995	0.770	0.652	0.147
10:17:06	13.896	5.995	0.692	0.652	0.156
10:17:21	13.888	5.995	0.611	0.709	0.186
10:17:36	9.014	6.864	0.638	0.000	0.179
10:17:51	0.714	9.608	13.584	57.045	0.151
10:18:06	0.070	9.952	31.868	157.387	0.121
10:18:21	0.020	10.000	37.050	207.619	0.071
10:18:36	0.037	9.997	38.956	218.380	-0.029
10:18:51	-0.004	10.005	39.990	219.447	-0.063
10:19:06	0.006	10.007	40.705	220.285	-0.062

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 10:14
Stop Time 10:22

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
10:19:21	-0.001	10.011	41.280	220.635	-0.060
10:19:36	-0.014	10.015	41.687	220.822	-0.059
10:19:51	-0.018	10.017	42.102	221.107	-0.060
10:20:06	-0.018	10.017	42.365	221.123	-0.067
10:20:21	-0.017	9.397	42.484	221.090	-0.068
10:20:36	0.004	2.005	28.080	221.099	0.456
10:20:51	-0.001	0.321	11.582	129.662	4.621
10:21:06	-0.001	0.182	6.221	7.073	12.075
10:21:21	0.000	0.129	4.205	2.833	19.959
10:21:36	0.000	0.104	3.093	1.767	23.056
10:21:51	-0.001	0.099	2.445	1.408	24.099
10:22:06	-0.005	0.098	2.110	0.741	24.264
10:22:21	-0.005	0.098	1.856	0.741	24.322
10:22:36	0.002	0.098	1.639	0.741	24.295
10:22:51	-0.007	0.098	1.410	0.814	24.287

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 10:24
Stop time 10:51
REFERENCE METHOD RUN 7

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.003	0.098	0.647	0.453	0.174
C_{mi}	Initial upscale gas	13.891	5.995	42.317	221.107	24.294
C_{of}	Final zero gas	-0.004	0.098	0.514	0.497	0.188
C_{mf}	Final upscale gas	13.906	5.995	42.122	220.941	24.262
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.818	10.598	8.029	162.624	5.425
C_{dc}	**concentration, drift corrected**	**8.896**	**10.787**	**7.930**	**165.641**	**5.404**

Clock Time (at end of 1 minute period)

041508 111604

10:25	8.695	10.729	10.568	153.437	5.292
10:26	8.374	11.050	10.130	162.676	4.793
10:27	9.045	10.443	8.852	164.227	3.401
10:28	8.643	10.775	8.883	170.254	3.581
10:29	8.592	10.862	10.349	174.339	4.412
10:30	8.943	10.513	9.929	164.424	4.352
10:31	9.226	10.296	9.094	167.011	4.666
10:32	8.866	10.583	8.433	165.615	5.671
10:33	8.848	10.515	9.005	159.219	6.671
10:34	9.245	10.252	8.304	152.406	5.311
10:35	9.238	10.265	7.749	151.954	5.728
10:36	8.781	10.627	7.718	154.188	6.273
10:37	8.010	11.324	9.188	167.019	6.525
10:38	9.169	10.336	8.737	162.198	5.354
10:39	9.142	10.324	7.364	161.227	4.871
10:40	8.315	11.009	7.028	168.209	5.552
10:41	8.474	10.895	7.917	164.888	5.405
10:42	8.780	10.629	7.449	156.093	5.340
10:43	8.619	10.703	7.052	147.822	5.972
10:44	8.761	10.609	6.794	150.216	5.632
10:45	8.882	10.503	6.995	151.591	5.340
10:46	8.631	10.716	6.975	161.286	5.743
10:47	9.093	10.336	6.649	166.883	5.562
10:48	9.089	10.320	6.365	170.570	5.130
10:49	8.957	10.464	6.342	181.203	5.798
10:50	8.939	10.465	6.691	173.956	7.451
10:51	8.725	10.609	6.220	167.926	6.661

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 10:52
Stop Time 11:00

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.004	0.098	0.514	0.497	0.188
C_{mf} Upscale gas	13.906	5.995	42.122	220.941	24.262
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.5%	0.1%	0.3%
Upscale gas	-0.8%	0.0%	-3.1%	-0.9%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.003	0.098	0.647	0.453	0.174
C_{mi} Upscale gas	13.891	5.995	42.317	221.107	24.294
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.2%	0.0%	0.0%
Upscale gas	0.1%	0.0%	-0.2%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141604

10:52:31	6.436	7.613	5.763	150.818	5.179
10:52:46	12.075	5.244	4.361	112.951	6.086
10:53:01	13.771	5.963	2.691	20.041	7.507
10:53:16	13.873	5.999	1.687	3.989	6.068
10:53:31	13.884	5.998	1.223	1.595	2.655
10:53:46	13.890	5.996	0.939	1.058	0.870
10:54:01	13.898	5.996	0.781	0.774	0.308
10:54:16	13.904	5.995	0.655	0.676	0.218
10:54:31	13.906	5.995	0.539	0.717	0.200
10:54:46	13.909	5.995	0.508	0.700	0.187
10:55:01	12.566	6.132	0.495	0.073	0.178
10:55:16	2.053	9.011	7.079	0.065	0.181
10:55:31	0.139	9.923	28.471	123.793	0.178
10:55:46	0.026	9.990	35.988	209.882	0.135
10:56:01	0.016	10.004	38.628	217.713	0.032
10:56:16	0.011	10.011	39.852	218.836	-0.047
10:56:31	0.002	10.018	40.741	219.634	-0.064

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 10:52
Stop Time 11:00

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
10:56:46	-0.002	10.020	41.304	220.049	-0.059
10:57:01	-0.010	10.023	41.744	220.602	-0.068
10:57:16	-0.008	10.027	42.156	220.627	-0.065
10:57:31	-0.010	10.029	42.466	221.090	-0.059
10:57:46	0.003	5.908	37.387	221.107	0.005
10:58:01	0.010	0.623	16.052	192.259	1.997
10:58:16	0.005	0.226	7.554	50.778	7.656
10:58:31	0.000	0.153	4.716	4.591	16.534
10:58:46	-0.004	0.108	3.409	1.946	21.756
10:59:01	0.000	0.101	2.631	1.612	23.912
10:59:16	-0.002	0.098	2.105	1.018	24.212
10:59:31	-0.007	0.098	1.641	0.790	24.264
10:59:46	-0.001	0.098	1.433	0.692	24.309
11:00:01	-0.005	0.098	1.294	0.644	24.332

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 11:02
Stop time 11:29
REFERENCE METHOD RUN 8

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.004	0.098	0.514	0.497	0.188
C_{mi}	Initial upscale gas	13.906	5.995	42.122	220.941	24.262
C_{of}	Final zero gas	-0.001	0.097	0.468	0.790	0.239
C_{mf}	Final upscale gas	13.911	5.996	42.162	221.577	24.305
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.788	10.493	3.920	157.376	3.992
C_{dc}	**concentration, drift corrected**	**8.859**	**10.677**	**3.650**	**160.060**	**3.898**

Clock Time (at end of 1 minute period)					
041508 141604					
11:03	8.291	10.879	4.658	163.089	3.919
11:04	8.434	10.790	4.831	164.263	3.258
11:05	8.314	10.883	4.665	156.888	3.103
11:06	8.792	10.520	4.584	164.629	3.750
11:07	8.065	11.086	4.164	160.179	2.789
11:08	8.596	10.701	4.544	161.313	2.793
11:09	8.946	10.321	4.111	150.142	2.644
11:10	8.493	10.747	4.076	161.250	3.438
11:11	8.572	10.569	4.168	154.866	2.751
11:12	8.386	10.820	4.730	153.368	4.311
11:13	9.192	10.107	3.845	145.234	3.218
11:14	8.915	10.401	3.678	149.770	4.489
11:15	9.258	10.081	3.620	148.301	4.175
11:16	9.393	9.959	3.632	145.079	4.605
11:17	8.897	10.429	3.608	150.962	4.654
11:18	8.638	10.649	3.715	154.021	5.028
11:19	9.285	10.107	3.729	152.906	4.699
11:20	9.327	10.051	3.480	155.328	4.701
11:21	8.409	10.813	3.919	158.761	4.830
11:22	9.196	10.187	3.823	162.310	4.171
11:23	9.079	10.265	3.439	156.703	4.040
11:24	8.643	10.606	3.291	158.392	4.580
11:25	9.109	10.268	3.438	163.889	4.367
11:26	8.921	10.373	3.320	157.812	4.040
11:27	8.531	10.689	3.412	160.399	4.193
11:28	8.590	10.703	3.740	174.363	5.098
11:29	9.009	10.298	3.633	164.931	4.151

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 11:29
Stop Time 11:37

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Callbration Gasses					
C_{of} Zero gas	-0.001	0.097	0.468	0.790	0.239
C_{mf} Upscale gas	13.911	5.996	42.162	221.577	24.305
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.5%	0.1%	0.3%
Upscale gas	-0.7%	0.0%	-3.0%	-0.7%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.004	0.098	0.514	0.497	0.188
C_{mi} Upscale gas	13.906	5.995	42.122	220.941	24.262
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.1%	0.1%
Upscale gas	0.0%	0.0%	0.0%	0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141604

11:29:51	8.613	10.678	3.840	172.894	4.963
11:30:06	7.562	9.906	3.891	171.030	4.545
11:30:21	9.216	4.670	3.542	144.681	4.634
11:30:36	13.608	5.881	2.523	47.074	5.991
11:30:51	13.873	5.999	1.617	8.791	6.136
11:31:06	13.889	6.001	1.086	1.726	3.640
11:31:21	13.901	5.999	0.775	1.319	1.203
11:31:36	13.907	5.996	0.622	0.774	0.420
11:31:51	13.914	5.997	0.544	0.757	0.233
11:32:06	13.912	5.995	0.472	0.774	0.247
11:32:21	13.417	6.023	0.389	0.839	0.238
11:32:36	3.132	8.605	2.172	0.293	0.190
11:32:51	0.188	9.898	22.860	129.157	0.176
11:33:06	0.026	9.982	34.533	202.051	0.098
11:33:21	0.015	10.008	37.861	218.332	0.024
11:33:36	0.019	10.015	39.427	219.756	-0.050
11:33:51	0.020	10.021	40.340	220.260	-0.063
11:34:06	0.023	10.024	41.034	220.960	-0.068

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 11:29
Stop Time 11:37

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
11:34:21	-0.034	10.023	41.525	221.131	-0.067
11:34:36	-0.012	10.032	41.895	221.449	-0.063
11:34:51	-0.022	10.034	42.220	221.636	-0.060
11:35:06	-0.022	9.451	42.372	221.645	-0.065
11:35:21	0.001	2.053	30.133	190.777	0.544
11:35:36	0.001	0.323	12.988	65.096	4.221
11:35:51	0.001	0.187	6.813	12.471	12.503
11:36:06	-0.001	0.124	4.370	1.954	19.539
11:36:21	-0.001	0.107	3.097	1.490	23.347
11:36:36	-0.018	0.100	2.429	1.140	24.129
11:36:51	-0.006	0.098	1.905	0.798	24.277
11:37:06	-0.001	0.098	1.607	0.741	24.291
11:37:21	0.002	0.098	1.351	0.831	24.347
11:37:36	-0.005	0.096	1.150	0.822	24.347

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 11:40
Stop time 12:07
REFERENCE METHOD RUN 9

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.001	0.097	0.468	0.790	0.239
C_{mi}	Initial upscale gas	13.911	5.996	42.162	221.577	24.305
C_{of}	Final zero gas	0.002	0.098	0.402	0.814	0.189
C_{mf}	Final upscale gas	13.902	5.997	41.535	220.912	24.263
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.391	10.901	4.473	164.593	4.839
C_{dc}	**concentration, drift corrected**	**8.459**	**11.095**	**4.322**	**167.401**	**4.770**

Clock Time (at end of 1 minute period)

041508 141604

11:41	8.169	11.012	4.971	164.937	3.433
11:42	8.070	11.145	5.637	170.094	4.123
11:43	8.416	10.812	4.668	156.536	3.808
11:44	7.781	11.394	4.262	171.595	4.506
11:45	8.277	10.974	4.245	165.564	4.170
11:46	8.242	10.988	4.341	160.905	4.324
11:47	8.706	10.625	4.230	157.269	4.805
11:48	8.537	10.734	3.801	153.028	4.632
11:49	8.821	10.516	3.867	159.489	5.677
11:50	8.634	10.673	4.496	158.287	6.512
11:51	8.560	10.763	4.041	168.708	6.920
11:52	8.495	10.816	4.197	173.221	5.753
11:53	8.445	10.852	5.112	179.672	5.989
11:54	8.326	10.941	5.110	171.272	4.606
11:55	8.039	11.260	5.454	178.335	4.750
11:56	8.323	10.971	5.186	164.182	3.920
11:57	8.357	10.964	5.274	168.712	4.412
11:58	8.482	10.836	4.599	154.532	4.446
11:59	8.479	10.855	4.733	158.852	5.345
12:00	8.366	10.922	4.370	157.595	4.016
12:01	8.686	10.698	4.394	158.478	4.408
12:02	8.219	11.051	4.016	156.632	4.452
12:03	8.492	10.872	3.969	166.054	5.312
12:04	8.431	10.894	3.757	157.692	4.562
12:05	8.479	10.855	4.012	165.232	5.007
12:06	8.293	11.028	4.063	173.693	5.203
12:07	8.440	10.878	3.966	173.447	5.550

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 12:08
Stop Time 12:15

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.002	0.098	0.402	0.814	0.189
C_{mf} Upscale gas	13.902	5.997	41.535	220.912	24.263
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.4%	0.2%	0.3%
Upscale gas	-0.8%	0.0%	-3.7%	-0.9%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.001	0.097	0.468	0.790	0.239
C_{mi} Upscale gas	13.911	5.996	42.162	221.577	24.305
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	-0.1%
Upscale gas	-0.1%	0.0%	-0.7%	-0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141604

12:08:13	6.100	7.728	3.823	182.311	5.402
12:08:28	12.192	5.309	2.992	115.124	6.327
12:08:43	13.790	5.972	1.996	54.839	7.526
12:08:58	13.875	6.003	1.327	1.962	5.779
12:09:13	13.889	5.999	0.990	1.709	2.652
12:09:28	13.897	5.999	0.715	1.343	0.780
12:09:43	13.906	5.997	0.555	0.847	0.337
12:09:58	13.896	5.997	0.458	0.896	0.234
12:10:13	13.904	5.997	0.386	0.904	0.199
12:10:28	12.667	6.117	0.361	0.643	0.134
12:10:43	2.119	8.981	4.448	16.996	0.200
12:10:58	0.134	9.923	25.875	78.478	0.179
12:11:13	0.026	9.989	34.802	188.197	0.099
12:11:28	0.029	10.002	37.586	218.153	0.006
12:11:43	-0.004	10.008	39.002	219.447	-0.062
12:11:58	-0.003	10.015	39.961	220.277	-0.068
12:12:13	-0.012	10.017	40.664	220.952	-0.070
12:12:28	-0.018	10.020	41.167	220.643	-0.060
12:12:43	-0.011	10.022	41.532	220.968	-0.060
12:12:58	-0.016	10.025	41.905	221.123	-0.062
12:13:13	0.002	6.762	39.601	221.449	-0.060
12:13:28	0.005	0.762	20.254	143.671	1.499
12:13:43	0.004	0.231	9.275	70.704	6.846
12:13:58	0.004	0.163	5.509	2.125	15.471
12:14:13	-0.002	0.114	3.917	1.677	21.444
12:14:28	0.001	0.102	2.940	1.579	23.759
12:14:43	-0.004	0.098	2.364	1.001	24.231
12:14:58	-0.001	0.098	1.981	0.757	24.251
12:15:13	-0.003	0.098	1.656	0.757	24.308
12:15:28	0.011	0.098	1.355	0.766	24.344

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 12:17
Stop time 12:44
REFERENCE METHOD RUN 10

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	0.002	0.098	0.402	0.814	0.189
C_{mi}	Initial upscale gas	13.902	5.997	41.535	220.912	24.263
C_{of}	Final zero gas	-0.007	0.098	0.378	0.293	0.179
C_{mf}	Final upscale gas	13.881	5.995	42.055	220.941	24.343
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.285	10.963	2.914	166.478	4.620
C_{dc}	**concentration, drift corrected**	**8.363**	**11.160**	**2.702**	**169.634**	**4.567**

Clock Time (at end of 1 minute period)					
041508 141604					
12:18	8.141	11.019	2.987	168.954	3.072
12:19	7.961	11.204	2.768	168.144	3.584
12:20	8.258	10.935	2.616	159.420	3.469
12:21	8.287	10.925	2.556	165.069	3.956
12:22	8.203	10.979	2.393	161.884	3.739
12:23	8.550	10.732	2.481	164.273	4.159
12:24	8.302	10.916	2.376	165.085	3.595
12:25	8.442	10.819	2.354	170.690	4.291
12:26	8.399	10.854	2.304	175.478	4.223
12:27	8.299	10.905	2.754	171.148	4.503
12:28	8.515	10.793	2.306	169.353	4.391
12:29	7.885	11.328	2.238	170.912	3.950
12:30	8.441	10.873	2.350	170.419	3.647
12:31	8.069	11.157	2.313	159.229	3.882
12:32	8.391	10.904	2.290	155.104	4.975
12:33	8.061	11.194	2.406	153.374	5.814
12:34	8.414	10.871	2.470	153.948	5.215
12:35	7.951	11.301	2.589	171.797	5.400
12:36	8.145	11.094	2.959	173.248	5.674
12:37	8.483	10.851	2.946	178.494	5.593
12:38	8.254	10.991	3.005	173.665	5.037
12:39	8.248	11.003	3.525	174.882	5.285
12:40	8.395	10.911	3.697	172.377	5.895
12:41	8.695	10.629	3.679	153.087	4.946
12:42	8.392	10.885	4.203	161.882	5.752
12:43	8.293	10.929	4.986	161.889	5.545
12:44	8.223	10.996	5.114	171.107	5.146

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 12:46
Stop Time 12:53

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{cf} Zero gas	-0.007	0.098	0.378	0.293	0.179
C_{mf} Upscale gas	13.881	5.995	42.055	220.941	24.343
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.038	0.045	0.114	-0.062
C_{mce} Upscale gas	14.013	5.993	44.791	224.949	24.156
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.4%	0.4%	0.0%	0.2%
Upscale gas	-0.9%	0.0%	-3.1%	-0.9%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.002	0.098	0.402	0.814	0.189
C_{mi} Upscale gas	13.902	5.997	41.535	220.912	24.263
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	0.0%	0.0%	-0.1%	0.0%
Upscale gas	-0.1%	0.0%	0.6%	0.0%	0.1%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 141004

12:46:00	11.899	5.214	3.950	133.293	5.448
12:46:15	13.754	5.965	2.377	22.124	6.675
12:46:30	13.853	6.000	1.514	4.135	5.319
12:46:45	13.876	6.000	0.996	1.669	2.730
12:47:00	13.879	5.998	0.747	1.123	0.733
12:47:15	13.889	5.997	0.646	0.766	0.324
12:47:30	13.873	5.995	0.484	0.749	0.182
12:47:45	13.882	5.995	0.397	0.774	0.158
12:48:00	13.889	5.995	0.391	0.725	0.179
12:48:15	13.889	5.995	0.383	0.114	0.176
12:48:30	12.077	6.221	0.360	0.041	0.181
12:48:45	1.709	9.160	7.354	9.011	0.137
12:49:00	0.120	9.925	28.029	68.913	0.117
12:49:15	0.022	9.979	35.476	200.912	0.083
12:49:30	0.016	9.994	38.012	217.379	0.028
12:49:45	0.005	10.000	39.443	219.089	-0.060
12:50:00	0.003	10.006	40.363	219.878	-0.063
12:50:15	-0.022	10.003	40.912	220.065	-0.054

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U1 FF Outlet

March 24, 2008
Start Time 12:46
Stop Time 12:53

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U1 FF Outlet %dv	U1 FF Outlet %dv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv	U1 FF Outlet ppmdv
12:50:30	-0.015	10.011	41.377	220.399	-0.059
12:50:45	-0.009	10.008	41.793	220.635	-0.063
12:51:00	-0.019	10.015	42.089	220.635	-0.070
12:51:15	-0.018	9.752	42.283	221.066	-0.063
12:51:30	-0.009	2.606	29.420	221.123	0.477
12:51:45	-0.005	0.357	12.046	108.824	3.573
12:52:00	-0.006	0.194	6.414	7.546	11.979
12:52:15	-0.002	0.138	4.256	2.385	18.883
12:52:30	-0.002	0.107	3.105	1.726	23.228
12:52:45	0.000	0.099	2.421	1.514	24.124
12:53:00	-0.007	0.098	2.020	0.863	24.312
12:53:15	-0.004	0.098	1.662	0.782	24.337
12:53:30	-0.006	0.098	1.381	0.822	24.381
12:53:45	-0.009	0.098	1.185	0.888	24.389

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Date: March 25, 2008
Start Time 6:08
Stop Time 6:28

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
Instrument Information					
Manufacturer:	Servomex		Western Research	T.E.I.	T.E.I.
Model:	1420C	Servomex	921NMP	42C-HL	48C
Detection:	Paramagnet	1415C NDIR	UV	Chemilumi.	GFC/NDIR
Asset or Serial No:	201170	203504	205247	201105	205209
Instrument Span Value	14.02	14.05	86.89	453.9	96.57
System Response Time (seconds)					
Actual Value of Calibration Gasses					
Zero	0	0	0	0	0
Low	5.986	6.058	44.33	225.3	24.83
Mid					49.53
High	14.02	14.03	86.89	453.9	96.57
Actual gas to be used for bias checks	14.020	6.058	44.330	225.300	24.830
Cylinder ID					
Zero	ALM21476-1007	ALM21476-1007	ALM21476-1007	ALM21476-1007	ALM21476-1007
Low	ALM54884-0407	ALM26535-0407	ALM002114	ALM002114	1L2234-0607
Mid					ALM13959-0507
High	ALM26535-0407	ALM54884-0407	ALM013846	ALM013846	ALM25195-0208
Instrument Response to Calibration Gas					
Zero	-0.004	0.081	-0.299	1.666	0.072
Low	5.961	6.063	45.016	226.238	24.011
Mid	NA	NA	NA	NA	49.274
High	13.987	14.062	87.578	455.404	96.946

Calibration Error as Percent of Span Value (Limit = 2%, EPA Method 25A limit = 5% of actual calibration gas value)

Zero	0.0%	0.6%	-0.3%	0.4%	0.1%
Low	-0.2%	0.0%	0.8%	0.2%	-0.8%
Mid	NA	NA	NA	NA	-0.3%
High	-0.2%	0.2%	0.8%	0.3%	0.4%

Calibration Error Status

Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	NA	NA	NA	NA	OK
High	OK	OK	OK	OK	OK

041508 143812

06:08:30	13.974	6.048	-0.332	1.661	0.083
06:08:45	13.992	6.055	-0.334	1.530	0.067
06:09:00	13.995	6.058	-0.357	1.571	0.145
06:08:30	13.974	6.048	-0.332	1.661	0.083
06:08:45	13.992	6.055	-0.334	1.530	0.067
06:09:00	13.995	6.058	-0.357	1.571	0.145
06:09:15	13.161	6.061	-0.412	1.636	0.096
06:09:30	7.145	11.720	-0.370	1.783	0.127
06:09:45	6.037	13.916	-0.374	1.913	0.062
06:10:00	5.973	14.082	-0.350	1.767	0.055
06:10:15	5.949	14.104	-0.287	1.620	0.158
06:10:30	5.955	14.111	-0.269	1.742	0.099
06:10:45	5.966	14.092	-0.265	1.750	0.111

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Date: **March 25, 2008**
Start Time 6:08
Stop Time 6:28

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
06:11:00	5.961	14.061	-0.265	1.791	0.119
06:11:15	5.967	14.062	-0.291	1.766	0.083
06:11:30	5.955	14.063	-0.288	1.767	0.060
06:11:45	9.239	11.768	-0.267	1.816	0.078
06:12:00	13.738	6.523	-0.308	1.767	0.086
06:12:15	13.980	6.097	-0.285	1.717	0.078
06:12:30	14.000	6.066	-0.278	1.579	0.114
06:12:45	14.006	6.061	-0.256	1.718	0.111
06:13:00	14.005	6.060	-0.278	1.612	0.119
06:13:15	13.994	6.050	-0.363	1.669	0.082
06:13:30	8.398	6.480	2.567	1.620	0.127
06:13:45	0.398	9.709	49.560	76.516	0.086
06:14:00	-0.017	10.079	79.433	315.148	0.140
06:14:15	-0.027	10.098	84.777	434.001	0.158
06:14:30	-0.037	10.106	86.273	464.363	0.085
06:14:45	-0.035	10.106	86.777	467.815	0.101
06:15:00	-0.044	10.107	87.009	468.181	0.062
06:15:15	-0.038	10.114	87.269	462.613	0.114
06:15:30	-0.044	10.116	87.427	455.116	0.076
06:15:45	-0.044	10.110	87.544	455.727	0.085
06:16:00	-0.045	10.113	87.762	455.368	0.060
06:16:15	0.134	10.007	80.230	455.205	0.060
06:16:30	0.140	9.599	29.576	432.894	0.083
06:16:45	-0.040	10.111	41.589	363.411	0.052
06:17:00	-0.043	10.137	44.181	244.029	0.085
06:17:15	-0.053	10.142	44.790	224.322	0.111
06:17:30	-0.051	10.148	44.962	226.276	0.098
06:17:45	-0.053	10.148	45.019	226.219	0.070
06:18:00	-0.054	10.149	45.066	226.219	0.047
06:18:15	0.074	10.113	44.508	226.545	0.126
06:18:30	0.276	3.142	11.943	226.308	0.845
06:18:45	-0.009	0.220	1.600	182.011	8.003
06:19:00	-0.024	0.099	0.340	35.132	37.983
06:19:15	-0.021	0.098	0.062	3.354	69.426
06:19:30	-0.019	0.100	-0.091	2.019	91.162
06:19:45	-0.030	0.094	-0.202	1.913	96.671
06:20:00	-0.026	0.091	-0.213	1.783	98.116
06:20:15	-0.040	0.096	-0.217	1.718	98.250
06:20:30	-0.030	0.090	-0.220	1.644	97.006
06:20:45	-0.034	0.088	-0.220	1.742	96.947
06:21:00	-0.034	0.094	-0.217	1.718	96.933
06:21:15	0.055	0.102	-0.140	1.783	96.959
06:21:30	0.077	0.133	0.119	1.954	94.965
06:21:45	-0.035	0.093	-0.093	2.035	83.884
06:22:00	-0.032	0.083	-0.202	1.710	55.409
06:22:15	-0.011	0.092	-0.218	1.506	36.217
06:22:30	-0.030	0.090	-0.222	1.758	26.103
06:22:45	-0.027	0.087	-0.222	1.718	24.361
06:23:00	-0.033	0.083	-0.222	1.596	24.029
06:23:15	-0.031	0.082	-0.215	1.677	24.008
06:23:30	-0.040	0.086	-0.220	1.669	23.997
06:23:45	0.011	0.085	-0.223	1.669	23.988
06:24:00	0.009	0.087	-0.220	1.653	26.336
06:24:15	0.000	0.091	-0.220	1.718	32.415
06:24:30	0.001	0.082	-0.218	1.669	42.340
06:24:45	-0.005	0.091	-0.220	1.701	47.253
06:25:00	-0.004	0.086	-0.220	1.490	49.127
06:25:15	-0.012	0.083	-0.220	1.596	49.263
06:25:30	-0.004	0.086	-0.220	1.693	49.281
06:25:45	-0.004	0.075	-0.220	1.498	49.278
06:26:00	-0.002	0.082	-0.220	1.628	49.319
06:26:15	5.728	1.783	0.348	1.555	49.311
06:26:30	13.543	5.720	0.254	4.274	45.211
06:26:45	13.966	6.009	-0.037	7.000	33.058

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

Date: **March 25, 2008**
Start Time 6:08
Stop Time 6:28

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
06:27:00	13.994	6.031	-0.176	2.523	14.344
06:27:15	14.011	6.038	-0.189	1.750	5.247
06:27:30	14.005	6.040	-0.217	1.530	0.993
06:27:45	14.009	6.040	-0.208	1.628	0.288
06:28:00	14.007	6.045	-0.212	1.758	0.062
06:28:15	14.008	6.045	-0.215	1.652	0.068
06:28:30	14.009	6.046	-0.215	1.547	0.086

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 6:29
Stop Time 6:38

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.015	0.099	-0.175	1.848	0.372
C_{mf} Upscale gas	13.920	6.009	41.797	223.823	24.162
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.1%	0.1%	0.1%	0.0%	0.3%
Upscale gas	-0.5%	-0.4%	-3.7%	-0.5%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	NA	NA	NA	NA	NA
C_{mi} Upscale gas	NA	NA	NA	NA	NA
System Drift as Percent of Span Value (3%)					
Zero gas	NA	NA	NA	NA	NA
Upscale gas	NA	NA	NA	NA	NA
Calibration Drift Status					
Zero gas	NA	NA	NA	NA	NA
Upscale gas	NA	NA	NA	NA	NA

