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Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, FL 33314

REPORT ON RELATIVE ACCURACY TEST AUDIT

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

CleanAir Project No: 10955-3
Revision 0: May 5, 2010

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.

Submitted by,

Scott Brown
Project Manager
sbrown@cleanair.com
(800) 627-0033 ext. 4544

Reviewed by,

Scott Lehmann
Midwest Engineering Group Leader
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Wheelabrator South Broward Inc.

A Waste Management Company

4400 South State Road 7
Ft. Lauderdale, FL 33314
(954) 581-6606
(954) 581-6705 Fax

May 6, 2010   UPS#70072680000087713974

Mr. Lennon Anderson
Air Program Administrator
Florida Department of Environmental Protection
Southeast District
400 North Congress Ave., Suite 200
West Palm Beach, FL 33401

RECEIVED

MAY 07 2010

BUREAU OF
AIR REGULATION

Re: Wheelabrator South Broward
        2010 Annual Compliance Stack Test and RATA Reports

Dear Mr. Anderson:

Please find enclosed a copy of the final compliance stack test report and the continuous emissions
monitoring system certification RATA report for testing conducted on March 22-24 of this year by Clean
Air Engineering, Inc.

I, the undersigned, am a responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source
addressed in this submittal. I hereby certify, based on information and belief formed after reasonable
inquiry, that the statements and information in this document are true, accurate and complete.

If there are any questions, please contact this office at (954) 581-6606.

Sincerely,

Ganeesh Siewrattan
Operations Manager

cc: USEPA, Region IV, Pesticides and Toxics Management Division, Air & EPCRA Enforcement
        Branch, Air Enforcement Section   (with)   UPS#70072680000087713981
        FDEP, Tallahassee, Bureau of Air Regulation, New Source Review Section,
                                (with)   UPS#70072680000087713998
        Broward County Department of Planning and Environmental Protection, Air Quality Division
                                (with)   UPS#70072680000087714001
        Chuck Faller (with)
        Ram Tewari – BCWRS (without)
        Tim Porter (without)
        Rob French – MPI (with)   UPS#70072680000087714018

WM.
WASTE MANAGEMENT

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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

CleanAir Project No: 10955-3

REPORT ON RELATIVE ACCURACY TEST AUDIT

DRAFT REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
D0a	04/23/10	All	Draft version of original document.

FINAL REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
0	05/05/10	All	Final version of original document.

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CONTENTS

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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

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 (EPA) and the Florida Department of Environmental Protection (FDEP).

Key Project Participants

Individuals responsible for coordinating and conducting the test program were:

> C. Faller – Wheelbrator South Broward
> S. Brown – CleanAir
> E. Dieter – CleanAir

Test Program Parameters

The testing performed at the Units 1, 2 and 3 fabric filter (FF) baghouse outlets from March 22 through 24, 2010, included the following emissions measurements:

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

Revision 0, Final

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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

CleanAir Project No: 10955-3

TEST PROGRAM SYNOPSIS

Results Summary

Table 1-1 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 2-6. The O_2 RATA results are presented for comparison purposes only.

Table 1-1:
Summary of Test Results

Monitor Constituent	CEM Serial Number	RM Avg	CEM Avg	Difference	95% CC	Relative Accuracy Result	Limit	Basis of Limit
Unit 1 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	278	4.3	3.4	1.0	0.198	4.0%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	278	196.7	198.9	-2.2	0.705	1.4%	10%	S[2]
CO (ppmdv @ 7% O_2)	278	12.9	13.3	-0.3	0.180	0.5%	5%	S[3]
Unit 2 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	277	12.0	10.6	1.4	0.178	5.5%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	277	187.2	185.6	1.5	0.508	1.0%	10%	S[2]
CO (ppmdv @ 7% O_2)	277	7.6	8.8	-1.2	0.095	1.3%	5%	S[3]
Unit 3 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	279	13.6	11.7	1.9	0.355	7.7%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	279	178.9	195.2	-16.3	0.271	8.1%	10%	S[2]
CO (ppmdv @ 7% O_2)	279	8.9	10.9	-2.0	0.189	2.2%	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: 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 after each day's calibration error check. The converter check data is presented in Appendix E.

End of Section 1 – Project Overview

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FT. LAUDERDALE, FL

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

Run No.	Start Time	Date (2010)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	8:03	Mar 23	8.88	8.80	0.08	0.90%	
2	8:37	Mar 23	9.08	9.00	0.08	0.90%	
3	9:11	Mar 23	8.89	8.80	0.09	1.00%	
4	9:45	Mar 23	8.63	8.60	0.03	0.30%	
5	10:19	Mar 23	9.02	9.00	0.02	0.21%	
6	10:52	Mar 23	9.47	9.40	0.07	0.79%	
7	11:26	Mar 23	9.04	8.90	0.14	1.60%	*
8	12:00	Mar 23	9.24	9.20	0.04	0.46%	
9	12:33	Mar 23	9.24	9.20	0.04	0.46%	
10	13:07	Mar 23	8.72	8.70	0.02	0.22%	
Average			9.02	8.97	0.05	0.59%	

Standard Deviation	0.029	
Confidence Coefficient (CC)	0.022	
		Limit
Avg. Absolute Diff. + CC (%dv)	0.07	NA

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

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	8:03	Mar 23	7.43	6.10	1.33	17.88%	
2	8:37	Mar 23	5.43	4.10	1.33	24.47%	*
3	9:11	Mar 23	4.65	3.50	1.15	24.67%	
4	9:45	Mar 23	3.01	2.20	0.81	26.83%	
5	10:19	Mar 23	4.47	3.30	1.17	26.20%	
6	10:52	Mar 23	4.79	3.60	1.19	24.82%	
7	11:26	Mar 23	3.13	2.30	0.83	26.51%	
8	12:00	Mar 23	3.57	2.90	0.67	18.74%	
9	12:33	Mar 23	2.59	2.00	0.59	22.76%	
10	13:07	Mar 23	5.38	4.40	0.98	18.14%	
Average			4.33	3.37	0.97	22.32%	

Standard Deviation	0.257	
Confidence Coefficient (CC)	0.198	
		Limits
Relative Accuracy (as % of RM)	26.9%	20.0%
Relative Accuracy (as % of Applicable Std.)	4.0%	20.0%
Standard = 29 (ppm@7%O2)		

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

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FT. LAUDERDALE, FL

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	8:03	Mar 23	192.57	195.90	-3.33	-1.73%	*
2	8:37	Mar 23	194.34	196.30	-1.96	-1.01%	
3	9:11	Mar 23	196.05	198.10	-2.05	-1.04%	
4	9:45	Mar 23	192.14	195.40	-3.26	-1.70%	
5	10:19	Mar 23	201.41	204.60	-3.19	-1.58%	
6	10:52	Mar 23	213.22	216.20	-2.98	-1.40%	
7	11:26	Mar 23	191.82	193.50	-1.68	-0.87%	
8	12:00	Mar 23	193.64	196.50	-2.86	-1.48%	
9	12:33	Mar 23	193.18	194.30	-1.12	-0.58%	
10	13:07	Mar 23	194.13	194.90	-0.77	-0.40%	
Average			196.66	198.87	-2.21	-1.12%	

Standard Deviation	0.917	
Confidence Coefficient (CC)	0.705	
		Limits
Relative Accuracy (as % of RM)	1.5%	20.0%
Relative Accuracy (as % of Applicable Std.)	1.4%	10.0%
Standard = 205 (ppm@7%O2)		

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

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	8:03	Mar 23	18.87	19.50	-0.63	-3.35%	
2	8:37	Mar 23	12.81	13.40	-0.59	-4.62%	
3	9:11	Mar 23	13.37	13.50	-0.13	-1.00%	
4	9:45	Mar 23	11.52	11.60	-0.08	-0.68%	
5	10:19	Mar 23	9.51	9.80	-0.29	-3.07%	
6	10:52	Mar 23	12.50	12.90	-0.40	-3.21%	
7	11:26	Mar 23	12.51	13.10	-0.59	-4.69%	
8	12:00	Mar 23	13.87	14.10	-0.23	-1.63%	
9	12:33	Mar 23	16.07	17.20	-1.13	-7.01%	*
10	13:07	Mar 23	11.47	11.50	-0.03	-0.22%	
Average			12.94	13.27	-0.33	-2.55%	

Standard Deviation	0.234	
Confidence Coefficient (CC)	0.180	
		Limits
Relative Accuracy (as % of RM)	3.9%	10.0%
Relative Accuracy (as % of Applicable Std.)	0.5%	5.0%
Standard = 100 (ppm@7%O2)		

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RESULTS

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

Run No.	Start Time	Date (2010)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	7:38	Mar 24	9.07	9.00	0.07	0.81%	
2	8:12	Mar 24	9.00	8.90	0.10	1.08%	
3	8:46	Mar 24	9.18	8.90	0.28	3.07%	
4	9:20	Mar 24	9.37	9.10	0.27	2.91%	
5	9:54	Mar 24	9.39	9.30	0.09	1.00%	
6	10:28	Mar 24	9.03	8.90	0.13	1.43%	
7	11:02	Mar 24	8.93	8.60	0.33	3.69%	*
8	11:36	Mar 24	9.13	8.90	0.23	2.51%	
9	12:10	Mar 24	9.36	9.30	0.06	0.68%	
10	12:44	Mar 24	9.21	9.00	0.21	2.25%	
Average			9.19	9.03	0.16	1.75%	

		RATA
Standard Deviation	0.087	
Confidence Coefficient (CC)	0.067	
		Limit
Avg. Absolute Diff. + CC (%dv)	0.23	NA

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

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:38	Mar 24	13.48	12.40	1.08	8.00%	
2	8:12	Mar 24	6.88	5.10	1.78	25.87%	*
3	8:46	Mar 24	9.11	7.50	1.61	17.71%	
4	9:20	Mar 24	13.79	12.30	1.49	10.79%	
5	9:54	Mar 24	14.77	13.50	1.27	8.60%	
6	10:28	Mar 24	13.09	11.50	1.59	12.16%	
7	11:02	Mar 24	12.03	10.90	1.13	9.41%	
8	11:36	Mar 24	9.15	7.40	1.75	19.12%	
9	12:10	Mar 24	9.25	7.70	1.55	16.75%	
10	12:44	Mar 24	13.72	12.40	1.32	9.63%	
Average			12.04	10.62	1.42	11.80%	

		Limits
Standard Deviation	0.231	
Confidence Coefficient (CC)	0.178	
		Limits
Relative Accuracy (as % of RM)	13.3%	20.0%
Relative Accuracy (as % of Applicable Std.)	5.5%	10.0%
Standard = 29 (ppm@7%O2)		

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

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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

CleanAir Project No: 10955-3

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:38	Mar 24	187.00	185.50	1.50	0.80%	
2	8:12	Mar 24	188.49	187.30	1.19	0.63%	
3	8:46	Mar 24	189.33	186.60	2.73	1.44%	*
4	9:20	Mar 24	189.90	187.70	2.20	1.16%	
5	9:54	Mar 24	183.91	182.00	1.91	1.04%	
6	10:28	Mar 24	181.53	180.30	1.23	0.68%	
7	11:02	Mar 24	191.87	191.60	0.27	0.14%	
8	11:36	Mar 24	186.73	185.10	1.63	0.87%	
9	12:10	Mar 24	180.27	177.70	2.57	1.43%	
10	12:44	Mar 24	194.72	193.30	1.42	0.73%	
Average			187.16	185.61	1.55	0.83%	

Standard Deviation	0.661		
Confidence Coefficient (CC)	0.508		
		Limits	
Relative Accuracy (as % of RM)	1.1%	20.0%	
Relative Accuracy (as % of Applicable Std.) Standard = 205 (ppm@7%O2)	1.0%	10.0%	

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

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:38	Mar 24	9.68	10.90	-1.22	-12.64%	
2	8:12	Mar 24	7.71	9.00	-1.29	-16.75%	
3	8:46	Mar 24	7.15	8.50	-1.35	-18.80%	*
4	9:20	Mar 24	6.59	7.70	-1.11	-16.93%	
5	9:54	Mar 24	8.73	9.90	-1.17	-13.40%	
6	10:28	Mar 24	6.85	8.10	-1.25	-18.16%	
7	11:02	Mar 24	7.36	8.50	-1.14	-15.45%	
8	11:36	Mar 24	6.43	7.60	-1.17	-18.22%	
9	12:10	Mar 24	7.96	9.30	-1.34	-16.80%	
10	12:44	Mar 24	7.49	8.40	-0.91	-12.15%	
Average			7.64	8.82	-1.18	-15.41%	

Standard Deviation	0.124		
Confidence Coefficient (CC)	0.095		
		Limits	
Relative Accuracy (as % of RM)	16.7%	10.0%	
Relative Accuracy (as % of Applicable Std.) Standard = 100 (ppm@7%O2)	1.3%	5.0%	

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

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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

CleanAir Project No: 10955-3

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

Run No.	Start Time	Date (2010)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	7:44	Mar 22	9.68	9.70	-0.02	-0.20%	
2	8:20	Mar 22	9.39	9.50	-0.11	-1.20%	
3	8:54	Mar 22	10.07	10.00	0.07	0.70%	
4	9:28	Mar 22	10.15	10.20	-0.05	-0.51%	
5	10:01	Mar 22	9.80	9.80	0.00	0.04%	
6	10:35	Mar 22	9.21	9.30	-0.09	-0.96%	
7	11:09	Mar 22	9.58	9.60	-0.02	-0.25%	
8	11:43	Mar 22	9.49	9.50	-0.01	-0.08%	
9	12:17	Mar 22	9.29	9.40	-0.11	-1.21%	
10	12:51	Mar 22	9.18	9.30	-0.12	-1.26%	*
Average			9.63	9.67	-0.04	-0.39%	

Standard Deviation	0.060	
Confidence Coefficient (CC)	0.046	
		Limit
Avg. Absolute Diff. + CC (%dv)	0.10	NA

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

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:44	Mar 22	13.30	12.00	1.30	9.74%	
2	8:20	Mar 22	15.15	12.90	2.25	14.83%	
3	8:54	Mar 22	13.51	11.30	2.21	16.33%	
4	9:28	Mar 22	14.03	11.40	2.63	18.77%	
5	10:01	Mar 22	13.97	12.10	1.87	13.38%	
6	10:35	Mar 22	11.66	9.40	2.26	19.40%	*
7	11:09	Mar 22	14.68	12.90	1.78	12.15%	
8	11:43	Mar 22	9.64	7.60	2.04	21.15%	
9	12:17	Mar 22	13.72	12.50	1.22	8.90%	
10	12:51	Mar 22	13.99	12.40	1.59	11.37%	
Average			13.55	11.68	1.88	13.84%	

	RATA	
Standard Deviation	0.461	
Confidence Coefficient (CC)	0.355	
		Limits
Relative Accuracy (as % of RM)	16.5%	20.0%
Relative Accuracy (as % of Applicable Std.)	7.7%	20.0%
Standard = 29 (ppm@7%O2)		