041508 1:13812

06:29:24	10.030	9.450	1.736	153.740	4.622
06:29:39	11.034	7.072	1.737	158.405	10.051
06:29:54	13.273	5.038	1.581	127.293	17.213
06:30:09	13.886	5.958	1.177	68.563	27.220
06:30:24	13.916	6.009	0.676	3.419	23.062
06:30:39	13.911	6.011	0.391	2.011	8.674
06:30:54	13.917	6.011	0.142	1.987	2.149
06:31:09	13.923	6.008	0.002	1.946	0.445
06:31:24	13.920	6.007	-0.096	1.807	0.366
06:31:39	13.918	6.009	-0.210	1.824	0.374
06:31:54	13.911	6.007	-0.220	1.913	0.376
06:32:09	13.921	6.007	-0.225	1.897	0.373
06:32:24	13.924	6.009	-0.225	1.628	0.363
06:32:39	11.061	6.455	-0.228	1.823	0.353
06:32:54	1.259	9.417	4.700	5.934	0.330
06:33:09	0.112	10.003	24.881	89.931	0.360
06:33:24	0.038	10.064	33.861	215.222	0.338
06:33:39	0.027	10.075	36.938	220.065	0.148
06:33:54	0.018	10.076	38.392	221.718	0.081
06:34:09	0.015	10.078	39.311	222.418	0.067
06:34:24	0.010	10.079	40.117	222.955	0.031
06:34:39	0.011	10.079	40.624	223.411	0.073
06:34:54	0.008	10.078	41.153	223.516	0.060
06:35:09	0.003	10.078	41.511	223.508	0.006
06:35:24	0.002	10.077	41.804	224.005	0.041
06:35:39	0.002	10.078	42.077	223.956	0.062
06:35:54	0.014	4.945	37.203	223.565	0.192
06:36:09	0.015	0.543	17.923	138.380	2.859
06:36:24	0.007	0.243	8.755	10.403	9.512
06:36:39	0.012	0.161	5.185	3.541	18.487
06:36:54	0.007	0.112	3.476	1.987	22.711
06:37:09	0.011	0.102	2.575	1.954	23.959
06:37:24	-0.001	0.100	1.874	1.889	24.114
06:37:39	0.014	0.100	1.555	1.848	24.184
06:37:54	0.011	0.100	1.135	1.881	24.187

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 6:29
Stop Time 6:38

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
06:38:09	0.019	0.098	0.882	1.807	24.195

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 6:55
Stop time 7:22
REFERENCE METHOD RUN 1

		Channel 1 O2 U2 FF Outlet %dv	Channel 2 CO2 U2 FF Outlet %dv	Channel 3 SO2 U2 FF Outlet ppmdv	Channel 4 NOx U2 FF Outlet ppmdv	Channel 5 CO U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	0.015	0.099	-0.175	1.848	0.372
C_{mi}	Initial upscale gas	13.920	6.009	41.797	223.823	24.162
C_{of}	Final zero gas	0.001	0.101	-0.049	1.859	0.360
C_{mf}	Final upscale gas	13.915	6.027	42.087	222.439	24.175
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Monitor Averages (concentrations)						
C	Average concentration, uncorrected	9.430	10.033	1.391	163.309	7.167
C_{dc}	**concentration, drift corrected**	**9.496**	**10.168**	**1.584**	**164.390**	**7.094**

Clock Time (at end of 1 minute period)

041508 143912

06:56	9.549	9.912	0.813	166.882	8.618
06:57	9.399	10.069	1.116	163.445	6.245
06:58	9.736	9.727	1.517	164.583	6.542
06:59	9.062	10.322	1.282	165.749	6.351
07:00	8.721	10.636	1.056	169.247	6.948
07:01	9.645	9.850	1.026	168.152	4.883
07:02	9.749	9.743	0.870	165.533	5.179
07:03	9.938	9.606	0.919	163.386	7.718
07:04	9.113	10.347	0.976	163.632	8.282
07:05	9.749	9.743	1.051	159.388	7.475
07:06	9.109	10.315	1.052	159.605	9.734
07:07	9.521	9.993	1.083	162.074	9.971
07:08	9.307	10.136	0.936	167.324	9.170
07:09	9.577	9.910	1.048	163.889	7.720
07:10	8.832	10.553	1.056	165.914	6.760
07:11	9.467	10.040	1.106	168.307	6.740
07:12	8.794	10.544	1.129	171.207	6.019
07:13	9.008	10.418	1.414	169.534	6.500
07:14	9.530	9.940	1.563	164.935	5.080
07:15	8.791	10.562	1.727	162.816	5.465
07:16	9.508	9.974	1.737	158.799	6.161
07:17	9.578	9.864	1.698	156.777	5.336
07:18	9.482	10.016	1.746	160.684	7.232
07:19	10.045	9.484	1.812	154.369	6.566
07:20	9.866	9.678	2.247	157.340	9.188
07:21	9.764	9.759	2.738	157.884	9.492
07:22	9.760	9.742	2.835	157.882	8.129

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 7:23
Stop Time 7:31

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.001	0.101	-0.049	1.859	0.360
C_{mf} Upscale gas	13.915	6.027	42.087	222.439	24.175
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.0%	0.1%	0.3%	0.0%	0.3%
Upscale gas	-0.5%	-0.3%	-3.4%	-0.8%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.015	0.099	-0.175	1.848	0.372
C_{mi} Upscale gas	13.920	6.009	41.797	223.823	24.162
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	0.0%	0.1%	0.0%	0.0%
Upscale gas	0.0%	0.1%	0.3%	-0.3%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 143812

07:23:21	9.770	9.701	3.222	161.376	7.406
07:23:36	8.402	8.881	3.493	163.875	7.323
07:23:51	9.856	4.576	3.277	165.030	8.202
07:24:06	13.664	5.914	2.473	112.617	9.245
07:24:21	13.884	6.024	1.527	5.267	7.606
07:24:36	13.903	6.030	0.890	2.890	3.699
07:24:51	13.897	6.032	0.406	1.954	0.952
07:25:06	13.898	6.032	0.368	1.978	0.402
07:25:21	13.911	6.028	0.185	1.913	0.376
07:25:36	13.907	6.026	0.067	1.856	0.376
07:25:51	13.928	6.027	-0.059	1.848	0.355
07:26:06	13.488	6.045	-0.155	1.872	0.350
07:26:21	3.285	8.555	0.508	19.455	0.373
07:26:36	0.199	9.954	17.516	89.304	0.365
07:26:51	0.043	10.069	31.334	181.994	0.303
07:27:06	0.020	10.079	35.824	220.025	0.189
07:27:21	0.021	10.078	37.947	221.066	0.010
07:27:36	0.008	10.079	39.220	221.807	0.070
07:27:51	-0.004	10.077	40.195	221.962	0.075
07:28:06	0.003	10.079	40.816	222.019	0.103
07:28:21	-0.020	10.079	41.348	222.173	0.050
07:28:36	-0.003	10.081	41.796	222.450	0.078
07:28:51	-0.008	10.083	42.126	222.417	0.081
07:29:06	-0.001	9.803	42.338	222.450	0.037
07:29:21	-0.002	2.591	33.249	190.476	0.537
07:29:36	0.009	0.364	15.489	78.633	4.099
07:29:51	0.002	0.224	7.979	19.349	12.682
07:30:06	0.013	0.136	4.972	2.011	20.068
07:30:21	0.010	0.110	3.376	1.962	23.588
07:30:36	0.008	0.104	2.470	1.987	24.047
07:30:51	0.004	0.108	1.845	1.832	24.155
07:31:06	0.006	0.101	1.486	1.848	24.176
07:31:21	0.005	0.100	1.190	1.889	24.195
07:31:36	-0.009	0.100	0.952	1.840	24.220

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 7:33
Stop time 8:00
REFERENCE METHOD RUN 2

		Channel 1 O2 U2 FF Outlet %dv	Channel 2 CO2 U2 FF Outlet %dv	Channel 3 SO2 U2 FF Outlet ppmdv	Channel 4 NOx U2 FF Outlet ppmdv	Channel 5 CO U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	0.001	0.101	-0.049	1.859	0.360
C_{mi}	Initial upscale gas	13.915	6.027	42.087	222.439	24.175
C_{of}	Final zero gas	0.013	0.110	-0.209	1.921	0.388
C_{mf}	Final upscale gas	13.902	6.041	42.229	222.266	24.206
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.156	10.240	6.402	159.990	5.766
C_{dc}	**concentration, drift corrected**	**9.227**	**10.355**	**6.846**	**161.569**	**5.621**

Clock Time (at end of 1 minute period)

041508 143812

07:34	9.078	10.277	4.662	165.716	6.244
07:35	9.039	10.295	3.937	164.678	5.946
07:36	8.969	10.383	4.382	166.703	5.896
07:37	8.654	10.654	4.902	170.716	5.649
07:38	8.686	10.626	6.020	173.374	5.669
07:39	8.966	10.383	6.522	167.053	5.138
07:40	9.238	10.205	7.770	166.068	5.919
07:41	8.955	10.405	7.324	163.319	5.367
07:42	9.319	10.108	8.138	163.161	5.683
07:43	9.192	10.173	6.921	158.641	5.480
07:44	9.319	10.122	7.191	166.311	4.801
07:45	9.008	10.305	9.041	164.280	4.608
07:46	8.693	10.645	9.567	170.690	5.938
07:47	9.308	10.087	7.692	161.498	4.046
07:48	8.862	10.497	6.978	166.398	4.724
07:49	9.573	9.830	5.955	163.266	3.683
07:50	8.666	10.653	7.030	163.421	5.195
07:51	9.054	10.386	7.686	166.237	4.708
07:52	9.397	10.066	6.685	160.144	4.797
07:53	9.567	9.909	5.670	156.632	4.883
07:54	9.477	10.021	4.984	149.021	5.002
07:55	9.151	10.271	5.538	144.904	5.883
07:56	8.828	10.577	6.784	149.654	7.886
07:57	9.680	9.816	6.822	144.268	7.062
07:58	10.023	9.513	5.254	141.531	7.014
07:59	9.586	9.840	4.610	142.707	8.513
08:00	8.917	10.430	4.787	149.338	9.936

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 8:01
Stop Time 8:09

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.013	0.110	-0.209	1.921	0.388
C_{mf} Upscale gas	13.902	6.041	42.229	222.266	24.206
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.1%	0.2%	0.1%	0.1%	0.3%
Upscale gas	-0.6%	-0.2%	-3.2%	-0.9%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.001	0.101	-0.049	1.859	0.360
C_{mi} Upscale gas	13.915	6.027	42.087	222.439	24.175
System Drift as Percent of Span Value (3%)					
Zero gas	0.1%	0.1%	-0.2%	0.0%	0.0%
Upscale gas	-0.1%	0.1%	0.2%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 143612

08:01:16	9.384	10.075	4.814	153.358	9.582
08:01:31	7.241	7.750	4.334	155.369	8.742
08:01:46	11.415	4.932	3.403	112.658	8.789
08:02:01	13.743	5.963	2.141	43.679	8.755
08:02:16	13.875	6.042	1.153	7.644	6.353
08:02:31	13.886	6.046	0.541	2.491	2.535
08:02:46	13.899	6.043	0.285	2.206	0.846
08:03:01	13.900	6.044	0.021	1.962	0.414
08:03:16	13.904	6.042	-0.181	1.970	0.402
08:03:31	13.901	6.038	-0.218	1.938	0.373
08:03:46	13.907	6.039	-0.228	1.856	0.389
08:04:01	13.903	6.039	-0.239	1.840	0.401
08:04:16	6.066	7.737	-0.205	9.084	0.413
08:04:31	0.361	9.864	13.034	85.739	0.369
08:04:46	0.056	10.058	30.208	164.827	0.314
08:05:01	0.028	10.078	35.884	219.642	0.259
08:05:16	0.024	10.079	38.147	220.936	0.135
08:05:31	0.015	10.081	39.350	221.636	0.124
08:05:46	0.010	10.084	40.259	221.571	0.059
08:06:01	0.000	10.092	40.923	221.775	0.112
08:06:16	0.006	10.094	41.379	222.157	0.106
08:06:31	-0.012	10.098	41.730	222.141	0.088
08:06:46	-0.006	10.100	42.011	222.173	0.116
08:07:01	-0.022	10.105	42.250	222.092	0.127
08:07:16	0.007	9.439	42.427	222.532	0.121
08:07:31	0.014	1.981	31.530	222.173	0.803
08:07:46	0.014	0.349	14.063	123.012	4.796
08:08:01	0.005	0.233	7.079	7.415	13.462
08:08:16	0.009	0.182	4.233	2.760	20.449
08:08:31	0.021	0.135	2.774	2.166	23.611
08:08:46	0.016	0.119	1.916	2.125	24.096
08:09:01	0.016	0.106	1.307	1.986	24.181
08:09:16	0.010	0.110	1.019	2.011	24.210
08:09:31	0.028	0.114	0.671	1.962	24.228
08:09:46	0.000	0.105	0.422	2.068	24.228

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 8:12
Stop time 8:39
REFERENCE METHOD RUN 3

		Channel 1 O2 U2 FF Outlet %dv	Channel 2 CO2 U2 FF Outlet %dv	Channel 3 SO2 U2 FF Outlet ppmdv	Channel 4 NOx U2 FF Outlet ppmdv	Channel 5 CO U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	0.013	0.110	-0.209	1.921	0.388
C_{mi}	Initial upscale gas	13.902	6.041	42.229	222.266	24.206
C_{of}	Final zero gas	0.003	0.100	-0.520	1.881	0.371
C_{mf}	Final upscale gas	13.899	6.045	41.890	221.590	24.198
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.318	10.068	0.946	156.760	7.148
C_{dc}	**concentration, drift corrected**	**9.395**	**10.164**	**1.369**	**158.571**	**7.055**

Clock Time (at end of 1 minute period)					
041508 143812					
08:13	8.988	10.302	1.864	157.853	8.475
08:14	9.059	10.255	1.739	157.448	7.517
08:15	9.077	10.229	1.717	161.640	6.289
08:16	9.464	9.910	1.706	163.521	5.707
08:17	9.814	9.633	1.508	163.341	5.564
08:18	9.240	10.098	1.341	164.088	6.628
08:19	9.308	10.034	1.319	165.726	6.311
08:20	9.048	10.324	1.151	167.468	6.859
08:21	9.201	10.159	1.056	161.884	7.294
08:22	9.497	9.869	1.418	156.484	8.182
08:23	9.076	10.261	1.141	159.400	7.930
08:24	9.042	10.260	0.945	162.049	7.319
08:25	8.694	10.587	1.019	174.501	7.958
08:26	9.559	9.851	0.981	165.362	5.734
08:27	9.598	9.813	0.739	156.461	5.944
08:28	9.355	10.027	0.729	152.198	6.699
08:29	9.437	10.006	0.750	151.532	7.473
08:30	9.212	10.220	0.586	146.785	6.466
08:31	9.531	9.893	0.440	142.410	7.302
08:32	9.386	10.060	0.399	146.482	8.141
08:33	9.440	9.980	0.413	143.761	7.043
08:34	9.595	9.864	0.615	142.760	7.090
08:35	9.924	9.603	0.399	147.462	7.747
08:36	9.534	9.887	0.390	152.074	6.472
08:37	9.015	10.374	0.389	157.344	7.719
08:38	9.033	10.345	0.392	156.109	8.644
08:39	9.461	9.982	0.387	156.384	8.493

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 8:39
Stop Time 8:47

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.003	0.100	-0.520	1.881	0.371
C_{mf} Upscale gas	13.899	6.045	41.890	221.590	24.198
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.0%	0.1%	-0.3%	0.0%	0.3%
Upscale gas	-0.6%	-0.1%	-3.6%	-1.0%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.013	0.110	-0.209	1.921	0.388
C_{mi} Upscale gas	13.902	6.041	42.229	222.266	24.206
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	-0.1%	-0.4%	0.0%	0.0%
Upscale gas	0.0%	0.0%	-0.4%	-0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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08:39:58	7.188	7.749	0.393	157.338	7.486
08:40:13	11.481	4.969	0.370	151.087	7.603
08:40:28	13.746	5.973	0.217	51.502	8.184
08:40:43	13.882	6.045	-0.044	5.600	6.084
08:40:58	13.887	6.049	-0.218	1.978	2.520
08:41:13	13.893	6.048	-0.228	1.986	0.739
08:41:28	13.897	6.047	-0.319	2.003	0.365
08:41:43	13.899	6.044	-0.396	1.758	0.361
08:41:58	13.902	6.043	-0.510	1.905	0.388
08:42:13	13.905	6.044	-0.531	1.816	0.383
08:42:28	8.954	6.976	-0.521	1.921	0.343
08:42:43	0.688	9.712	10.100	69.752	0.357
08:42:58	0.068	10.046	28.821	182.230	0.340
08:43:13	0.021	10.077	34.849	212.983	0.246
08:43:28	0.010	10.078	37.298	220.000	0.124
08:43:43	0.003	10.085	38.646	220.773	-0.003
08:43:58	0.004	10.092	39.578	221.376	0.006
08:44:13	0.006	10.098	40.321	221.376	-0.021
08:44:28	-0.014	10.101	40.861	221.401	0.010
08:44:43	-0.018	10.103	41.322	221.441	-0.021
08:44:58	-0.021	10.106	41.631	221.742	0.021
08:45:13	-0.018	10.108	41.895	221.392	-0.021
08:45:28	-0.027	10.110	42.144	221.636	0.033
08:45:43	-0.011	7.526	40.957	221.954	0.003
08:45:58	0.010	0.952	23.481	179.894	1.602
08:46:13	0.009	0.271	10.703	39.788	7.432
08:46:28	0.006	0.206	5.864	5.462	16.305
08:46:43	-0.006	0.118	3.730	2.125	22.252
08:46:58	-0.001	0.101	2.670	1.938	23.914
08:47:13	-0.002	0.101	1.900	1.897	24.172
08:47:28	0.001	0.099	1.485	1.930	24.199
08:47:43	0.013	0.099	1.076	1.881	24.223
08:47:58	-0.004	0.101	0.768	1.848	24.247

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 8:51
Stop time 9:18
REFERENCE METHOD RUN 4

		Channel 1 O2 U2 FF Outlet %dv	Channel 2 CO2 U2 FF Outlet %dv	Channel 3 SO2 U2 FF Outlet ppmdv	Channel 4 NOx U2 FF Outlet ppmdv	Channel 5 CO U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	0.003	0.100	-0.520	1.881	0.371
C_{mi}	Initial upscale gas	13.899	6.045	41.890	221.590	24.198
C_{of}	Final zero gas	0.006	0.100	-0.325	1.832	0.382
C_{mf}	Final upscale gas	13.898	6.047	41.924	220.304	24.165
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.494	9.954	1.968	147.127	7.035
C_{dc}	**concentration, drift corrected**	**9.575**	**10.040**	**2.504**	**149.387**	**6.945**

Clock Time (at end of 1 minute period)

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08:52	9.094	10.279	0.366	147.155	5.741
08:53	9.169	10.203	0.326	145.468	4.517
08:54	9.560	9.877	0.310	145.875	5.621
08:55	9.280	10.080	0.276	147.861	5.643
08:56	9.187	10.201	0.235	151.532	5.144
08:57	9.201	10.171	0.260	144.389	5.271
08:58	9.652	9.835	0.254	145.330	6.315
08:59	9.562	9.871	0.199	141.626	5.651
09:00	9.435	10.028	0.348	142.636	6.684
09:01	9.232	10.148	0.693	144.764	7.271
09:02	9.758	9.750	0.397	146.508	8.024
09:03	9.905	9.632	0.499	143.051	9.147
09:04	9.187	10.236	1.070	144.656	8.768
09:05	8.942	10.439	1.358	151.451	8.130
09:06	9.670	9.845	1.731	152.825	6.151
09:07	9.801	9.687	1.737	146.353	5.324
09:08	9.463	9.975	1.645	143.478	6.273
09:09	9.728	9.758	1.507	143.384	6.895
09:10	9.523	9.964	1.739	149.495	6.366
09:11	9.540	9.945	1.944	150.747	6.006
09:12	9.872	9.624	2.293	147.452	6.950
09:13	9.788	9.697	3.770	143.834	8.545
09:14	9.716	9.749	4.611	148.537	9.196
09:15	9.682	9.773	5.513	145.904	8.674
09:16	9.428	10.025	6.302	148.989	9.925
09:17	9.275	10.170	6.963	156.298	9.398
09:18	9.685	9.793	6.799	152.818	8.323

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 9:19
Stop Time 9:27

CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	0.006	0.100	-0.325	1.832	0.382
C_{mf} Upscale gas	13.898	6.047	41.924	220.304	24.165
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Perc	3.00000				
Zero gas	0.1%	0.1%	0.0%	0.0%	0.3%
Upscale gas	-0.6%	-0.1%	-3.6%	-1.3%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.003	0.100	-0.520	1.881	0.371
C_{mi} Upscale gas	13.899	6.045	41.890	221.590	24.198
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	0.2%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.0%	-0.3%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:19:28	12.962	5.610	5.428	90.696	8.645
09:19:43	13.827	6.024	2.450	36.516	8.383
09:19:58	13.874	6.050	1.141	1.954	5.128
09:20:13	13.894	6.050	0.515	1.954	1.792
09:20:28	13.896	6.048	0.153	1.930	0.534
09:20:43	13.891	6.050	-0.112	1.864	0.383
09:20:58	13.898	6.046	-0.222	1.856	0.388
09:21:13	13.905	6.045	-0.327	1.824	0.373
09:21:28	13.904	6.045	-0.427	1.815	0.386
09:21:43	8.464	7.108	-0.414	1.848	0.373
09:21:58	0.593	9.758	10.740	49.556	0.365
09:22:13	0.055	10.062	29.643	187.318	0.366
09:22:28	0.025	10.078	35.539	215.914	0.326
09:22:43	0.015	10.079	37.884	218.762	0.164
09:22:58	-0.006	10.082	39.189	219.211	0.033
09:23:13	0.016	10.094	40.065	219.699	0.010
09:23:28	-0.011	10.099	40.653	219.796	0.031
09:23:43	-0.017	10.098	41.130	220.204	0.047
09:23:58	0.000	10.100	41.457	220.302	0.008
09:24:13	-0.022	10.107	41.709	220.285	0.016
09:24:28	-0.037	10.110	41.919	220.310	0.034
09:24:43	-0.035	10.107	42.144	220.318	0.015
09:24:58	-0.011	7.346	41.039	220.277	0.072
09:25:13	0.010	0.897	23.637	199.610	1.465
09:25:28	0.008	0.266	10.585	58.136	7.144
09:25:43	0.003	0.198	5.631	5.047	16.207
09:25:58	0.006	0.116	3.424	1.970	21.828
09:26:13	0.009	0.104	2.317	1.970	23.775
09:26:28	0.004	0.102	1.613	1.881	24.122
09:26:43	0.010	0.102	1.110	1.824	24.187
09:26:58	0.006	0.099	0.851	1.840	24.187
09:27:13	0.001	0.100	0.487	1.840	24.220

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 9:29
Stop time 9:56
REFERENCE METHOD RUN 5

		Channel 1 O2 U2 FF Outlet %dv	Channel 2 CO2 U2 FF Outlet %dv	Channel 3 SO2 U2 FF Outlet ppmdv	Channel 4 NOx U2 FF Outlet ppmdv	Channel 5 CO U2 FF Outlet ppmdv
Calibration Checks						
C_{ol}	Initial zero gas	0.006	0.100	-0.325	1.832	0.382
C_{ml}	Initial upscale gas	13.898	6.047	41.924	220.304	24.165
C_{of}	Final zero gas	-0.008	0.099	-0.490	1.908	0.384
C_{mf}	Final upscale gas	13.890	6.050	42.045	220.125	24.189
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.319	10.094	0.763	155.438	5.875
C_{dc}	**concentration, drift corrected**	**9.404**	**10.178**	**1.224**	**158.460**	**5.731**

Clock Time (at end of 1 minute period)

041508 143812

09:30	8.948	10.354	0.761	166.669	4.819
09:31	8.632	10.630	0.563	169.571	4.654
09:32	9.609	9.833	0.412	165.328	4.092
09:33	9.087	10.295	0.363	165.299	5.114
09:34	10.052	9.460	0.267	157.798	5.316
09:35	9.894	9.607	0.190	152.165	6.158
09:36	9.376	10.067	0.180	149.351	6.492
09:37	9.462	9.973	0.305	148.113	7.288
09:38	9.532	9.867	0.888	144.799	6.895
09:39	9.583	9.857	0.741	146.296	6.151
09:40	9.080	10.295	0.439	149.560	5.538
09:41	9.208	10.219	0.670	149.512	5.936
09:42	9.415	10.011	0.621	146.467	5.463
09:43	9.654	9.795	0.676	149.452	6.037
09:44	9.423	10.001	0.781	154.377	6.563
09:45	9.296	10.144	0.906	156.555	6.932
09:46	9.083	10.320	0.982	157.078	8.272
09:47	9.129	10.210	1.005	154.562	6.745
09:48	8.553	10.712	1.341	163.236	6.126
09:49	9.323	10.088	1.053	160.745	4.081
09:50	9.334	10.081	1.025	159.129	5.028
09:51	9.311	10.093	0.902	160.177	5.002
09:52	9.223	10.219	1.043	158.266	5.322
09:53	9.244	10.167	1.059	153.966	5.190
09:54	9.144	10.304	1.054	154.980	6.080
09:55	9.211	10.236	1.074	155.283	6.593
09:56	9.808	9.695	1.293	148.087	6.732

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 9:57
Stop Time 10:05

CALIBRATION BIAS 05

	Channel 1 O2 U2 FF Outlet %dv	Channel 2 CO2 U2 FF Outlet %dv	Channel 3 SO2 U2 FF Outlet ppmdv	Channel 4 NOx U2 FF Outlet ppmdv	Channel 5 CO U2 FF Outlet ppmdv
System Response to *Calibration Gasses*					
C_{of} Zero gas	-0.008	0.099	-0.490	1.908	0.384
C_{mf} Upscale gas	13.890	6.050	42.045	220.125	24.189
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.0%	0.1%	-0.2%	0.1%	0.3%
Upscale gas	-0.7%	-0.1%	-3.4%	-1.3%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	0.006	0.100	-0.325	1.832	0.382
C_{mi} Upscale gas	13.898	6.047	41.924	220.304	24.165
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	0.0%	-0.2%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	0.1%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 143612

09:57:19	8.590	10.006	3.655	151.884	8.501
09:57:34	8.201	4.746	4.146	129.825	7.691
09:57:49	13.492	5.855	2.510	63.574	7.769
09:58:04	13.848	6.044	1.125	17.932	7.139
09:58:19	13.860	6.054	0.415	1.978	3.631
09:58:34	13.888	6.052	-0.065	2.011	1.288
09:58:49	13.894	6.051	-0.223	1.930	0.427
09:59:04	13.885	6.050	-0.415	1.864	0.386
09:59:19	13.892	6.048	-0.529	1.905	0.401
09:59:34	13.886	6.048	-0.527	1.954	0.366
09:59:49	7.445	7.378	-0.303	4.607	0.388
10:00:04	0.472	9.824	15.059	59.471	0.383
10:00:19	0.057	10.061	30.572	137.289	0.358
10:00:34	0.017	10.079	35.469	217.517	0.241
10:00:49	0.006	10.086	37.719	218.502	0.072
10:01:04	0.000	10.096	38.935	218.934	0.013
10:01:19	-0.003	10.099	39.865	219.178	0.029
10:01:34	-0.007	10.104	40.496	219.243	0.033
10:01:49	-0.007	10.108	41.001	219.650	0.042
10:02:04	-0.022	10.110	41.324	219.796	0.026
10:02:19	-0.025	10.112	41.589	219.788	0.018
10:02:34	-0.034	10.115	41.841	219.821	-0.016
10:02:49	-0.028	10.114	42.074	220.204	-0.002
10:03:04	-0.031	10.117	42.221	220.350	0.032
10:03:19	-0.011	9.219	42.074	219.984	0.024
10:03:34	-0.001	1.724	27.531	182.515	0.628
10:03:49	-0.009	0.323	12.067	57.216	5.477
10:04:04	-0.007	0.220	6.266	11.356	13.548
10:04:19	-0.014	0.135	3.940	1.995	21.136
10:04:34	-0.007	0.115	2.740	1.970	23.608
10:04:49	0.005	0.102	1.887	1.954	24.098
10:05:04	0.008	0.100	1.379	1.815	24.163
10:05:19	-0.003	0.101	1.040	1.897	24.203
10:05:34	-0.014	0.100	0.767	1.889	24.202
10:05:49	-0.007	0.098	0.443	1.807	24.189

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 10:08
Stop time 10:35
REFERENCE METHOD RUN 6

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.008	0.099	-0.490	1.908	0.384
C_{mi}	Initial upscale gas	13.890	6.050	42.045	220.125	24.189
C_{of}	Final zero gas	-0.005	0.099	-0.465	1.857	0.383
C_{mf}	Final upscale gas	13.882	6.044	42.235	219.433	24.113
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.353	10.081	2.844	149.210	6.774
C_{dc}	**concentration, drift corrected**	**9.446**	**10.167**	**3.455**	**152.333**	**6.676**