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

WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference
1	7:44	Mar 22	178.10	195.50	-17.40	-9.77%
2	8:20	Mar 22	178.33	194.70	-16.37	-9.18%
3	8:54	Mar 22	179.96	196.60	-16.64	-9.25%
4	9:28	Mar 22	182.99	199.70	-16.71	-9.13%
5	10:01	Mar 22	176.31	192.90	-16.59	-9.41%
6	10:35	Mar 22	179.70	195.90	-16.20	-9.02%
7	11:09	Mar 22	179.04	195.10	-16.06	-8.97%
8	11:43	Mar 22	176.77	192.70	-15.93	-9.01%
9	12:17	Mar 22	177.93	193.60	-15.67	-8.81%
10	12:51	Mar 22	179.40	195.50	-16.10	-8.97%
Average			178.94	195.19	-16.25	-9.08%

	RATA	
Standard Deviation	0.353	
Confidence Coefficient (CC)	0.271	
		Limits
Relative Accuracy (as % of RM)	9.2%	20.0%
Relative Accuracy (as % of Applicable Std.)	8.1%	10.0%

Standard = 205 (ppm@7%O2)

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

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

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:44	Mar 22	8.61	11.10	-2.49	-28.95%	
2	8:20	Mar 22	8.42	10.40	-1.98	-23.59%	
3	8:54	Mar 22	8.55	10.60	-2.05	-23.98%	
4	9:28	Mar 22	11.13	13.70	-2.57	-23.07%	*
5	10:01	Mar 22	12.01	14.00	-1.99	-16.57%	
6	10:35	Mar 22	9.35	11.00	-1.65	-17.70%	
7	11:09	Mar 22	7.89	9.90	-2.01	-25.44%	
8	11:43	Mar 22	9.09	11.30	-2.21	-24.26%	
9	12:17	Mar 22	7.98	9.70	-1.72	-21.56%	
10	12:51	Mar 22	7.82	9.80	-1.98	-25.30%	
Average			8.86	10.87	-2.01	-22.69%	

	RATA	
Standard Deviation	0.246	
Confidence Coefficient (CC)	0.189	
		Limits
Relative Accuracy (as % of RM)	24.8%	10.0%
Relative Accuracy (as % of Applicable Std.)	2.2%	5.0%

Standard = 100 (ppm@7%O2)

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

End of Section 2 – Results

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DESCRIPTION OF INSTALLATION   3-1

PROCESS DESCRIPTION

The South Broward Resource Recovery facility, located in Ft. Lauderdale, Florida, operates three (3) 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 an FF baghouse for the control of particulate emissions. The control equipment is manufactured by Wheelabrator Air Pollution Control, Inc. Each FF 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). With the recent addition of M and C chillers, the MCS-100 /e analyzers measure pollutant and diluent concentrations on a cold-dry 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 (O_2), carbon dioxide (CO_2), carbon monoxide (CO), sulfur dioxide (SO_2) and nitrogen oxides (NO_X) 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 data loggers. A general CEMs schematic is shown in Figure 3-1 on page 3-3.

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 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 cold-dry 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°F to prevent condensation prior to the chillers.

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DESCRIPTION OF INSTALLATION   3-2

PERKIN ELMER MCS-100 /E ANALYZER (CONTINUED)

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, CO_2 and O_2 measurement signals and operational status outputs are sent to the ESC 8816 data logger.

ESC DAS

The DAS consists of three (3) Model 8816 data loggers, a central data polling and reporting computer and engineering workstation. The 8816 data loggers receive the measurement signals from the MCS-100 /e analyzers, and transmit the data to the central computer. The 8816 data 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 data loggers store up to four (4) weeks of hourly CEM data. Consequently, in the event the central computer goes down, data recording and archiving is not affected. The data 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 data 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 data logger. No other adjustments or corrections are performed on the data.

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DESCRIPTION OF INSTALLATION

3-3

CEMS SCHEMATIC

Figure 3-1 is a general schematic of each of the outlet CEM systems. Figure 3-2 on page 3-4 presents the RM and CEM outlet sampling locations, as well as a general facility process flow diagram.
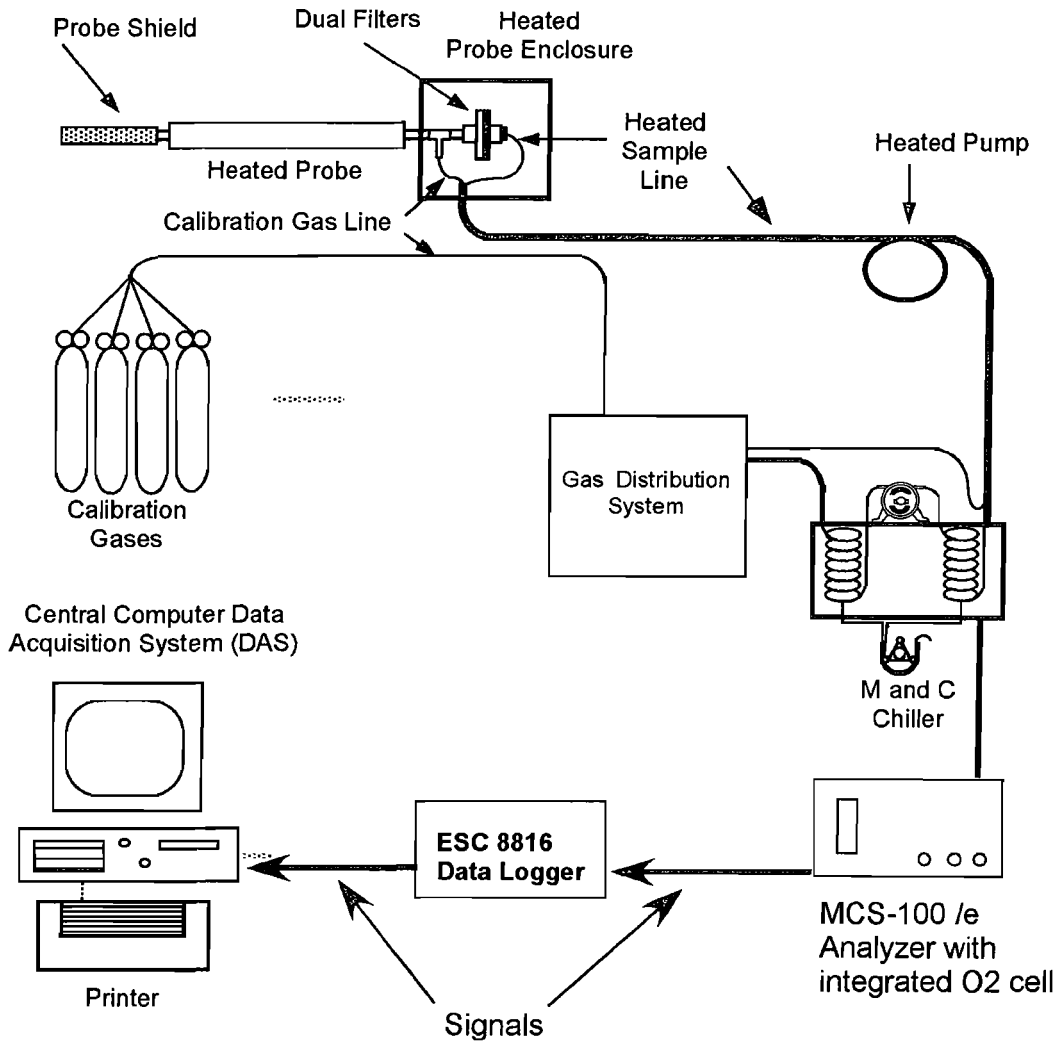

Figure 3-1: General CEMS Schematic

Revision 0, Final

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CEMS SCHEMATIC (CONTINUED)
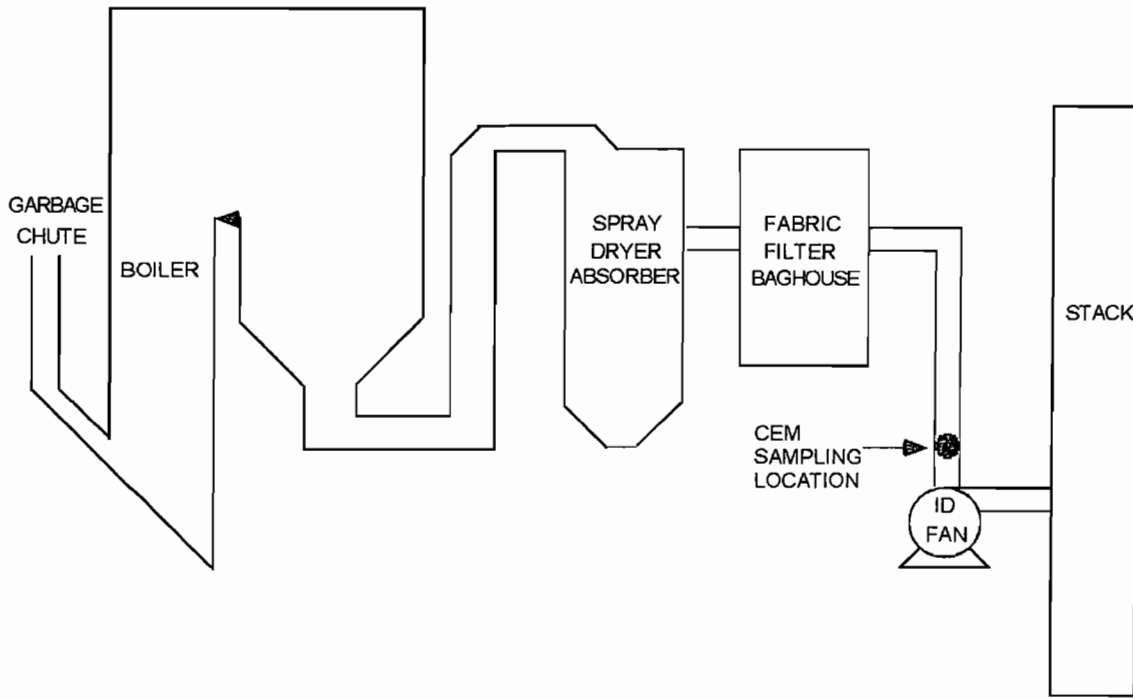
Figure 3-2: Process Flow Diagram and CEM Locations

CleanAir

## DESCRIPTION OF INSTALLATION

3-5

DESCRIPTION OF SAMPLING LOCATIONS
Sampling point locations were determined according to EPA Method 1.

Table 3-1 outlines the sampling point configurations. Figure 3-3 on page 3-6 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

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DESCRIPTION OF INSTALLATION   3-6

DESCRIPTION OF SAMPLING LOCATIONS (CONTINUED)
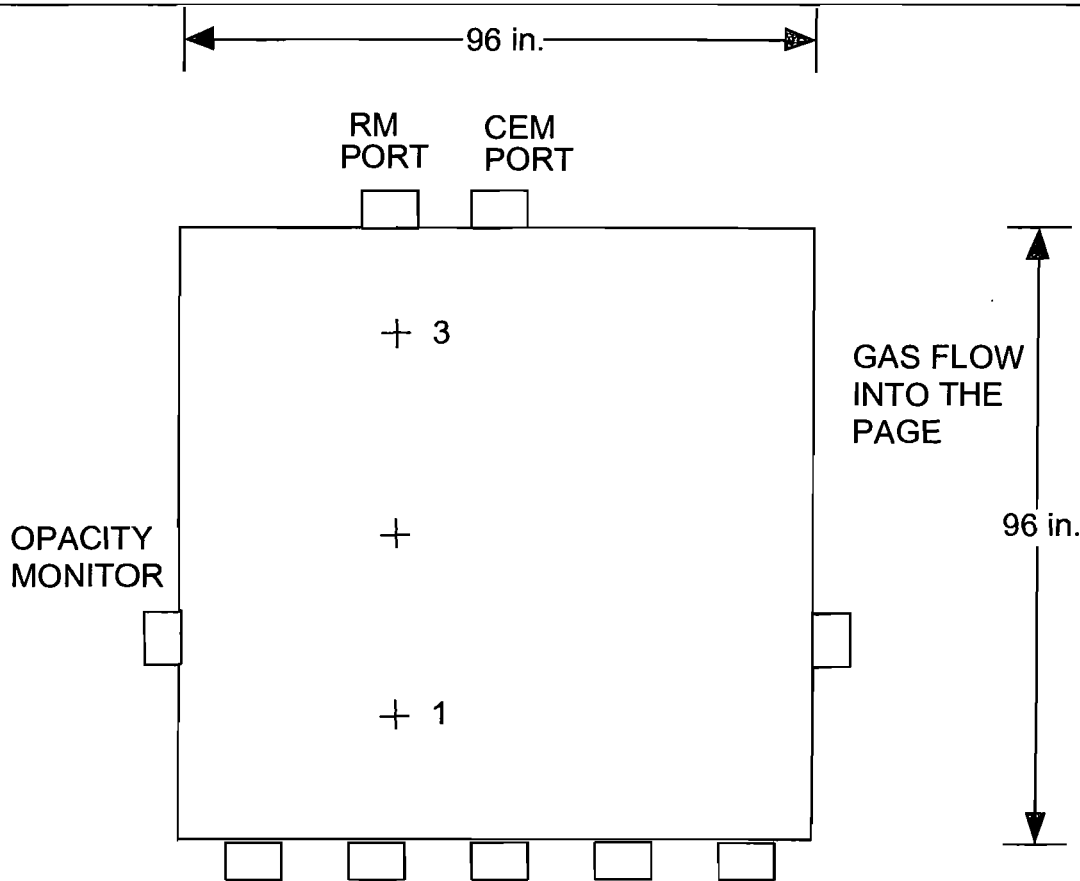
Sampling Point	Port to Point Distance (in.)
1	80
2	48
3	16

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 EPA 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 EPA "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

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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)	$\leq$ 1.33 x Expected Maximum	0-14.1
Carbon Dioxide (CO_2)	$\leq$ 1.33 x Expected Maximum	0-13.9%
Sulfur Dioxide (SO_2)	$\leq$ 1.33 x Expected Maximum	0-89.9 ppm
Nitrogen Oxides (NO_x)	$\leq$ 1.33 x Expected Maximum	0-453 ppm
Carbon Monoxide (CO)	$\leq$ 1.33 x Expected Maximum	0-98.5 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. $\leq$60 min. Sample Time	1-min. intervals or 30 measurements (less restrictive)	One reading per second
Recording Freq. $\leq$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)	EPA Protocol 1	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
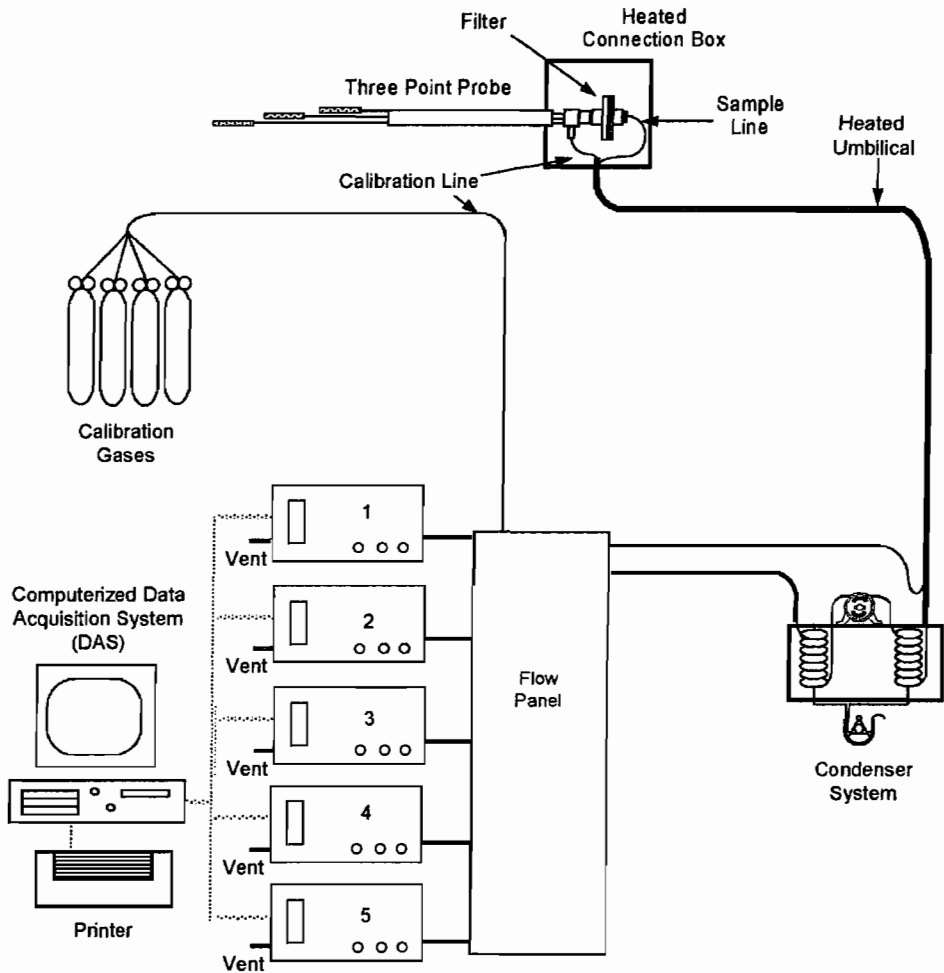
Number	Gas	Monitor	Range Used	Calibration Gas Concentrations
1	NO_x	T.E.I. 42i-HL	0-453 ppm	0, 225, 453
2	SO_2	Western Research 921L	0-89.9 ppm	0, 44.9, 89.9
3	CO	T.E.I. 48i	0-95.48 ppm	0, 48.2, 95.48
4	O_2	Servomex 1420C	0-14.1 %	0, 6.01, 14.1
5	CO_2	Servomex 1415C	0-13.9 %	0, 5.91, 13.9

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SAMPLE CALCULATIONS

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

CEM Field Sample Calculations
for SO2 FF Outlet 1

Sample data taken from ▮▮▮▮▮▮▮▮▮
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.

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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	=	43.504 ppmdv
	In this case the low cal series for channel 3		

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	=	43.504 ppmdv
	In this case the low cal series for channel 3		
C_{ma}	= concentration of actual calibration gas value	=	44.900 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	=	43.504	ppmdv
	In this case the low cal series for channel 3			
C_{ma}	= concentration of actual calibration gas value	=	44.900	ppmdv
Span	= instrument span value	=	89.900	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	1.55%	**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	=	43.504	ppmdv
	in this case the Low cal series for channel 3			
C_{mf}	= calibration error response concentration for Cal01	=	41.530	ppmdv
Span	= instrument span value	=	89.900	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	2.20%	**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)	=	41.530	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	41.691	ppmdv
Span	= instrument span value	=	89.900	ppmdv
l_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.18%	**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	=	5.351	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average SO2 concentration for Run 1	=	5.978	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	=	44.900	ppmdv
C	= average SO2 concentration for Run 1	=	5.978	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	41.530	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	41.691	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.050	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.007	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	6.423	ppmdv

CEM Emissions Sample Calculations
for SO2 FF Outlet 1

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.

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1. SO2 concentration (ppmdv)

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

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

Where:

C_{DC}	= drift corrected average concentration	= 6.423	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)	= 6.423	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)	= 6.423	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)	= 1.068E-06	lb/dscf

3. SO2 concentration (mg/dscm)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	= 1.068E-06	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)	= 17.103	mg/dscm

FF Outlet 1

4. SO2 concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	1.068E-06	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)	=	18.354	mg/Nm^3 dry

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

$$C(ppmdv @ \; x\%O2) \quad = C(ppmdv) \times \left(\frac{20.9 - x}{20.9 - O_2}\right)$$

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	6.423	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	8.880	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2)	= SO2 concentration corrected to 7% O2 (ppmdv example)	=	7.428	ppmdv @ 7%O2

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

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

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	6.423	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.222	%
C (ppmdv -CO2)	= SO2 concentration corrected to 12% CO2 (ppmdv example)	=	7.541	ppmdv @ 12%CO2

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FF Outlet 1

CEM RATA Sample Calculations
for SO2 FF Outlet 1

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.

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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	=	6.100	ppm@7%O2
C_R	= SO2 value from CleanAir RM Data	=	7.428	ppm@7%O2
D	= SO2 value difference between 2 methods	=	1.328	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= SO2 value from CleanAir RM Data	=	7.428	ppm@7%O2
D	= SO2 value difference between 2 methods	=	1.328	ppm@7%O2
$D_\%$	= SO2 value difference as a percentage of RM Data	=	17.9%	

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	=	6.100	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average SO2 value from Plant CEM Data	=	3.367	ppm@7%O2

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FF Outlet 1

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

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

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	7.428	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	6.100	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.257	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	=	0.257	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.198	ppm@7%O2

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

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

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	7.428	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	6.100	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.198	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	26.879%	
		Limit =	20.000%	

Wheelabrator South Broward

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FF Outlet 1

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

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

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	7.428	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	6.100	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.198	
C_{std}	= SO2 value of applicable standard	=	29.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	4.017%	
		Limit =	20.000%	

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FF Outlet 1

<div align="center">

CEM Field Sample Calculations
for NOX FF Outlet 1

</div>

Sample data taken from ▓▓▓▓▓▓▓▓
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.

041410 125657

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	=	226.086	ppmdv
	In this case the low cal series for channel 4			

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	=	226.086	ppmdv
	In this case the low cal series for channel 4			
C_{ma}	= concentration of actual calibration gas value	=	225.000	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	=	226.086	ppmdv
	In this case the low cal series for channel 4			
C_{ma}	= concentration of actual calibration gas value	=	225.000	ppmdv
Span	= instrument span value	=	453.000	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.24%	**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	=	226.086	ppmdv
	in this case the Low cal series for channel 4			
C_{mf}	= calibration error response concentration for Cal01	=	222.122	ppmdv
Span	= instrument span value	=	453.000	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	0.88%	**Pass**

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

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

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	222.122	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	222.181	ppmdv
Span	= instrument span value	=	453.000	ppmdv
l_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.01%	**Pass**

5. Average Concentration for an entire Run

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

Where:

C_i	= All concentration readings for the entirety of Run 1 for the monitor looking for NOX on channel 4	=	153.468	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average NOX concentration for Run 1	=	164.509	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	=	225.000	ppmdv
C	= average NOX concentration for Run 1	=	164.509	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	222.122	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	222.181	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.717	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	-0.011	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	166.525	ppmdv

CEM Emissions Sample Calculations
for NOX FF Outlet 1

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.

041410 125657

1. NOX concentration (ppmdv)

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

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

Where:

C_{DC}	= drift corrected average concentration	=	166.525	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)	=	166.525	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)	=	166.525	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)	=	1.988E-05	lb/dscf

3. NOX concentration (mg/dscm)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.988E-05	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft³/m³
C (mg/dscm)	= NOX concentration (mg/dscm)	=	318.405	mg/dscm

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4. NOX concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.988E-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)	=	341.703	mg/Nm^3 dry

5. NOX concentration corrected to 7% O2 (ppmdv example)

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

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	166.525	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	8.880	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2)	= NOX concentration corrected to 7% O2 (ppmdv example)	=	192.572	ppmdv @ 7%O2

6. NOX concentration corrected to 12% CO2 (ppmdv example)

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

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	166.525	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.222	%
C (ppmdv -CO2)	= NOX concentration corrected to 12% CO2 (ppmdv example)	=	195.499	ppmdv @ 12%CO2

CEM RATA Sample Calculations
for NOX FF Outlet 1

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.

041410 125657

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	=	195.900	ppm@7%O2
C_R	= NOX value from CleanAir RM Data	=	192.572	ppm@7%O2
D	= NOX value difference between 2 methods	=	-3.328	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= NOX value from CleanAir RM Data	=	192.572	ppm@7%O2
D	= NOX value difference between 2 methods	=	-3.328	ppm@7%O2
$D_\%$	= NOX value difference as a percentage of RM Data	=	-1.7%	

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	=	195.900	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average NOX value from Plant CEM Data	=	198.867	ppm@7%O2

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

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

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	192.572	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	195.900	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.917	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	=	0.917	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.705	ppm@7%O2

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

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

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	192.572	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	195.900	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.705	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	1.481%	
		Limit =	20.000%	

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

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

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	192.572	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	195.900	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.705	
C_{std}	= NOX value of applicable standard	=	205.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	1.421%	
		Limit =	10.000%	

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CEM Field Sample Calculations
for CO FF Outlet 1

Sample data taken from ▓▓▓▓▓▓▓
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.

041410 125721

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	=	49.020	ppmdv
	In this case the low cal series for channel 5			

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

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

Where:

C_{mce}	= average concentration of a calibration series	=	49.020	ppmdv
	In this case the low cal series for channel 5			
C_{ma}	= concentration of actual calibration gas value	=	48.200	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)

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

Where:

C_{mce}	= average concentration of a calibration series	=	49.020	ppmdv
	In this case the low cal series for channel 5			
C_{ma}	= concentration of actual calibration gas value	=	48.200	ppmdv
Span	= instrument span value	=	98.500	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.83%	**Pass**

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

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

Where:

C_{mce}	= average concentration of a calibration series	=	49.020	ppmdv
	in this case the Low cal series for channel 5			
C_{mf}	= calibration error response concentration for Cal01	=	48.977	ppmdv
Span	= instrument span value	=	98.500	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	0.04%	**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)	=	48.977	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	49.007	ppmdv
Span	= instrument span value	=	98.500	ppmdv
l_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.03%	**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	=	18.545	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average CO concentration for Run 1	=	16.206	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	=	48.200	ppmdv
C	= average CO concentration for Run 1	=	16.206	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	48.977	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	49.007	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	-0.557	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	-0.588	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	16.316	ppmdv

**CEM Emissions Sample Calculations
for CO FF Outlet 1**

**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.

041410 125721

1. CO concentration (ppmdv)

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

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

Where:

C_{DC}	= drift corrected average concentration	=	16.316	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)	=	16.316	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)	=	16.316	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)	=	1.186E-06	lb/dscf

3. CO concentration (mg/dscm)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	1.186E-06	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft³/m³
C (mg/dscm)	= CO concentration (mg/dscm)	=	18.994	mg/dscm

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4. CO concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	1.186E-06	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)	=	20.384	mg/Nm^3 dry

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

$$C(ppmdv @ x\%O2) \quad = C(ppmdv) \times \left(\frac{20.9 - x}{20.9 - O_2}\right)$$

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	16.316	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	8.880	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2)	= CO concentration corrected to 7% O2 (ppmdv example)	=	18.868	ppmdv @ 7%O2

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

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

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	16.316	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.222	%
C (ppmdv -CO2)	= CO concentration corrected to 12% CO2 (ppmdv example)	=	19.155	ppmdv @ 12%CO2

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CEM RATA Sample Calculations
for CO FF Outlet 1

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.

041410 125756

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	=	19.500	ppm@7%O2
C_R	= CO value from CleanAir RM Data	=	18.868	ppm@7%O2
D	= CO value difference between 2 methods	=	-0.632	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= CO value from CleanAir RM Data	=	18.868	ppm@7%O2
D	= CO value difference between 2 methods	=	-0.632	ppm@7%O2
$D_\%$	= CO value difference as a percentage of RM Data	=	-3.3%	

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	=	19.500	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average CO value from Plant CEM Data	=	13.267	ppm@7%O2

FF Outlet 1

   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	=	18.868	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	19.500	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.234	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	=	0.234	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.180	ppm@7%O2

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

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

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	18.868	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	19.500	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.180	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	3.937%	
		Limit =	10.000%	

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

$$\overline{RA}_{std} = \frac{abs\left[\dfrac{\left|\displaystyle\sum_{i=1}^{N}(C_{R,i} - C_{p,i})\right|}{N}\right] + abs|CC|}{C_{std}}$$

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	18.868	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	19.500	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.180	
C_{std}	= CO value of applicable standard	=	100.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	0.509%	
	Limit =		5.000%	

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PARAMETERS

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2010)	Mar 23				
Start Time	8:03				
End Time	8:30				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.22	8.88	6.42	166.53	16.32
Concentration (ppmdv)			6.42	166.53	16.32
Concentration (lb/dscf)			1.068E-06	1.988E-05	1.186E-06
Concentration (%dv)	10.222	8.880	0.00064	0.01665	0.00163
Concentration (mg/dscm)			17.10	318.41	18.99
Concentration (mg/Nm3)			18.35	341.70	20.38
Concentration @7%O2 (ppm)			7.43	192.57	18.87
Concentration @12%CO2 (ppm)			7.54	195.50	19.15
Concentration @7%O2 (lb/scf)			1.235E-06	2.299E-05	1.372E-06
Concentration @12%CO2 (lb/scf)			1.254E-06	2.334E-05	1.393E-06
Concentration @7%O2 (mg/scm)			19.78	368.21	21.97
Concentration @12%CO2 (mg/scm)			20.08	373.80	22.30
Concentration @7%O2 (mg/Nm3)			21.22	395.15	23.57
Concentration @12%CO2 (mg/Nm3)			21.55	401.16	23.93

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	2
Date (2010)	Mar 23
Start Time	8:37
End Time	9:04
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.10	9.08	4.62	165.24	10.89
Concentration (ppmdv)			4.62	165.24	10.89
Concentration (lb/dscf)			7.673E-07	1.973E-05	7.917E-07
Concentration (%dv)	10.102	9.082	0.00046	0.01652	0.00109
Concentration (mg/dscm)			12.29	315.94	12.68
Concentration (mg/Nm3)			13.19	339.06	13.61
Concentration @7%O2 (ppm)			5.43	194.34	12.81
Concentration @12%CO2 (ppm)			5.48	196.28	12.94
Concentration @7%O2 (lb/scf)			9.025E-07	2.320E-05	9.312E-07
Concentration @12%CO2 (lb/scf)			9.115E-07	2.344E-05	9.405E-07
Concentration @7%O2 (mg/scm)			14.45	371.59	14.91
Concentration @12%CO2 (mg/scm)			14.60	375.30	15.06
Concentration @7%O2 (mg/Nm3)			15.51	398.78	16.00
Concentration @12%CO2 (mg/Nm3)			15.66	402.77	16.16