041508 143612

Clock Time (at end of 1 minute period)					
10:09	9.648	9.744	2.580	140.531	5.760
10:10	10.093	9.432	1.985	140.059	6.401
10:11	9.658	9.807	1.800	142.458	7.939
10:12	9.332	10.106	2.366	148.496	9.348
10:13	8.962	10.409	2.451	151.017	9.261
10:14	9.111	10.328	2.675	155.258	9.017
10:15	9.323	10.080	2.618	149.029	5.779
10:16	9.308	10.162	2.493	154.737	6.128
10:17	9.190	10.269	1.905	154.282	5.935
10:18	9.164	10.210	1.862	154.621	6.109
10:19	9.582	9.961	2.068	153.653	6.812
10:20	10.111	9.480	1.828	142.416	5.622
10:21	9.506	9.908	2.123	139.532	6.550
10:22	8.655	10.700	2.772	152.741	7.155
10:23	9.235	10.169	2.457	147.411	4.492
10:24	9.981	9.561	1.798	145.425	4.285
10:25	9.903	9.607	1.473	141.343	5.016
10:26	9.699	9.804	2.432	139.788	8.043
10:27	9.715	9.746	4.458	138.893	8.042
10:28	9.267	10.149	4.872	143.382	7.362
10:29	9.063	10.356	5.227	147.224	8.471
10:30	9.443	10.035	4.032	147.515	7.326
10:31	9.099	10.239	3.492	148.327	7.656
10:32	8.519	10.811	4.418	161.465	8.176
10:33	8.598	10.690	4.312	160.657	5.361
10:34	9.126	10.272	3.461	166.398	5.174
10:35	9.250	10.146	2.834	161.996	5.680

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 10:36
Stop Time 10:44

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.005	0.099	-0.465	1.857	0.383
C_{mf} Upscale gas	13.882	6.044	42.235	219.433	24.113
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.0%	0.1%	-0.2%	0.0%	0.3%
Upscale gas	-0.7%	-0.1%	-3.2%	-1.5%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.008	0.099	-0.490	1.908	0.384
C_{mi} Upscale gas	13.890	6.050	42.045	220.125	24.189
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	0.2%	-0.2%	-0.1%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 143812

10:36:01	9.546	9.745	2.488	162.116	5.719
10:36:16	7.493	5.317	2.333	158.356	5.647
10:36:31	13.251	5.759	1.643	129.841	6.813
10:36:46	13.825	6.033	0.889	29.931	7.064
10:37:01	13.862	6.048	0.287	3.451	4.088
10:37:16	13.874	6.047	-0.056	1.978	1.644
10:37:31	13.879	6.046	-0.226	1.970	0.422
10:37:46	13.879	6.044	-0.238	1.848	0.386
10:38:01	13.882	6.044	-0.386	1.881	0.383
10:38:17	13.886	6.043	-0.457	1.884	0.379
10:38:31	12.058	6.284	-0.552	1.807	0.389
10:38:46	1.647	9.257	5.708	1.815	0.378
10:39:02	0.106	10.034	27.657	142.805	0.359
10:39:16	0.028	10.078	34.882	212.283	0.321
10:39:31	0.010	10.079	37.556	217.916	0.225
10:39:46	0.002	10.079	38.844	218.388	0.106
10:40:01	0.000	10.081	39.728	218.852	0.070
10:40:16	0.004	10.091	40.536	219.259	0.060
10:40:31	-0.003	10.096	41.128	219.447	0.068
10:40:46	-0.019	10.093	41.545	219.813	0.093
10:41:01	-0.022	10.097	41.773	219.845	0.064
10:41:16	-0.020	10.095	42.028	219.398	0.073
10:41:31	-0.028	10.104	42.261	219.300	0.059
10:41:46	-0.033	10.063	42.414	219.601	0.085
10:42:02	-0.019	3.654	32.518	219.609	0.402
10:42:16	0.005	0.418	12.962	149.792	3.297
10:42:31	-0.006	0.234	6.156	8.042	11.362
10:42:46	0.010	0.157	3.707	3.215	18.958
10:43:01	0.005	0.108	2.499	1.987	23.222
10:43:16	0.003	0.105	1.706	1.970	23.971
10:43:32	-0.010	0.105	1.142	1.902	24.120
10:43:46	-0.003	0.099	0.905	1.873	24.096
10:44:02	-0.018	0.101	0.508	1.867	24.124
10:44:17	0.006	0.098	0.358	1.954	24.162

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 10:46
Stop time 11:13
REFERENCE METHOD RUN 7

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.005	0.099	-0.465	1.857	0.383
C_{mi}	Initial upscale gas	13.882	6.044	42.235	219.433	24.113
C_{of}	Final zero gas	-0.002	0.100	-0.536	1.932	0.392
C_{mf}	Final upscale gas	13.864	6.044	41.611	219.297	24.178
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.111	10.246	1.905	154.762	6.100
C_{dc}	**concentration, drift corrected**	**9.209**	**10.341**	**2.513**	**158.371**	**5.970**

Clock Time (at end of 1 minute period)					
041506 143512					
10:47	9.475	9.914	2.230	145.393	6.152
10:48	9.666	9.776	2.152	143.164	6.028
10:49	9.563	9.872	1.863	142.037	7.505
10:50	9.548	9.916	2.236	143.152	9.570
10:51	9.414	10.023	2.291	145.883	8.842
10:52	9.360	10.066	1.987	145.191	7.574
10:53	9.552	9.910	1.668	140.706	8.473
10:54	9.650	9.781	1.653	145.091	7.904
10:55	8.964	10.406	1.513	147.092	7.863
10:56	8.792	10.460	2.386	150.700	7.823
10:57	8.766	10.551	2.445	156.030	6.339
10:58	8.949	10.379	2.312	153.616	4.795
10:59	8.956	10.368	1.946	158.138	4.887
11:00	8.025	11.132	1.820	165.279	5.268
11:01	8.498	10.770	1.967	175.867	5.159
11:02	9.137	10.185	1.592	167.548	3.700
11:03	8.455	10.773	1.390	166.797	4.845
11:04	9.504	9.902	1.370	160.895	4.248
11:05	9.238	10.104	1.383	154.497	4.306
11:06	8.850	10.487	1.360	164.017	6.048
11:07	8.793	10.557	1.934	164.286	6.329
11:08	9.549	9.890	2.404	156.630	5.727
11:09	9.135	10.202	2.075	152.412	4.633
11:10	9.300	10.086	1.960	156.144	5.140
11:11	9.173	10.222	1.737	157.212	5.754
11:12	8.649	10.588	1.764	158.657	4.912
11:13	9.039	10.331	1.991	162.137	4.867

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 11:14
Stop Time 11:22

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.002	0.100	-0.536	1.932	0.392
C_{mf} Upscale gas	13.864	6.044	41.611	219.297	24.178
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.0%	0.1%	-0.3%	0.1%	0.3%
Upscale gas	-0.9%	-0.1%	-3.9%	-1.5%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{ol} Zero gas	-0.005	0.099	-0.465	1.857	0.383
C_{mi} Upscale gas	13.882	6.044	42.235	219.433	24.113
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	-0.7%	0.0%	0.1%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 143812

11:14:22	9.264	10.075	1.877	154.001	3.925
11:14:37	7.499	9.208	1.900	156.850	4.588
11:14:52	10.136	4.760	1.778	129.035	5.907
11:15:07	13.639	5.951	1.159	40.399	7.461
11:15:22	13.834	6.046	0.459	9.459	6.383
11:15:37	13.857	6.048	0.067	2.003	3.087
11:15:52	13.859	6.045	-0.222	1.970	0.851
11:16:07	13.860	6.045	-0.357	1.913	0.404
11:16:22	13.871	6.043	-0.497	1.954	0.393
11:16:37	13.863	6.043	-0.545	1.921	0.386
11:16:52	13.329	6.076	-0.567	1.921	0.397
11:17:07	2.991	8.703	1.599	14.335	0.383
11:17:22	0.169	9.976	22.880	138.095	0.401
11:17:37	0.030	10.069	33.488	201.441	0.357
11:17:52	0.019	10.077	36.851	217.501	0.184
11:18:07	0.009	10.080	38.362	218.104	0.137
11:18:22	0.005	10.084	39.292	218.453	0.104
11:18:37	0.003	10.090	40.007	218.893	0.070
11:18:52	-0.013	10.092	40.583	219.349	0.039
11:19:07	-0.006	10.094	41.006	218.950	0.083
11:19:22	-0.015	10.095	41.324	219.284	0.078
11:19:37	-0.035	10.099	41.644	219.325	0.041
11:19:52	-0.044	10.100	41.866	219.284	0.039
11:20:07	-0.039	10.102	41.973	219.251	0.042
11:20:22	-0.004	5.704	38.851	219.544	0.176
11:20:37	-0.001	0.595	19.165	127.342	2.183
11:20:52	0.005	0.263	8.518	17.542	9.086
11:21:07	0.006	0.188	4.677	4.046	17.265
11:21:22	0.002	0.112	2.900	2.068	22.561
11:21:37	0.003	0.109	1.986	1.970	23.825
11:21:52	0.000	0.103	1.369	1.938	24.163
11:22:07	-0.005	0.098	0.967	1.954	24.184
11:22:22	-0.002	0.100	0.544	1.962	24.189
11:22:37	0.000	0.103	0.363	1.913	24.186

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 11:24
Stop time 11:51
REFERENCE METHOD RUN 8

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.002	0.100	-0.536	1.932	0.392
C_{mi}	Initial upscale gas	13.864	6.044	41.611	219.297	24.178
C_{of}	Final zero gas	-0.010	0.102	-0.229	1.878	0.404
C_{mf}	Final upscale gas	13.840	6.031	42.194	218.605	24.169
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.434	9.972	6.155	152.385	6.710
C_{dc}	**concentration, drift corrected**	**9.551**	**10.073**	**6.853**	**156.203**	**6.592**

Clock Time (at end of 1 minute period)

041508 143812

11:25	9.333	10.026	4.086	143.277	5.863
11:26	9.168	10.222	6.002	148.443	6.409
11:27	9.191	10.187	8.663	144.534	5.044
11:28	9.798	9.676	9.385	145.916	4.838
11:29	9.521	9.915	7.080	151.439	5.198
11:30	8.709	10.596	6.152	159.738	5.712
11:31	9.145	10.240	5.255	155.582	5.793
11:32	9.299	10.100	4.018	153.860	5.560
11:33	9.341	10.052	3.992	150.374	5.579
11:34	9.370	10.054	2.979	152.070	5.690
11:35	9.316	10.127	2.967	152.340	6.480
11:36	9.270	10.148	2.817	152.489	6.291
11:37	9.645	9.818	2.849	152.564	6.528
11:38	10.044	9.486	3.368	151.697	8.300
11:39	9.925	9.578	3.557	154.186	8.753
11:40	9.642	9.797	4.227	156.471	8.351
11:41	9.593	9.854	4.499	154.976	8.906
11:42	9.814	9.631	4.858	151.309	8.633
11:43	9.554	9.817	5.716	148.055	7.346
11:44	9.083	10.271	6.865	155.566	7.548
11:45	9.470	9.929	7.726	152.387	7.715
11:46	9.738	9.638	8.217	144.369	7.166
11:47	9.522	9.879	8.830	146.939	6.585
11:48	9.301	10.075	9.080	154.276	6.578
11:49	9.478	9.912	10.275	155.784	7.438
11:50	9.261	10.093	11.674	161.001	6.721
11:51	9.202	10.125	11.035	164.766	6.136

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 11:52
Stop Time 12:00

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.010	0.102	-0.229	1.878	0.404
C_{mf} Upscale gas	13.840	6.031	42.194	218.605	24.169
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.0%	0.2%	0.1%	0.0%	0.3%
Upscale gas	-1.0%	-0.2%	-3.2%	-1.7%	0.2%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.002	0.100	-0.536	1.932	0.392
C_{mi} Upscale gas	13.864	6.044	41.611	219.297	24.178
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	0.0%	0.4%	0.0%	0.0%
Upscale gas	-0.2%	-0.1%	0.7%	-0.2%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

241508 143912

11:52:53	13.171	5.699	6.247	105.128	6.667
11:53:08	13.798	6.014	2.587	7.684	7.295
11:53:23	13.831	6.036	1.177	3.338	4.454
11:53:38	13.848	6.039	0.497	2.068	1.703
11:53:53	13.841	6.035	0.277	1.930	0.570
11:54:08	13.828	6.032	0.031	1.930	0.414
11:54:23	13.849	6.032	-0.202	1.864	0.404
11:54:38	13.843	6.030	-0.230	1.929	0.410
11:54:53	12.407	6.186	-0.254	1.840	0.397
11:55:08	1.914	9.127	5.224	35.116	0.405
11:55:23	0.138	9.990	27.147	147.993	0.366
11:55:38	0.031	10.059	35.137	201.864	0.343
11:55:53	0.017	10.074	37.703	216.589	0.236
11:56:08	0.015	10.077	38.932	217.460	0.116
11:56:23	-0.003	10.078	39.805	217.835	0.075
11:56:38	-0.005	10.078	40.394	218.022	0.117
11:56:53	-0.002	10.081	40.834	218.177	0.067
11:57:08	-0.019	10.083	41.229	218.226	0.073
11:57:23	-0.023	10.084	41.551	218.291	0.077
11:57:38	-0.022	10.087	41.830	218.657	0.002
11:57:53	-0.036	10.089	42.045	218.689	0.117
11:58:08	-0.029	10.089	42.169	218.404	0.042
11:58:23	-0.029	9.970	42.367	218.722	0.077
11:58:38	-0.003	3.098	33.240	218.771	0.575
11:58:53	0.000	0.391	13.776	135.466	3.902
11:59:08	-0.004	0.230	6.693	7.489	11.837
11:59:23	0.000	0.167	4.003	2.931	19.497
11:59:38	-0.003	0.121	2.711	2.068	23.227
11:59:53	-0.003	0.107	1.939	1.946	24.073
12:00:08	-0.002	0.106	1.324	1.897	24.150
12:00:23	-0.008	0.102	0.954	1.897	24.164
12:00:38	-0.020	0.099	0.677	1.889	24.192

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 12:02
Stop time 12:29
REFERENCE METHOD RUN 9

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.010	0.102	-0.229	1.878	0.404
C_{mi}	Initial upscale gas	13.840	6.031	42.194	218.605	24.169
C_{of}	Final zero gas	-0.005	0.106	-0.593	1.924	0.396
C_{mf}	Final upscale gas	13.847	6.030	41.565	218.673	24.143
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.255	10.089	1.603	162.267	6.527
C_{dc}	**concentration, drift corrected**	**9.375**	**10.206**	**2.111**	**166.701**	**6.405**

Clock Time (at end of 1 minute period)					
041508 143812					
12:03	10.013	9.459	9.949	157.090	7.254
12:04	9.818	9.598	7.656	155.855	7.214
12:05	9.335	10.020	4.310	162.497	8.001
12:06	9.133	10.190	2.666	162.159	8.120
12:07	8.374	10.787	2.228	168.594	8.886
12:08	8.549	10.691	2.049	177.751	6.762
12:09	8.755	10.523	1.581	172.517	4.451
12:10	8.726	10.543	1.225	172.906	4.020
12:11	9.448	9.928	0.913	167.401	4.630
12:12	9.199	10.127	0.652	164.872	5.500
12:13	9.257	10.000	1.419	168.523	6.671
12:14	8.716	10.566	0.643	180.576	7.196
12:15	9.160	10.169	0.508	173.001	5.272
12:16	9.390	9.991	0.417	170.771	6.571
12:17	9.075	10.223	0.396	158.040	6.237
12:18	9.546	9.846	0.388	154.599	6.796
12:19	9.437	9.943	0.390	153.665	6.365
12:20	8.972	10.358	0.394	156.349	7.342
12:21	9.399	9.950	0.760	154.040	6.729
12:22	10.017	9.465	0.818	148.419	6.462
12:23	9.557	9.819	0.543	152.700	6.686
12:24	9.218	10.156	0.641	161.626	7.947
12:25	9.856	9.617	0.541	156.459	6.808
12:26	9.752	9.646	0.510	153.958	6.738
12:27	9.270	10.065	0.617	154.894	6.497
12:28	8.748	10.561	0.593	159.387	5.861
12:29	9.155	10.172	0.481	162.566	5.221

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 12:31
Stop Time 12:40

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.005	0.106	-0.593	1.924	0.396
C_{mf} Upscale gas	13.847	6.030	41.565	218.673	24.143
Calibration Error Reponses					
C_{oce} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mce} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.0%	0.2%	-0.3%	0.1%	0.3%
Upscale gas	-1.0%	-0.2%	-4.0%	-1.7%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.010	0.102	-0.229	1.878	0.404
C_{mi} Upscale gas	13.840	6.031	42.194	218.605	24.169
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.4%	0.0%	0.0%
Upscale gas	0.0%	0.0%	-0.7%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 143812

12:31:44	13.834	6.035	-0.200	2.377	2.808
12:31:59	13.833	6.034	-0.226	1.995	0.920
12:32:14	13.851	6.032	-0.329	1.921	0.414
12:32:29	13.846	6.031	-0.482	1.913	0.402
12:32:44	13.844	6.028	-0.584	1.913	0.394
12:32:59	13.857	6.030	-0.713	1.946	0.391
12:33:14	9.060	6.937	-0.620	1.864	0.399
12:33:29	0.706	9.686	13.475	54.400	0.397
12:33:44	3.284	10.073	30.945	187.993	0.384
12:33:59	8.735	10.165	21.618	210.338	0.624
12:34:14	9.083	10.199	8.270	187.562	2.102
12:34:29	9.006	10.342	3.975	165.380	4.155
12:34:44	8.932	10.382	2.571	167.114	5.584
12:34:59	8.608	10.651	1.911	166.797	5.859
12:35:14	5.272	10.494	2.160	167.326	6.139
12:35:29	0.371	10.091	18.299	180.912	5.666
12:35:44	0.021	10.078	32.146	211.062	4.029
12:35:59	0.004	10.082	36.262	216.801	1.765
12:36:14	-0.024	10.082	38.014	218.104	0.529
12:36:29	-0.020	10.087	39.093	218.120	0.098
12:36:44	-0.025	10.085	39.953	218.616	0.054
12:36:59	-0.032	10.087	40.518	218.730	0.103
12:37:14	-0.033	10.086	40.969	218.681	0.047
12:37:29	-0.019	10.085	41.369	218.771	0.028
12:37:44	-0.032	10.086	41.569	218.771	0.109
12:37:59	-0.032	10.087	41.755	218.478	0.086
12:38:14	-0.033	9.034	41.537	218.640	0.031
12:38:29	-0.002	1.609	24.000	174.961	0.933
12:38:44	-0.008	0.309	9.192	60.879	5.416
12:38:59	0.003	0.217	4.742	14.571	14.136
12:39:14	-0.005	0.141	2.924	2.239	20.825
12:39:29	-0.013	0.115	2.012	2.043	23.499
12:39:44	-0.010	0.105	1.447	1.978	24.132
12:39:59	-0.002	0.102	1.021	1.954	24.158
12:40:14	-0.022	0.109	0.651	1.889	24.140

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 12:31
Stop Time 12:40

CALIBRATION BIAS 09

	Channel 1 O2 U2 FF Outlet %dv	Channel 2 CO2 U2 FF Outlet %dv	Channel 3 SO2 U2 FF Outlet ppmdv	Channel 4 NOx U2 FF Outlet ppmdv	Channel 5 CO U2 FF Outlet ppmdv
12:40:29	0.008	0.106	0.388	1.872	24.161

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 12:42
Stop time 13:09
REFERENCE METHOD RUN 10

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.005	0.106	-0.593	1.924	0.396
C_{mi}	Initial upscale gas	13.847	6.030	41.565	218.673	24.143
C_{of}	Final zero gas	-0.017	0.101	-0.251	1.791	0.376
C_{mf}	Final upscale gas	13.850	6.019	42.340	217.895	24.139
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.206	10.170	4.888	161.006	6.202
C_{dc}	**concentration, drift corrected**	**9.323**	**10.299**	**5.556**	**165.674**	**6.080**

Clock Time (at end of 1 minute period)					
041508 143812					
12:43	9.120	10.186	1.372	166.107	5.595
12:44	9.153	10.172	1.389	170.490	6.020
12:45	8.863	10.439	1.607	175.130	6.371
12:46	8.851	10.441	2.019	174.351	6.232
12:47	8.974	10.349	2.537	173.771	5.483
12:48	9.011	10.292	2.751	170.710	5.230
12:49	9.463	9.949	3.294	166.062	6.124
12:50	9.496	9.884	3.533	154.534	5.461
12:51	9.409	9.917	4.974	156.310	7.763
12:52	9.351	10.091	5.856	156.321	8.554
12:53	9.945	9.533	4.989	146.956	7.149
12:54	9.306	10.118	4.420	145.739	8.282
12:55	9.371	10.056	4.992	156.355	7.352
12:56	8.713	10.622	4.334	159.744	7.485
12:57	8.889	10.480	4.003	157.204	6.279
12:58	8.942	10.397	3.648	154.155	4.912
12:59	8.789	10.551	3.102	157.428	4.998
13:00	8.681	10.627	3.159	157.873	5.233
13:01	9.400	10.043	4.467	157.296	5.343
13:02	9.357	10.032	3.875	157.086	5.200
13:03	9.502	9.934	3.893	159.780	5.522
13:04	9.532	9.890	3.903	160.763	5.804
13:05	9.629	9.841	4.778	159.980	5.775
13:06	9.335	10.049	10.875	164.383	6.349
13:07	9.022	10.337	13.863	169.097	6.724
13:08	9.089	10.293	14.070	160.319	6.256
13:09	9.359	10.064	10.287	159.215	5.968

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U2 FF Outlet

March 25, 2008
Start Time 13:10
Stop Time 13:18

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U2 FF Outlet %dv	U2 FF Outlet %dv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv	U2 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.017	0.101	-0.251	1.791	0.376
C_{mf} Upscale gas	13.850	6.019	42.340	217.895	24.139
Calibration Error Reponses					
C_{oco} Zero gas	-0.004	0.081	-0.299	1.666	0.072
C_{mco} Upscale gas	13.987	6.063	45.016	226.238	24.011
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.90	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	-0.1%	0.1%	0.1%	0.0%	0.3%
Upscale gas	-1.0%	-0.3%	-3.1%	-1.8%	0.1%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.005	0.106	-0.593	1.924	0.396
C_{mi} Upscale gas	13.847	6.030	41.565	218.673	24.143
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	0.0%	0.4%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	0.9%	-0.2%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

C41506 143812

13:10:14	8.496	8.910	13.276	160.537	5.939
13:10:29	9.610	4.621	10.079	140.252	6.060
13:10:44	13.583	5.918	4.254	84.884	7.297
13:10:59	13.823	6.024	1.976	18.730	6.279
13:11:14	13.839	6.032	1.045	1.962	3.336
13:11:29	13.844	6.026	0.500	1.987	0.977
13:11:44	13.851	6.026	0.120	1.897	0.415
13:11:59	13.842	6.026	0.024	1.897	0.392
13:12:14	13.853	6.022	-0.137	1.856	0.387
13:12:29	13.846	6.018	-0.218	1.873	0.386
13:12:44	13.852	6.016	-0.228	1.873	0.373
13:12:59	12.029	6.245	-0.306	1.628	0.370
13:13:14	1.662	9.220	9.008	1.946	0.383
13:13:29	0.104	10.007	29.809	84.730	0.379
13:13:44	0.011	10.073	35.837	211.648	0.342
13:13:59	-0.007	10.077	38.155	215.238	0.246
13:14:14	-0.005	10.078	39.401	216.443	0.070
13:14:29	0.002	10.077	40.256	216.874	0.068
13:14:44	-0.017	10.078	40.860	217.485	0.082
13:14:59	-0.003	10.078	41.315	217.631	0.107
13:15:14	-0.061	10.078	41.679	217.892	0.055
13:15:29	-0.020	10.078	41.902	217.876	0.094
13:15:44	-0.034	10.078	42.082	217.900	0.095
13:15:59	-0.044	10.078	42.349	217.892	0.099
13:16:14	-0.029	10.068	42.590	217.892	0.055
13:16:29	-0.006	4.118	32.606	217.086	0.322
13:16:44	0.005	0.443	12.423	173.984	2.883
13:16:59	0.003	0.234	5.796	34.978	10.768
13:17:14	-0.005	0.152	3.411	3.801	18.637
13:17:29	-0.002	0.113	2.261	2.100	23.149
13:17:44	0.004	0.106	1.594	1.962	23.945
13:17:59	-0.013	0.099	1.102	1.873	24.125
13:18:14	-0.004	0.103	0.783	1.881	24.135
13:18:29	-0.025	0.100	0.485	1.872	24.156
13:18:44	-0.022	0.100	0.366	1.905	24.163

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Date: March 26, 2008
Start Time 5:34
Stop Time 6:49

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
Instrument Information					
Manufacturer:	Servomex		Western Research	T.E.I.	T.E.I.
Model:	1420C	Servomex 1415C NDIR	921NMP	42C-HL	48C
Detection:	Paramagnet		UV	Chemilumi.	GFC/NDIR
Asset or Serial No:	201170	203504	205247	201105	205209
Instrument Span Value	14.02	14.05	86.89	453.9	96.57
System Response Time (seconds)					
Actual Value of Calibration Gasses					
Zero	0	0	0	0	0
Low	5.986	6.058	44.33	225.3	24.83
Mid					49.53
High	14.02	14.03	86.89	453.9	96.57
Actual gas to be used for bias checks	14.020	6.058	44.330	225.300	24.830
Cylinder ID					
Zero	ALM21476-1007	ALM21476-1007	ALM21476-1007	ALM21476-1007	ALM21476-1007
Low	ALM54884-0407	ALM26535-0407	ALM002114	ALM002114	1L2234-0607
Mid					ALM13959-0507
High	ALM26535-0407	ALM54884-0407	ALM013846	ALM013846	ALM25195-0208
Instrument Response to Calibration Gas					
Zero	-0.046	0.067	0.436	0.510	0.086
Low	5.971	6.054	45.373	227.473	24.231
Mid	NA	NA	NA	NA	49.543
High	14.016	14.057	87.773	455.574	96.870
Calibration Error as Percent of Span Value (Limit = 2%, EPA Method 25A limit = 5% of actual calibration gas value)					
Zero	-0.3%	0.5%	0.5%	0.1%	0.1%
Low	-0.1%	0.0%	1.2%	0.5%	-0.6%
Mid	NA	NA	NA	NA	0.0%
High	0.0%	0.2%	1.0%	0.4%	0.3%
Calibration Error Status					
Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	NA	NA	NA	NA	OK
High	OK	OK	OK	OK	OK

041508 144913

05:34:46	14.019	6.044	0.438	0.407	0.096
05:35:01	13.031	6.075	0.472	0.562	0.067
05:34:46	14.019	6.044	0.438	0.407	0.096
05:35:01	13.031	6.075	0.472	0.562	0.067
05:35:16	6.919	11.950	0.596	0.952	0.081
05:35:31	6.013	13.915	0.536	1.962	0.088
05:35:46	5.978	14.036	0.511	1.286	0.089
05:36:01	5.968	14.053	0.444	0.407	0.013
05:36:16	5.971	14.058	0.484	0.431	-0.031
05:36:31	5.972	14.061	0.598	0.358	-0.034
05:36:46	6.046	14.012	0.837	0.350	-0.044
05:37:01	1.692	10.259	11.147	0.203	-0.039
05:37:16	0.046	10.106	61.761	85.649	-0.036

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Date: March 26, 2008
Start Time 5:34
Stop Time 6:49