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2010)	Mar 23				
Start Time	9:11				
End Time	9:38				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.23	8.89	4.01	169.41	11.55
Concentration (ppmdv)			4.01	169.41	11.55
Concentration (lb/dscf)			6.675E-07	2.023E-05	8.396E-07
Concentration (%dv)	10.231	8.889	0.00040	0.01694	0.00115
Concentration (mg/dscm)			10.69	323.92	13.45
Concentration (mg/Nm3)			11.47	347.62	14.43
Concentration @7%O2 (ppm)			4.65	196.05	13.37
Concentration @12%CO2 (ppm)			4.71	198.71	13.55
Concentration @7%O2 (lb/scf)			7.725E-07	2.341E-05	9.717E-07
Concentration @12%CO2 (lb/scf)			7.830E-07	2.373E-05	9.849E-07
Concentration @7%O2 (mg/scm)			12.37	374.87	15.56
Concentration @12%CO2 (mg/scm)			12.54	379.94	15.77
Concentration @7%O2 (mg/Nm3)			13.28	402.30	16.70
Concentration @12%CO2 (mg/Nm3)			13.46	407.74	16.93

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	4
Date (2010)	Mar 23
Start Time	9:45
End Time	10:12
Elapsed Time (hh:mm)	00:27

	1	2	3	4	5
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.46	8.63	2.65	169.66	10.17
Concentration (ppmdv)			2.65	169.66	10.17
Concentration (lb/dscf)			4.414E-07	2.026E-05	7.396E-07
Concentration (%dv)	10.458	8.626	0.00027	0.01697	0.00102
Concentration (mg/dscm)			7.07	324.40	11.84
Concentration (mg/Nm3)			7.59	348.14	12.71
Concentration @7%O2 (ppm)			3.01	192.14	11.52
Concentration @12%CO2 (ppm)			3.05	194.67	11.67
Concentration @7%O2 (lb/scf)			4.999E-07	2.294E-05	8.376E-07
Concentration @12%CO2 (lb/scf)			5.065E-07	2.324E-05	8.486E-07
Concentration @7%O2 (mg/scm)			8.01	367.38	13.41
Concentration @12%CO2 (mg/scm)			8.11	372.23	13.59
Concentration @7%O2 (mg/Nm3)			8.59	394.26	14.39
Concentration @12%CO2 (mg/Nm3)			8.70	399.46	14.58

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	5
Date (2010)	Mar 23
Start Time	10:19
End Time	10:46
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.17	9.02	3.82	172.16	8.13
Concentration (ppmdv)			3.82	172.16	8.13
Concentration (lb/dscf)			6.355E-07	2.056E-05	5.908E-07
Concentration (%dv)	10.166	9.019	0.00038	0.01722	0.00081
Concentration (mg/dscm)			10.18	329.17	9.46
Concentration (mg/Nm3)			10.92	353.26	10.15
Concentration @7%O2 (ppm)			4.47	201.41	9.51
Concentration @12%CO2 (ppm)			4.51	203.21	9.59
Concentration @7%O2 (lb/scf)			7.435E-07	2.405E-05	6.912E-07
Concentration @12%CO2 (lb/scf)			7.501E-07	2.426E-05	6.974E-07
Concentration @7%O2 (mg/scm)			11.91	385.11	11.07
Concentration @12%CO2 (mg/scm)			12.01	388.55	11.17
Concentration @7%O2 (mg/Nm3)			12.78	413.29	11.88
Concentration @12%CO2 (mg/Nm3)			12.89	416.99	11.99

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Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2010)	Mar 23				
Start Time	10:52				
End Time	11:19				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.79	9.47	3.94	175.25	10.27
Concentration (ppmdv)	.		3.94	175.25	10.27
Concentration (lb/dscf)			6.544E-07	2.093E-05	7.469E-07
Concentration (%dv)	9.786	9.475	0.00039	0.01753	0.00103
Concentration (mg/dscm)			10.48	335.09	11.96
Concentration (mg/Nm3)			11.25	359.61	12.84
Concentration @7%O2 (ppm)			4.79	213.22	12.50
Concentration @12%CO2 (ppm)			4.83	214.90	12.60
Concentration @7%O2 (lb/scf)			7.962E-07	2.546E-05	9.087E-07
Concentration @12%CO2 (lb/scf)			8.025E-07	2.566E-05	9.158E-07
Concentration @7%O2 (mg/scm)			12.75	407.68	14.55
Concentration @12%CO2 (mg/scm)			12.85	410.90	14.67
Concentration @7%O2 (mg/Nm3)			13.68	437.51	15.62
Concentration @12%CO2 (mg/Nm3)			13.79	440.96	15.74

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Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number			7			
Date (2010)			Mar 23			
Start Time			11:26			
End Time			11:53			
Elapsed Time (hh:mm)			00:27			

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.12	9.04	2.67	163.61	10.67
Concentration (ppmdv)			2.67	163.61	10.67
Concentration (lb/dscf)			4.439E-07	1.954E-05	7.759E-07
Concentration (%dv)	10.118	9.044	0.00027	0.01636	0.00107
Concentration (mg/dscm)			7.11	312.83	12.42
Concentration (mg/Nm3)			7.63	335.72	13.33
Concentration @7%O2 (ppm)			3.13	191.82	12.51
Concentration @12%CO2 (ppm)			3.17	194.05	12.66
Concentration @7%O2 (lb/scf)			5.204E-07	2.290E-05	9.097E-07
Concentration @12%CO2 (lb/scf)			5.264E-07	2.317E-05	9.203E-07
Concentration @7%O2 (mg/scm)			8.33	366.78	14.57
Concentration @12%CO2 (mg/scm)			8.43	371.03	14.74
Concentration @7%O2 (mg/Nm3)			8.94	393.62	15.63
Concentration @12%CO2 (mg/Nm3)			9.05	398.18	15.81

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2010)	Mar 23				
Start Time	12:00				
End Time	12:27				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.96	9.24	2.99	162.40	11.64
Concentration (ppmdv)			2.99	162.40	11.64
Concentration (lb/dscf)			4.977E-07	1.939E-05	8.459E-07
Concentration (%dv)	9.963	9.242	0.00030	0.01624	0.00116
Concentration (mg/dscm)			7.97	310.51	13.55
Concentration (mg/Nm3)			8.55	333.23	14.54
Concentration @7%O2 (ppm)			3.57	193.64	13.87
Concentration @12%CO2 (ppm)			3.61	195.61	14.02
Concentration @7%O2 (lb/scf)			5.934E-07	2.312E-05	1.009E-06
Concentration @12%CO2 (lb/scf)			5.994E-07	2.336E-05	1.019E-06
Concentration @7%O2 (mg/scm)			9.50	370.25	16.15
Concentration @12%CO2 (mg/scm)			9.60	374.02	16.32
Concentration @7%O2 (mg/Nm3)			10.20	397.34	17.33
Concentration @12%CO2 (mg/Nm3)			10.30	401.38	17.51

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Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	9
Date (2010)	Mar 23
Start Time	12:33
End Time	13:00
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.03	9.24	2.17	162.01	13.48
Concentration (ppmdv)			2.17	162.01	13.48
Concentration (lb/dscf)			3.611E-07	1.934E-05	9.800E-07
Concentration (%dv)	10.031	9.243	0.00022	0.01620	0.00135
Concentration (mg/dscm)			5.78	309.78	15.69
Concentration (mg/Nm3)			6.20	332.45	16.84
Concentration @7%O2 (ppm)			2.59	193.18	16.07
Concentration @12%CO2 (ppm)			2.60	193.81	16.13
Concentration @7%O2 (lb/scf)			4.305E-07	2.307E-05	1.168E-06
Concentration @12%CO2 (lb/scf)			4.319E-07	2.314E-05	1.172E-06
Concentration @7%O2 (mg/scm)			6.89	369.37	18.71
Concentration @12%CO2 (mg/scm)			6.92	370.58	18.77
Concentration @7%O2 (mg/Nm3)			7.40	396.40	20.08
Concentration @12%CO2 (mg/Nm3)			7.42	397.70	20.15

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Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2010)	Mar 23				
Start Time	13:07				
End Time	13:34				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.43	8.72	4.71	170.12	10.06
Concentration (ppmdv)			4.71	170.12	10.06
Concentration (lb/dscf)			7.832E-07	2.031E-05	7.310E-07
Concentration (%dv)	10.425	8.719	0.00047	0.01701	0.00101
Concentration (mg/dscm)			12.54	325.28	11.71
Concentration (mg/Nm3)			13.46	349.08	12.56
Concentration @7%O2 (ppm)			5.38	194.13	11.47
Concentration @12%CO2 (ppm)			5.42	195.81	11.57
Concentration @7%O2 (lb/scf)			8.937E-07	2.318E-05	8.342E-07
Concentration @12%CO2 (lb/scf)			9.014E-07	2.338E-05	8.414E-07
Concentration @7%O2 (mg/scm)			14.31	371.19	13.36
Concentration @12%CO2 (mg/scm)			14.44	374.41	13.47
Concentration @7%O2 (mg/Nm3)			15.36	398.35	14.34
Concentration @12%CO2 (mg/Nm3)			15.49	401.80	14.46

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2010)	Mar 24				
Start Time	7:38				
End Time	8:05				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO_2	O_2	SO_2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.22	9.07	11.47	159.11	8.23
Concentration (ppmdv)			11.47	159.11	8.23
Concentration (lb/dscf)			1.907E-06	1.900E-05	5.986E-07
Concentration (%dv)	10.216	9.073	0.001	0.016	0.001
Concentration (mg/dscm)			30.53	304.22	9.59
Concentration (mg/Nm3)			32.77	326.48	10.29
Concentration @7%O2 (ppm)			13.48	187.00	9.68
Concentration @12%CO2 (ppm)			13.47	186.89	9.67
Concentration @7%O2 (lb/scf)			2.241E-06	2.233E-05	7.035E-07
Concentration @12%CO2 (lb/scf)			2.240E-06	2.231E-05	7.031E-07
Concentration @7%O2 (mg/scm)			35.89	357.56	11.27
Concentration @12%CO2 (mg/scm)			35.86	357.34	11.26
Concentration @7%O2 (mg/Nm3)			38.51	383.72	12.09
Concentration @12%CO2 (mg/Nm3)			38.49	383.49	12.08

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Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2010)	Mar 24				
Start Time	8:12				
End Time	8:39				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.21	9.00	5.89	161.41	6.60
Concentration (ppmdv)			5.89	161.41	6.60
Concentration (lb/dscf)			9.796E-07	1.927E-05	4.799E-07
Concentration (%dv)	10.211	8.997	0.001	0.016	0.001
Concentration (mg/dscm)			15.69	308.63	7.68
Concentration (mg/Nm3)			16.83	331.21	8.25
Concentration @7%O2 (ppm)			6.88	188.49	7.71
Concentration @12%CO2 (ppm)			6.92	189.69	7.76
Concentration @7%O2 (lb/scf)			1.144E-06	2.251E-05	5.604E-07
Concentration @12%CO2 (lb/scf)			1.151E-06	2.265E-05	5.640E-07
Concentration @7%O2 (mg/scm)			18.32	360.40	8.97
Concentration @12%CO2 (mg/scm)			18.44	362.70	9.03
Concentration @7%O2 (mg/Nm3)			19.66	386.77	9.63
Concentration @12%CO2 (mg/Nm3)			19.78	389.24	9.69

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	3
Date (2010)	Mar 24
Start Time	8:46
End Time	9:13
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.05	9.18	7.68	159.61	6.03
Concentration (ppmdv)			7.68	159.61	6.03
Concentration (lb/dscf)			1.278E-06	1.906E-05	4.385E-07
Concentration (%dv)	10.053	9.182	0.001	0.016	0.001
Concentration (mg/dscm)			20.46	305.19	7.02
Concentration (mg/Nm3)			21.96	327.52	7.54
Concentration @7%O2 (ppm)			9.11	189.33	7.15
Concentration @12%CO2 (ppm)			9.17	190.52	7.20
Concentration @7%O2 (lb/scf)			1.515E-06	2.261E-05	5.201E-07
Concentration @12%CO2 (lb/scf)			1.525E-06	2.275E-05	5.234E-07
Concentration @7%O2 (mg/scm)			24.27	362.00	8.33
Concentration @12%CO2 (mg/scm)			24.42	364.29	8.38
Concentration @7%O2 (mg/Nm3)			26.04	388.49	8.94
Concentration @12%CO2 (mg/Nm3)			26.21	390.94	9.00

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Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	4
Date (2010)	Mar 24
Start Time	9:20
End Time	9:47
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO_2	O_2	SO_2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.89	9.37	11.43	157.48	5.46
Concentration (ppmdv)			11.43	157.48	5.46
Concentration (lb/dscf)			1.901E-06	1.880E-05	3.970E-07
Concentration (%dv)	9.894	9.373	0.001	0.016	0.001
Concentration (mg/dscm)			30.44	301.11	6.36
Concentration (mg/Nm3)			32.67	323.14	6.82
Concentration @7%O2 (ppm)			13.79	189.90	6.59
Concentration @12%CO2 (ppm)			13.87	191.00	6.62
Concentration @7%O2 (lb/scf)			2.292E-06	2.267E-05	4.787E-07
Concentration @12%CO2 (lb/scf)			2.306E-06	2.281E-05	4.815E-07
Concentration @7%O2 (mg/scm)			36.71	363.09	7.67
Concentration @12%CO2 (mg/scm)			36.92	365.19	7.71
Concentration @7%O2 (mg/Nm3)			39.40	389.66	8.23
Concentration @12%CO2 (mg/Nm3)			39.62	391.91	8.28

QA/QC_____

Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2010)	Mar 24				
Start Time	9:54				
End Time	10:21				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.91	9.39	12.23	152.24	7.23
Concentration (ppmdv)			12.23	152.24	7.23
Concentration (lb/dscf)			2.033E-06	1.818E-05	5.253E-07
Concentration (%dv)	9.914	9.394	0.001	0.015	0.001
Concentration (mg/dscm)			32.55	291.09	8.41
Concentration (mg/Nm3)			34.94	312.39	9.03
Concentration @7%O2 (ppm)			14.77	183.91	8.73
Concentration @12%CO2 (ppm)			14.80	184.26	8.75
Concentration @7%O2 (lb/scf)			2.456E-06	2.196E-05	6.346E-07
Concentration @12%CO2 (lb/scf)			2.460E-06	2.200E-05	6.358E-07
Concentration @7%O2 (mg/scm)			39.33	351.65	10.16
Concentration @12%CO2 (mg/scm)			39.40	352.32	10.18
Concentration @7%O2 (mg/Nm3)			42.20	377.38	10.91
Concentration @12%CO2 (mg/Nm3)			42.28	378.10	10.93

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2010)	Mar 24				
Start Time	10:28				
End Time	10:55				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.19	9.03	11.18	155.02	5.85
Concentration (ppmdv)			11.18	155.02	5.85
Concentration (lb/dscf)			1.859E-06	1.851E-05	4.256E-07
Concentration (%dv)	10.186	9.029	0.001	0.016	0.001
Concentration (mg/dscm)			29.77	296.41	6.82
Concentration (mg/Nm3)			31.95	318.10	7.31
Concentration @7%O2 (ppm)			13.09	181.53	6.85
Concentration @12%CO2 (ppm)			13.17	182.64	6.90
Concentration @7%O2 (lb/scf)			2.177E-06	2.167E-05	4.983E-07
Concentration @12%CO2 (lb/scf)			2.190E-06	2.181E-05	5.014E-07
Concentration @7%O2 (mg/scm)			34.86	347.09	7.98
Concentration @12%CO2 (mg/scm)			35.07	349.21	8.03
Concentration @7%O2 (mg/Nm3)			37.41	372.49	8.56
Concentration @12%CO2 (mg/Nm3)			37.64	374.76	8.62

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	7
Date (2010)	Mar 24
Start Time	11:02
End Time	11:29
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO_2	O_2	SO_2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.28	8.93	10.36	165.24	6.34
Concentration (ppmdv)			10.36	165.24	6.34
Concentration (lb/dscf)			1.723E-06	1.973E-05	4.609E-07
Concentration (%dv)	10.285	8.929	0.001	0.017	0.001
Concentration (mg/dscm)			27.59	315.95	7.38
Concentration (mg/Nm3)			29.61	339.07	7.92
Concentration @7%O2 (ppm)			12.03	191.87	7.36
Concentration @12%CO2 (ppm)			12.09	192.80	7.40
Concentration @7%O2 (lb/scf)			2.001E-06	2.291E-05	5.352E-07
Concentration @12%CO2 (lb/scf)			2.010E-06	2.302E-05	5.378E-07
Concentration @7%O2 (mg/scm)			32.04	366.86	8.57
Concentration @12%CO2 (mg/scm)			32.19	368.65	8.61
Concentration @7%O2 (mg/Nm3)			34.38	393.71	9.20
Concentration @12%CO2 (mg/Nm3)			34.55	395.62	9.24

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2010)	Mar 24				
Start Time	11:36				
End Time	12:03				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO_2	O_2	SO_2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.06	9.13	7.75	158.13	5.44
Concentration (ppmdv)			7.75	158.13	5.44
Concentration (lb/dscf)			1.288E-06	1.888E-05	3.958E-07
Concentration (%dv)	10.062	9.129	0.001	0.016	0.001
Concentration (mg/dscm)			20.63	302.35	6.34
Concentration (mg/Nm3)			22.14	324.48	6.80
Concentration @7%O2 (ppm)			9.15	186.73	6.43
Concentration @12%CO2 (ppm)			9.24	188.59	6.49
Concentration @7%O2 (lb/scf)			1.521E-06	2.230E-05	4.674E-07
Concentration @12%CO2 (lb/scf)			1.536E-06	2.252E-05	4.720E-07
Concentration @7%O2 (mg/scm)			24.36	357.03	7.48
Concentration @12%CO2 (mg/scm)			24.60	360.59	7.56
Concentration @7%O2 (mg/Nm3)			26.14	383.15	8.03
Concentration @12%CO2 (mg/Nm3)			26.40	386.97	8.11

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	9
Date (2010)	Mar 24
Start Time	12:10
End Time	12:37
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO_2	O_2	SO_2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.93	9.36	7.68	149.62	6.61
Concentration (ppmdv)			7.68	149.62	6.61
Concentration (lb/dscf)			1.276E-06	1.787E-05	4.804E-07
Concentration (%dv)	9.929	9.363	0.001	0.015	0.001
Concentration (mg/dscm)			20.44	286.09	7.69
Concentration (mg/Nm3)			21.94	307.02	8.26
Concentration @7%O2 (ppm)			9.25	180.27	7.96
Concentration @12%CO2 (ppm)			9.28	180.84	7.99
Concentration @7%O2 (lb/scf)			1.538E-06	2.153E-05	5.788E-07
Concentration @12%CO2 (lb/scf)			1.543E-06	2.159E-05	5.807E-07
Concentration @7%O2 (mg/scm)			24.63	344.69	9.27
Concentration @12%CO2 (mg/scm)			24.70	345.78	9.30
Concentration @7%O2 (mg/Nm3)			26.43	369.92	9.95
Concentration @12%CO2 (mg/Nm3)			26.51	371.08	9.98

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2010)	Mar 24				
Start Time	12:44				
End Time	13:11				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.03	9.21	11.54	163.80	6.30
Concentration (ppmdv)			11.54	163.80	6.30
Concentration (lb/dscf)			1.919E-06	1.956E-05	4.580E-07
Concentration (%dv)	10.031	9.208	0.001	0.016	0.001
Concentration (mg/dscm)			30.73	313.19	7.33
Concentration (mg/Nm3)			32.98	336.11	7.87
Concentration @7%O2 (ppm)			13.72	194.72	7.49
Concentration @12%CO2 (ppm)			13.81	195.94	7.54
Concentration @7%O2 (lb/scf)			2.281E-06	2.325E-05	5.445E-07
Concentration @12%CO2 (lb/scf)			2.296E-06	2.340E-05	5.479E-07
Concentration @7%O2 (mg/scm)			36.53	372.32	8.72
Concentration @12%CO2 (mg/scm)			36.76	374.65	8.77
Concentration @7%O2 (mg/Nm3)			39.21	399.57	9.36
Concentration @12%CO2 (mg/Nm3)			39.45	402.07	9.42

QA/QC_____

Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	1
Date (2010)	Mar 22
Start Time	7:44
End Time	8:11
Elapsed Time (hh:mm)	00:27

	1	2	3	4	5
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.72	9.68	10.73	143.75	6.95
Concentration (ppmdv)			10.73	143.75	6.95
Concentration (lb/dscf)			1.784E-06	1.716E-05	5.051E-07
Concentration (%dv)	9.718	9.681	0.00107	0.0144	0.00069
Concentration (mg/dscm)			28.57	274.85	8.09
Concentration (mg/Nm3)			30.66	294.96	8.68
Concentration @7%O2 (ppm)			13.30	178.10	8.61
Concentration @12%CO2 (ppm)			13.25	177.51	8.58
Concentration @7%O2 (lb/scf)			2.211E-06	2.126E-05	6.258E-07
Concentration @12%CO2 (lb/scf)			2.203E-06	2.119E-05	6.237E-07
Concentration @7%O2 (mg/scm)			35.40	340.53	10.02
Concentration @12%CO2 (mg/scm)			35.28	339.40	9.99
Concentration @7%O2 (mg/Nm3)			37.99	365.45	10.75
Concentration @12%CO2 (mg/Nm3)			37.86	364.23	10.72

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Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	2
Date (2010)	Mar 22
Start Time	8:20
End Time	8:47
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.89	9.39	12.54	147.70	6.97
Concentration (ppmdv)			12.54	147.70	6.97
Concentration (lb/dscf)			2.086E-06	1.764E-05	5.067E-07
Concentration (%dv)	9.895	9.387	0.00125	0.0148	0.00070
Concentration (mg/dscm)			33.40	282.41	8.11
Concentration (mg/Nm3)			35.84	303.08	8.71
Concentration @7%O2 (ppm)			15.15	178.33	8.42
Concentration @12%CO2 (ppm)			15.21	179.13	8.45
Concentration @7%O2 (lb/scf)			2.518E-06	2.129E-05	6.118E-07
Concentration @12%CO2 (lb/scf)			2.530E-06	2.139E-05	6.145E-07
Concentration @7%O2 (mg/scm)			40.33	340.98	9.80
Concentration @12%CO2 (mg/scm)			40.51	342.51	9.84
Concentration @7%O2 (mg/Nm3)			43.28	365.93	10.51
Concentration @12%CO2 (mg/Nm3)			43.47	367.57	10.56

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Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	3
Date (2010)	Mar 22
Start Time	8:54
End Time	9:21
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.37	10.07	10.52	140.20	6.66
Concentration (ppmdv)			10.52	140.20	6.66
Concentration (lb/dscf)			1.749E-06	1.674E-05	4.842E-07
Concentration (%dv)	9.375	10.071	0.00105	0.0140	0.00067
Concentration (mg/dscm)			28.02	268.07	7.75
Concentration (mg/Nm3)			30.07	287.68	8.32
Concentration @7%O2 (ppm)			13.51	179.96	8.55
Concentration @12%CO2 (ppm)			13.47	179.46	8.53
Concentration @7%O2 (lb/scf)			2.246E-06	2.149E-05	6.216E-07
Concentration @12%CO2 (lb/scf)			2.239E-06	2.143E-05	6.199E-07
Concentration @7%O2 (mg/scm)			35.96	344.08	9.95
Concentration @12%CO2 (mg/scm)			35.86	343.14	9.93
Concentration @7%O2 (mg/Nm3)			38.59	369.26	10.68
Concentration @12%CO2 (mg/Nm3)			38.48	368.24	10.65

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2010)	Mar 22				
Start Time	9:28				
End Time	9:55				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.39	10.15	10.86	141.55	8.61
Concentration (ppmdv)			10.86	141.55	8.61
Concentration (lb/dscf)			1.805E-06	1.690E-05	6.260E-07
Concentration (%dv)	9.387	10.148	0.00109	0.0142	0.00086
Concentration (mg/dscm)			28.90	270.65	10.02
Concentration (mg/Nm3)			31.02	290.45	10.76
Concentration @7%O2 (ppm)			14.03	182.99	11.13
Concentration @12%CO2 (ppm)			13.88	180.95	11.01
Concentration @7%O2 (lb/scf)			2.333E-06	2.185E-05	8.092E-07
Concentration @12%CO2 (lb/scf)			2.307E-06	2.161E-05	8.002E-07
Concentration @7%O2 (mg/scm)			37.37	349.89	12.96
Concentration @12%CO2 (mg/scm)			36.95	345.98	12.81
Concentration @7%O2 (mg/Nm3)			40.10	375.49	13.91
Concentration @12%CO2 (mg/Nm3)			39.65	371.30	13.75

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	5
Date (2010)	Mar 22
Start Time	10:01
End Time	10:28
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.69	9.80	11.15	140.74	9.59
Concentration (ppmdv)			11.15	140.74	9.59
Concentration (lb/dscf)			1.854E-06	1.681E-05	6.970E-07
Concentration (%dv)	9.688	9.804	0.00112	0.0141	0.00096
Concentration (mg/dscm)			29.69	269.11	11.16
Concentration (mg/Nm3)			31.86	288.80	11.98
Concentration @7%O2 (ppm)			13.97	176.31	12.01
Concentration @12%CO2 (ppm)			13.81	174.34	11.88
Concentration @7%O2 (lb/scf)			2.323E-06	2.105E-05	8.731E-07
Concentration @12%CO2 (lb/scf)			2.297E-06	2.082E-05	8.633E-07
Concentration @7%O2 (mg/scm)			37.19	337.12	13.98
Concentration @12%CO2 (mg/scm)			36.78	333.35	13.82
Concentration @7%O2 (mg/Nm3)			39.92	361.79	15.00
Concentration @12%CO2 (mg/Nm3)			39.47	357.74	14.84

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	6
Date (2010)	Mar 22
Start Time	10:35
End Time	11:02
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO_2	O_2	SO_2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.10	9.21	9.81	151.11	7.86
Concentration (ppmdv)			9.81	151.11	7.86
Concentration (lb/dscf)			1.631E-06	1.804E-05	5.713E-07
Concentration (%dv)	10.100	9.211	0.00098	0.0151	0.00079
Concentration (mg/dscm)			26.11	288.93	9.15
Concentration (mg/Nm3)			28.02	310.07	9.82
Concentration @7%O2 (ppm)			11.66	179.70	9.35
Concentration @12%CO2 (ppm)			11.65	179.54	9.34
Concentration @7%O2 (lb/scf)			1.939E-06	2.146E-05	6.794E-07
Concentration @12%CO2 (lb/scf)			1.937E-06	2.144E-05	6.788E-07
Concentration @7%O2 (mg/scm)			31.05	343.59	10.88
Concentration @12%CO2 (mg/scm)			31.02	343.30	10.87
Concentration @7%O2 (mg/Nm3)			33.32	368.73	11.68
Concentration @12%CO2 (mg/Nm3)			33.29	368.41	11.67

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run-Number	7				
Date (2010)	Mar 22				
Start Time	11:09				
End Time	11:36				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.81	9.58	11.96	145.86	6.43
Concentration (ppmdv)			11.96	145.86	6.43
Concentration (lb/dscf)			1.989E-06	1.742E-05	4.674E-07
Concentration (%dv)	9.811	9.576	0.00120	0.0146	0.00064
Concentration (mg/dscm)			31.85	278.88	7.49
Concentration (mg/Nm3)			34.18	299.29	8.03
Concentration @7%O2 (ppm)			14.68	179.04	7.89
Concentration @12%CO2 (ppm)			14.63	178.40	7.86
Concentration @7%O2 (lb/scf)			2.441E-06	2.138E-05	5.737E-07
Concentration @12%CO2 (lb/scf)			2.433E-06	2.130E-05	5.717E-07
Concentration @7%O2 (mg/scm)			39.10	342.32	9.19
Concentration @12%CO2 (mg/scm)			38.96	341.11	9.16
Concentration @7%O2 (mg/Nm3)			41.96	367.37	9.86
Concentration @12%CO2 (mg/Nm3)			41.81	366.07	9.83

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Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2010)	Mar 22				
Start Time	11:43				
End Time	12:10				
Elapsed Time (hh:mm)	00:27				

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.86	9.49	7.91	145.07	7.46
Concentration (ppmdv)			7.91	145.07	7.46
Concentration (lb/dscf)			1.315E-06	1.732E-05	5.426E-07
Concentration (%dv)	9.865	9.492	0.00079	0.0145	0.00075
Concentration (mg/dscm)			21.06	277.39	8.69
Concentration (mg/Nm3)			22.60	297.69	9.32
Concentration @7%O2 (ppm)			9.64	176.77	9.09
Concentration @12%CO2 (ppm)			9.62	176.48	9.08
Concentration @7%O2 (lb/scf)			1.603E-06	2.111E-05	6.611E-07
Concentration @12%CO2 (lb/scf)			1.600E-06	2.107E-05	6.600E-07
Concentration @7%O2 (mg/scm)			25.66	337.99	10.59
Concentration @12%CO2 (mg/scm)			25.62	337.44	10.57
Concentration @7%O2 (mg/Nm3)			27.54	362.72	11.36
Concentration @12%CO2 (mg/Nm3)			27.50	362.13	11.34

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	9
Date (2010)	Mar 22
Start Time	12:17
End Time	12:44
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.99	9.29	11.46	148.65	6.67
Concentration (ppmdv)			11.46	148.65	6.67
Concentration (lb/dscf)			1.906E-06	1.775E-05	4.846E-07
Concentration (%dv)	9.987	9.288	0.00115	0.0149	0.00067
Concentration (mg/dscm)			30.52	284.22	7.76
Concentration (mg/Nm3)			32.75	305.02	8.33
Concentration @7%O2 (ppm)			13.72	177.93	7.98
Concentration @12%CO2 (ppm)			13.77	178.61	8.01
Concentration @7%O2 (lb/scf)			2.281E-06	2.125E-05	5.801E-07
Concentration @12%CO2 (lb/scf)			2.290E-06	2.133E-05	5.823E-07
Concentration @7%O2 (mg/scm)			36.53	340.21	9.29
Concentration @12%CO2 (mg/scm)			36.67	341.51	9.32
Concentration @7%O2 (mg/Nm3)			39.21	365.11	9.97
Concentration @12%CO2 (mg/Nm3)			39.36	366.50	10.01