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
05:37:31	-0.049	10.117	80.156	371.657	-0.037
05:37:46	-0.053	10.120	84.731	446.447	-0.041
05:38:01	-0.048	10.120	86.037	454.799	-0.047
05:38:16	-0.051	10.122	86.722	455.376	-0.033
05:38:31	-0.055	10.123	87.067	455.417	-0.047
05:38:46	-0.055	10.120	87.316	455.930	-0.042
05:39:01	0.249	9.690	70.564	455.555	-0.019
05:39:16	0.066	9.758	36.148	393.944	-0.018
05:39:31	-0.043	10.122	44.207	192.218	-0.026
05:39:46	-0.058	10.148	45.527	203.574	-0.026
05:40:01	-0.066	10.150	45.835	227.473	-0.037
05:40:16	-0.053	10.153	45.976	227.473	-0.033
05:40:31	-0.056	10.153	46.016	227.473	-0.034
05:40:46	0.068	10.139	45.473	227.318	-0.041
05:41:01	0.452	3.387	13.639	226.992	0.648
05:41:16	-0.001	0.277	2.668	183.044	6.875
05:41:31	-0.033	0.095	1.159	35.523	33.539
05:41:46	-0.037	0.083	0.723	3.020	63.279
05:42:01	-0.043	0.073	0.560	1.408	86.992
05:42:16	-0.044	0.080	0.441	1.302	94.400
05:42:31	-0.040	0.077	0.462	0.724	97.037
05:42:46	-0.046	0.070	0.487	0.611	97.169
05:43:01	-0.048	0.068	0.487	0.529	96.827
05:43:16	-0.045	0.070	0.469	0.586	96.824
05:43:31	-0.044	0.062	0.474	0.415	96.959
05:43:46	-0.048	1.704	19.324	0.440	96.933
05:44:01	-0.051	9.152	71.878	100.220	91.180
05:44:16	-0.056	10.052	85.535	282.784	67.603
05:44:31	-0.061	10.098	88.025	431.950	27.127
05:44:46	-0.055	10.109	88.620	455.311	8.492
05:45:01	-0.055	10.116	87.793	455.938	0.965
05:45:16	-0.055	10.120	87.710	455.906	-0.010
05:45:31	-0.057	10.120	87.815	456.329	-0.041
05:45:46	-0.050	10.097	74.186	456.467	-0.044
05:46:01	-0.057	10.139	48.350	379.447	-0.041
05:46:16	-0.054	10.157	45.850	276.622	-0.031
05:46:31	-0.058	10.157	45.438	234.562	-0.039
05:46:46	-0.056	10.157	45.358	227.961	-0.044
05:47:01	-0.058	10.159	45.324	227.652	-0.036
05:47:16	-0.044	10.137	45.298	227.407	-0.024
05:47:31	0.175	4.160	17.053	214.904	0.137
05:47:46	-0.030	0.259	2.584	90.281	2.409
05:48:01	-0.044	0.091	1.071	22.238	10.864
05:48:16	-0.049	0.082	0.707	1.579	18.618
05:48:31	-0.048	0.083	0.521	1.319	23.303
05:48:46	-0.054	0.071	0.467	1.180	24.083
05:49:01	-0.054	0.064	0.435	0.513	24.204
05:49:16	-0.053	0.067	0.443	0.407	24.241
05:49:31	-0.051	0.061	0.422	0.285	24.249
05:49:46	-0.051	0.063	0.417	0.358	24.238
05:50:01	0.029	0.157	1.270	0.334	24.541
05:50:16	-0.010	0.074	0.988	0.179	27.340
05:50:31	-0.023	0.057	0.679	0.212	36.780
05:50:46	-0.012	0.045	0.539	0.228	44.676
05:51:01	-0.032	0.058	0.479	0.374	48.928
05:51:16	-0.022	0.057	0.467	0.309	49.507
05:51:31	-0.029	0.054	0.482	0.440	49.574
05:51:46	-0.027	0.049	0.488	0.212	49.548
05:52:01	-0.035	0.055	0.446	0.252	49.555
05:52:16	-0.030	0.068	0.444	0.334	49.371
05:52:31	-0.035	0.067	0.427	0.431	48.951
05:52:46	-0.018	0.082	0.427	0.537	48.868
05:53:01	-0.030	0.092	0.506	1.441	48.861
05:53:16	8.555	2.918	1.179	1.913	48.593

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

Date: March 26, 2008
Start Time 5:34
Stop Time 6:49

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
05:53:31	13.763	5.851	0.879	2.133	41.384
05:53:46	14.001	6.028	0.663	1.734	25.993
05:54:01	14.011	6.044	0.552	0.545	8.558
05:54:16	14.020	6.047	0.461	0.431	2.395
05:54:31	14.024	6.047	0.464	0.301	0.287
05:54:46	14.013	6.048	0.448	0.269	0.089
05:55:01	14.012	6.052	0.422	0.293	0.086
05:55:16	14.024	6.053	0.440	0.171	0.081
05:55:31	12.965	6.634	1.221	0.228	0.045
06:47:30	7.938	11.168	8.458	110.777	11.206
06:47:45	8.073	11.057	8.864	119.113	12.005
06:48:00	8.265	10.910	8.991	123.590	11.837
06:48:15	8.607	10.690	8.816	126.097	10.963
06:48:30	9.005	10.350	8.465	127.131	10.103
06:48:45	9.234	10.136	8.252	127.928	9.756
06:49:00	9.396	10.023	7.990	128.734	9.426

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 5:56
Stop Time 6:04

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.007	0.097	0.390	0.355	0.354
C_{mf} Upscale gas	13.909	6.010	42.343	223.215	24.234
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14	14	87	454	97
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.2%	-0.1%	0.0%	0.3%
Upscale gas	-0.8%	-0.3%	-3.5%	-0.9%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	NA	NA	NA	NA	NA
C_{mi} Upscale gas	NA	NA	NA	NA	NA
System Drift as Percent of Span Value (3%)					
Zero gas	NA	NA	NA	NA	NA
Upscale gas	NA	NA	NA	NA	NA
Calibration Drift Status					
Zero gas	NA	NA	NA	NA	NA
Upscale gas	NA	NA	NA	NA	NA

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05:56:38	13.687	5.774	3.888	117.997	17.509
05:56:53	13.886	6.003	2.289	11.852	21.778
05:57:08	13.896	6.018	1.452	2.898	14.956
05:57:23	13.899	6.018	1.034	1.669	5.478
05:57:38	13.909	6.014	0.807	1.351	1.320
05:57:53	13.907	6.013	0.693	1.205	0.402
05:58:08	13.910	6.011	0.531	1.091	0.376
05:58:23	13.911	6.011	0.412	0.887	0.374
05:58:38	13.906	6.009	0.391	0.537	0.365
05:58:53	13.911	6.009	0.391	0.269	0.360
05:59:08	12.056	6.245	0.388	0.260	0.339
05:59:23	1.766	9.190	8.838	3.834	0.357
05:59:38	0.144	9.975	29.688	69.255	0.363
05:59:53	0.032	10.043	36.230	217.184	0.329
06:00:08	0.015	10.060	38.403	220.847	0.182
06:00:23	0.012	10.072	39.582	222.214	0.042
06:00:38	0.004	10.075	40.418	222.222	-0.013
06:00:53	-0.005	10.078	41.014	222.719	-0.008
06:01:08	-0.013	10.078	41.387	223.044	-0.007
06:01:23	-0.019	10.078	41.775	223.232	-0.050
06:01:38	-0.020	10.078	42.123	223.223	-0.026
06:01:53	-0.019	10.079	42.315	223.199	-0.028
06:02:08	-0.026	10.078	42.590	223.223	-0.010
06:02:23	-0.020	7.248	40.350	223.223	0.037
06:02:38	-0.009	0.895	19.953	155.458	1.299
06:02:53	0.008	0.247	8.786	17.298	6.380
06:03:08	-0.002	0.145	5.138	5.218	14.346
06:03:23	-0.012	0.105	3.585	1.921	21.035
06:03:38	-0.014	0.099	2.737	1.881	23.357
06:03:53	0.002	0.098	2.232	1.180	24.052
06:04:08	-0.009	0.098	1.774	1.294	24.197
06:04:23	0.003	0.098	1.491	1.302	24.251
06:04:38	-0.010	0.096	1.234	1.351	24.256
06:04:53	-0.015	0.097	1.058	1.376	24.304

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 6:07
Stop time 6:34
REFERENCE METHOD RUN 1

		Channel 1 O2 U3 FF Outlet %dv	Channel 2 CO2 U3 FF Outlet %dv	Channel 3 SO2 U3 FF Outlet ppmdv	Channel 4 NOx U3 FF Outlet ppmdv	Channel 5 CO U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.007	0.097	0.390	0.355	0.354
C_{mi}	Initial upscale gas	13.909	6.010	42.343	223.215	24.234
C_{of}	Final zero gas	-0.017	0.098	0.577	1.088	0.375
C_{mf}	Final upscale gas	13.889	6.030	42.648	220.133	24.214
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Monitor Averages (concentrations)						
C	Average concentration, uncorrected	9.268	10.099	4.283	164.261	10.508
C_{dc}	**concentration, drift corrected**	**9.353**	**10.230**	**4.009**	**166.757**	**10.556**

Clock Time (at end of 1 minute period)

041508 144913

06:08	9.856	9.574	4.278	148.120	9.519
06:09	9.614	9.804	4.470	154.269	13.215
06:10	9.476	9.921	4.575	153.633	12.301
06:11	9.856	9.608	4.860	154.243	13.062
06:12	9.943	9.538	4.667	160.999	13.878
06:13	9.867	9.595	4.488	160.006	12.067
06:14	9.980	9.488	4.477	158.382	12.112
06:15	9.902	9.569	4.731	163.622	15.379
06:16	9.473	9.894	4.635	160.407	13.417
06:17	9.528	9.876	5.242	159.432	14.843
06:18	9.393	10.023	4.756	159.324	13.297
06:19	9.470	9.924	4.352	152.898	11.600
06:20	9.396	10.012	4.290	162.576	10.530
06:21	8.993	10.357	4.420	167.771	10.753
06:22	9.212	10.179	4.281	179.445	9.964
06:23	9.038	10.329	3.945	175.041	8.777
06:24	9.603	9.841	3.636	168.449	8.279
06:25	9.212	10.141	3.518	164.597	9.027
06:26	8.912	10.415	4.127	168.704	8.742
06:27	9.108	10.245	4.072	162.529	7.663
06:28	9.241	10.124	3.807	158.635	8.783
06:29	8.634	10.510	3.859	163.274	8.565
06:30	9.254	10.081	3.724	155.596	6.925
06:31	8.487	10.762	3.551	174.414	7.760
06:32	8.248	10.937	3.700	181.152	6.823
06:33	8.259	10.947	4.114	184.825	7.356
06:34	8.284	10.974	5.056	182.700	9.083

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 6:36
Stop Time 6:45

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.017	0.098	0.577	1.088	0.375
C_{mf} Upscale gas	13.889	6.030	42.648	220.133	24.214
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.9	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.2%	0.2%	0.2%	0.1%	0.3%
Upscale gas	-0.9%	-0.2%	-3.1%	-1.6%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.007	0.097	0.390	0.355	0.354
C_{mi} Upscale gas	13.909	6.010	42.343	223.215	24.234
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	0.0%	0.2%	0.2%	0.0%
Upscale gas	-0.1%	0.1%	0.4%	-0.7%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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06:36:38	11.621	7.957	3.184	72.731	4.042
06:36:53	11.497	8.079	3.153	71.494	3.637
06:37:08	12.994	7.013	3.191	70.639	3.845
06:37:23	13.827	6.110	2.869	35.930	3.752
06:37:38	13.884	6.048	2.178	12.951	2.789
06:37:53	13.890	6.038	1.517	1.555	1.412
06:38:08	13.883	6.032	1.164	1.197	0.541
06:38:23	13.886	6.030	0.961	1.359	0.384
06:38:38	13.901	6.030	0.778	1.115	0.376
06:38:53	13.882	6.030	0.672	1.001	0.371
06:39:08	13.899	6.028	0.550	1.148	0.376
06:39:23	13.653	6.034	0.508	0.334	0.371
06:39:38	3.757	8.431	1.556	1.425	0.361
06:39:53	0.206	9.945	21.538	43.908	0.358
06:40:08	0.038	10.056	34.110	185.031	0.351
06:40:23	0.016	10.072	37.675	216.703	0.184
06:40:38	0.012	10.079	39.305	218.559	0.075
06:40:53	-0.003	10.077	40.259	219.048	-0.011
06:41:08	-0.010	10.078	40.960	219.495	-0.015
06:41:23	-0.024	10.078	41.521	219.625	-0.023
06:41:38	-0.028	10.079	41.968	219.601	-0.010
06:41:53	-0.022	10.079	42.286	219.845	-0.013
06:42:08	-0.016	10.082	42.520	220.131	-0.008
06:42:23	-0.032	10.083	42.696	220.131	-0.003
06:42:38	-0.017	10.083	42.729	220.139	-0.008
06:42:53	-0.011	6.976	41.000	219.911	0.039
06:43:08	-0.003	0.781	22.299	212.552	1.415
06:43:23	-0.004	0.237	10.269	70.843	6.556
06:43:38	-0.012	0.146	6.008	5.486	14.493
06:43:53	-0.010	0.107	4.246	1.954	20.845
06:44:08	-0.021	0.101	3.256	1.799	23.332
06:44:23	0.001	0.098	2.626	1.571	24.106
06:44:38	-0.015	0.098	2.198	1.034	24.220
06:44:53	-0.023	0.098	1.859	1.197	24.216
06:45:08	-0.016	0.098	1.646	1.123	24.207

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 6:36
Stop Time 6:45

CALIBRATION BIAS 01

	Channel 1 O2 U3 FF Outlet %dv	Channel 2 CO2 U3 FF Outlet %dv	Channel 3 SO2 U3 FF Outlet ppmdv	Channel 4 NOx U3 FF Outlet ppmdv	Channel 5 CO U3 FF Outlet ppmdv
06:45:23	-0.013	0.098	1.439	1.172	24.202

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 7:23
Stop time 7:50
REFERENCE METHOD RUN 2

		Channel 1 O2 U3 FF Outlet %dv	Channel 2 CO2 U3 FF Outlet %dv	Channel 3 SO2 U3 FF Outlet ppmdv	Channel 4 NOx U3 FF Outlet ppmdv	Channel 5 CO U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.017	0.098	0.577	1.088	0.375
C_{mi}	Initial upscale gas	13.889	6.030	42.648	220.133	24.214
C_{of}	Final zero gas	-0.016	0.098	0.613	1.145	0.378
C_{mf}	Final upscale gas	13.883	6.040	42.209	220.166	24.257
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	8.913	10.375	4.983	166.249	11.021
C_{dc}	**concentration, drift corrected**	**9.005**	**10.487**	**4.650**	**169.857**	**11.078**

Clock Time (at end of 1 minute period)

041508 144913

07:24	9.245	10.105	4.858	161.506	8.401
07:25	9.628	9.760	4.826	158.754	8.766
07:26	8.997	10.297	4.807	161.632	9.811
07:27	9.284	10.083	4.612	160.993	9.549
07:28	9.413	9.947	4.161	155.322	7.214
07:29	9.325	10.042	4.328	159.813	7.731
07:30	8.904	10.402	4.555	163.417	7.846
07:31	9.461	9.941	4.423	163.651	7.677
07:32	9.308	10.041	4.284	160.431	8.543
07:33	9.447	9.887	3.991	156.547	9.789
07:34	9.145	10.198	4.173	167.094	9.953
07:35	9.107	10.208	4.106	164.650	10.091
07:36	9.315	10.060	4.435	168.205	14.726
07:37	9.300	10.026	4.296	162.719	15.131
07:38	9.014	10.335	4.648	174.931	15.386
07:39	8.884	10.409	4.337	170.356	12.932
07:40	8.839	10.448	4.489	172.684	13.499
07:41	8.919	10.399	4.526	170.055	12.607
07:42	9.388	10.005	4.455	165.362	11.927
07:43	8.890	10.385	4.793	164.109	10.932
07:44	9.336	10.006	4.854	167.670	8.607
07:45	8.866	10.411	4.894	164.566	9.660
07:46	8.981	10.326	4.796	165.613	8.763
07:47	7.921	11.136	5.384	163.978	8.244
07:48	6.834	12.218	9.785	162.285	16.074
07:49	8.236	10.917	7.418	171.113	7.816
07:50	9.618	9.716	5.019	166.367	4.715

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 7:51
Stop Time 7:59

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.016	0.098	0.613	1.145	0.378
C_{mf} Upscale gas	13.883	6.040	42.209	220.166	24.257
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14.02	14.05	86.89	453.9	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.2%	0.2%	0.2%	0.1%	0.3%
Upscale gas	-1.0%	-0.1%	-3.6%	-1.6%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{of} Zero gas	-0.017	0.098	0.577	1.088	0.375
C_{mf} Upscale gas	13.889	6.030	42.648	220.133	24.214
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	0.1%	-0.5%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 144913

07:51:46	8.464	5.570	4.614	155.458	4.915
07:52:01	13.458	5.855	3.873	105.266	5.403
07:52:16	13.833	6.039	2.689	42.662	4.716
07:52:31	13.871	6.047	1.854	2.507	2.582
07:52:46	13.874	6.043	1.390	1.921	1.169
07:53:01	13.879	6.043	1.044	1.734	0.393
07:53:16	13.876	6.042	0.840	1.742	0.378
07:53:31	13.885	6.039	0.646	1.783	0.375
07:53:46	13.888	6.038	0.619	1.221	0.381
07:54:01	13.726	6.040	0.575	1.123	0.374
07:54:16	4.067	8.315	1.376	1.091	0.378
07:54:31	0.211	9.947	20.374	57.005	0.356
07:54:46	0.025	10.064	33.877	197.965	0.343
07:55:01	0.013	10.079	37.574	216.793	0.182
07:55:16	-0.001	10.078	39.165	219.097	0.088
07:55:31	-0.004	10.078	40.306	219.601	0.018
07:55:46	-0.016	10.082	41.078	219.609	-0.026
07:56:01	-0.014	10.085	41.600	219.894	-0.011
07:56:16	-0.023	10.089	41.923	220.131	-0.013
07:56:31	-0.029	10.089	42.283	220.139	-0.006
07:56:46	-0.024	9.247	42.423	220.228	-0.033
07:57:01	-0.014	1.709	29.104	220.643	0.744
07:57:16	-0.009	0.297	12.742	107.717	3.821
07:57:31	-0.020	0.172	6.948	6.846	12.270
07:57:46	-0.007	0.114	4.594	2.393	18.924
07:58:01	-0.006	0.104	3.442	1.807	23.106
07:58:16	-0.013	0.099	2.673	1.824	23.990
07:58:31	-0.009	0.098	2.157	1.392	24.177
07:58:46	-0.015	0.098	1.781	1.067	24.220
07:59:01	-0.013	0.098	1.520	1.123	24.282
07:59:16	-0.021	0.097	1.384	1.221	24.269

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 8:01
Stop time 8:28
REFERENCE METHOD RUN 3

		Channel 1 O2 U3 FF Outlet %dv	Channel 2 CO2 U3 FF Outlet %dv	Channel 3 SO2 U3 FF Outlet ppmdv	Channel 4 NOx U3 FF Outlet ppmdv	Channel 5 CO U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.016	0.098	0.613	1.145	0.378
C_{mi}	Initial upscale gas	13.883	6.040	42.209	220.166	24.257
C_{of}	Final zero gas	-0.010	0.098	0.664	1.354	0.379
C_{mf}	Final upscale gas	13.895	6.036	42.140	221.039	24.238
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.743	9.490	7.420	135.945	8.963
C_{dc}	**concentration, drift corrected**	**9.839**	**9.579**	**7.238**	**138.348**	**8.930**

Clock Time (at end of 1 minute period)

041508 144913

08:02	9.704	9.548	6.488	137.910	4.982
08:03	8.217	10.811	6.906	140.741	5.503
08:04	7.736	11.323	12.224	141.388	8.461
08:05	9.379	9.899	10.386	142.774	6.092
08:06	9.403	9.832	8.076	140.324	4.892
08:07	8.498	10.595	10.507	141.455	6.915
08:08	8.495	10.624	12.328	142.241	9.326
08:09	9.171	10.021	10.087	141.946	7.341
08:10	9.564	9.595	9.063	140.020	6.436
08:11	9.356	9.777	9.348	136.056	6.418
08:12	9.003	10.147	10.972	135.989	8.558
08:13	9.759	9.471	9.845	139.528	7.167
08:14	10.088	9.158	8.439	135.411	7.304
08:15	10.231	9.032	7.944	131.957	8.703
08:16	10.210	9.060	7.944	134.650	10.916
08:17	10.140	9.147	7.333	136.775	11.042
08:18	10.387	8.905	6.807	135.482	10.153
08:19	10.673	8.654	6.062	135.688	10.526
08:20	10.654	8.671	5.662	130.653	11.411
08:21	10.247	9.039	5.370	136.313	13.971
08:22	10.196	9.040	5.009	131.699	12.262
08:23	9.852	9.353	4.794	135.720	10.256
08:24	10.025	9.213	4.480	131.944	8.371
08:25	10.566	8.751	3.987	128.545	8.383
08:26	10.572	8.773	3.582	129.367	11.559
08:27	10.476	8.887	3.441	127.611	12.553
08:28	10.448	8.911	3.260	128.338	12.501

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 8:29
Stop Time 8:36

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.010	0.098	0.664	1.354	0.379
C_{mf} Upscale gas	13.895	6.036	42.140	221.039	24.238
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14.02	14.05	86.89	453.9	96.57
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.2%	0.3%	0.2%	0.3%
Upscale gas	-0.9%	-0.1%	-3.7%	-1.4%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.016	0.098	0.613	1.145	0.378
C_{mi} Upscale gas	13.883	6.040	42.209	220.166	24.257
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	0.1%	0.0%	0.0%
Upscale gas	0.1%	0.0%	-0.1%	0.2%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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08:29:05	10.249	9.056	3.201	126.666	11.323
08:29:20	9.532	8.834	3.199	128.661	12.181
08:29:35	9.365	4.721	3.075	128.360	13.040
08:29:50	13.614	5.894	2.576	93.992	13.063
08:30:05	13.870	6.029	1.944	12.226	10.247
08:30:20	13.884	6.037	1.444	2.019	5.078
08:30:35	13.889	6.039	1.079	1.758	1.854
08:30:50	13.890	6.037	0.876	1.319	0.519
08:31:05	13.898	6.036	0.729	1.343	0.389
08:31:20	13.896	6.036	0.672	1.416	0.371
08:31:35	12.988	6.113	0.589	1.302	0.378
08:31:50	2.384	8.944	3.590	18.551	0.368
08:32:05	0.142	9.998	25.788	76.964	0.376
08:32:20	0.021	10.073	35.583	182.491	0.335
08:32:35	0.014	10.078	38.401	218.657	0.138
08:32:50	0.002	10.079	39.718	219.886	0.062
08:33:05	-0.006	10.081	40.596	220.155	-0.005
08:33:20	-0.016	10.083	41.254	220.464	0.010
08:33:35	-0.019	10.091	41.766	220.773	-0.013
08:33:50	-0.020	10.095	42.147	221.172	-0.054
08:34:05	-0.022	9.860	42.507	221.172	-0.036
08:34:20	-0.002	2.645	32.902	221.188	0.492
08:34:35	0.002	0.344	14.177	101.970	3.391
08:34:50	-0.001	0.182	7.241	7.790	11.116
08:35:05	-0.014	0.115	4.632	2.206	18.234
08:35:20	-0.008	0.102	3.336	1.864	22.680
08:35:35	-0.009	0.098	2.657	1.636	23.932
08:35:50	-0.007	0.098	2.235	1.205	24.199
08:36:05	-0.008	0.098	1.815	1.319	24.210
08:36:20	-0.009	0.098	1.587	1.221	24.235
08:36:35	-0.014	0.098	1.364	1.286	24.270

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 8:38
Stop time 9:05
REFERENCE METHOD RUN 4

		Channel 1 O2 U3 FF Outlet %dv	Channel 2 CO2 U3 FF Outlet %dv	Channel 3 SO2 U3 FF Outlet ppmdv	Channel 4 NOx U3 FF Outlet ppmdv	Channel 5 CO U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.010	0.098	0.664	1.354	0.379
C_{mi}	Initial upscale gas	13.895	6.036	42.140	221.039	24.238
C_{of}	Final zero gas	-0.017	0.098	0.513	1.229	0.391
C_{mf}	Final upscale gas	13.896	6.036	41.970	221.272	24.222
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	10.296	9.162	2.310	147.658	10.851
C_{dc}	**concentration, drift corrected**	**10.391**	**9.247**	**1.840**	**149.985**	**10.898**

Clock Time (at end of 1 minute period)

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08:39	11.002	8.469	3.257	135.324	10.540
08:40	11.223	8.259	2.912	132.493	12.569
08:41	10.415	9.032	3.300	135.440	15.497
08:42	9.567	9.818	3.941	147.338	19.865
08:43	9.364	10.009	3.571	156.870	15.934
08:44	10.135	9.312	2.873	160.545	9.644
08:45	9.984	9.458	2.376	161.966	7.415
08:46	10.191	9.299	2.210	163.368	9.205
08:47	10.213	9.131	2.169	161.408	11.170
08:48	10.230	9.227	2.567	150.356	11.422
08:49	9.789	9.614	2.219	153.946	11.103
08:50	10.315	9.131	2.054	140.346	8.005
08:51	10.574	8.902	1.796	130.326	7.302
08:52	10.399	9.097	1.719	130.047	9.169
08:53	10.266	9.219	1.930	141.264	12.315
08:54	9.599	9.773	2.160	157.200	11.599
08:55	9.871	9.552	2.302	161.319	10.394
08:56	9.785	9.602	2.437	163.402	8.620
08:57	10.383	9.084	2.068	154.550	7.829
08:58	10.537	8.960	1.823	153.744	9.115
08:59	10.596	8.910	1.859	150.167	8.887
09:00	10.657	8.843	1.793	142.275	10.437
09:01	10.290	9.180	1.801	140.126	11.119
09:02	10.290	9.196	1.832	139.793	10.665
09:03	10.845	8.684	1.875	139.943	10.400
09:04	10.868	8.677	1.753	139.575	10.672
09:05	10.592	8.929	1.769	143.637	12.083

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 9:06
Stop Time 9:13

CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.017	0.098	0.513	1.229	0.391
C_{mf} Upscale gas	13.896	6.036	41.970	221.272	24.222
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14	14	87	454	97
System Bias as Perc	3.00000				
Zero gas	0.2%	0.2%	0.1%	0.2%	0.3%
Upscale gas	-0.9%	-0.1%	-3.9%	-1.4%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.010	0.098	0.664	1.354	0.379
C_{mi} Upscale gas	13.895	6.036	42.140	221.039	24.238
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.2%	0.0%	0.0%
Upscale gas	0.0%	0.0%	-0.2%	0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:06:23	11.008	8.536	1.882	142.165	12.474
09:06:38	8.245	5.558	1.902	140.562	12.708
09:06:53	13.136	5.636	1.776	73.594	13.254
09:07:08	13.845	6.016	1.570	17.005	11.793
09:07:23	13.893	6.036	1.211	2.613	7.153
09:07:38	13.904	6.038	0.983	1.824	2.831
09:07:53	13.895	6.036	0.780	1.286	0.759
09:08:08	13.896	6.034	0.610	1.254	0.399
09:08:23	13.899	6.038	0.506	1.229	0.389
09:08:38	13.078	6.103	0.423	1.205	0.386
09:08:53	2.498	8.910	2.177	1.245	0.386
09:09:08	0.136	9.994	22.742	64.062	0.371
09:09:23	0.026	10.072	34.637	206.952	0.325
09:09:38	0.015	10.079	37.955	218.185	0.166
09:09:53	0.010	10.078	39.409	219.756	0.078
09:10:08	0.002	10.082	40.278	220.464	0.047
09:10:23	-0.028	10.085	40.871	220.806	-0.011
09:10:38	-0.016	10.091	41.416	221.147	-0.013
09:10:53	-0.036	10.094	41.744	221.172	-0.006
09:11:08	-0.029	10.093	42.001	221.131	-0.013
09:11:23	-0.027	8.664	42.165	221.514	-0.016
09:11:38	-0.002	1.314	28.335	221.156	0.856
09:11:53	0.000	0.271	12.794	93.618	4.988
09:12:08	-0.004	0.160	7.077	6.609	12.614
09:12:23	-0.010	0.106	4.560	2.174	19.816
09:12:38	-0.002	0.098	3.295	1.873	23.106
09:12:53	-0.013	0.098	2.579	1.856	24.052
09:13:08	-0.011	0.098	2.094	1.473	24.189
09:13:23	-0.013	0.098	1.724	1.237	24.225
09:13:38	-0.018	0.098	1.464	1.221	24.254
09:13:53	-0.021	0.098	1.208	1.310	24.257

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 9:16
Stop time 9:43
REFERENCE METHOD RUN 5

		Channel 1 O2 U3 FF Outlet %dv	Channel 2 CO2 U3 FF Outlet %dv	Channel 3 SO2 U3 FF Outlet ppmdv	Channel 4 NOx U3 FF Outlet ppmdv	Channel 5 CO U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.017	0.098	0.513	1.229	0.391
C_{mi}	Initial upscale gas	13.896	6.036	41.970	221.272	24.222
C_{of}	Final zero gas	-0.010	0.098	0.409	1.240	0.383
C_{mf}	Final upscale gas	13.900	6.037	41.961	220.825	24.237
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	10.777	8.811	2.162	143.670	13.279
C_{dc}	**concentration, drift corrected**	**10.875**	**8.888**	**1.817**	**145.990**	**13.426**

Clock Time (at end of 1 minute period)

041508 144913

09:17	10.122	9.351	1.987	169.898	11.457
09:18	10.752	8.722	1.689	159.499	8.265
09:19	10.194	9.286	1.723	160.167	12.574
09:20	10.522	9.027	1.809	157.597	14.182
09:21	10.772	8.790	1.737	153.873	10.893
09:22	11.075	8.488	1.695	145.368	11.540
09:23	10.595	8.940	1.653	143.205	12.316
09:24	10.405	9.163	1.819	144.320	13.298
09:25	10.132	9.191	1.943	143.205	11.715
09:26	10.360	9.173	2.166	142.682	10.896
09:27	10.271	9.283	1.746	141.608	9.036
09:28	10.378	9.155	1.727	138.828	8.535
09:29	10.224	9.344	1.859	144.273	11.169
09:30	10.852	8.735	1.961	145.035	10.337
09:31	10.840	8.779	2.073	147.896	11.155
09:32	11.406	8.245	2.066	140.208	12.495
09:33	11.096	8.537	2.097	139.255	16.060
09:34	11.637	8.116	2.407	135.602	17.828
09:35	11.586	8.135	2.606	136.909	17.258
09:36	11.154	8.494	2.886	141.333	17.981
09:37	11.078	8.625	3.119	139.288	26.786
09:38	11.104	8.562	2.842	132.468	24.101
09:39	9.759	9.764	2.725	139.892	16.807
09:40	10.605	9.038	2.564	137.265	11.026
09:41	10.985	8.650	2.299	132.654	9.091
09:42	11.411	8.257	2.318	134.215	9.409
09:43	11.670	8.050	2.860	132.534	12.327

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 9:43
Stop Time 9:51

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.010	0.098	0.409	1.240	0.383
C_{mf} Upscale gas	13.900	6.037	41.961	220.825	24.237
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14	14	87	454	97
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.2%	0.0%	0.2%	0.3%
Upscale gas	-0.8%	-0.1%	-3.9%	-1.5%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.017	0.098	0.513	1.229	0.391
C_{mi} Upscale gas	13.896	6.036	41.970	221.272	24.222
System Drift as Percent of Span Value (3%)					
Zero gas	0.1%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.0%	-0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:43:57	11.369	8.247	3.456	138.405	16.370
09:44:12	9.443	8.199	3.323	141.888	17.179
09:44:27	10.427	4.786	3.140	125.568	18.053
09:44:42	13.713	5.941	2.559	76.435	17.936
09:44:57	13.878	6.029	1.825	16.150	13.267
09:45:12	13.892	6.036	1.249	1.913	5.802
09:45:27	13.902	6.038	0.913	1.400	2.004
09:45:42	13.902	6.037	0.692	1.262	0.562
09:45:57	13.895	6.037	0.508	1.140	0.391
09:46:12	13.897	6.036	0.446	1.254	0.386
09:46:27	13.903	6.037	0.397	1.213	0.383
09:46:42	10.833	6.532	0.383	1.254	0.381
09:46:57	1.078	9.527	7.811	0.586	0.383
09:47:12	0.073	10.037	29.410	141.262	0.371
09:47:27	0.015	10.077	36.405	214.327	0.311
09:47:42	0.011	10.078	38.702	219.154	0.124
09:47:57	0.004	10.080	39.839	219.951	0.065
09:48:12	-0.014	10.086	40.628	220.310	0.024
09:48:27	-0.004	10.091	41.193	220.651	-0.016
09:48:42	-0.029	10.093	41.670	220.651	-0.013
09:48:57	-0.020	10.095	41.968	220.676	-0.008
09:49:12	-0.030	9.833	42.245	221.147	-0.023
09:49:27	-0.001	2.558	32.710	205.071	0.407
09:49:42	0.002	0.339	14.336	145.340	3.616
09:49:57	-0.002	0.184	7.362	32.169	10.279
09:50:12	0.001	0.110	4.659	2.100	18.623
09:50:27	-0.006	0.100	3.324	1.873	22.592
09:50:42	0.000	0.099	2.530	1.848	23.997
09:50:57	-0.010	0.098	2.004	1.498	24.182
09:51:12	-0.011	0.098	1.716	1.286	24.190
09:51:27	-0.008	0.098	1.459	1.213	24.244
09:51:42	-0.010	0.098	1.262	1.205	24.277

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 9:53
Stop time 10:20
REFERENCE METHOD RUN 6

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.010	0.098	0.409	1.240	0.383
C_{mi}	Initial upscale gas	13.900	6.037	41.961	220.825	24.237
C_{of}	Final zero gas	-0.023	0.098	0.548	1.199	0.379
C_{mf}	Final upscale gas	13.893	6.043	42.131	220.662	24.188
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	10.496	9.056	3.966	146.886	11.568
C_{dc}	**concentration, drift corrected**	**10.594**	**9.133**	**3.720**	**149.499**	**11.655**

Clock Time (at end of 1 minute period)

041508 144913

09:54	11.081	8.493	3.865	145.352	14.009
09:55	11.565	8.092	4.023	141.101	14.423
09:56	12.002	7.748	4.011	130.934	18.579
09:57	10.669	8.833	4.546	136.427	21.487
09:58	10.016	9.519	5.854	154.540	19.047
09:59	10.525	8.981	4.289	149.646	11.178
10:00	10.532	8.990	3.079	155.639	9.631
10:01	9.604	9.844	2.893	160.887	8.898
10:02	10.827	8.769	3.192	148.915	6.569
10:03	10.506	8.975	3.860	138.246	8.521
10:04	9.949	9.509	4.231	145.128	8.934
10:05	9.927	9.599	4.846	153.769	10.453
10:06	10.397	9.098	4.012	142.133	8.055
10:07	10.577	8.982	3.331	140.635	7.353
10:08	10.375	9.145	3.055	136.575	8.436
10:09	10.095	9.427	3.272	136.150	9.253
10:10	10.574	8.996	3.558	139.607	9.421
10:11	10.404	9.129	3.349	141.885	9.679
10:12	10.361	9.182	3.575	144.703	10.902
10:13	10.063	9.501	3.816	152.987	11.451
10:14	10.561	9.024	3.774	152.422	11.177
10:15	10.506	9.078	3.808	150.319	10.648
10:16	10.128	9.439	3.892	154.648	11.175
10:17	10.865	8.778	3.987	151.249	12.146
10:18	10.806	8.784	4.320	147.719	14.146
10:19	10.294	9.262	4.998	158.761	14.188
10:20	10.196	9.344	5.645	155.537	12.573

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 10:21
Stop Time 10:28

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.023	0.098	0.548	1.199	0.379
C_{mf} Upscale gas	13.893	6.043	42.131	220.662	24.188
Calibration Error Reponses					
C_{ooe} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14	14	87	454	97
System Bias as Percent of Span Value (5%)					
Zero gas	0.2%	0.2%	0.1%	0.2%	0.3%
Upscale gas	-0.9%	-0.1%	-3.7%	-1.5%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.010	0.098	0.409	1.240	0.383
C_{mi} Upscale gas	13.900	6.037	41.961	220.825	24.237
System Drift as Percent of Span Value (3%)					
Zero gas	-0.1%	0.0%	0.2%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.2%	0.0%	-0.1%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 144913

10:21:11	10.171	9.411	5.599	157.118	13.406
10:21:26	7.837	7.335	5.234	154.489	12.541
10:21:41	12.143	5.236	4.576	128.132	12.024
10:21:56	13.797	6.000	3.251	32.414	11.373
10:22:11	13.870	6.042	2.113	4.103	7.406
10:22:26	13.889	6.044	1.449	1.824	3.603
10:22:41	13.898	6.042	1.016	1.628	0.948
10:22:56	13.892	6.043	0.757	1.213	0.425
10:23:11	13.893	6.040	0.666	1.254	0.391
10:23:26	13.904	6.038	0.549	1.156	0.389
10:23:41	13.784	6.041	0.428	1.188	0.356
10:23:56	4.345	8.253	1.096	1.221	0.379
10:24:11	0.229	9.950	20.142	127.819	0.384
10:24:26	0.025	10.071	34.001	200.122	0.353
10:24:41	0.016	10.079	37.608	218.706	0.229
10:24:56	0.004	10.079	39.197	219.805	0.096
10:25:11	0.000	10.082	40.223	220.122	0.033
10:25:26	-0.020	10.091	40.918	220.489	-0.011
10:25:41	-0.028	10.094	41.477	220.659	-0.003
10:25:56	-0.029	10.100	41.858	220.651	-0.054
10:26:11	-0.025	10.098	42.157	220.668	-0.005
10:26:26	-0.025	9.820	42.378	220.868	0.016
10:26:41	-0.005	2.515	33.503	192.894	0.542
10:26:56	-0.019	0.337	14.996	79.194	3.417
10:27:11	-0.015	0.184	7.769	18.600	11.428
10:27:26	0.001	0.117	4.951	1.962	18.273
10:27:41	-0.016	0.102	3.582	1.734	22.784
10:27:56	-0.017	0.098	2.813	1.856	23.855
10:28:11	-0.024	0.098	2.237	1.156	24.173
10:28:26	-0.022	0.098	1.822	1.189	24.166
10:28:41	-0.023	0.098	1.483	1.123	24.227

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 10:30
Stop time 10:57
REFERENCE METHOD RUN 7

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.023	0.098	0.548	1.199	0.379
C_{mi}	Initial upscale gas	13.893	6.043	42.131	220.662	24.188
C_{of}	Final zero gas	-0.020	0.098	0.469	1.414	0.387
C_{mf}	Final upscale gas	13.878	6.036	42.293	221.169	24.209
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.710	9.723	3.211	158.118	9.691
C_{dc}	**concentration, drift corrected**	**9.811**	**9.815**	**2.873**	**160.875**	**9.704**

Clock Time (at end of 1 minute period)

041508 144915

10:31	9.621	9.778	4.039	162.772	11.065
10:32	10.005	9.486	3.413	153.478	9.288
10:33	10.514	9.025	3.149	147.546	11.335
10:34	9.821	9.624	3.203	150.596	12.358
10:35	9.406	10.007	3.162	151.428	10.683
10:36	9.270	10.084	3.195	154.017	9.187
10:37	9.071	10.282	3.072	163.124	7.810
10:38	9.554	9.839	2.632	159.794	5.819
10:39	9.669	9.728	2.895	158.254	6.928
10:40	9.686	9.725	2.458	155.362	6.241
10:41	9.273	10.190	2.451	162.167	7.080
10:42	10.091	9.406	2.434	156.893	7.513
10:43	9.799	9.688	2.557	164.149	9.064
10:44	9.439	10.011	2.465	167.194	8.764
10:45	10.458	9.111	2.702	153.677	8.995
10:46	10.070	9.441	2.955	153.541	12.325
10:47	9.705	9.764	3.139	157.401	11.959
10:48	10.330	9.178	3.244	148.602	11.175
10:49	10.103	9.315	3.852	145.857	11.320
10:50	9.489	9.907	3.738	155.712	11.142
10:51	9.930	9.538	3.570	150.277	12.755
10:52	10.176	9.292	3.774	150.574	13.708
10:53	9.078	10.218	3.527	160.389	12.078
10:54	9.475	9.945	3.864	173.390	9.732
10:55	10.108	9.322	3.755	164.965	8.341
10:56	8.588	10.651	3.831	174.542	8.957
10:57	9.449	9.979	3.615	173.484	6.026

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 10:58
Stop Time 11:05

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.020	0.098	0.469	1.414	0.387
C_{mf} Upscale gas	13.878	6.036	42.293	221.169	24.209
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14	14	87	454	97
System Bias as Percent of Span Value (5%)					
Zero gas	0.2%	0.2%	0.0%	0.2%	0.3%
Upscale gas	-1.0%	-0.1%	-3.5%	-1.4%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.023	0.098	0.548	1.199	0.379
C_{mi} Upscale gas	13.893	6.043	42.131	220.662	24.188
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	-0.1%	-0.1%	0.2%	0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 144913

10:58:31	9.663	8.728	3.199	153.919	6.095
10:58:46	9.374	4.743	3.147	147.969	6.893
10:59:01	13.605	5.906	2.664	110.240	8.215
10:59:16	13.853	6.032	1.946	18.234	7.647
10:59:31	13.867	6.040	1.324	1.986	4.148
10:59:46	13.873	6.039	1.019	1.873	1.737
11:00:01	13.879	6.038	0.747	1.636	0.505
11:00:16	13.875	6.036	0.599	1.432	0.391
11:00:31	13.880	6.034	0.417	1.416	0.381
11:00:46	13.483	6.053	0.393	1.392	0.388
11:01:01	3.221	8.619	1.521	13.626	0.386
11:01:16	0.174	9.971	21.382	59.789	0.391
11:01:31	0.021	10.067	34.322	173.683	0.376
11:01:46	0.006	10.078	37.986	218.421	0.233
11:02:01	-0.003	10.078	39.562	219.870	0.083
11:02:16	-0.017	10.082	40.516	220.220	0.076
11:02:31	-0.011	10.082	41.247	220.684	0.036
11:02:46	-0.025	10.083	41.690	220.724	0.011
11:03:01	-0.044	10.088	42.051	221.147	0.000
11:03:16	-0.042	10.092	42.312	221.188	-0.002
11:03:31	-0.028	9.324	42.515	221.172	0.011
11:03:46	-0.012	1.797	30.716	205.698	0.474
11:04:01	0.003	0.302	13.613	139.903	4.469
11:04:16	-0.024	0.172	7.184	16.524	11.162
11:04:31	-0.012	0.107	4.656	2.052	19.350
11:04:46	-0.014	0.100	3.394	1.815	22.800
11:05:01	-0.003	0.098	2.647	1.856	24.044
11:05:16	-0.021	0.098	2.183	1.099	24.210
11:05:31	-0.017	0.098	1.763	1.026	24.200
11:05:46	-0.023	0.098	1.452	0.944	24.217

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 11:08
Stop time 11:35
REFERENCE METHOD RUN 8

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.020	0.098	0.469	1.414	0.387
C_{mi}	Initial upscale gas	13.878	6.036	42.293	221.169	24.209
C_{of}	Final zero gas	-0.008	0.098	0.523	1.207	0.385
C_{mf}	Final upscale gas	13.894	6.041	42.139	221.232	24.256
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.816	9.635	3.825	154.888	10.765
C_{dc}	**concentration, drift corrected**	**9.915**	**9.726**	**3.537**	**157.356**	**10.807**

Clock Time (at end of 1 minute period)

041508 144913

11:09	9.729	9.685	4.471	153.075	11.597
11:10	9.743	9.714	4.192	156.280	8.890
11:11	10.390	9.137	4.679	148.982	10.138
11:12	10.265	9.249	4.666	148.124	11.874
11:13	9.881	9.626	4.805	154.959	10.953
11:14	10.087	9.446	6.083	154.257	13.718
11:15	9.827	9.648	6.161	150.317	13.382
11:16	10.201	9.366	5.284	150.407	10.711
11:17	10.459	8.955	4.849	143.742	12.935
11:18	9.511	9.884	5.365	152.222	14.798
11:19	9.820	9.686	5.154	167.535	13.426
11:20	9.986	9.462	4.215	162.218	11.483
11:21	9.811	9.624	3.952	159.752	11.474
11:22	9.410	10.004	3.503	156.767	9.987
11:23	9.669	9.774	3.415	153.513	10.587
11:24	9.842	9.589	3.203	147.648	9.863
11:25	9.809	9.637	3.146	148.885	8.211
11:26	10.131	9.394	3.206	153.447	10.104
11:27	10.074	9.413	3.405	156.026	11.408
11:28	9.863	9.618	2.861	166.964	11.475
11:29	9.531	9.855	2.662	165.926	10.441
11:30	8.523	10.724	2.769	170.252	11.355
11:31	9.720	9.752	2.611	157.808	7.350
11:32	10.263	9.230	2.102	144.447	7.223
11:33	9.276	10.057	2.038	152.202	10.697
11:34	9.174	10.192	2.322	155.039	9.704
11:35	10.035	9.425	2.153	151.192	6.871

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 11:36
Stop Time 11:43

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.008	0.098	0.523	1.207	0.385
C_{mf} Upscale gas	13.894	6.041	42.139	221.232	24.256
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14	14	87	454	97
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.2%	0.1%	0.2%	0.3%
Upscale gas	-0.9%	-0.1%	-3.7%	-1.4%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.020	0.098	0.469	1.414	0.387
C_{mi} Upscale gas	13.878	6.036	42.293	221.169	24.209
System Drift as Percent of Span Value (3%)					
Zero gas	0.1%	0.0%	0.1%	0.0%	0.0%
Upscale gas	0.1%	0.0%	-0.2%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 144913

11:36:08	8.903	4.884	1.869	157.151	11.230
11:36:23	13.573	5.892	1.683	106.813	11.109
11:36:38	13.857	6.038	1.387	5.991	8.967
11:36:53	13.880	6.044	1.032	2.768	4.781
11:37:08	13.900	6.044	0.835	1.775	1.890
11:37:23	13.893	6.042	0.705	1.392	0.568
11:37:38	13.895	6.040	0.581	1.270	0.388
11:37:53	13.894	6.041	0.415	1.083	0.384
11:38:08	7.000	7.500	0.572	1.270	0.383
11:38:23	0.390	9.856	15.985	80.407	0.379
11:38:38	0.040	10.056	32.389	204.013	0.363
11:38:53	0.016	10.078	37.021	216.647	0.278
11:39:08	0.000	10.078	38.847	220.081	0.143
11:39:23	-0.011	10.081	39.933	220.668	0.063
11:39:38	-0.016	10.086	40.666	220.676	0.005
11:39:53	-0.023	10.092	41.232	221.050	-0.008
11:40:08	-0.031	10.094	41.796	221.156	-0.008
11:40:23	-0.038	10.097	42.180	221.164	-0.023
11:40:38	-0.030	10.096	42.440	221.376	-0.019
11:40:53	-0.023	7.180	41.068	219.455	-0.003
11:41:08	-0.014	0.801	22.173	174.123	1.423
11:41:23	-0.008	0.241	10.172	93.317	6.610
11:41:38	-0.007	0.151	5.975	2.621	14.585
11:41:53	-0.006	0.107	4.147	1.938	20.972
11:42:08	-0.008	0.100	3.149	1.644	23.417
11:42:23	-0.011	0.098	2.505	1.783	24.148
11:42:38	-0.007	0.098	2.084	1.018	24.269
11:42:53	-0.010	0.098	1.740	1.140	24.256
11:43:08	-0.006	0.098	1.456	1.197	24.244

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 11:45
Stop time 12:12
REFERENCE METHOD RUN 9

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.008	0.098	0.523	1.207	0.385
C_{mi}	Initial upscale gas	13.894	6.041	42.139	221.232	24.256
C_{of}	Final zero gas	-0.010	0.098	0.607	1.527	0.388
C_{mf}	Final upscale gas	13.887	6.036	42.253	221.348	24.256
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.304	10.033	1.943	158.964	10.870
C_{dc}	**concentration, drift corrected**	**9.394**	**10.131**	**1.467**	**161.450**	**10.906**

Clock Time (at end of 1 minute period)

041508 144913

11:46	9.333	9.995	2.109	161.276	13.570
11:47	9.559	9.857	1.905	158.325	9.077
11:48	9.664	9.774	1.788	153.594	8.285
11:49	9.457	9.969	1.754	154.477	9.542
11:50	9.710	9.761	1.745	150.788	8.478
11:51	9.741	9.700	1.789	151.740	10.371
11:52	9.889	9.578	1.822	152.643	12.535
11:53	9.672	9.763	1.856	156.608	13.402
11:54	9.900	9.545	2.334	163.415	14.890
11:55	9.167	10.093	2.115	159.949	12.299
11:56	8.235	11.021	2.094	170.669	13.175
11:57	10.487	9.028	1.919	161.997	9.742
11:58	9.473	9.787	1.680	155.448	12.404
11:59	8.208	10.956	1.753	172.393	12.496
12:00	9.529	9.860	1.831	161.349	9.047
12:01	9.665	9.642	1.718	146.933	8.309
12:02	8.294	10.854	1.680	153.698	9.702
12:03	9.826	9.556	2.085	155.959	8.587
12:04	9.681	9.633	1.781	152.430	8.571
12:05	8.294	10.870	1.859	159.764	10.370
12:06	9.824	9.605	2.031	158.380	10.383
12:07	9.510	9.769	1.850	151.939	12.020
12:08	7.884	11.234	2.022	169.745	13.971
12:09	8.979	10.363	2.236	168.716	11.180
12:10	10.019	9.418	2.185	158.335	10.307
12:11	8.318	10.819	2.069	163.586	10.829
12:12	8.901	10.449	2.438	167.861	9.962

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 12:13
Stop Time 12:20

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.010	0.098	0.607	1.527	0.388
C_{mf} Upscale gas	13.887	6.036	42.253	221.348	24.256
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value					
	14	14	87	454	97
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.2%	0.2%	0.2%	0.3%
Upscale gas	-0.9%	-0.1%	-3.6%	-1.3%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.008	0.098	0.523	1.207	0.385
C_{mi} Upscale gas	13.894	6.041	42.139	221.232	24.256
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.0%	0.1%	0.1%	0.0%
Upscale gas	-0.1%	0.0%	0.1%	0.0%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 144913

12:13:10	7.776	7.459	2.297	147.277	11.458
12:13:25	12.055	5.209	2.100	119.748	12.431
12:13:40	13.783	5.993	1.820	71.657	11.948
12:13:55	13.868	6.040	1.482	2.003	8.181
12:14:10	13.878	6.041	1.144	1.954	3.583
12:14:25	13.883	6.038	1.009	1.734	1.220
12:14:40	13.886	6.037	0.760	1.579	0.425
12:14:55	13.892	6.034	0.685	1.563	0.391
12:15:10	13.891	6.032	0.617	1.555	0.383
12:15:25	8.652	7.064	0.518	1.465	0.391
12:15:40	0.592	9.751	9.804	64.110	0.384
12:15:55	0.044	10.041	29.885	193.944	0.386
12:16:10	0.018	10.073	36.625	214.180	0.291
12:16:25	0.017	10.077	38.900	219.845	0.125
12:16:40	0.001	10.078	40.054	220.562	0.072
12:16:55	-0.004	10.079	40.873	220.895	0.067
12:17:10	-0.019	10.080	41.529	221.212	0.018
12:17:25	-0.034	10.080	41.991	221.245	0.008
12:17:40	-0.021	10.083	42.271	221.221	0.005
12:17:55	-0.024	10.085	42.496	221.579	0.016
12:18:10	-0.013	7.408	41.685	221.229	0.094
12:18:25	-0.014	0.862	24.970	170.476	1.185
12:18:40	-0.016	0.249	11.464	97.827	6.439
12:18:55	-0.009	0.154	6.520	2.898	14.020
12:19:10	-0.015	0.107	4.332	1.954	20.886
12:19:25	-0.007	0.099	3.178	1.921	23.461
12:19:40	-0.006	0.098	2.462	1.905	24.156
12:19:55	-0.009	0.098	1.993	1.506	24.215
12:20:10	-0.008	0.098	1.716	1.481	24.262
12:20:25	-0.013	0.098	1.465	1.514	24.290

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 12:22
Stop time 12:49

REFERENCE METHOD RUN 10

		Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
		U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
Calibration Checks						
C_{oi}	Initial zero gas	-0.010	0.098	0.607	1.527	0.388
C_{mi}	Initial upscale gas	13.887	6.036	42.253	221.348	24.256
C_{of}	Final zero gas	-0.004	0.106	0.731	1.625	0.410
C_{mf}	Final upscale gas	13.876	6.024	42.245	220.901	24.238
C_{ma}	Actual concentration of upscale gas	14.02	6.058	44.33	225.3	24.83
Gaseous Emissions Results						
C	Average concentration, uncorrected	9.000	10.262	3.138	163.779	7.602
C_{dc}	**concentration, drift corrected**	**9.093**	**10.383**	**2.633**	**166.453**	**7.499**

Clock Time (at end of 1 minute period)

041508 144913

12:23	9.146	10.124	3.269	154.196	12.275
12:24	9.093	10.206	3.359	161.062	12.046
12:25	8.699	10.496	3.150	163.189	10.760
12:26	9.033	10.225	3.090	167.436	9.742
12:27	9.004	10.236	2.743	164.227	7.487
12:28	8.850	10.345	2.728	161.695	7.457
12:29	8.505	10.655	2.917	168.280	7.019
12:30	8.303	10.767	3.066	170.226	4.725
12:31	8.665	10.517	3.064	173.685	3.829
12:32	8.738	10.416	2.924	172.293	3.518
12:33	8.697	10.516	3.057	168.889	4.493
12:34	8.780	10.343	3.392	165.537	5.891
12:35	8.744	10.486	3.225	167.047	6.637
12:36	8.995	10.258	2.863	163.512	5.592
12:37	9.041	10.244	2.989	163.315	6.882
12:38	9.275	10.046	3.079	161.131	7.672
12:39	9.036	10.261	3.134	159.375	9.360
12:40	8.830	10.379	3.005	158.578	7.655
12:41	8.484	10.687	3.185	166.838	7.298
12:42	9.214	10.084	3.241	164.092	6.162
12:43	9.069	10.240	3.171	163.051	7.153
12:44	9.363	9.975	3.199	165.084	6.939
12:45	8.946	10.386	3.369	171.835	8.473
12:46	9.672	9.736	3.375	160.651	7.050
12:47	9.498	9.914	3.201	158.584	8.711
12:48	9.712	9.714	3.221	154.046	9.374
12:49	9.616	9.811	3.716	154.190	11.043

QA/QC_____
Date_____

Wheelabrator
Clean Air Project No. 10455
South Broward
U3 FF Outlet

March 26, 2008
Start Time 12:50
Stop Time 12:58

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOx	Channel 5 CO
	U3 FF Outlet %dv	U3 FF Outlet %dv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv	U3 FF Outlet ppmdv
System Response to Calibration Gasses					
C_{of} Zero gas	-0.004	0.106	0.731	1.625	0.410
C_{mf} Upscale gas	13.876	6.024	42.245	220.901	24.238
Calibration Error Reponses					
C_{oce} Zero gas	-0.046	0.067	0.436	0.510	0.086
C_{mce} Upscale gas	14.016	6.054	45.373	227.473	24.231
Actual Upscale Gas Value					
C_{ma} Upscale gas	14.02	6.058	44.33	225.3	24.83
Data Acquisition Span Value	14	14	87	454	97
System Bias as Percent of Span Value (5%)					
Zero gas	0.3%	0.3%	0.3%	0.2%	0.3%
Upscale gas	-1.0%	-0.2%	-3.6%	-1.4%	0.0%
Calibration Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous Calibration Bias Responses					
C_{oi} Zero gas	-0.010	0.098	0.607	1.527	0.388
C_{mi} Upscale gas	13.887	6.036	42.253	221.348	24.256
System Drift as Percent of Span Value (3%)					
Zero gas	0.0%	0.1%	0.1%	0.0%	0.0%
Upscale gas	-0.1%	-0.1%	0.0%	-0.1%	0.0%
Calibration Drift Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041508 144913

12:50:20	7.052	9.026	4.451	161.734	11.310
12:50:35	11.163	5.056	4.314	135.669	11.282
12:50:50	13.731	5.968	3.598	37.501	10.351
12:51:05	13.852	6.029	2.585	7.090	7.770
12:51:20	13.862	6.032	1.846	1.995	3.632
12:51:35	13.862	6.032	1.498	2.027	1.397
12:51:50	13.871	6.029	1.099	1.750	0.482
12:52:05	13.884	6.027	1.032	1.758	0.407
12:52:20	13.874	6.025	1.011	1.783	0.420
12:52:35	13.876	6.023	0.961	1.750	0.404
12:52:50	13.878	6.022	0.825	1.799	0.423
12:53:05	13.879	6.021	0.706	1.767	0.399
12:53:20	13.203	6.066	0.661	1.311	0.407
12:53:35	2.685	8.806	1.981	24.225	0.435
12:53:50	0.150	9.966	21.941	92.869	0.394
12:54:05	0.025	10.043	34.610	181.685	0.374
12:54:20	0.023	10.060	38.138	218.689	0.296
12:54:35	0.011	10.068	39.772	219.869	0.212
12:54:50	0.008	10.071	40.697	220.301	0.143
12:55:05	0.000	10.073	41.392	220.375	0.117
12:55:20	-0.010	10.077	41.893	220.790	0.150
12:55:35	-0.020	10.077	42.235	220.944	0.106
12:55:50	-0.013	10.078	42.607	220.968	0.114
12:56:05	-0.001	7.332	41.822	220.920	0.156
12:56:20	0.002	0.851	25.316	144.729	1.539
12:56:35	-0.005	0.259	11.674	43.606	5.954
12:56:50	0.005	0.178	6.665	7.457	14.864
12:57:05	0.000	0.113	4.552	2.174	20.702
12:57:20	0.004	0.109	3.445	2.084	23.435
12:57:35	-0.003	0.100	2.717	1.978	24.106
12:57:50	-0.007	0.107	2.266	1.880	24.220
12:58:05	0.006	0.108	1.892	1.978	24.241
12:58:20	-0.011	0.102	1.682	1.856	24.254