QA/QC_____
Date_____

Wheelabrator South Broward
Clean Air Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	10
Date (2010)	Mar 22
Start Time	12:51
End Time	13:18
Elapsed Time (hh:mm)	00:27

Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.08	9.18	11.79	151.21	6.59
Concentration (ppmdv)			11.79	151.21	6.59
Concentration (lb/dscf)			1.961E-06	1.806E-05	4.792E-07
Concentration (%dv)	10.081	9.184	0.00118	0.0151	0.00066
Concentration (mg/dscm)			31.40	289.13	7.67
Concentration (mg/Nm3)			33.70	310.28	8.24
Concentration @7%O2 (ppm)			13.99	179.40	7.82
Concentration @12%CO2 (ppm)			14.04	180.00	7.85
Concentration @7%O2 (lb/scf)			2.326E-06	2.142E-05	5.686E-07
Concentration @12%CO2 (lb/scf)			2.334E-06	2.149E-05	5.705E-07
Concentration @7%O2 (mg/scm)			37.25	343.03	9.10
Concentration @12%CO2 (mg/scm)			37.38	344.16	9.14
Concentration @7%O2 (mg/Nm3)			39.98	368.13	9.77
Concentration @12%CO2 (mg/Nm3)			40.11	369.35	9.80

QA/QC_____
Date_____

QA/QC DATA

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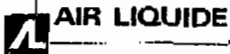
AIR LIQUIDE Air Liquide America Specialty Gases LLC **(S) SCOTT™**

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

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 24252-66WHEELABRATOR
Project No.: 06-66618-001

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: ALM010885   Certification Date: 19Sep2008   Exp. Date: 19Sep2010
Cylinder Pressure***:   1914 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.2	%	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	225	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	44.9	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	225.	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.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1800	01Mar2009	K006478	17.87 %	CARBON DIOXIDE
NTRM 1685	01Sep2010	KAL003325	247.1 PPM	NITRIC OXIDE
NTRM 1693	01Dec2011	KAL004073	50.20 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	04Sep2008	FTIR
FTIR//0928621	28Aug2008	FTIR
FTIR//0928621	18Sep2008	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: 12Sep2008 Response Unit: %
$Z1 = -0.00238$ $R1 = 17.78265$ $T1 = 10.09628$
$R2 = 17.78884$ $Z2 = 0.00216$ $T2 = 10.09698$
$Z3 = 0.00421$ $T3 = 10.10938$ $R3 = 17.79053$
Avg. Concentration: 10.15   %

Concentration $= A + Bx + Cx2 + Dx3 + Ex4$
$r = 9.99988E-1$
Constants: $A = 0.00000E+0$
$B = 9.31146E-1$ $C = 1.22400E-2$
$D = 0.00000E+0$ $E = 0.00000E+0$

NITRIC OXIDE
Date: 12Sep2008 Response Unit: PPM
$Z1 = 0.01885$ $R1 = 248.7477$ $T1 = 226.2887$
$R2 = 249.0275$ $Z2 = 0.12571$ $T2 = 226.6309$
$Z3 = 0.46283$ $T3 = 226.8421$ $R3 = 249.3030$
Avg. Concentration: 224.8   PPM

Date: 19Sep2008 Response Unit: PPM
$Z1 = -0.34230$ $R1 = 248.0818$ $T1 = 226.5803$
$R2 = 248.1205$ $Z2 = 0.32020$ $T2 = 226.8173$
$Z3 = 0.37723$ $T3 = 227.1357$ $R3 = 248.2152$
Avg. Concentration: 226.9   PPM

Concentration $= A + Bx + Cx2 + Dx3 + Ex4$
$r = 9.99998E-1$
Constants: $A = 0.00000E+0$
$B = 9.44080E-1$ $C = 3.90000E-5$
$D = 0.00000E+0$ $E = 0.00000E+0$

SULFUR DIOXIDE *
Date: 12Sep2008 Response Unit: PPM
$Z1 = -0.00016$ $R1 = 50.25512$ $T1 = 44.99951$
$R2 = 50.26485$ $Z2 = 0.06038$ $T2 = 45.03611$
$Z3 = 0.06819$ $T3 = 45.08546$ $R3 = 50.30269$
Avg. Concentration: 44.97   PPM

Date: 19Sep2008 Response Unit: PPM
$Z1 = 0.03964$ $R1 = 50.33410$ $T1 = 44.83878$
$R2 = 50.43386$ $Z2 = 0.04622$ $T2 = 44.92096$
$Z3 = 0.05640$ $T3 = 44.96287$ $R3 = 50.44218$
Avg. Concentration: 44.72   PPM

Concentration $= A + Bx + Cx2 + Dx3 + Ex4$
$r = 9.99994E-1$
Constants: $A = 0.00000E+0$
$B = 1.00099E+0$ $C = 0.00000E+0$
$D = 0.00000E+0$ $E = 0.00000E+0$

APPROVED BY: _____
Rob McCrandell

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AIR LIQUIDE | Air Liquide America Specialty Gases LLC (S) SCOTT™

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

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 24859-66-65000
Project No.: 05-84187-001

Customer
CLEAN AIR ENGINEERING

SCOTT BROWN
500 WEST 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: CC124384   **Certification Date:** 28Jan2010   **Exp. Date:** 28Jan2012
Cylinder Pressure***: 1888 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.0	%	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	453	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	89.9	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	453.	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.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675 B	02Oct2012	K000696	13.93 %	CARBON DIOXIDE
NTRM 1686	01Sep2010	KAL003496	490.0 PPM	NITRIC OXIDE
NTRM 1694 S	01Jun2012	KAL004124	100.4 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	31Dec2009	FTIR
FTIR//0928621	08Jan2010	FTIR
FTIR//0928621	14Jan2010	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: 19Jan2010 Response Unit:%
$Z1 = 0.00116$ $R1 = 13.91162$ $T1 = 10.01153$
$R2 = 13.91811$ $Z2 = 0.00130$ $T2 = 10.01366$
$Z3 = 0.01087$ $T3 = 10.01880$ $R3 = 13.91889$
Avg. Concentration: 10.02   %

Calibration Curve:
$Concentration = A + Bx + Cx2 + Dx3 + Ex4$
$r = 9.99994E-1$
Constants: $A = 0.00000E + 0$
$B = 9.29116E-1$ $C = 1.26900E-2$
$D = 0.00000E + 0$ $E = 0.00000E + 0$

NITRIC OXIDE
Date: 19Jan2010 Response Unit:PPM
$Z1 = -0.03529$ $R1 = 488.9653$ $T1 = 451.6460$
$R2 = 490.2213$ $Z2 = 0.37681$ $T2 = 454.1722$
$Z3 = 0.69378$ $T3 = 455.3191$ $R3 = 490.9652$
Avg. Concentration: 453.6   PPM

Date: 28Jan2010 Response Unit: PPM
$Z1 = 0.35355$ $R1 = 490.4896$ $T1 = 450.8998$
$R2 = 491.2955$ $Z2 = 0.72792$ $T2 = 453.3129$
$Z3 = 1.26294$ $T3 = 454.9297$ $R3 = 491.3667$
Avg. Concentration: 452.0   PPM

Calibration Curve:
$Concentration = A + Bx + Cx2 + Dx3 + Ex4$
$r = 9.99995E-1$
Constants: $A = 0.00000E + 0$
$B = 8.97507E-1$ $C = 3.40000E-5$
$D = 0.00000E + 0$ $E = 0.00000E + 0$

SULFUR DIOXIDE *
Date: 19Jan2010 Response Unit:PPM
$Z1 = -0.00177$ $R1 = 101.3279$ $T1 = 91.01780$
$R2 = 101.5012$ $Z2 = 0.03768$ $T2 = 91.02749$
$Z3 = 0.15600$ $T3 = 91.04919$ $R3 = 101.6885$
Avg. Concentration: 90.03   PPM

Date: 28Jan2010 Response Unit: PPM
$Z1 = -0.03477$ $R1 = 101.4266$ $T1 = 90.68078$
$R2 = 101.4765$ $Z2 = -0.02790$ $T2 = 90.81634$
$Z3 = 0.10977$ $T3 = 90.94830$ $R3 = 101.6130$
Avg. Concentration: 89.82   PPM

Calibration Curve:
$Concentration = A + Bx + Cx2 + Dx3 + Ex4$
$r = 9.99999E-1$
Constants: $A = 0.00000E + 0$
$8 = 1.05169E + 0$ $C = 6.00000E-6$
$D = 0.00000E + 0$ $E = 0.00000E + 0$
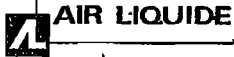
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RATA CLASS

AIR LIQUIDE | Air Liquide America Specialty Gases LLC | **(S) SCOTT™**

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	Customer
P.O. No.: 57858-71-65000	CLEAN AIR ENGINEERING
AIR LIQUIDE AMERICA SPECIALTY GASES LLC Project No.: 05-83307-001	DON ALLEN
1290 COMBERMERE STREET	500 W. WOOD STREET
TROY, MI 48083	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: EB0011451   Certification Date: 04Jan2010   Exp. Date: 03Jan2013
Cylinder Pressure***:   1849 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	48.2	PPM	+/- 1%	Direct NIST and VSL
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 1	02Oct2010	KAL003109	101.0 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	24Dec2009	FTIR

ANALYZER READINGS

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

First Triad Analysis   Second Triad Analysis   Calibration Curve

CARBON MONOXIDE

Date: 28Dec2009 Response Unit:PPM		
Z1=0.03183	R1 = 101.1945	T1 = 48.26842
R2 = 101.2298	Z2 = 0.03304	T2 = 48.27261
Z3 = 0.06765	T3 = 48.33387	R3 = 101.2757
Avg. Concentration:	48.18	PPM

Date: 04Jan2010 Response Unit: PPM		
Z1 = 0.01474	R1 = 101.1699	T1 = 48.20196
R2 = 101.2582	Z2 = 0.05407	T2 = 48.37728
Z3 = 0.10127	T3 = 48.45435	R3 = 101.2630
Avg. Concentration:	48.21	PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99990E-1	
Constants:	A = 0.00000E+0
B = 9.81711E-1	C = 6.28000E-4
D = 1.00000E-6	E = 0.00000E+0
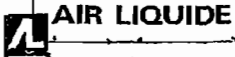
APPROVED BY: _____
                        Rob McCrandall

AIR LIQUIDE Air Liquide America Specialty Gases LLC (S) Scott™

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

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory   **Customer**

P.O. No.: 57534-71-65000   CLEAN AIR ENGINEERING

AIR LIQUIDE AMERICA SPECIALTY GASES LLC   Project No.: 05-78153-002   DON ALLEN

1290 COMBERMERE STREET   500 W. WOOD STREET

TROY, MI 48083   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: ALM054744   **Certification Date:**   28Jul2009   **Exp. Date:**   27Jul2012

Cylinder Pressure***:   1983 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	98.5	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 1	02Oct2010	KAL003128	101.0 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	16Jul2009	FTIR

ANALYZER READINGS

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

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

CARBON MONOXIDE

Date: 21Jul2009	Response Unit:PPM	
Z1 = -0.02619	R1 = 25.05672	T1 = 98.05983
R2 = 25.09750	Z2 = 0.03499	T2 = 98.21467
Z3 = 0.11000	T3 = 98.44034	R3 = 25.13916
Avg. Concentration:	98.79	PPM

Date: 28Jul2009	Response Unit: PPM	
Z1 = 0.04130	R1 = 101.1553	T1 = 98.43124
R2 = 101.2594	Z2 = 0.08861	T2 = 98.44001
Z3 = 0.16955	T3 = 98.51880	R3 = 101.2611
Avg. Concentration:	98.24	PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99991E-1	
Constants:	A = 0.00000E+0
B = 9.93719E-1	C = 8.63000E-4
D = 1.00000E-6	E = 0.00000E+0

APPROVED BY: _____

     Rob McCrandall

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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   **Customer**

P.O. No.: 57534-71-65000   CLEAN AIR ENGINEERING

AIR LIQUIDE AMERICA SPECIALTY GASES LLC   Project No.: 05-78153-003   DON ALLEN

1290 COMBERMERE STREET   500 W. WOOD STREET

TROY, MI 48083   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: ALM033730   **Certification Date:**   27Jul2009   **Exp. Date:**   26Jul2012

Cylinder Pressure***:   2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.91	%	+/- 1%	Direct NIST and NMi
OXYGEN	14.1	%	+/- 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	01Dec2011	K016398	23.20 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
PIR/2000/609015	16Jul2009	NDIR
CAI/110P/V03018	01Jul2009	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: 27Jul2009	Response Unit:MV	
Z1=0.00000	R1=102.5000	T1=43.00000
R2=102.5000	Z2=0.00000	T2=43.00000
Z3=0.00000	T3=43.00000	R3=102.5000
Avg. Concentration:	5.909	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r=0.999992	
Constants:	A=-0.00322681
B=0.13615338	C=-0.0005754
D=1.40219E-06	E=0

OXYGEN

Date: 28Jul2009	Response Unit:%	
Z1=0.00000	R1=23.20000	T1=14.06000
R2=23.20000	Z2=0.00000	T2=14.06000
Z3=0.00000	T3=14.06000	R3=23.20000
Avg. Concentration:	14.05	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r=0.999992	
Constants:	A=-0.00675558
B=0.999864575	C=0
D=0	E=0

APPROVED BY: _____

JEFF CROTEAU

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AIR LIQUIDE | Air Liquide America Specialty Gases LLC | (S) Scott™

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

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory	Customer
	P.O. No.: 57439-71-65000	CLEAN AIR ENGINEERING
AIR LIQUIDE AMERICA SPECIALTY GASES LLC Project No.: 05-76738-005	DON ALLEN
1290 COMBERMERE STREET	500 W. WOOD STREET
TROY, MI 48083	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: ALM046255 **Certification Date:** 09Jun2009 **Exp. Date:** 08Jun2012

Cylinder Pressure***: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	13.9	%	+/- 1%	Direct NIST and NMi
OXYGEN	6.01	%	+/- 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 1675	02Oct2012	K006645	13.93 %	CARBON DIOXIDE
NTRM 2658	01Jan2010	K001290	10.03 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
PIR/2000/609015	11May2009	NDIR
CAI/110P/V03018	01Jun2009	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: 09Jun2009	Response Unit:MV
Z1=0.00000	R1=80.60000	T1=80.30000
R2=80.60000	Z2=0.00000	T2=80.30000
Z3=0.00000	T3=80.30000	R3=80.60000
Avg. Concentration:	13.86	%
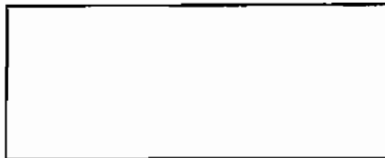
Concentration = $A + Bx + Cx^2 + Dx^3 + Ex^4$
r = 0.999998
Constants: A = -0.00492643
B = 0.111614122   C = 0.00014738
D = 6.76093E-06   E = 0

OXYGEN

Date: 09Jun2009	Response Unit:%
Z1=0.00000	R1=10.06000	T1=6.01000
R2=10.06000	Z2=0.00000	T2=6.01000
Z3=0.00000	T3=6.01000	R3=10.06000
Avg. Concentration:	6.005	%