QA/QC_____
Date_____

CEM MONITOR AND PROCESS DATA

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Run 01

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 07:18
Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	06:39	7.6	191.8	6.1	8.5	6.8	171.1	5.4	186.5
	06:40	7.7	188.3	7.5	8.8	6.7	164.0	6.6	185.2
	06:41	8.0	185.4	7.4	9.1	6.8	157.8	6.3	184.6
	06:42	9.3	190.8	6.7	9.0	8.0	163.9	5.7	186.5
	06:43	8.4	192.2	6.0	8.9	7.2	166.0	5.2	185.3
	06:44	8.1	198.9	5.9	9.2	6.8	167.0	5.0	185.2
	06:45	8.5	214.6	5.6	8.8	7.4	186.6	4.8	186.1
	06:46	8.4	219.0	5.8	8.9	7.2	188.6	5.0	185.8
	06:47	8.5	217.6	5.6	9.1	7.3	185.4	4.8	184.7
	06:48	8.0	203.3	6.1	9.0	6.8	173.6	5.2	186.1
	06:49	8.9	191.4	6.4	8.5	7.9	170.9	5.7	188.2
	06:50	8.9	185.6	4.3	8.7	7.8	163.1	3.8	187.2
	06:51	9.7	191.7	4.8	8.8	8.5	167.4	4.2	186.2
	06:52	9.6	194.4	5.4	8.7	8.4	171.3	4.7	189.8
	06:53	9.6	196.2	5.4	8.4	8.6	176.8	4.9	188.0
	06:54	8.8	206.7	6.3	9.2	7.4	173.6	5.3	185.8
	06:55	9.0	205.9	4.8	9.1	7.7	174.6	4.1	185.6
	06:56	8.5	195.8	5.5	8.9	7.4	169.2	4.8	184.5
	06:57	8.3	196.4	6.7	9.4	6.9	162.6	5.6	182.8
	06:58	8.8	192.7	7.3	9.4	7.3	159.5	6.1	182.8
	06:59	8.8	196.8	6.8	9.1	7.5	166.6	5.7	181.9
	07:00	9.3	202.5	5.9	9.1	7.9	171.5	5.0	182.2
	07:01	9.1	200.1	6.5	8.9	7.8	172.3	5.6	183.4
	07:02	10.2	204.9	7.0	9.1	8.6	173.3	5.9	182.6
	07:03	9.6	205.2	5.3	9.0	8.2	175.5	4.6	182.6
	07:04	8.8	207.0	5.2	9.0	7.5	177.4	4.5	182.6
	07:05	8.9	206.6	5.3	9.2	7.5	174.6	4.5	180.9
Average =		8.8	199.3	6.0	9.0	7.6	171.3	5.1	184.9
Geometric Avg. =		8.8	199.1	5.9	8.9	7.5	171.1	5.1	184.9
Maximum =		10.2	219.0	7.5	9.4	8.6	188.6	6.6	189.8
Minimum =		7.6	185.4	4.3	8.4	6.7	157.8	3.8	180.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		237.5	5381.7	161.7	241.7	204.1	4624.1	138.9	4993.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Run 02

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 07:56
Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	07:16	8.8	201.3	7.6	9.3	7.3	167.4	6.3	182.2
	07:17	9.1	196.2	8.9	9.5	7.4	160.8	7.3	180.7
	07:18	9.2	184.3	9.2	9.7	7.4	148.9	7.4	179.6
	07:19	8.6	183.1	10.7	9.6	6.9	148.6	8.7	181.0
	07:20	9.5	187.2	11.8	9.3	7.9	155.7	9.8	183.2
	07:21	9.9	187.5	8.0	8.9	8.5	161.5	6.9	182.9
	07:22	10.2	192.2	6.7	9.1	8.7	163.5	5.7	184.2
	07:23	10.1	197.1	6.5	8.8	8.8	171.7	5.6	183.4
	07:24	10.5	193.2	5.1	9.0	9.0	165.1	4.4	181.9
	07:25	13.3	192.4	6.4	9.1	11.3	163.3	5.4	183.2
	07:26	13.8	192.6	9.4	9.0	11.8	165.5	8.1	185.5
	07:27	13.9	194.7	8.2	8.6	12.3	171.8	7.2	185.9
	07:28	11.1	199.5	5.7	8.9	9.6	172.0	4.9	182.2
	07:29	9.3	215.9	6.8	9.5	7.6	176.9	5.6	181.9
	07:30	9.5	214.2	7.5	9.3	7.9	179.1	6.3	183.2
	07:31	10.2	214.6	8.1	9.2	8.6	180.7	6.9	183.8
	07:32	11.3	211.6	7.6	9.2	9.5	178.7	6.4	184.3
	07:33	13.2	198.8	5.5	9.0	11.4	170.6	4.7	184.2
	07:34	13.1	189.4	6.1	9.2	11.0	159.2	5.2	184.5
	07:35	11.9	182.8	6.6	9.0	10.2	156.2	5.7	187.4
	07:36	13.1	178.1	6.0	8.7	11.5	156.7	5.3	185.1
	07:37	12.0	185.8	7.3	9.3	10.0	155.2	6.1	183.1
	07:38	10.4	189.7	7.5	9.4	8.6	157.2	6.2	181.6
	07:39	11.0	195.8	7.5	9.6	8.9	159.1	6.1	180.5
	07:40	13.2	199.2	9.7	9.7	10.7	161.2	7.9	181.9
	07:41	13.3	199.7	9.8	9.3	11.1	166.7	8.2	183.3
	07:42	14.2	203.2	6.5	9.1	12.1	173.0	5.5	182.8
Average =		11.2	195.6	7.6	9.2	9.5	164.7	6.4	183.1
Geometric Avg. =		11.1	195.3	7.5	9.2	9.4	164.4	6.3	183.1
Maximum =		14.2	215.9	11.8	9.7	12.3	180.7	9.8	187.4
Minimum =		8.6	178.1	5.1	8.6	6.9	148.6	4.4	179.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		303.6	5280.0	206.5	248.2	256.2	4446.2	173.5	4943.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/24/2008 to 03/24/2008

Run 03

Site Name: UNIT1

Time of Report: 03/24/08 08:36

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	07:55	9.6	191.9	14.6	9.3	8.1	160.8	12.2	176.5
	07:56	9.0	190.9	12.4	9.8	7.2	152.7	9.9	175.5
	07:57	8.3	192.8	13.1	9.6	6.8	156.6	10.6	176.1
	07:58	8.5	192.9	13.2	9.1	7.2	163.3	11.2	178.7
	07:59	7.3	195.6	8.3	8.8	6.4	170.7	7.2	175.7
	08:00	7.5	218.6	9.5	9.9	6.0	173.6	7.5	178.2
	08:01	8.3	215.8	12.5	8.9	7.2	186.6	10.8	181.2
	08:02	7.9	210.4	8.2	8.4	7.1	189.6	7.4	183.5
	08:03	7.7	199.7	8.4	8.3	7.0	180.8	7.6	185.0
	08:04	8.6	194.4	9.9	8.9	7.4	168.1	8.6	182.9
	08:05	7.3	182.5	10.5	9.5	6.0	150.3	8.7	182.3
	08:06	8.2	180.3	10.8	9.4	6.8	149.7	9.0	184.9
	08:07	8.0	187.0	8.8	8.8	7.0	163.1	7.7	184.9
	08:08	7.3	197.0	5.9	8.9	6.3	169.6	5.1	183.8
	08:09	7.1	205.4	5.9	9.1	6.0	173.9	5.0	185.3
	08:10	7.3	203.8	6.9	8.7	6.4	178.2	6.0	184.9
	08:11	6.6	209.2	6.6	9.0	5.6	178.9	5.7	184.1
	08:12	7.2	203.6	6.4	9.1	6.1	172.2	5.4	186.9
	08:13	6.7	195.2	5.3	8.6	5.9	172.7	4.7	188.7
	08:14	6.6	197.8	4.4	9.1	5.6	167.9	3.7	183.5
	08:15	6.6	197.0	7.8	9.3	5.5	164.5	6.5	183.0
	08:16	7.1	185.6	7.3	8.6	6.3	164.8	6.5	186.4
	08:17	7.8	180.8	6.3	8.5	6.9	161.0	5.6	186.9
	08:18	7.6	188.0	6.4	9.2	6.4	158.0	5.4	184.1
	08:19	6.6	194.7	8.7	9.4	5.5	160.5	7.2	185.3
	08:20	8.0	191.0	9.0	9.1	6.8	162.4	7.7	185.1
	08:21	8.3	199.6	9.4	9.3	6.9	165.9	7.8	182.8
Average =		7.7	196.3	8.8	9.1	6.5	167.3	7.4	182.8
Geometric Avg. =		7.6	196.1	8.4	9.0	6.5	167.0	7.1	182.8
Maximum =		9.6	218.6	14.6	9.9	8.1	189.6	12.2	188.7
Minimum =		6.6	180.3	4.4	8.3	5.5	149.7	3.7	175.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		207.1	5301.4	236.7	244.6	176.3	4516.6	200.8	4936.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Run 04

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 09:13
Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	08:32	10.9	194.1	9.9	8.3	9.8	175.3	8.9	188.0
	08:33	10.9	199.2	8.5	8.8	9.5	173.8	7.4	186.3
	08:34	9.9	207.0	7.8	9.2	8.4	174.8	6.6	184.9
	08:35	9.0	205.7	7.7	8.9	7.7	177.6	6.7	186.9
	08:36	10.3	201.1	6.0	8.4	9.2	180.2	5.4	184.5
	08:37	10.1	200.7	7.8	8.9	8.7	173.5	6.7	183.8
	08:38	9.4	205.5	8.6	8.8	8.2	179.6	7.5	187.0
	08:39	8.4	201.9	7.6	8.1	7.8	186.4	7.0	186.2
	08:40	7.5	205.0	5.6	8.3	6.7	185.2	5.1	185.1
	08:41	8.4	207.5	7.3	8.5	7.5	185.1	6.5	186.1
	08:42	8.9	211.7	7.0	8.4	8.0	190.4	6.3	184.1
	08:43	7.4	213.0	7.4	8.8	6.4	185.2	6.4	183.2
	08:44	8.3	206.5	8.1	8.7	7.3	181.3	7.1	183.3
	08:45	8.6	202.0	8.1	8.8	7.5	176.4	7.1	182.7
	08:46	8.6	202.3	9.1	9.0	7.3	172.5	7.7	182.5
	08:47	8.4	198.5	9.3	8.8	7.3	172.5	8.1	184.8
	08:48	8.2	196.9	7.3	8.4	7.4	176.7	6.5	185.0
	08:49	8.5	193.7	7.7	8.7	7.5	170.1	6.8	184.5
	08:50	8.3	196.0	9.1	8.6	7.3	172.9	8.0	185.1
	08:51	8.4	197.7	7.1	8.4	7.6	177.5	6.4	184.7
	08:52	7.8	197.8	7.2	8.7	6.9	174.0	6.3	184.8
	08:53	8.4	203.8	8.4	8.6	7.4	180.4	7.4	186.0
	08:54	7.9	205.8	8.1	8.4	7.1	185.6	7.3	186.1
	08:55	7.2	205.3	7.7	8.6	6.4	182.0	6.8	185.9
	08:56	7.7	204.5	7.7	8.6	6.8	180.8	6.8	185.9
	08:57	7.4	194.5	8.0	8.5	6.6	173.3	7.1	186.3
	08:58	7.6	194.5	7.8	8.5	6.8	173.6	7.0	186.5
Average =		8.6	201.9	7.9	8.6	7.6	178.4	6.9	185.2
Geometric Avg. =		8.6	201.9	7.8	8.6	7.6	178.3	6.9	185.2
Maximum =		10.9	213.0	9.9	9.2	9.8	190.4	8.9	188.0
Minimum =		7.2	193.7	5.6	8.1	6.4	170.1	5.1	182.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		232.4	5452.4	212.0	232.7	205.2	4816.8	187.2	4999.9

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Run 05

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 09:48
Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	09:11	13.0	212.4	5.0	8.5	11.6	189.2	4.5	187.7
	09:12	13.8	206.0	6.0	8.5	12.4	183.8	5.3	187.7
	09:13	15.4	195.0	7.8	8.5	13.8	174.5	7.0	189.1
	09:14	18.0	185.4	4.7	8.4	16.2	167.2	4.3	186.6
	09:15	20.8	178.6	6.0	8.7	18.2	156.7	5.3	187.0
	09:16	21.4	176.1	5.6	8.6	18.9	155.7	5.0	186.5
	09:17	20.5	188.0	5.7	8.7	18.0	165.0	5.0	186.4
	09:18	20.0	191.8	6.0	8.7	17.5	168.3	5.3	187.8
	09:19	21.3	197.2	6.1	8.4	19.1	176.6	5.5	186.6
	09:20	20.3	203.4	5.3	8.9	17.5	175.8	4.6	187.0
	09:21	18.7	195.1	4.8	8.4	16.9	175.7	4.4	186.2
	09:22	18.4	193.8	4.2	8.6	16.3	170.9	3.7	184.9
	09:23	19.1	195.0	5.7	9.0	16.3	166.7	4.9	184.4
	09:24	21.6	204.0	5.9	8.9	18.7	176.2	5.1	185.4
	09:25	23.9	203.3	6.4	8.6	21.0	179.4	5.7	184.9
	09:26	22.1	200.4	5.3	8.8	19.4	175.2	4.7	183.6
	09:27	19.2	205.2	7.5	8.8	16.7	178.7	6.5	184.5
	09:28	18.7	202.9	6.7	8.6	16.6	179.9	5.9	185.0
	09:29	19.6	205.3	5.5	8.6	17.4	182.2	4.9	185.2
	09:30	19.4	208.4	6.2	8.6	17.2	184.1	5.5	184.2
	09:31	19.0	207.1	8.9	8.9	16.4	179.1	7.7	183.4
	09:32	21.2	203.8	8.7	8.9	18.4	176.5	7.6	183.1
	09:33	18.5	202.8	6.5	8.8	16.2	176.9	5.6	181.9
	09:34	15.5	198.9	7.1	8.8	13.4	172.4	6.1	182.0
	09:35	15.2	197.7	6.3	8.9	13.1	170.5	5.5	181.3
	09:36	16.0	200.6	6.7	9.2	13.4	168.6	5.6	180.5
	09:37	15.2	198.5	7.1	9.1	12.9	167.8	6.0	182.2
Average =		18.7	198.4	6.2	8.7	16.4	173.8	5.4	185.0
Geometric Avg. =		18.5	198.2	6.1	8.7	16.2	173.7	5.4	185.0
Maximum =		23.9	212.4	8.9	9.2	21.0	189.2	7.7	189.1
Minimum =		13.0	176.1	4.2	8.4	11.6	155.7	3.7	180.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		506.0	5356.6	167.8	235.4	443.5	4693.6	146.9	4994.8

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Run 06

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 10:26
Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	09:48	15.3	204.7	6.7	8.2	14.0	187.2	6.1	185.6
	09:49	14.6	191.6	5.8	8.4	13.2	172.7	5.2	185.1
	09:50	13.8	183.6	4.7	8.4	12.4	165.0	4.3	186.3
	09:51	14.5	182.3	5.9	8.2	13.2	166.6	5.4	185.6
	09:52	15.0	185.7	4.9	8.8	13.1	162.1	4.3	184.7
	09:53	14.6	198.8	5.8	8.8	12.7	172.9	5.0	184.2
	09:54	12.9	201.6	6.8	8.7	11.3	177.6	6.0	183.8
	09:55	12.3	202.3	6.7	8.8	10.7	176.8	5.9	183.5
	09:56	12.4	199.8	7.7	8.5	11.0	177.7	6.8	184.6
	09:57	13.1	188.9	5.4	8.3	11.9	170.9	4.9	184.7
	09:58	13.7	188.7	6.1	8.3	12.4	171.0	5.5	185.6
	09:59	12.3	193.4	6.5	8.6	10.8	170.7	5.7	183.6
	10:00	12.3	196.8	6.6	9.0	10.5	169.0	5.6	183.0
	10:01	11.1	197.1	9.4	8.8	9.6	170.9	8.2	181.9
	10:02	11.3	200.0	9.4	9.0	9.7	171.9	8.1	181.1
	10:03	11.2	200.6	9.9	8.9	9.7	172.7	8.5	182.8
	10:04	11.7	198.1	8.6	9.1	10.0	168.6	7.3	182.6
	10:05	11.4	198.7	9.4	9.2	9.5	166.8	7.9	182.8
	10:06	11.6	214.3	10.0	9.0	9.9	182.8	8.5	181.5
	10:07	11.9	215.6	8.8	8.4	10.7	193.7	7.9	184.7
	10:08	13.4	209.1	7.0	8.0	12.4	193.5	6.5	185.7
	10:09	13.9	211.3	5.2	8.5	12.4	188.6	4.7	184.7
	10:10	13.5	214.0	5.3	8.6	12.0	189.7	4.7	185.8
	10:11	13.9	210.3	5.9	8.4	12.5	188.9	5.3	186.3
	10:12	13.3	206.7	5.8	8.6	11.7	182.9	5.1	184.7
	10:13	12.6	197.9	5.0	8.9	10.9	171.3	4.3	185.3
	10:14	12.0	199.8	5.9	8.6	10.6	177.5	5.2	185.1
Average =		12.9	199.7	6.9	8.6	11.4	176.3	6.0	184.3
Geometric Avg. =		12.9	199.5	6.7	8.6	11.4	176.1	5.9	184.3
Maximum =		15.3	215.6	10.0	9.2	14.0	193.7	8.5	186.3
Minimum =		11.1	182.3	4.7	8.0	9.5	162.1	4.3	181.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		349.5	5391.8	185.1	233.0	309.0	4759.9	162.9	4975.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Run 07

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 11:08
Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	10:25	15.1	193.6	6.3	8.2	13.8	176.4	5.8	185.1
	10:26	12.9	201.3	5.1	8.7	11.3	176.7	4.5	183.9
	10:27	12.2	209.1	5.0	8.6	10.8	184.7	4.4	185.2
	10:28	14.8	208.6	6.1	8.2	13.5	190.2	5.6	185.6
	10:29	15.0	208.5	6.2	8.8	13.1	182.1	5.4	185.3
	10:30	12.7	205.9	6.4	8.7	11.1	180.4	5.6	184.1
	10:31	12.2	207.8	9.3	8.9	10.5	179.6	8.0	184.2
	10:32	12.4	203.5	8.6	8.7	10.9	178.6	7.5	184.5
	10:33	12.5	193.0	6.5	8.9	10.8	167.1	5.6	183.6
	10:34	12.1	191.7	8.1	9.0	10.3	164.2	7.0	181.5
	10:35	12.8	196.5	9.6	8.9	11.1	169.4	8.3	184.4
	10:36	13.8	198.1	9.1	8.0	12.8	183.1	8.4	186.6
	10:37	13.6	198.4	7.2	8.3	12.3	179.4	6.5	183.4
	10:38	12.3	206.1	7.4	9.1	10.5	175.4	6.3	182.8
	10:39	10.7	203.8	8.1	8.5	9.5	181.4	7.2	185.8
	10:40	11.4	201.7	6.6	8.1	10.5	185.8	6.1	185.5
	10:41	10.8	194.4	7.5	8.4	9.7	175.1	6.8	184.4
	10:42	10.2	184.3	8.5	8.6	9.0	163.2	7.5	184.6
	10:43	9.0	180.2	7.7	8.5	8.1	161.0	6.9	184.0
	10:44	9.4	182.1	7.7	8.6	8.4	161.8	6.8	183.8
	10:45	10.0	191.3	8.8	8.5	8.9	170.2	7.8	184.1
	10:46	9.7	207.5	7.2	8.7	8.5	182.8	6.4	183.4
	10:47	8.9	216.3	7.6	8.9	7.7	186.5	6.5	183.6
	10:48	8.6	225.3	9.2	8.7	7.6	198.2	8.1	184.3
	10:49	9.1	227.0	11.4	8.8	7.9	198.0	10.0	183.7
	10:50	8.8	210.7	8.6	8.7	7.7	184.7	7.5	184.4
	10:51	8.9	199.6	7.2	8.5	8.0	178.0	6.4	185.2
Average =		11.5	201.7	7.7	8.6	10.2	178.3	6.8	184.3
Geometric Avg. =		11.3	201.4	7.5	8.6	10.0	178.0	6.7	184.3
Maximum =		15.1	227.0	11.4	9.1	13.8	198.2	10.0	186.6
Minimum =		8.6	180.2	5.0	8.0	7.6	161.0	4.4	181.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		310.0	5446.4	206.9	232.5	274.3	4814.1	182.8	4977.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Run 08

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 11:42
Rolling Average Interval: 1

ate	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	11:03	7.0	192.6	4.2	8.1	6.5	176.7	3.8	187.8
	11:04	7.7	191.1	5.7	8.2	7.1	174.9	5.3	187.2
	11:05	6.7	195.8	4.2	8.4	6.0	176.4	3.7	187.0
	11:06	6.7	192.8	5.0	8.1	6.2	177.7	4.6	188.6
	11:07	6.8	185.7	4.0	8.1	6.2	170.7	3.7	185.2
	11:08	6.4	190.8	5.9	8.8	5.5	165.6	5.1	186.8
	11:09	5.9	192.6	2.7	8.2	5.4	175.5	2.4	186.5
	11:10	6.5	192.0	6.3	8.4	5.8	172.4	5.6	188.2
	11:11	6.2	181.3	4.6	8.0	5.8	167.9	4.3	184.5
	11:12	5.5	184.7	6.3	9.0	4.8	158.6	5.4	184.6
	11:13	5.5	183.8	6.6	8.7	4.8	161.9	5.8	183.2
	11:14	5.5	186.6	7.1	9.0	4.7	159.4	6.1	181.7
	11:15	6.2	190.3	7.1	9.2	5.2	160.2	6.0	181.8
	11:16	6.2	192.0	7.4	8.7	5.4	168.2	6.5	183.2
	11:17	6.6	192.1	6.6	8.5	5.9	171.8	5.9	183.8
	11:18	6.0	190.0	7.0	8.9	5.1	163.5	6.0	182.4
	11:19	6.6	201.0	7.3	9.1	5.6	170.1	6.1	184.2
	11:20	6.2	198.3	5.7	8.4	5.6	179.0	5.1	185.4
	11:21	5.9	197.9	5.9	8.8	5.1	172.9	5.2	184.0
	11:22	5.4	194.6	6.6	8.9	4.7	168.3	5.7	184.7
	11:23	5.5	195.8	7.1	8.6	4.9	173.2	6.3	185.5
	11:24	5.7	198.3	6.3	8.7	5.0	174.4	5.6	183.7
	11:25	5.9	197.9	6.4	8.8	5.1	172.2	5.6	184.2
	11:26	6.0	203.1	7.3	8.4	5.4	182.3	6.6	187.0
	11:27	6.0	209.3	5.5	8.2	5.5	190.9	5.0	184.4
	11:28	5.8	210.1	7.1	8.8	5.0	183.1	6.2	185.1
	11:29	6.3	209.3	5.6	8.3	5.7	189.3	5.1	186.3
Average =		6.2	194.4	6.0	8.6	5.5	172.5	5.3	185.1
Geometric Avg. =		6.1	194.3	5.8	8.6	5.5	172.3	5.2	185.1
Maximum =		7.7	210.1	7.4	9.2	7.1	190.9	6.6	188.6
Minimum =		5.4	181.3	2.7	8.0	4.7	158.6	2.4	181.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		166.6	5250.0	161.4	231.4	148.0	4657.2	142.6	4997.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
P - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Run 09

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 12:23
Rolling Average Interval: 1

ate	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	11:41	8.7	196.8	5.6	7.8	8.2	185.6	5.3	185.2
	11:42	7.8	191.1	6.8	8.2	7.1	174.1	6.2	187.1
	11:43	6.6	198.6	5.3	7.6	6.3	189.5	5.0	186.7
	11:44	6.2	192.4	5.2	8.0	5.8	178.8	4.8	185.9
	11:45	6.8	193.7	7.2	8.1	6.3	178.4	6.6	185.4
	11:46	6.4	188.4	6.6	8.3	5.8	170.3	6.0	184.5
	11:47	6.3	189.7	7.9	8.4	5.7	170.0	7.1	184.2
	11:48	6.0	186.2	7.0	8.4	5.3	166.9	6.3	182.7
	11:49	6.9	199.5	9.8	8.5	6.1	177.9	8.8	183.6
	11:50	5.9	206.0	7.9	8.4	5.3	185.9	7.1	184.1
	11:51	6.9	212.7	8.4	8.3	6.2	193.2	7.7	185.0
	11:52	7.5	215.5	6.3	8.2	6.9	197.0	5.8	184.6
	11:53	8.0	210.4	7.6	8.2	7.3	191.8	6.9	185.7
	11:54	8.1	206.7	5.4	7.7	7.7	195.8	5.1	184.6
	11:55	8.3	198.1	5.8	8.2	7.6	181.2	5.3	185.5
	11:56	7.8	196.4	5.8	8.1	7.2	181.3	5.3	184.7
	11:57	7.8	189.1	7.3	8.3	7.0	171.2	6.6	185.2
	11:58	6.8	191.0	5.3	8.2	6.2	174.8	4.9	185.0
	11:59	6.6	190.9	6.6	8.2	6.0	174.2	6.0	184.8
	12:00	6.5	193.1	6.3	8.3	5.8	174.5	5.7	183.5
	12:01	6.3	195.9	8.1	8.3	5.7	178.1	7.3	184.7
	12:02	6.0	193.4	5.8	8.1	5.5	178.3	5.4	183.3
	12:03	6.2	191.6	6.9	8.3	5.6	173.2	6.3	182.4
	12:04	6.7	200.4	7.0	8.2	6.1	182.7	6.4	183.0
	12:05	7.2	206.3	7.5	8.0	6.7	190.9	6.9	182.5
	12:06	6.8	211.3	7.4	8.2	6.2	192.4	6.8	182.0
	12:07	5.9	220.0	7.2	8.1	5.4	202.7	6.6	183.9
Average =		6.9	198.7	6.8	8.2	6.3	181.9	6.2	184.4
Geometric Avg. =		6.9	198.5	6.7	8.2	6.3	181.6	6.2	184.4
Maximum =		8.7	220.0	9.8	8.5	8.2	202.7	8.8	187.1
Minimum =		5.9	186.2	5.2	7.6	5.3	166.9	4.8	182.0
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		186.9	5365.1	184.1	220.9	171.2	4910.5	168.2	4979.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Run 10

Plant Name: SBWD
General Average Report
Reporting Period: 03/24/2008 to 03/24/2008

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/24/08 12:57
Rolling Average Interval: 1

ate	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/24/08	12:18	4.3	196.9	5.5	7.8	4.0	185.0	5.1	185.2
	12:19	3.7	191.4	4.7	7.9	3.5	179.1	4.4	184.8
	12:20	4.9	190.3	5.6	8.0	4.5	176.6	5.2	184.1
	12:21	5.0	189.0	5.3	8.1	4.6	173.7	4.9	184.6
	12:22	4.9	194.1	5.3	8.0	4.6	179.9	4.9	183.4
	12:23	5.1	198.0	6.2	8.3	4.6	179.1	5.6	183.5
	12:24	4.4	202.0	6.2	8.1	4.0	185.8	5.7	183.7
	12:25	4.6	206.5	5.9	8.2	4.2	188.9	5.4	183.5
	12:26	4.7	212.9	5.5	8.2	4.3	194.4	5.0	184.3
	12:27	4.9	204.6	5.7	8.1	4.5	189.1	5.3	183.8
	12:28	5.0	203.8	5.7	8.2	4.5	185.7	5.2	186.5
	12:29	4.4	202.7	5.0	7.7	4.1	192.2	4.7	184.7
	12:30	4.5	190.8	6.7	8.2	4.1	174.0	6.1	185.1
	12:31	4.5	185.6	6.4	7.9	4.2	173.8	6.0	184.7
	12:32	5.0	179.6	8.2	8.1	4.6	165.2	7.5	184.9
	12:33	5.2	187.4	6.1	8.0	4.8	173.3	5.6	184.3
	12:34	4.9	194.8	7.7	8.0	4.6	181.0	7.2	184.8
	12:35	5.0	208.0	7.0	7.9	4.7	194.6	6.5	184.5
	12:36	5.2	205.4	7.3	7.9	4.8	192.2	6.8	183.0
	12:37	5.0	210.1	7.2	8.3	4.5	189.8	6.5	184.1
	12:38	5.5	208.8	6.8	8.0	5.1	193.6	6.3	184.1
	12:39	6.1	207.2	7.3	8.0	5.7	192.1	6.7	182.7
	12:40	6.2	195.3	6.0	8.4	5.6	175.9	5.4	181.5
	12:41	6.4	190.8	8.3	8.2	5.8	173.7	7.6	182.9
	12:42	7.3	195.2	8.1	8.2	6.6	177.7	7.4	184.0
	12:43	8.5	198.8	7.2	7.9	8.0	185.6	6.7	184.2
	12:44	7.4	205.7	6.5	7.9	6.9	192.2	6.1	184.9
Average =		5.3	198.4	6.4	8.1	4.9	183.1	5.9	184.1
Geometric Avg. =		5.2	198.2	6.3	8.1	4.8	182.9	5.9	184.1
Maximum =		8.5	212.9	8.3	8.4	8.0	194.6	7.6	186.5
Minimum =		3.7	179.6	4.7	7.7	3.5	165.2	4.4	181.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		142.6	5355.5	173.4	217.8	131.6	4944.1	160.0	4972.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 01

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 07:34
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	06:56	5.1	182.5	7.0	9.3	4.2	152.4	5.8	187.0
	06:57	5.0	184.5	6.9	9.3	4.2	154.4	5.8	186.4
	06:58	3.7	189.8	7.8	9.4	3.0	156.7	6.4	189.3
	06:59	5.2	179.9	6.2	8.6	4.6	158.7	5.5	191.1
	07:00	4.3	173.0	3.6	8.7	3.8	152.3	3.2	187.8
	07:01	3.2	194.6	7.1	9.6	2.6	157.6	5.7	186.3
	07:02	4.7	197.5	7.2	9.5	3.9	162.4	6.0	185.0
	07:03	4.7	193.5	9.7	9.5	3.9	158.7	8.0	186.3
	07:04	3.6	179.6	3.7	9.1	3.1	152.0	3.2	186.0
	07:05	3.9	185.1	10.7	9.2	3.3	155.7	9.0	186.9
	07:06	5.1	184.5	9.9	9.0	4.4	158.3	8.5	186.4
	07:07	2.6	187.0	9.0	9.4	2.1	155.1	7.5	186.2
	07:08	1.9	189.3	7.0	9.1	1.6	160.9	6.0	184.9
	07:09	4.3	183.0	7.9	9.2	3.6	153.6	6.6	186.7
	07:10	5.5	181.0	5.1	8.8	4.8	158.1	4.5	185.4
	07:11	3.6	195.4	6.5	9.2	3.0	164.4	5.4	187.7
	07:12	4.1	182.5	6.0	8.5	3.7	162.8	5.3	187.5
	07:13	3.1	180.1	3.2	9.0	2.6	154.3	2.8	186.6
	07:14	2.0	182.9	9.5	9.2	1.7	154.1	8.0	188.0
	07:15	3.3	178.8	5.6	8.7	2.9	156.9	4.9	185.9
	07:16	1.9	178.5	6.9	9.5	1.6	146.7	5.7	185.7
	07:17	2.4	178.0	7.0	9.1	2.1	150.6	5.9	184.2
	07:18	1.2	183.0	7.9	9.6	1.0	148.6	6.4	182.3
	07:19	3.0	183.6	9.6	9.7	2.4	148.0	7.7	180.7
	07:20	4.3	186.0	9.9	9.7	3.5	150.4	8.0	181.0
	07:21	4.0	192.2	9.8	9.7	3.2	155.4	7.9	180.5
	07:22	5.1	195.0	7.2	9.6	4.1	158.9	5.9	179.0
Average =		3.7	185.2	7.3	9.2	3.1	155.5	6.1	185.6
Geometric Avg. =		3.5	185.1	7.0	9.2	3.0	155.4	5.9	185.6
Maximum =		5.5	197.5	10.7	9.7	4.8	164.4	9.0	191.1
Minimum =		1.2	173.0	3.2	8.5	1.0	146.7	2.8	179.0
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		100.8	5000.9	198.0	249.1	84.9	4197.9	165.6	5011.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 02

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 08:13
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	07:34	9.9	183.8	4.8	9.0	8.5	157.2	4.1	186.2
	07:35	9.4	189.7	5.4	8.8	8.2	165.5	4.7	187.0
	07:36	10.3	183.5	6.4	8.6	9.1	162.1	5.7	187.9
	07:37	12.0	182.3	4.7	8.4	10.8	164.3	4.3	187.9
	07:38	11.0	183.0	5.2	8.8	9.6	159.6	4.5	188.5
	07:39	12.8	187.4	4.4	8.8	11.2	163.2	3.9	187.4
	07:40	10.3	184.3	6.5	9.1	8.8	156.7	5.6	188.5
	07:41	12.1	175.8	3.2	8.7	10.7	154.4	2.8	186.4
	07:42	11.4	184.0	4.2	9.3	9.5	153.0	3.5	187.0
	07:43	12.6	186.2	2.5	8.8	10.9	161.7	2.1	185.5
	07:44	14.3	190.5	6.6	9.3	12.0	159.4	5.5	188.8
	07:45	15.0	188.0	2.3	8.4	13.4	168.8	2.1	187.7
	07:46	13.0	175.2	2.7	8.9	11.2	150.9	2.4	188.3
	07:47	11.8	175.3	3.0	8.8	10.3	153.1	2.6	186.2
	07:48	9.5	184.1	3.2	9.2	8.0	155.1	2.7	186.2
	07:49	11.6	184.3	4.9	8.9	10.0	159.6	4.2	187.5
	07:50	12.6	182.3	3.3	8.5	11.2	162.5	3.0	186.1
	07:51	10.6	177.5	3.6	9.1	9.0	151.3	3.0	185.2
	07:52	10.0	176.7	5.5	9.3	8.3	147.5	4.6	183.6
	07:53	8.0	167.9	5.2	9.3	6.7	140.1	4.3	182.5
	07:54	9.0	159.3	5.8	9.2	7.6	134.6	4.9	185.7
	07:55	10.4	161.4	7.7	8.6	9.2	142.6	6.8	186.2
	07:56	10.5	159.1	6.3	9.1	8.9	134.9	5.3	184.5
	07:57	9.3	162.0	8.1	9.7	7.5	130.1	6.5	183.2
	07:58	7.7	167.3	9.9	9.7	6.2	134.7	8.0	184.1
	07:59	8.3	162.2	10.9	9.1	7.1	138.1	9.3	187.8
	08:00	8.7	161.5	5.3	8.6	7.7	142.5	4.7	187.8
Average =		10.8	176.8	5.3	9.0	9.3	152.0	4.5	186.4
Geometric Avg. =		10.7	176.5	4.9	9.0	9.2	151.6	4.2	186.4
Maximum =		15.0	190.5	10.9	9.7	13.4	168.8	9.3	188.8
Minimum =		7.7	159.1	2.3	8.4	6.2	130.1	2.1	182.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		292.2	4774.7	141.9	241.9	251.6	4103.6	121.2	5033.9

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 03

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 08:52
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	08:13	4.1	169.9	5.8	8.9	3.5	147.2	5.0	188.9
	08:14	4.8	177.5	4.7	8.9	4.1	153.2	4.0	188.1
	08:15	3.5	178.9	5.6	9.2	2.9	150.1	4.7	185.8
	08:16	3.3	190.2	5.9	9.6	2.7	154.5	4.8	186.5
	08:17	3.4	192.1	5.7	9.1	2.8	163.2	4.9	186.2
	08:18	4.6	192.1	7.5	9.0	3.9	164.1	6.4	187.5
	08:19	3.6	177.0	7.4	8.9	3.1	153.2	6.4	187.5
	08:20	3.3	177.5	7.7	9.0	2.8	151.6	6.5	186.7
	08:21	3.5	176.7	8.3	9.2	2.9	148.5	6.9	187.7
	08:22	3.6	170.9	7.0	8.9	3.1	147.2	6.1	187.4
	08:23	4.5	178.2	8.3	8.8	4.0	155.3	7.3	189.5
	08:24	4.9	185.7	4.4	8.5	4.4	165.4	3.9	187.2
	08:25	2.3	174.5	4.3	9.4	1.9	145.0	3.6	184.8
	08:26	1.4	168.2	6.5	9.4	1.1	138.7	5.4	184.9
	08:27	4.0	163.1	7.4	9.2	3.4	137.7	6.2	185.2
	08:28	3.4	157.9	5.8	9.2	2.9	132.4	4.8	185.4
	08:29	2.0	157.6	5.1	9.1	1.7	134.1	4.3	184.1
	08:30	2.8	156.6	8.1	9.3	2.3	131.1	6.8	184.2
	08:31	2.2	157.4	7.3	9.2	1.9	132.3	6.1	184.0
	08:32	3.1	162.2	6.7	9.3	2.6	135.7	5.6	183.0
	08:33	2.6	163.3	8.4	9.4	2.2	135.1	6.9	181.3
	08:34	1.0	176.0	7.7	9.7	0.8	142.4	6.2	180.0
	08:35	2.0	180.2	10.0	9.3	1.7	150.3	8.3	183.5
	08:36	2.6	179.5	7.9	8.8	2.3	155.8	6.9	185.0
	08:37	2.1	172.8	10.4	8.9	1.8	149.8	9.0	184.2
	08:38	2.3	177.7	7.2	9.2	2.0	149.4	6.1	183.5
	08:39	2.9	181.9	8.1	9.3	2.5	152.2	6.8	184.5
Average =		3.1	173.9	7.0	9.1	2.6	147.2	5.9	185.4
Geometric Avg. =		2.9	173.6	6.8	9.1	2.5	146.9	5.8	185.4
Maximum =		4.9	192.1	10.4	9.7	4.4	165.4	9.0	189.5
Minimum =		1.0	156.6	4.3	8.5	0.8	131.1	3.6	180.0
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		83.8	4695.7	189.4	246.6	71.2	3975.5	160.2	5006.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - atack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 04

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 09:33
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	08:52	2.2	166.3	5.1	9.0	1.9	142.8	4.4	186.2
	08:53	1.2	160.7	6.1	9.3	1.0	134.1	5.1	185.0
	08:54	1.5	169.1	7.1	9.2	1.2	141.8	6.0	186.0
	08:55	2.1	161.7	3.1	8.9	1.8	139.1	2.7	186.2
	08:56	1.4	161.8	7.9	9.1	1.2	137.9	6.7	184.9
	08:57	0.6	160.1	5.6	9.4	0.5	132.9	4.7	182.7
	08:58	0.8	161.4	8.7	9.5	0.7	132.7	7.2	183.5
	08:59	1.6	166.4	6.0	9.2	1.3	139.7	5.1	183.6
	09:00	1.7	170.9	5.8	9.1	1.4	145.1	4.9	183.4
	09:01	0.1	166.6	8.4	9.4	0.1	137.3	6.9	181.9
	09:02	0.9	170.1	10.6	9.7	0.8	137.3	8.6	181.6
	09:03	3.2	177.4	11.4	9.2	2.7	149.1	9.6	183.5
	09:04	3.6	171.9	5.5	8.8	3.2	149.3	4.7	184.0
	09:05	2.8	165.2	4.6	9.3	2.3	138.1	3.9	181.6
	09:06	4.4	169.5	6.4	9.7	3.6	137.1	5.2	181.4
	09:07	4.3	167.7	7.2	9.4	3.5	138.7	5.9	181.8
	09:08	2.6	157.3	5.1	9.5	2.1	129.1	4.2	181.5
	09:09	4.2	172.7	4.7	9.3	3.5	143.6	3.9	181.5
	09:10	4.8	173.9	6.0	9.3	4.0	144.7	5.0	180.4
	09:11	4.3	174.8	8.2	9.6	3.5	141.7	6.7	179.4
	09:12	7.5	177.3	8.7	9.7	6.0	143.2	7.0	180.5
	09:13	9.6	179.9	9.1	9.6	7.9	146.9	7.4	180.5
	09:14	10.8	175.8	10.1	9.5	8.9	144.2	8.3	180.8
	09:15	10.6	172.6	10.8	9.3	8.9	144.5	9.0	181.8
	09:16	11.5	174.5	7.6	9.1	9.8	148.6	6.4	182.3
	09:17	11.3	174.2	7.4	9.4	9.3	143.5	6.1	182.1
	09:18	13.6	174.7	7.2	9.3	11.3	145.7	6.0	184.2
Average =		4.6	169.4	7.2	9.3	3.8	141.1	6.0	182.7
Geometric Avg. =		2.9	169.3	6.9	9.3	2.4	141.0	5.7	182.7
Maximum =		13.6	179.9	11.4	9.7	11.3	149.3	9.6	186.2
Minimum =		0.1	157.3	3.1	8.8	0.1	129.1	2.7	179.4
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		123.2	4574.7	194.3	251.8	102.3	3808.5	161.4	4932.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 05

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 10:10
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	09:30	3.9	189.1	3.7	8.6	3.5	167.8	3.3	188.1
	09:31	4.5	183.8	2.0	9.0	3.8	158.0	1.7	186.5
	09:32	2.9	186.9	6.1	9.2	2.4	157.9	5.1	185.2
	09:33	1.2	188.7	4.7	9.5	1.0	155.2	3.9	182.7
	09:34	0.1	178.4	7.5	9.7	0.1	143.4	6.0	181.0
	09:35	0.4	170.4	8.6	9.5	0.3	139.9	7.0	182.6
	09:36	1.4	169.9	7.0	9.2	1.2	142.7	5.9	183.1
	09:37	1.9	162.5	5.1	9.3	1.6	135.6	4.3	183.3
	09:38	2.9	176.1	5.1	9.4	2.4	146.2	4.2	182.6
	09:39	3.3	184.9	5.6	9.3	2.8	154.6	4.7	184.6
	09:40	4.7	172.1	3.8	8.8	4.1	149.8	3.3	183.6
	09:41	3.9	160.7	4.6	9.2	3.3	135.6	3.9	182.0
	09:42	4.1	170.7	5.5	9.4	3.4	141.1	4.5	180.6
	09:43	3.1	187.6	7.3	9.4	2.6	154.6	6.0	181.5
	09:44	2.7	179.1	5.9	9.0	2.3	152.9	5.0	183.2
	09:45	3.9	178.6	7.9	9.0	3.3	153.1	6.7	183.8
	09:46	5.9	181.0	7.3	9.1	5.0	153.9	6.2	186.1
	09:47	6.3	179.9	3.1	8.4	5.7	162.1	2.8	186.8
	09:48	6.0	174.5	3.3	8.8	5.2	152.5	2.9	185.8
	09:49	3.9	182.4	4.0	9.2	3.2	153.4	3.3	185.6
	09:50	3.3	176.3	4.6	9.2	2.8	148.5	3.9	185.8
	09:51	3.4	179.5	4.7	9.0	2.9	153.7	4.0	184.9
	09:52	3.2	171.7	4.4	9.2	2.7	144.3	3.7	185.6
	09:53	2.8	168.3	6.2	8.8	2.4	146.1	5.4	184.8
	09:54	4.0	170.7	6.8	9.0	3.4	146.0	5.9	183.7
	09:55	2.9	169.6	7.0	9.4	2.4	140.1	5.8	185.0
	09:56	4.6	170.5	7.2	9.0	4.0	145.7	6.2	185.3
Average =		3.4	176.4	5.5	9.1	2.9	149.4	4.7	184.2
Geometric Avg. =		2.7	176.3	5.3	9.1	2.3	149.2	4.4	184.2
Maximum =		6.3	189.1	8.6	9.7	5.7	167.8	7.0	188.1
Minimum =		0.1	160.7	2.0	8.4	0.1	135.6	1.7	180.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		91.4	4763.9	149.1	246.5	78.0	4034.9	125.8	4974.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 06

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 10:52
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	10:09	3.9	168.0	8.3	9.8	3.1	133.9	6.6	179.3
	10:10	4.3	167.1	10.1	9.7	3.5	135.2	8.2	179.8
	10:11	5.9	163.1	9.6	9.2	4.9	136.9	8.0	181.9
	10:12	6.5	169.8	9.6	8.9	5.6	146.9	8.3	185.6
	10:13	8.0	165.2	4.6	8.7	7.0	144.5	4.0	185.0
	10:14	7.4	165.2	7.0	9.3	6.2	138.1	5.8	184.9
	10:15	7.8	169.3	6.2	9.0	6.7	145.0	5.3	184.0
	10:16	5.3	171.7	4.9	9.1	4.6	146.4	4.2	183.6
	10:17	7.0	180.1	5.6	9.1	6.0	153.5	4.8	184.7
	10:18	5.2	174.3	5.7	9.1	4.4	147.8	4.8	182.0
	10:19	4.1	167.8	6.9	9.9	3.2	132.9	5.4	180.7
	10:20	7.4	170.0	8.7	9.7	6.0	137.3	7.0	184.8
	10:21	7.5	161.9	3.4	8.4	6.7	145.4	3.0	186.4
	10:22	5.7	161.9	3.0	9.0	4.9	139.0	2.6	183.0
	10:23	4.4	160.3	4.3	9.6	3.6	130.6	3.5	181.2
	10:24	3.8	160.6	5.5	9.8	3.0	128.1	4.4	180.9
	10:25	7.8	158.9	9.4	9.6	6.3	129.5	7.7	180.7
	10:26	10.9	168.5	7.6	9.6	8.8	137.1	6.2	178.8
	10:27	10.1	166.9	7.5	9.2	8.4	140.3	6.3	182.3
	10:28	8.7	160.1	6.3	8.8	7.5	139.0	5.5	183.1
	10:29	8.2	161.7	6.4	9.1	7.0	137.3	5.4	182.3
	10:30	9.0	175.3	8.9	9.2	7.6	148.1	7.5	185.8
	10:31	10.6	172.6	6.0	8.3	9.6	156.9	5.5	187.0
	10:32	9.5	172.1	5.6	8.5	8.5	153.9	5.0	187.3
	10:33	7.5	179.4	4.3	8.7	6.6	156.9	3.7	186.1
	10:34	7.2	180.2	6.8	9.1	6.2	153.3	5.8	184.8
	10:35	5.9	187.5	6.1	9.2	4.9	157.9	5.2	185.6
Average =		7.0	168.9	6.6	9.2	6.0	142.7	5.5	183.4
Geometric Avg. =		6.7	168.7	6.3	9.2	5.7	142.4	5.3	183.4
Maximum =		10.9	187.5	10.1	9.9	9.6	157.9	8.3	187.3
Minimum =		3.8	158.9	3.0	8.3	3.0	128.1	2.6	178.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		189.4	4559.5	178.3	247.4	160.8	3851.8	149.8	4951.7

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 07

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 11:28
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	10:47	4.7	167.9	6.3	9.4	3.9	138.7	5.2	182.6
	10:48	4.9	168.4	9.4	9.6	4.0	136.8	7.7	182.4
	10:49	5.0	161.3	11.1	9.3	4.2	134.7	9.2	182.0
	10:50	5.6	163.0	9.2	9.4	4.7	134.9	7.6	182.3
	10:51	5.3	170.1	6.7	9.2	4.5	143.5	5.7	181.6
	10:52	3.2	159.1	7.1	9.2	2.7	133.6	5.9	181.3
	10:53	3.8	163.0	7.5	9.5	3.1	133.6	6.2	180.7
	10:54	5.5	165.5	8.2	9.4	4.5	137.4	6.8	182.5
	10:55	6.9	159.2	7.3	8.7	6.1	139.5	6.4	184.8
	10:56	8.1	166.2	4.8	8.5	7.2	148.7	4.3	185.6
	10:57	8.9	161.2	4.3	8.8	7.8	140.7	3.8	185.9
	10:58	7.3	171.7	3.3	8.7	6.4	150.2	2.9	185.8
	10:59	6.4	177.1	4.1	8.6	5.7	157.2	3.6	188.9
	11:00	9.4	191.6	1.5	7.8	8.9	180.7	1.4	188.0
	11:01	7.5	195.5	2.2	8.6	6.6	172.5	2.0	187.3
	11:02	4.8	185.2	4.5	8.6	4.3	163.8	4.0	189.2
	11:03	6.5	180.8	1.4	8.6	5.7	159.7	1.2	185.1
	11:04	6.0	184.8	4.7	9.4	4.9	152.4	3.9	184.4
	11:05	6.8	182.1	6.9	8.7	6.0	159.7	6.0	184.9
	11:06	7.0	180.4	6.2	8.7	6.2	158.6	5.4	185.6
	11:07	7.9	177.5	3.4	8.8	6.9	154.6	3.0	183.2
	11:08	6.3	173.5	4.2	9.4	5.2	144.1	3.5	183.7
	11:09	6.4	174.2	4.6	9.0	5.5	149.3	3.9	183.3
	11:10	5.4	176.1	4.4	9.0	4.6	151.0	3.8	183.3
	11:11	6.4	177.1	5.1	9.0	5.5	151.7	4.3	185.3
	11:12	7.3	179.3	2.7	8.4	6.5	161.2	2.4	184.4
	11:13	5.3	181.1	2.9	9.1	4.5	153.2	2.4	183.2
Average =		6.3	173.8	5.3	8.9	5.4	149.7	4.5	184.3
Geometric Avg. =		6.1	173.5	4.7	8.9	5.2	149.2	4.1	184.3
Maximum =		9.4	195.5	11.1	9.6	8.9	180.7	9.2	189.2
Minimum =		3.2	159.1	1.4	7.8	2.7	133.6	1.2	180.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		169.0	4692.9	144.0	241.4	146.3	4042.0	122.6	4977.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run08
Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 12:06
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	11:25	11.3	160.9	5.7	9.0	9.7	138.3	4.9	183.7
	11:26	14.5	158.8	3.6	9.1	12.2	134.4	3.0	183.4
	11:27	15.8	165.5	2.6	9.2	13.2	139.0	2.2	181.2
	11:28	13.2	181.2	5.7	9.6	10.8	147.9	4.7	181.6
	11:29	12.5	187.3	6.1	9.0	10.7	160.4	5.2	183.2
	11:30	10.6	175.4	4.0	8.7	9.3	153.7	3.5	183.9
	11:31	9.6	167.7	5.2	8.9	8.3	145.0	4.5	182.8
	11:32	7.5	169.5	5.3	9.3	6.3	141.5	4.4	182.4
	11:33	7.7	170.0	6.5	9.2	6.5	143.1	5.4	182.3
	11:34	6.1	167.8	5.0	9.1	5.2	142.9	4.3	181.5
	11:35	6.7	169.5	7.6	9.1	5.6	143.4	6.5	179.8
	11:36	6.4	169.8	9.3	9.3	5.4	142.1	7.7	179.7
	11:37	6.9	178.2	9.8	9.7	5.6	143.6	7.9	179.5
	11:38	7.2	188.7	8.4	9.8	5.8	150.2	6.7	178.9
	11:39	8.1	190.4	8.8	9.6	6.6	154.1	7.1	178.8
	11:40	8.5	187.1	10.2	9.5	7.0	153.8	8.4	180.0
	11:41	9.1	181.4	7.3	9.6	7.4	147.9	6.0	180.1
	11:42	9.9	174.6	7.8	9.6	8.0	141.8	6.3	180.2
	11:43	12.3	173.5	7.1	9.1	10.4	146.8	6.0	181.9
	11:44	14.2	169.4	8.5	9.0	12.1	144.9	7.2	181.4
	11:45	15.4	168.0	7.8	9.5	12.6	137.6	6.3	181.0
	11:46	15.6	164.8	5.2	9.5	12.9	135.6	4.3	181.8
	11:47	14.2	171.1	7.2	9.2	11.9	143.7	6.1	182.6
	11:48	15.8	177.9	6.0	9.2	13.3	149.3	5.1	181.7
	11:49	19.7	190.7	5.8	9.3	16.5	159.6	4.9	182.3
	11:50	18.4	199.3	5.9	9.1	15.7	169.5	5.0	183.1
	11:51	19.8	190.9	3.5	9.1	16.8	162.2	2.9	182.3
Average =		11.7	175.9	6.5	9.3	9.8	147.1	5.4	181.5
Geometric Avg. =		11.0	175.6	6.2	9.3	9.2	146.9	5.2	181.5
Maximum =		19.8	199.3	10.2	9.8	16.8	169.5	8.4	183.9
Minimum =		6.1	158.8	2.6	8.7	5.2	134.4	2.2	178.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		316.8	4749.1	175.9	250.3	265.6	3972.2	146.7	4901.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 09

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 12:44
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	12:03	16.5	191.9	8.9	9.9	13.1	152.4	7.1	178.6
	12:04	13.5	181.1	8.9	9.4	11.1	149.4	7.3	180.2
	12:05	7.3	173.1	8.3	9.1	6.2	146.4	7.0	181.8
	12:06	6.4	185.9	8.2	8.8	5.6	161.2	7.1	185.6
	12:07	9.1	196.4	4.7	8.1	8.3	180.8	4.4	187.1
	12:08	9.7	198.9	3.2	8.5	8.6	178.0	2.9	186.2
	12:09	9.3	193.9	3.8	8.6	8.2	171.1	3.4	187.0
	12:10	7.9	190.4	3.1	8.6	7.0	168.6	2.7	185.5
	12:11	6.4	185.2	6.2	9.3	5.4	155.1	5.2	185.1
	12:12	4.0	183.8	5.6	9.1	3.3	155.4	4.8	185.0
	12:13	5.1	203.5	6.2	8.8	4.4	177.8	5.4	186.8
	12:14	5.2	205.6	4.7	8.7	4.6	180.7	4.1	186.4
	12:15	3.6	198.4	6.8	9.0	3.1	170.2	5.9	185.2
	12:16	4.5	189.1	4.9	9.3	3.8	157.9	4.1	185.2
	12:17	3.6	172.6	4.2	8.9	3.1	148.8	3.6	183.1
	12:18	2.8	169.5	4.9	9.3	2.4	141.6	4.1	182.7
	12:19	2.8	173.5	9.5	9.1	2.3	146.9	8.1	183.6
	12:20	2.8	176.8	5.5	9.0	2.4	152.0	4.7	183.5
	12:21	1.9	166.6	6.3	9.3	1.6	139.4	5.3	180.1
	12:22	3.9	175.7	7.6	9.8	3.1	140.4	6.1	180.3
	12:23	3.8	185.5	8.6	9.2	3.2	155.9	7.2	181.3
	12:24	3.0	180.2	5.4	9.2	2.6	151.7	4.6	180.4
	12:25	3.8	183.7	7.1	9.7	3.1	148.2	5.8	180.3
	12:26	5.6	185.5	6.5	9.5	4.6	152.1	5.3	182.4
	12:27	6.1	179.5	4.0	8.9	5.3	155.1	3.5	184.1
	12:28	7.1	178.8	3.8	8.7	6.2	156.4	3.3	184.3
	12:29	6.8	185.3	5.7	8.9	5.9	160.3	5.0	185.4
Average =		6.0	184.8	6.0	9.1	5.1	157.5	5.1	183.6
Geometric Avg. =		5.3	184.6	5.7	9.1	4.5	157.1	4.9	183.6
Maximum =		16.5	205.6	9.5	9.9	13.1	180.8	8.1	187.1
Minimum =		1.9	166.6	3.1	8.1	1.6	139.4	2.7	178.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		162.6	4990.5	162.8	244.7	138.6	4253.8	137.8	4957.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/25/2008 to 03/25/2008

Run 10

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/25/08 13:22
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/25/08	12:43	4.6	197.1	5.4	9.0	4.0	169.3	4.6	186.0
	12:44	6.1	201.1	6.8	8.7	5.3	176.5	6.0	187.1
	12:45	6.5	203.1	5.9	8.7	5.7	177.7	5.2	188.6
	12:46	6.9	192.8	4.0	8.7	6.1	169.7	3.5	187.3
	12:47	7.4	189.2	6.7	8.9	6.4	163.1	5.7	186.9
	12:48	8.7	182.3	2.3	9.1	7.4	154.8	2.0	184.5
	12:49	7.8	175.4	7.2	9.5	6.4	143.5	5.9	183.7
	12:50	8.7	176.7	6.1	9.2	7.3	148.5	5.1	183.2
	12:51	8.7	181.5	8.0	9.1	7.3	153.6	6.8	181.8
	12:52	8.5	180.4	10.0	9.8	6.8	144.4	8.0	181.1
	12:53	9.9	173.5	7.2	9.3	8.3	145.2	6.0	180.7
	12:54	11.5	181.4	7.5	9.3	9.6	151.8	6.3	182.5
	12:55	9.1	173.4	6.7	8.7	8.0	152.5	5.8	184.5
	12:56	9.5	168.9	3.1	8.6	8.4	149.8	2.7	184.3
	12:57	9.3	167.3	5.1	8.8	8.1	145.7	4.4	185.8
	12:58	8.6	166.7	4.2	8.6	7.6	148.0	3.8	186.2
	12:59	7.8	167.7	4.2	8.6	6.9	148.6	3.7	187.2
	13:00	7.7	171.8	4.9	8.8	6.7	149.0	4.2	184.8
	13:01	8.3	185.2	5.5	9.3	6.9	154.0	4.6	183.4
	13:02	8.3	179.3	4.9	9.3	6.9	149.8	4.1	182.6
	13:03	7.5	195.1	4.7	9.3	6.2	162.2	3.9	182.2
	13:04	8.7	188.4	5.2	9.4	7.2	155.9	4.3	181.8
	13:05	19.3	192.6	7.9	9.4	16.0	159.8	6.5	183.1
	13:06	22.4	190.4	6.8	8.9	19.3	164.3	5.9	184.3
	13:07	22.6	178.3	4.7	8.8	19.6	154.6	4.1	183.9
	13:08	17.1	183.4	6.4	9.1	14.5	155.6	5.4	183.3
	13:09	19.8	180.2	5.9	9.4	16.4	149.4	4.9	182.7
Average =		10.4	182.4	5.8	9.0	8.9	155.4	4.9	184.2
Geometric Avg. =		9.5	182.1	5.6	9.0	8.1	155.2	4.8	184.2
Maximum =		22.6	203.1	10.0	9.8	19.6	177.7	8.0	188.6
Minimum =		4.6	166.7	2.3	8.6	4.0	143.5	2.0	180.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		281.2	4923.5	157.2	244.3	239.4	4197.1	133.5	4973.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Run 01