Concentration = $A + Bx + Cx^2 + Dx^3 + Ex^4$
r = 0.999998
Constants: A = -0.00970246
B = 0.999816092   C = 0
D = 0   E = 0

APPROVED BY: _____
JEFF GROTEAU

Page   1 of 1

AIR LIQUIDE | Air Liquide America Specialty Gases LLC   **(S) SCOTT™**

```
                    1290 COMBERMERE STREET
        Shipped     TROY              MI   48083
        From:       Phone: 248-589-2950        Fax: 248-589-2134
                    C E R T I F I C A T E   O F   A N A L Y S I S
```

```
        CLEAN AIR ENGINEERING              PROJECT #: 05-76361-001
        SCOTT BROWN                        PO#:  24559-66-65000
        500 WEST WOOD STREET               ITEM #:  0501813    AL
                                           DATE: 29May2009
        PALATINE                    IL  60067
```

```
        CYLINDER #: AAL14589
        FILL PRESSURE:  02000 PSIG


        PURE MATERIAL: NITROGEN                CAS# 7727-37-9

        GRADE:       ZERO GAS

        PURITY: 99.998%
```

	MAXIMUM
IMPURITY	**CONCENTRATIONS**
THC	0.5 PPM

ANALYST: _aOrcie_____

CERTIFIED MASTER CLASS
Single-Certified Calibration Standard

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

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information
Project No.: 05-76093-001
Item No.: 05020002680PAL
P.O. No.: 57397-71-65000

Cylinder Number: ALM000611
Cylinder Size: AL
Certification Date: 19May2009
Expiration Date: 19May2011

Customer

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

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
NITROGEN DIOXIDE	49.7	PPM	2
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: ~~Hilary Thatcher~~   DATE: 5/27/09
HILARY THATCHER

7E-4 Interference Response

Date of Test	8/23/2007
Analyzer Type	Thermo
Model No	48iHL
Serial Number	605114590
CleanAir Asset#	204533
Instrument Range	100.00 ppm
Span Cal Response	90 ppm
Zero Cal Response	-0.07 ppm
2.5% of Calibration Span	2.25 ppm
Tester	Art Dean

CleanAir

Test Location: CleanAir
500 West Wood St.
Palatine, IL 60067

You may introduce the appropriate interference test gasses into the analyzer separately or as mixtures.
This test must be performed both with and without CO.
Interferences are gasses that are potentially encountered during a test.
The total interference response must not be greater than 2.5% of the calibration span for the analyzer tested.

Test Gas Type	Conc/Unit	Analyzer Response	Absolute Diff
NO	13.73 ppm	89.50	0.56%
NO2	15.50 ppm	90.00	0.00%
HCL	9.48 ppm	90.00	0.00%
H2	45.41 ppm	90.30	0.33%
SO2	17.50 ppm	90.00	0.00%
CH4	44.93 ppm	90.00	0.00%
NH3	8.88 ppm	90.00	0.00%
CO	45.56 ppm	NA	NA
N2O	9.06 ppm	89.70	0.33%
CO2 High	15.43 %	82.50	8.33%
CO2 Low	4.52 %	86.10	4.33%
H2O	2.00 %	87.40	0.91%

Test Gas Type	Conc/Unit	Analyzer Response	Absolute Diff
NO	15.15 ppm	0.00	0.00%
NO2	17.1 ppm	0.00	0.00%
HCL	10.46 ppm	0.00	0.00%
H2	50.1 ppm	0.00	0.00%
SO2	19.31 ppm	0.00	0.00%
CH4	49.57 ppm	0.00	0.00%
NH3	9.8 ppm	0.00	0.00%
CO	50.27 ppm	NA	NA
N2O	10 ppm	-0.62	0.69%
CO2 High	17.02 %	-6.35	7.06%
CO2 Low	4.99 %	-3.50	3.89%
H2O	2 %	-1.40	1.56%

Gas Type	Conc/Unit	Cylinder
NO	15.15 ppm	AAL20914
NO2	17.1 ppm	1L1652
HCL	10.46 ppm	NA25733
H2	50.1 ppm	ALM52896
SO2	19.31 ppm	ALM46049
CH4	49.57 ppm	AAL21367
NH3	9.80 ppm	ALM52993
CO	50.27 ppm	ALM10054
N2O	10.00 ppm	ALM51673
CO2 High	17.02 %	ALM 36532
CO2	4.99 %	ALM37876
%H2O	2.00 %	MKS205321
N2	99.99 %	K24662
CO High Span	961 ppm	ALM47921

Tester: _____

7E-4 Interference Response

Date of Test	9/5/2007
Analyzer Type	Ametek
Model No	921CE SO2
Serial Number	AD-921-S051
CleanAir Asset#	204589
Instrument Range	100.00 ppm
Span Cal Response	90 ppm
Zero Cal Response	0.00 ppm
2.5% of Calibration Span	2.25 ppm
Tester	Art Dean

CleanAir

Test Location: CleanAir
500 West Wood St.
Palatine, IL 60067

You may introduce the appropriate interference test gasses into the analyzer separately or as mixtures.
This test must be performed both with and without SO2.
Interferences are gasses that are potentially encountered during a test.
The total interference response must not be greater than 2.5% of the calibration span for the analyzer tested.

Test Gas Type			
NO	13.71 ppm	90.00	0.00%
NO2	15.47 ppm	90.20	0.22%
HCL	9.46 ppm	90.00	0.00%
H2	45.33 ppm	90.00	0.00%
SO2	17.47 ppm	NA	NA
CH4	44.85 ppm	90.00	0.00%
NH3	8.87 ppm	90.00	0.00%
CO	45.49 ppm	90.00	0.00%
N2O	9.05 ppm	90.00	0.00%
CO2 High	15.40 %	89.90	0.11%
CO2 Low	4.52 %	90.00	0.00%
H2O	1.04 %	89.10	0.04%

Test Gas Type			
NO	15.15 ppm	0.00	0.00%
NO2	17.1 ppm	0.20	0.22%
HCL	10.46 ppm	0.00	0.00%
H2	50.1 ppm	0.00	0.00%
SO2	19.31 ppm	NA	NA
CH4	49.57 ppm	0.00	0.00%
NH3	9.8 ppm	0.00	0.00%
CO	50.27 ppm	0.00	0.00%
N2O	10 ppm	0.00	0.00%
CO2 High	17.02 %	0.00	0.00%
CO2 Low	4.99 %	0.00	0.00%
H2O	1.035 %	0.00	0.00%

Gas Type	Conc Unit	Cylinder
NO	15.15 ppm	AAL20914
NO2	17.1 ppm	1L1652
HCL	10.46 ppm	NA25733
H2	50.1 ppm	ALM52896
SO2	19.31 ppm	ALM46049
CH4	49.57 ppm	AAL21367
NH3	9.80 ppm	ALM52993
CO	50.27 ppm	ALM10054
N2O	10.00 ppm	ALM51673
CO2 High	17.02 %	ALM 36532
CO2	4.99 %	ALM37876
%H2O	1.04 %	MKS209040
N2	99.99 %	K24662
SO2 High Span	945.7 ppm	ALM57777

Tester: _____

7E-4 Interference Response

Date of Test	8/31/2007
Analyzer Type	Thermo
Model No	48i
Serial Number	713421694
CleanAir Asset#	205209
Instrument Range	100.00 ppm
Span Cal Response	90 ppm
Zero Cal Response	0.00 ppm
2.5% of Calibration Span	2.25 ppm
Tester	Art Dean

Test Location: CleanAir
500 West Wood St.
Palatine, IL 60067

CleanAir

You may introduce the appropriate interference test gasses into the analyzer separately or as mixtures.
This test must be performed both with and without CO.
Interferences are gasses that are potentially encountered during a test.
The total interference response must not be greater than 2.5% of the calibration span for the analyzer tested.

Test Gas Type	Conc Unit	Analyzer Response	Absolute Rate
NO	13.73 ppm	89.70	0.33%
NO2	15.50 ppm	89.70	0.33%
HCL	9.48 ppm	89.70	0.33%
H2	45.41 ppm	89.60	0.44%
SO2	17.50 ppm	89.70	0.33%
CH4	44.93 ppm	90.00	0.00%
NH3	8.88 ppm	89.90	0.11%
CO	45.56 ppm	NA	NA
N2O	9.06 ppm	89.70	0.33%
CO2 High	15.43 %	94.70	5.22%
CO2 Low	4.52 %	91.00	1.11%
H2O	1.40 %	90.00	1.42%

Test Gas Type	Conc Unit	Analyzer Response	Absolute Rate
NO	15.15 ppm	-0.38	0.42%
NO2	17.1 ppm	-0.38	0.42%
HCL	10.46 ppm	-0.38	0.42%
H2	50.1 ppm	-0.39	0.43%
SO2	19.31 ppm	-0.34	0.38%
CH4	49.57 ppm	0.00	0.00%
NH3	9.8 ppm	-0.13	0.14%
CO	50.27 ppm	NA	NA
N2O	10 ppm	-0.38	0.42%
CO2 High	17.02 %	-0.30	0.33%
CO2 Low	4.99 %	0.00	0.00%
H2O	1.4 %	0.11	0.12%

Gas	Conc Unit	Cylinder #
NO	15.15 ppm	AAL20914
NO2	17.1 ppm	1L1652
HCL	10.46 ppm	NA25733
H2	50.1 ppm	ALM52896
SO2	19.31 ppm	ALM46049
CH4	49.57 ppm	AAL21367
NH3	9.80 ppm	ALM52993
CO	50.27 ppm	ALM10054
N2O	10.00 ppm	ALM51673
CO2 High	17.02 %	ALM 36532
CO2	4.99 %	ALM37876
%H2O	1.40 %	MKS205321
N2	99.99 %	K24662
CO Span Gas	981 ppm	ALM47921

Tester: _____

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REFERENCE METHOD FIELD DATA   E

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Date: March 23, 2010
Start Time   7:36
Stop Time   8:01
CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	CO2	O2	SO2	NOX	CO
	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
	%dv	%dv	ppmdv	ppmdv	ppmdv
Instrument Information					
Manufacturer:	Servomex	Servomex	Wstrn	T.E.I.	T.E.I.
Model:	1415C	1420C	Rsrch 921L	42i-HL	48i
Detection:	NDIR	Paramagn.	UV Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	204217	205832	205184	205956	205194

Calibration Span Value (CS)

	13.900	14.100	89.900	453.000	98.500

System Response Time (seconds)

	45	45	45	45	45

Manufacturer Certified Cylinder Value (C_v)

Zero	0.000	0.000	0.000	0.000	0.000
Low	5.910	6.010	44.900	225.000	48.200
Mid					
High	13.900	14.100	89.900	453.000	98.500

Actual gas to be used for bias checks

	5.910	14.100	44.900	225.000	48.200

Cylinder ID

Zero	AAL14589	AAL14589	AAL14589	AAL14589	AAL14589
Low	ALM033730	ALM046255	ALM010885	ALM010885	EB0011451
Mid					
High	ALM046255	ALM033730	CC124384	CC124384	ALM054744

Analyzer Calibration Response (C_{Dir})

Zero	0.006	0.002	-0.110	0.038	-0.345
Low	5.942	6.015	43.504	226.086	49.020
Mid	9.884	0.056	53.932	392.153	-0.686
High	13.911	14.094	90.008	453.635	98.828

Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)

Zero	0.0%	0.0%	-0.1%	0.0%	-0.4%
Low	0.2%	0.0%	-1.6%	0.2%	0.8%
Mid	N/A	N/A	N/A	N/A	N/A
High	0.1%	0.0%	0.1%	0.1%	0.3%

Calibration Error Status

Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	N/A	N/A	N/A	N/A	N/A
High	OK	OK	OK	OK	OK

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07:36:02	0.020	0.009	-0.236	7.424	5.761
07:36:17	0.015	0.008	-0.269	0.814	2.055
07:36:32	0.012	0.006	-0.293	0.480	0.549
07:36:47	0.006	0.006	-0.217	0.179	-0.294
07:37:02	0.008	0.005	-0.080	0.033	-0.366
07:37:17	0.004	-0.005	-0.034	-0.098	-0.376
07:37:32	1.572	5.834	-0.049	-0.122	-0.366
07:37:47	5.534	13.581	-0.088	-0.122	-0.346

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Date: **March 23, 2010**
Start Time 7:36
Stop Time 8:01
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
07:38:02	5.921	14.071	-0.098	-0.098	-0.312
07:38:17	5.949	14.102	-0.054	-0.114	-0.233
07:38:32	5.954	14.109	-0.049	-0.089	-0.165
07:38:47	6.889	12.158	-0.070	-0.106	-0.103
07:39:02	12.843	6.624	-0.140	-0.122	-0.070
07:39:17	13.810	6.037	-0.127	-0.146	-0.235
07:39:32	13.901	6.018	-0.077	-0.106	-0.340
07:39:47	13.915	6.013	-0.034	-0.114	-0.464
07:40:02	13.918	6.012	-0.023	-0.098	-0.469
07:40:17	12.956	4.743	9.913	-0.138	-0.464
07:40:32	10.115	0.429	69.763	68.702	-0.461
07:40:47	9.925	0.016	86.931	250.313	-0.440
07:41:02	9.914	0.000	88.992	402.157	-0.524
07:41:17	9.914	-0.002	89.368	448.514	-0.601
07:41:32	9.895	-0.023	89.592	452.356	-0.682
07:41:47	9.914	-0.008	89.944	453.212	-0.666
07:42:02	9.915	-0.009	89.984	453.732	-0.664
07:42:17	9.906	-0.009	90.097	453.960	-0.679
07:42:32	9.719	0.160	75.835	454.147	-0.731
07:42:47	9.932	0.022	43.429	427.977	-0.682
07:43:02	10.000	-0.015	42.533	294.335	-0.645
07:43:17	10.009	-0.020	43.004	238.070	-0.659
07:43:32	10.008	-0.018	43.240	226.935	-0.684
07:43:47	10.006	-0.016	43.407	226.219	-0.735
07:44:02	10.012	-0.015	43.528	226.048	-0.731
07:44:17	10.013	-0.017	43.577	225.991	-0.690
07:44:32	8.735	0.135	39.897	225.885	-0.617
07:44:47	1.136	0.054	10.549	201.432	3.058
07:45:02	0.093	0.006	1.384	79.341	18.755
07:45:17	0.033	0.005	0.348	18.242	53.685
07:45:32	0.029	0.005	0.150	1.465	79.109
07:45:47	0.021	0.006	0.088	0.733	93.113
07:46:02	0.021	0.005	0.039	0.611	95.376
07:46:17	0.018	0.006	0.052	0.611	95.865
07:46:32	0.012	0.005	0.027	0.611	97.583
07:46:47	0.017	0.005	0.027	0.611	98.784
07:47:02	0.013	0.004	0.024	0.586	98.834
07:47:17	0.009	0.004	0.019	0.546	98.865
07:47:32	0.109	0.030	0.145	0.529	98.636
07:47:47	0.046	0.008	0.267	0.546	95.284
07:48:02	0.011	0.003	0.165	0.831	83.637
07:48:17	0.009	0.003	0.096	0.464	65.910
07:48:32	0.005	0.002	0.053	-0.024	54.891
07:48:47	0.005	0.003	0.024	-0.033	50.030
07:49:02	0.004	0.001	0.022	-0.073	49.122
07:49:17	0.003	0.002	-0.008	-0.033	49.016
07:49:32	0.004	0.002	-0.002	-0.024	49.021
07:49:47	0.005	0.002	0.006	-0.008	49.024
07:59:26	0.919	1.538	2.281	146.992	13.418
07:59:41	0.077	1.033	1.136	64.607	11.422
07:59:56	0.023	1.007	0.962	39.349	5.959
08:00:11	0.018	1.007	0.928	43.183	2.357

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

Date: **March 23, 2010**
Start Time   7:36
Stop Time   8:01
CALIBRATION ERROR

	Channel 1 CO2 FF Outlet 1 %dv	Channel 2 O2 FF Outlet 1 %dv	Channel 3 SO2 FF Outlet 1 ppmdv	Channel 4 NOX FF Outlet 1 ppmdv	Channel 5 CO FF Outlet 1 ppmdv
08:00:26	0.012	1.005	0.928	44.379	0.174
08:00:41	0.007	1.003	0.933	44.795	-0.255
08:00:56	0.008	1.003	0.936	45.063	-0.361
08:01:11	0.009	1.004	0.949	45.242	-0.364

NOX Conversion Efficiency
NO2 = 49.7
Efficiency =   90.9%

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   7:53
Stop Time   7:57
CALIBRATION BIAS 00

		Channel 1 CO2 FF Outlet 1 %dv	Channel 2 O2 FF Outlet 1 %dv	Channel 3 SO2 FF Outlet 1 ppmdv	Channel 4 NOX FF Outlet 1 ppmdv	Channel 5 CO FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.020	0.022	0.007	-0.011	-0.588
C_{uf}	Upscale gas	5.934	13.946	41.691	222.181	49.007
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce}	Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.1%	0.1%	0.1%	0.0%	-0.2%
	Upscale gas	-0.1%	-1.0%	-2.0%	-0.9%	0.0%
System Blas Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)						
C_{oi}	Zero gas	N/A	N/A	N/A	N/A	N/A
C_{ui}	Upscale gas	N/A	N/A	N/A	N/A	N/A
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	N/A	N/A	N/A	N/A	N/A
	Upscale gas	N/A	N/A	N/A	N/A	N/A
Drift Assessment Status						
	Zero gas	N/A	N/A	N/A	N/A	N/A
	Upscale gas	N/A	N/A	N/A	N/A	N/A

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07:53:09	0.022	0.021	0.011	-0.008	49.000
07:53:24	0.018	0.023	0.005	-0.008	49.011
07:53:39	0.021	0.022	0.006	-0.016	49.009
07:53:54	0.165	0.023	0.036	-0.024	48.975
07:54:09	7.119	0.011	14.890	13.268	47.953
07:54:24	9.695	0.004	34.388	62.491	39.214
07:54:39	9.848	0.004	38.634	171.901	23.320
07:54:54	9.869	0.001	39.450	218.950	8.661
07:55:09	9.883	-0.005	40.381	221.775	1.968
07:55:24	9.897	0.000	41.050	221.954	-0.155
07:55:39	9.900	0.000	41.437	222.100	-0.558
07:55:54	9.911	0.000	41.708	222.189	-0.591
07:56:09	9.915	0.001	41.928	222.255	-0.586
07:56:24	9.465	2.775	40.073	222.100	-0.586
07:56:39	6.542	12.597	16.034	221.571	-0.521
07:56:54	5.982	13.877	4.549	138.682	-0.249
07:57:09	5.944	13.933	2.354	11.933	0.002
07:57:24	5.932	13.949	1.591	3.085	0.099
07:57:39	5.926	13.956	1.216	0.944	0.065

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   8:03
Stop time   8:30
REFERENCE METHOD RUN 1

		Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.020	0.022	0.007	-0.011	-0.588
C_{ui}	Initial upscale	5.934	13.946	41.691	222.181	49.007
C_{of}	Final zero	0.051	0.029	0.050	0.717	-0.557
C_{uf}	Final upscale	5.952	13.937	41.530	222.122	48.977
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.252	8.790	5.978	164.509	16.206
C_{Gas}	**Bias adjusted**	**10.222**	**8.880**	**6.423**	**166.525**	**16.316**

Clock Time (at end of sample period)

041410 130218

	CO_2	O_2	SO_2	NOX	CO
08:04	9.767	9.346	5.351	153.468	18.545
08:05	9.748	9.442	5.853	155.997	23.065
08:06	9.915	9.156	5.522	156.894	24.615
08:07	10.070	8.958	5.904	163.846	22.352
08:08	9.831	9.284	5.839	167.108	22.085
08:09	9.983	9.087	5.659	172.039	20.849
08:10	10.117	8.906	5.402	174.076	24.392
08:11	9.806	9.319	5.025	173.197	22.144
08:12	9.909	9.172	5.035	169.813	18.059
08:13	9.990	9.071	5.274	165.146	19.751
08:14	10.540	8.420	5.884	172.025	20.401
08:15	10.829	8.140	7.451	179.485	17.673
08:16	9.954	9.138	6.295	163.128	13.352
08:17	9.993	9.080	5.531	156.506	15.092
08:18	10.668	8.317	5.661	158.091	14.198
08:19	10.668	8.279	5.930	161.607	12.827
08:20	10.721	8.253	6.430	169.530	12.772
08:21	10.385	8.596	5.630	161.797	10.361
08:22	10.995	7.999	5.937	168.567	11.270
08:23	10.429	8.572	6.543	170.578	10.563
08:24	10.839	8.078	6.605	169.353	10.690
08:25	10.623	8.373	7.020	172.572	11.449
08:26	10.107	8.947	5.855	162.452	9.123
08:27	10.506	8.520	6.205	163.392	10.943
08:28	10.193	8.863	6.524	154.640	11.765
08:29	10.233	8.873	6.810	155.171	15.332
08:30	9.997	9.135	6.221	151.260	13.882

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   8:30
Stop Time   8:35
CALIBRATION BIAS 01

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.051	0.029	0.050	0.717	-0.557
C_{uf} Upscale gas	5.952	13.937	41.530	222.122	48.977
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce} Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.3%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	0.1%	-1.1%	-2.2%	-0.9%	0.0%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.020	0.022	0.007	-0.011	-0.588
C_{ui} Upscale gas	5.934	13.946	41.691	222.181	49.007
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.2%	0.1%	0.0%	0.2%	0.0%
Upscale gas	0.1%	-0.1%	-0.2%	0.0%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130218

	CO2	O2	SO2	NOX	CO
08:30:57	0.279	0.172	2.468	95.759	18.673
08:31:12	0.108	0.051	0.915	38.827	25.298
08:31:27	0.078	0.038	0.420	4.387	36.700
08:31:42	0.069	0.033	0.222	1.539	44.617
08:31:57	0.058	0.030	0.119	0.904	48.228
08:32:12	0.049	0.030	0.034	0.635	48.907
08:32:27	0.047	0.029	-0.002	0.611	49.014
08:32:42	0.043	0.028	-0.021	0.456	49.011
08:32:57	4.881	0.023	6.877	0.358	48.467
08:33:12	9.595	0.000	30.836	56.141	41.581
08:33:27	9.860	0.000	38.234	184.403	25.395
08:33:42	9.898	0.000	39.922	213.700	10.497
08:33:57	9.913	0.000	40.682	221.221	2.424
08:34:12	9.921	0.000	41.188	221.840	0.050
08:34:27	9.930	0.000	41.548	222.271	-0.519
08:34:42	9.936	0.003	41.853	222.255	-0.586
08:34:57	8.205	7.808	32.798	222.483	-0.565
08:35:12	6.126	13.616	9.043	168.580	-0.459
08:35:27	5.965	13.912	3.092	43.288	-0.238
08:35:42	5.945	13.943	1.762	10.248	-0.033
08:35:57	5.945	13.955	1.184	1.408	0.045

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   8:37
Stop time   9:04
REFERENCE METHOD RUN 2

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.051	0.029	0.050	0.717	-0.557
C_{ui}	Initial upscale	5.952	13.937	41.530	222.122	48.977
C_{of}	Final zero	0.056	0.031	0.026	0.535	-0.535
C_{uf}	Final upscale	5.959	13.935	41.219	221.256	48.841
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.141	8.987	4.287	162.972	10.628
C_{Gas}	**Bias adjusted**	**10.102**	**9.082**	**4.615**	**165.238**	**10.890**

Clock Time (at end of sample period)

041410 130218

	CO2	O2	SO2	NOX	CO
08:38	10.863	8.166	6.274	177.224	7.802
08:39	10.086	9.035	6.213	171.425	7.813
08:40	10.771	8.279	5.943	163.981	9.691
08:41	10.061	9.097	4.750	159.402	10.426
08:42	10.301	8.792	3.853	158.934	9.769
08:43	10.333	8.766	3.544	163.915	9.753
08:44	10.237	8.892	3.735	164.967	12.077
08:45	10.240	8.860	3.792	161.708	10.012
08:46	10.022	9.101	3.667	160.710	9.898
08:47	10.122	9.019	3.750	156.323	10.246
08:48	9.717	9.511	3.576	156.241	9.452
08:49	9.884	9.298	3.773	161.567	12.052
08:50	10.057	9.081	4.365	164.212	13.119
08:51	10.256	8.878	4.813	163.972	14.465
08:52	10.204	8.900	4.314	161.184	14.952
08:53	10.348	8.708	4.304	165.061	14.210
08:54	10.273	8.825	3.736	170.332	11.652
08:55	10.114	9.006	4.011	168.824	9.181
08:56	10.065	9.070	4.559	163.321	9.627
08:57	10.210	8.900	4.683	164.109	9.753
08:58	9.826	9.393	4.211	161.915	8.551
08:59	9.673	9.585	3.880	156.392	8.431
09:00	10.060	9.057	4.091	161.657	10.275
09:01	10.092	9.005	4.275	165.393	11.155
09:02	10.217	8.851	4.095	162.884	10.689
09:03	9.906	9.256	3.922	160.329	11.127
09:04	9.873	9.309	3.618	154.265	10.780

March 23, 2010
Start Time   9:05
Stop Time   9:09
CALIBRATION BIAS 02

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.056	0.031	0.026	0.535	-0.535
C_{uf} Upscale gas	5.959	13.935	41.219	221.256	48.841
Analyzer Calibration Error Reponses (C_{DIr})					
C_{oce} Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce} Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	0.1%	-1.1%	-2.5%	-1.1%	-0.2%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.051	0.029	0.050	0.717	-0.557
C_{ui} Upscale gas	5.952	13.937	41.530	222.122	48.977
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.1%	0.0%	-0.3%	-0.2%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130218

	CO2	O2	SO2	NOX	CO
09:05:41	0.086	0.045	0.282	2.426	36.799
09:05:56	0.072	0.037	0.124	0.798	45.911
09:06:11	0.065	-0.033	0.073	0.537	48.116
09:06:26	0.055	0.031	0.016	0.554	48.801
09:06:41	0.049	0.029	-0.013	0.513	48.863
09:06:56	0.049	0.027	-0.002	0.480	48.860
09:07:11	4.795	0.023	6.939	0.480	48.646
09:07:26	9.599	0.006	31.378	21.523	42.133
09:07:41	9.873	0.004	38.247	160.415	27.828
09:07:56	9.903	0.000	39.847	215.043	10.631
09:08:11	9.918	0.000	40.744	220.651	3.326
09:08:26	9.928	0.000	41.284	221.180	-0.010
09:08:41	9.935	0.000	41.628	221.212	-0.488
09:08:56	8.818	5.888	35.656	221.376	-0.586
09:09:11	6.242	13.427	10.230	175.181	-0.531
09:09:26	5.975	13.909	3.188	55.067	-0.349
09:09:41	5.955	13.942	1.818	12.992	-0.156
09:09:56	5.946	13.954	1.366	1.514	-0.011

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   9:11
Stop time   9:38
REFERENCE METHOD RUN 3

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.056	0.031	0.026	0.535	-0.535
C_{ui}	Initial upscale	5.959	13.935	41.219	221.256	48.841
C_{of}	Final zero	0.055	0.030	-0.021	0.486	-0.501
C_{uf}	Final upscale	5.953	13.935	41.495	221.265	48.898
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.269	8.796	3.700	166.719	11.316
C_{Gas}	**Bias adjusted**	**10.231**	**8.889**	**4.015**	**169.409**	**11.550**

Clock Time (at end of sample period)

041410 130218

09:12	10.432	8.631	4.982	156.866	18.474
09:13	11.066	7.911	5.444	173.020	18.259
09:14	10.748	8.280	4.640	186.711	14.651
09:15	9.953	9.139	3.292	174.567	9.654
09:16	10.476	8.529	2.851	180.346	9.811
09:17	10.817	8.205	3.355	185.932	10.192
09:18	10.579	8.477	4.280	183.415	9.827
09:19	10.273	8.790	4.013	166.245	9.490
09:20	10.412	8.628	3.913	165.153	9.462
09:21	10.547	8.499	3.947	170.529	10.094
09:22	10.102	8.972	3.535	155.598	8.842
09:23	10.274	8.794	3.355	157.515	8.972
09:24	10.545	8.486	3.611	156.138	10.146
09:25	10.245	8.801	3.846	159.237	10.137
09:26	10.207	8.882	3.863	159.719	9.557
09:27	9.705	9.493	3.370	145.482	8.355
09:28	9.946	9.185	3.442	147.471	10.234
09:29	10.338	8.685	3.735	159.941	12.104
09:30	10.222	8.815	3.742	167.149	10.833
09:31	10.260	8.759	3.283	165.053	9.756
09:32	10.491	8.492	3.360	176.455	13.544
09:33	10.177	8.855	3.378	182.300	12.174
09:34	10.026	9.065	3.342	178.177	12.807
09:35	10.098	8.947	3.225	176.359	12.585
09:36	9.919	9.211	3.285	167.035	12.569
09:37	9.658	9.547	3.395	155.952	11.974
09:38	9.754	9.422	3.410	149.054	11.037

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   9:39
Stop Time   9:44
CALIBRATION BIAS 03

	Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_s)					
C_{of} Zero gas	0.055	0.030	-0.021	0.486	-0.501
C_{uf} Upscale gas	5.953	13.935	41.495	221.265	48.898
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce} Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.1%	0.1%	-0.2%
Upscale gas	0.1%	-1.1%	-2.2%	-1.1%	-0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_s)					
C_{oi} Zero gas	0.056	0.031	0.026	0.535	-0.535
C_{ui} Upscale gas	5.959	13.935	41.219	221.256	48.841
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.3%	0.0%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:39:37	0.098	0.049	0.319	3.345	34.449
09:39:52	0.081	0.040	0.142	0.822	43.280
09:40:07	0.066	0.035	0.032	0.611	47.560
09:40:22	0.062	0.033	-0.010	0.611	48.708
09:40:37	0.054	0.030	-0.021	0.538	48.905
09:40:52	0.049	0.028	-0.034	0.309	48.905
09:41:07	0.483	0.029	0.213	0.317	48.882
09:41:22	7.907	0.012	18.090	0.195	47.158
09:41:37	9.781	0.004	35.753	113.635	37.127
09:