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 06:51
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	06:08	3.1	191.3	18.0	9.6	2.5	155.2	14.6	186.1
	06:09	3.6	192.4	20.0	9.5	3.0	157.5	16.4	185.6
	06:10	3.4	195.5	21.6	9.8	2.7	155.7	17.2	184.3
	06:11	3.3	205.4	19.3	9.9	2.6	161.9	15.2	183.3
	06:12	3.1	203.3	18.6	9.9	2.4	161.0	14.7	184.6
	06:13	3.7	207.2	24.2	10.0	2.9	162.7	19.0	183.2
	06:14	3.6	208.9	19.7	9.9	2.8	165.7	15.7	183.3
	06:15	3.1	198.5	20.8	9.5	2.5	163.3	17.1	183.8
	06:16	3.2	196.4	18.6	9.5	2.6	160.6	15.2	183.5
	06:17	2.6	193.8	16.3	9.4	2.1	159.9	13.5	182.0
	06:18	2.1	193.3	14.9	9.5	1.7	159.1	12.2	183.0
	06:19	1.4	198.6	16.8	9.4	1.2	164.4	13.9	184.8
	06:20	1.3	209.3	14.5	9.0	1.1	179.2	12.4	185.4
	06:21	0.8	209.1	13.5	9.2	0.6	176.7	11.4	185.6
	06:22	0.7	205.1	12.4	9.1	0.6	174.2	10.5	182.5
	06:23	0.8	204.7	13.7	9.6	0.6	166.1	11.1	183.3
	06:24	1.0	203.6	14.3	9.2	0.8	171.5	12.0	185.8
	06:25	0.6	197.7	10.7	8.9	0.5	170.3	9.2	186.4
	06:26	0.4	193.2	13.2	9.1	0.4	163.7	11.2	183.9
	06:27	0.4	192.1	12.7	9.2	0.3	161.2	10.6	186.0
	06:28	0.4	187.1	9.4	8.7	0.3	164.4	8.3	183.4
	06:29	0.2	190.0	11.7	9.2	0.2	159.9	9.8	183.1
	06:30	0.2	201.2	9.9	8.5	0.2	179.3	8.8	184.6
	06:31	0.2	204.6	11.0	8.3	0.2	186.0	10.0	186.2
	06:32	0.3	204.5	12.0	8.2	0.3	186.3	10.9	187.3
	06:33	0.8	199.7	13.3	8.3	0.7	180.7	12.0	183.7
	06:34	1.0	198.8	14.5	9.1	0.9	168.7	12.3	183.6
Average =		1.7	199.5	15.4	9.2	1.4	167.2	12.8	184.4
Geometric Avg. =		1.1	199.4	14.9	9.2	0.9	167.0	12.5	184.4
Maximum =		3.7	209.3	24.2	10.0	3.0	186.3	19.0	187.3
Minimum =		0.2	187.1	9.4	8.2	0.2	155.2	8.3	182.0
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		45.2	5385.2	415.5	249.6	36.9	4514.9	345.3	4978.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Run 02

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 08:02
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	07:24	1.2	194.5	13.1	9.4	1.0	160.9	10.9	184.4
	07:25	1.9	197.7	15.9	9.5	1.6	161.6	13.0	185.8
	07:26	1.1	193.1	11.4	9.0	0.9	165.4	9.8	184.6
	07:27	0.8	192.3	11.5	9.4	0.7	159.0	9.5	182.9
	07:28	1.1	196.7	11.8	9.4	0.9	162.7	9.8	184.4
	07:29	1.2	197.4	10.8	9.2	1.0	165.8	9.1	185.1
	07:30	1.0	195.3	11.5	9.0	0.8	166.8	9.8	185.2
	07:31	1.3	199.5	13.2	9.6	1.1	162.8	10.8	184.8
	07:32	1.0	198.6	10.5	9.4	0.8	164.5	8.7	184.3
	07:33	0.9	200.7	14.9	9.3	0.8	168.1	12.5	184.0
	07:34	0.7	201.6	15.1	9.2	0.6	169.3	12.7	184.7
	07:35	1.1	199.7	20.3	9.1	0.9	169.9	17.2	183.2
	07:36	1.2	202.5	23.1	9.5	1.0	165.9	18.9	184.2
	07:37	1.2	206.2	18.2	9.1	1.0	175.3	15.4	183.6
	07:38	0.6	206.7	18.7	9.1	0.5	175.0	15.9	184.2
	07:39	0.9	201.8	16.7	8.7	0.8	176.4	14.6	184.6
	07:40	0.7	200.1	18.1	8.9	0.6	172.8	15.6	184.2
	07:41	0.8	201.5	15.0	9.0	0.7	172.4	12.9	183.2
	07:42	0.9	200.7	16.2	9.3	0.7	167.1	13.5	184.2
	07:43	0.5	197.5	11.3	9.0	0.4	169.2	9.6	184.2
	07:44	1.2	199.4	16.0	9.3	1.0	166.3	13.4	186.1
	07:45	0.6	192.5	11.4	8.8	0.5	167.0	9.9	187.7
	07:46	1.0	190.3	14.5	9.0	0.9	162.9	12.4	198.5
	07:47	3.2	172.9	18.4	7.2	3.2	170.7	18.2	204.5
	07:48	1.3	171.6	7.1	7.3	1.2	168.3	7.0	195.6
	07:49	0.2	187.3	5.8	8.6	0.2	165.5	5.1	185.0
	07:50	0.6	202.8	7.2	9.7	0.4	163.5	5.8	190.5
Average =		1.0	196.3	14.0	9.0	0.9	167.2	11.9	186.4
Geometric Avg. =		0.9	196.2	13.3	9.0	0.8	167.2	11.4	186.4
Maximum =		3.2	206.7	23.1	9.7	3.2	176.4	18.9	204.5
Minimum =		0.2	171.6	5.8	7.2	0.2	159.0	5.1	182.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		28.3	5301.0	377.6	244.1	24.4	4515.0	321.7	5033.7

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Run 03

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 08:41
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	08:02	4.7	165.1	12.2	9.0	4.1	141.2	10.4	195.2
	08:03	9.3	153.1	9.8	7.6	8.9	146.5	9.4	191.4
	08:04	7.3	164.0	7.4	8.7	6.4	143.5	6.5	184.0
	08:05	5.5	171.5	8.2	9.5	4.5	140.5	6.7	183.4
	08:06	8.1	166.9	14.9	9.0	6.9	142.7	12.7	189.1
	08:07	9.2	158.3	10.1	8.3	8.3	143.2	9.1	188.8
	08:08	8.1	164.2	9.6	8.9	7.0	141.5	8.2	186.1
	08:09	7.8	169.5	9.2	9.4	6.5	139.8	7.6	183.8
	08:10	8.3	171.7	12.1	9.7	6.7	138.6	9.7	186.9
	08:11	10.5	163.2	11.3	9.0	9.0	139.9	9.7	186.8
	08:12	9.4	168.9	10.6	9.5	7.7	138.5	8.7	184.3
	08:13	8.1	172.1	12.6	10.0	6.4	135.0	9.9	182.5
	08:14	7.8	175.3	16.9	10.2	6.0	134.4	13.0	181.6
	08:15	7.6	179.8	17.7	10.3	5.8	137.1	13.5	181.6
	08:16	6.5	180.4	17.1	10.2	5.0	139.2	13.2	181.0
	08:17	5.7	184.3	17.7	10.4	4.3	139.6	13.4	180.5
	08:18	4.7	183.3	16.9	10.5	3.5	136.6	12.6	179.8
	08:19	4.0	179.1	21.0	10.7	2.9	131.2	15.4	181.0
	08:20	3.3	182.6	23.4	10.4	2.5	137.6	17.6	183.2
	08:21	2.9	178.9	18.8	10.3	2.2	135.9	14.3	184.2
	08:22	2.2	175.8	14.0	9.9	1.7	138.8	11.1	186.1
	08:23	1.0	170.7	12.1	9.8	0.8	136.2	9.7	182.9
	08:24	1.4	170.6	15.3	10.4	1.0	128.3	11.5	180.7
	08:25	1.8	175.6	18.6	10.6	1.3	130.2	13.8	181.2
	08:26	1.8	171.3	19.7	10.5	1.4	128.5	14.8	181.4
	08:27	1.9	172.6	20.1	10.5	1.4	128.8	15.0	182.0
	08:28	1.8	172.8	20.4	10.5	1.3	129.9	15.3	183.0
Average =		5.6	171.9	14.7	9.8	4.6	137.2	11.6	184.2
Geometric Avg. =		4.6	171.7	14.0	9.7	3.7	137.1	11.2	184.1
Maximum =		10.5	184.3	23.4	10.7	9.0	146.5	17.6	195.2
Minimum =		1.0	153.1	7.4	7.6	0.8	128.3	6.5	179.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		150.7	4641.5	397.6	264.0	123.6	3703.5	312.8	4972.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Run 04

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 09:17
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	08:39	1.6	191.3	22.5	11.2	1.1	132.9	15.6	177.1
	08:40	2.2	195.1	30.4	11.1	1.5	137.5	21.4	182.6
	08:41	1.8	194.6	30.0	10.1	1.4	150.7	23.2	188.5
	08:42	0.2	190.0	20.1	9.3	0.2	157.9	16.7	187.4
	08:43	0.0	196.2	10.6	9.6	0.0	159.7	8.6	183.2
	08:44	0.0	208.7	13.8	10.2	0.0	161.4	10.7	181.8
	08:45	0.0	211.1	15.0	10.1	0.0	163.4	11.6	182.0
	08:46	0.2	214.4	17.0	10.2	0.2	164.5	13.0	183.6
	08:47	0.2	210.8	16.2	10.2	0.2	161.8	12.4	185.1
	08:48	0.1	200.1	16.7	10.1	0.1	155.0	13.0	186.1
	08:49	0.0	187.0	9.9	9.9	0.0	147.5	7.8	183.9
	08:50	0.0	174.3	10.9	10.4	0.0	131.6	8.3	180.2
	08:51	0.0	171.0	17.5	10.6	0.0	126.8	13.0	181.6
	08:52	0.4	183.0	20.0	10.4	0.3	138.1	15.1	183.7
	08:53	0.5	204.7	20.3	10.1	0.4	159.0	15.8	187.3
	08:54	0.0	201.0	13.4	9.6	0.0	163.7	10.9	186.7
	08:55	0.0	206.8	12.9	9.8	0.0	165.1	10.3	185.5
	08:56	0.0	201.3	11.2	10.0	0.0	157.5	8.8	183.2
	08:57	0.1	202.8	13.4	10.4	0.1	153.3	10.2	181.9
	08:58	0.3	201.2	15.4	10.6	0.2	148.9	11.4	182.5
	08:59	0.6	197.2	18.5	10.7	0.4	145.3	13.6	183.0
	09:00	0.5	193.7	18.6	10.6	0.3	143.2	13.7	184.9
	09:01	0.2	186.5	16.6	10.3	0.2	142.2	12.6	185.3
	09:02	0.3	187.0	14.8	10.4	0.2	140.8	11.2	181.8
	09:03	0.7	191.7	19.3	10.9	0.5	137.5	13.9	181.9
	09:04	1.0	197.0	19.9	10.8	0.8	143.8	14.5	182.1
	09:05	1.0	195.9	20.3	10.8	0.8	143.0	14.8	182.6
Average =		0.4	196.1	17.2	10.3	0.3	149.3	13.0	183.5
Geometric Avg. =		0.1	195.8	16.6	10.3	0.1	148.9	12.6	183.5
Maximum =		2.2	214.4	30.4	11.2	1.5	165.1	23.2	188.5
Minimum =		0.0	171.0	9.9	9.3	0.0	126.8	7.8	177.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		11.9	5294.2	465.3	278.6	8.8	4032.3	352.2	4955.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Run 05

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 09:55
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	09:17	0.0	216.6	17.3	10.8	0.0	157.8	12.6	182.4
	09:18	0.1	212.5	23.7	10.5	0.0	159.4	17.8	185.8
	09:19	0.1	207.7	16.7	10.3	0.1	157.9	12.7	183.7
	09:20	0.2	210.5	19.0	10.8	0.1	153.3	13.8	181.0
	09:21	0.3	206.9	20.6	11.2	0.2	145.1	14.4	181.5
	09:22	0.6	201.5	21.3	10.9	0.5	145.2	15.4	184.2
	09:23	0.3	193.5	18.7	10.4	0.2	145.9	14.1	185.5
	09:24	0.2	190.9	18.5	10.4	0.2	144.2	14.0	187.3
	09:25	0.1	190.0	14.4	10.3	0.1	144.9	10.9	187.4
	09:26	0.1	185.7	12.0	10.2	0.1	142.6	9.2	185.4
	09:27	0.3	186.3	16.7	10.6	0.2	138.6	12.4	186.6
	09:28	0.7	187.5	16.5	10.2	0.5	144.7	12.7	185.8
	09:29	1.1	200.0	19.6	10.7	0.8	146.1	14.3	185.8
	09:30	1.2	203.4	18.6	10.7	0.9	148.8	13.6	182.1
	09:31	1.3	204.4	25.1	11.3	0.9	140.9	17.3	179.0
	09:32	1.6	205.3	31.8	11.3	1.1	141.2	21.9	179.5
	09:33	1.9	198.6	28.6	11.4	1.3	136.4	19.7	177.5
	09:34	2.3	209.5	30.3	11.7	1.5	138.6	20.0	178.1
	09:35	2.1	212.2	39.7	11.4	1.5	145.1	27.1	181.9
	09:36	2.3	198.9	40.8	11.1	1.6	140.5	28.8	184.2
	09:37	1.9	194.4	29.5	11.2	1.4	135.8	20.6	187.6
	09:38	1.8	189.2	21.8	10.3	1.4	143.7	16.6	190.2
	09:39	0.7	176.2	13.0	10.2	0.6	136.0	10.0	187.3
	09:40	1.0	182.7	16.4	11.0	0.7	130.5	11.7	183.4
	09:41	1.2	191.6	19.6	11.3	0.8	132.1	13.5	180.0
	09:42	2.8	200.7	27.9	11.7	1.9	133.3	18.5	180.6
	09:43	3.8	213.3	35.0	11.5	2.5	143.9	23.6	188.7
Average =		1.1	198.9	22.7	10.9	0.8	143.4	16.2	183.8
Geometric Avg. =		0.6	198.6	21.5	10.9	0.4	143.2	15.5	183.8
Maximum =		3.8	216.6	40.8	11.7	2.5	159.4	28.8	190.2
Minimum =		0.0	176.2	12.0	10.2	0.0	130.5	9.2	177.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		29.9	5369.8	613.0	293.3	20.9	3872.5	437.4	4962.7

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Run06

Site Name: UNIT3
Time of Report: 03/26/08 10:32
Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	09:54	3.5	210.6	27.6	11.4	2.4	144.2	18.9	176.9
	09:55	4.7	206.8	38.2	11.9	3.1	134.2	24.8	176.2
	09:56	5.9	214.0	40.4	11.7	3.9	142.0	26.8	186.8
	09:57	5.3	199.7	20.7	9.9	4.2	158.6	16.4	188.9
	09:58	2.7	203.7	17.0	10.5	2.0	151.8	12.6	188.3
	09:59	1.9	211.9	13.8	10.6	1.4	157.6	10.2	188.9
	10:00	1.6	205.6	11.5	10.0	1.3	161.5	9.0	187.9
	10:01	1.5	193.2	10.6	10.3	1.2	147.8	8.1	182.9
	10:02	2.7	191.6	15.0	10.9	1.9	138.2	10.8	182.9
	10:03	3.7	196.3	16.6	10.4	2.8	148.8	12.6	188.9
	10:04	4.0	190.6	14.4	9.6	3.2	154.9	11.7	186.6
	10:05	3.0	197.4	12.6	10.5	2.2	147.5	9.4	184.8
	10:06	2.1	188.3	12.6	10.4	1.6	142.6	9.5	182.1
	10:07	2.0	185.8	15.6	10.6	1.5	137.5	11.6	183.0
	10:08	2.5	179.9	16.3	10.3	1.9	137.6	12.4	185.1
	10:09	2.6	183.6	13.4	10.3	2.0	140.3	10.3	183.4
	10:10	2.4	192.9	18.3	10.6	1.8	143.5	13.6	183.6
	10:11	2.8	199.8	19.2	10.5	2.1	148.9	14.3	184.9
	10:12	2.9	198.1	18.8	10.1	2.2	154.4	14.6	184.4
	10:13	2.5	206.1	18.9	10.5	1.9	154.5	14.2	182.9
	10:14	2.6	205.3	18.2	10.5	1.9	153.6	13.6	182.8
	10:15	3.1	202.1	18.2	10.2	2.4	154.9	13.9	181.4
	10:16	3.3	207.0	22.6	10.6	2.4	153.9	16.8	179.9
	10:17	3.7	211.7	26.1	11.0	2.6	150.1	18.5	180.3
	10:18	4.5	216.1	20.7	10.5	3.4	161.9	15.5	182.8
	10:19	4.5	211.3	21.2	10.3	3.5	161.2	16.2	185.2
	10:20	4.0	204.2	17.5	10.0	3.1	159.6	13.7	186.7
Average =		3.2	200.5	19.1	10.5	2.4	149.7	14.1	184.0
Geometric Avg. =		3.0	200.3	18.1	10.5	2.2	149.5	13.5	184.0
Maximum =		5.9	216.1	40.4	11.9	4.2	161.9	26.8	188.9
Minimum =		1.5	179.9	10.6	9.6	1.2	134.2	8.1	176.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		85.8	5413.8	516.1	283.9	63.8	4041.4	380.3	4968.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/26/2008 to 03/26/2008

Run 07

Site Name: UNIT3

Data Averaging Type: 1m

Time of Report: 03/26/08 11:10

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	10:31	0.9	194.6	14.9	9.7	0.8	156.7	12.0	183.8
	10:32	1.5	199.1	18.5	10.4	1.1	151.0	14.0	182.8
	10:33	2.2	200.2	20.0	10.2	1.7	153.6	15.4	185.3
	10:34	1.4	190.4	16.1	9.5	1.1	155.6	13.2	187.4
	10:35	0.7	191.1	14.2	9.5	0.6	157.2	11.7	190.1
	10:36	0.2	195.4	9.6	9.0	0.2	167.1	8.2	187.6
	10:37	0.0	194.1	8.4	9.3	0.0	162.5	7.0	186.0
	10:38	0.2	193.5	10.1	9.5	0.1	158.4	8.3	183.6
	10:39	0.7	199.1	10.7	9.9	0.6	157.3	8.4	184.5
	10:40	0.6	192.5	11.8	9.2	0.5	162.3	10.0	184.7
	10:41	0.5	201.9	12.7	9.9	0.4	159.8	10.1	184.2
	10:42	1.0	207.1	13.5	9.8	0.8	164.7	10.7	183.1
	10:43	0.7	208.0	13.5	9.6	0.5	168.4	10.9	183.4
	10:44	0.8	200.1	13.5	9.9	0.6	158.5	10.7	181.8
	10:45	1.7	201.8	21.7	10.3	1.3	153.4	16.5	182.1
	10:46	1.7	202.1	16.9	9.9	1.3	159.9	13.4	183.3
	10:47	1.5	196.7	17.3	10.0	1.2	153.9	13.5	182.2
	10:48	2.3	196.6	18.1	10.4	1.7	148.0	13.6	182.4
	10:49	2.0	193.2	17.5	9.7	1.6	155.9	14.2	185.0
	10:50	1.1	186.4	20.7	9.7	0.9	150.6	16.7	185.2
	10:51	2.0	195.2	19.5	10.1	1.6	151.3	15.1	184.4
	10:52	1.8	202.7	18.0	9.8	1.5	161.9	14.3	187.7
	10:53	0.8	203.7	11.4	8.9	0.7	175.3	9.8	186.0
	10:54	1.1	213.1	14.3	10.1	0.8	166.0	11.1	186.6
	10:55	1.7	212.8	12.3	9.4	1.4	176.6	10.2	189.7
	10:56	0.3	202.4	6.5	8.7	0.3	177.0	5.7	186.7
	10:57	0.8	203.5	10.3	10.0	0.7	159.1	8.1	184.9
Average =		1.1	199.2	14.5	9.7	0.9	160.1	11.6	185.0
Geometric Avg. =		0.7	199.1	13.9	9.7	0.8	159.9	11.2	185.0
Maximum =		2.3	213.1	21.7	10.4	1.7	177.0	16.7	190.1
Minimum =		0.0	186.4	6.5	8.7	0.0	148.0	5.7	181.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		30.3	5377.4	391.9	262.6	24.0	4321.7	312.7	4994.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Run 08

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 11:46
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	11:09	2.4	194.1	15.1	9.9	1.9	154.2	12.0	183.3
	11:10	3.1	195.2	19.7	10.4	2.3	147.3	14.9	181.5
	11:11	3.0	197.1	18.0	10.2	2.3	151.0	13.8	183.2
	11:12	4.2	197.6	20.3	9.9	3.3	155.8	16.0	184.5
	11:13	5.6	200.2	21.2	10.2	4.4	154.8	16.4	184.7
	11:14	4.2	194.3	15.6	9.9	3.4	153.8	12.4	182.0
	11:15	2.8	191.7	19.9	10.2	2.1	146.9	15.3	181.1
	11:16	3.6	198.7	24.2	10.6	2.7	147.7	18.0	184.1
	11:17	3.2	201.3	18.9	9.5	2.6	165.0	15.5	185.4
	11:18	1.2	207.4	17.0	9.9	1.0	164.1	13.5	185.6
	11:19	1.8	210.4	17.6	10.0	1.4	164.9	13.8	184.3
	11:20	1.1	198.6	14.5	9.8	0.9	159.1	11.6	185.5
	11:21	0.8	190.7	16.0	9.4	0.6	157.3	13.2	185.6
	11:22	1.0	186.1	13.9	9.7	0.8	149.8	11.2	185.1
	11:23	1.2	187.9	12.9	9.9	1.0	149.0	10.3	183.8
	11:24	1.2	192.2	16.2	9.8	0.9	152.9	12.9	183.9
	11:25	1.0	198.3	17.6	10.1	0.8	153.8	13.6	183.5
	11:26	1.1	210.5	19.3	10.0	0.8	164.4	15.0	182.5
	11:27	0.3	213.3	16.0	9.9	0.3	169.1	12.7	185.2
	11:28	0.3	208.4	17.3	9.4	0.3	172.0	14.3	189.9
	11:29	0.0	191.6	9.3	8.6	0.0	169.0	8.2	184.8
	11:30	0.0	186.5	11.5	9.8	0.0	149.6	9.2	180.1
	11:31	0.4	192.6	16.9	10.2	0.3	147.6	13.0	184.3
	11:32	0.6	190.3	14.5	9.3	0.5	158.9	12.1	185.9
	11:33	0.1	185.6	9.5	9.2	0.1	156.1	8.0	183.9
	11:34	0.3	192.0	15.3	9.9	0.2	151.4	12.0	184.0
	11:35	0.4	196.2	14.5	9.6	0.3	159.0	11.7	182.7
Average =		1.7	196.6	16.4	9.8	1.3	156.5	13.0	184.1
Geometric Avg. =		0.7	196.5	16.0	9.8	0.8	156.3	12.8	184.1
Maximum =		5.6	213.3	24.2	10.6	4.4	172.0	18.0	189.9
Minimum =		0.0	185.6	9.3	8.6	0.0	146.9	8.0	180.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		45.0	5308.7	442.9	265.6	35.2	4224.5	350.6	4970.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Run 09

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 12:23
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	11:46	0.1	193.4	12.5	9.5	0.1	159.1	10.3	185.5
	11:47	0.3	191.0	14.9	9.7	0.2	153.9	12.0	186.0
	11:48	0.1	188.2	12.4	9.5	0.1	154.6	10.2	185.2
	11:49	0.2	183.6	14.3	9.6	0.2	149.4	11.6	185.1
	11:50	0.6	190.0	18.1	9.8	0.4	152.3	14.5	184.6
	11:51	0.6	196.8	20.4	9.9	0.5	155.9	16.2	183.2
	11:52	0.8	199.6	21.8	9.8	0.6	159.4	17.4	185.0
	11:53	0.6	201.1	17.5	9.7	0.5	161.4	14.1	185.3
	11:54	1.1	205.7	21.7	9.7	0.9	165.9	17.5	192.3
	11:55	0.1	189.4	12.3	8.1	0.1	174.0	11.3	185.9
	11:56	0.1	203.3	15.8	10.0	0.1	159.2	12.4	182.1
	11:57	1.0	207.5	21.7	10.0	0.8	162.1	17.0	187.8
	11:58	0.1	192.5	11.8	8.3	0.1	174.8	10.7	187.5
	11:59	0.1	190.0	11.6	9.2	0.1	160.3	9.8	183.6
	12:00	0.5	188.3	15.9	9.8	0.4	149.9	12.6	187.8
	12:01	0.2	176.3	12.0	8.5	0.2	157.3	10.7	185.1
	12:02	0.1	187.6	11.9	9.5	0.1	154.2	9.8	182.4
	12:03	0.9	198.0	16.4	9.9	0.7	156.7	13.0	187.7
	12:04	0.5	182.4	13.4	8.4	0.4	164.3	12.1	185.0
	12:05	0.1	189.0	16.3	9.4	0.1	155.7	13.4	181.6
	12:06	0.9	199.5	23.0	9.8	0.7	159.4	18.4	187.7
	12:07	0.2	192.1	15.3	8.1	0.2	176.3	14.0	188.3
	12:08	0.0	186.2	13.6	8.6	0.0	164.9	12.0	182.0
	12:09	0.3	199.9	15.9	9.9	0.3	158.6	12.6	184.0
	12:10	0.6	196.4	15.0	8.8	0.5	171.2	13.1	186.8
	12:11	0.2	186.1	13.7	8.6	0.1	164.6	12.1	183.0
	12:12	0.7	183.9	16.4	9.8	0.5	146.7	13.1	180.2
Average =		0.4	192.5	15.8	9.3	0.3	160.1	13.0	185.2
Geometric Avg. =		0.3	192.4	15.4	9.3	0.2	159.9	12.8	185.2
Maximum =		1.1	207.5	23.0	10.0	0.9	176.3	18.4	192.3
Minimum =		0.0	176.3	11.6	8.1	0.0	146.7	9.8	180.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		11.1	5197.6	425.7	251.9	9.0	4322.3	352.0	5000.7

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/26/2008 to 03/26/2008

Run 10

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/26/08 13:00
Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/26/08	12:23	1.3	191.6	15.6	9.0	1.1	163.4	13.3	187.2
	12:24	0.8	192.6	15.6	9.0	0.7	164.7	13.3	187.5
	12:25	0.1	192.7	11.4	8.9	0.1	167.0	9.9	185.3
	12:26	0.2	193.8	10.8	9.1	0.2	164.5	9.2	184.7
	12:27	0.4	189.9	11.0	9.0	0.3	162.0	9.4	185.9
	12:28	0.3	192.6	7.7	8.6	0.3	170.0	6.8	187.1
	12:29	0.2	194.0	6.9	8.5	0.2	173.3	6.2	187.7
	12:30	0.0	193.4	5.1	8.5	0.0	173.0	4.6	185.8
	12:31	0.1	201.2	5.8	8.9	0.1	173.5	5.0	185.0
	12:32	0.2	192.9	7.0	8.6	0.2	171.0	6.2	184.1
	12:33	0.4	197.0	9.4	9.0	0.3	169.3	8.1	185.9
	12:34	0.6	193.0	7.4	8.6	0.6	170.1	6.6	184.5
	12:35	0.5	193.8	9.3	9.0	0.5	165.7	7.9	184.7
	12:36	0.8	190.7	10.8	9.0	0.7	163.7	9.3	183.6
	12:37	0.9	193.7	13.7	9.3	0.8	162.0	11.4	183.3
	12:38	1.0	192.8	12.6	9.1	0.8	163.4	10.7	184.1
	12:39	0.7	191.2	11.5	9.1	0.6	162.1	9.7	186.8
	12:40	0.5	189.5	9.3	8.4	0.5	169.9	8.3	184.5
	12:41	0.2	192.7	8.4	9.0	0.2	165.3	7.2	183.5
	12:42	0.6	194.8	10.4	9.1	0.5	164.9	8.8	181.6
	12:43	0.9	198.3	11.5	9.4	0.8	164.3	9.5	184.5
	12:44	1.3	198.3	11.3	8.9	1.1	170.7	9.7	182.8
	12:45	1.2	199.4	12.5	9.5	1.0	163.1	10.2	181.7
	12:46	1.7	197.0	12.9	9.5	1.4	161.7	10.6	180.1
	12:47	1.5	191.8	16.5	9.7	1.2	154.2	13.3	179.8
	12:48	1.8	191.4	16.9	9.7	1.4	154.6	13.6	182.4
	12:49	2.0	192.6	15.4	9.2	1.7	161.8	13.0	185.1
Average =		0.8	193.8	11.0	9.0	0.6	165.5	9.3	184.4
Geometric Avg. =		0.5	193.8	10.5	9.0	0.4	165.5	9.0	184.4
Maximum =		2.0	201.2	16.9	9.7	1.7	173.5	13.6	187.7
Minimum =		0.0	189.5	5.1	8.4	0.0	154.2	4.6	179.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		20.5	5232.5	296.9	243.7	17.2	4469.3	252.0	4979.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated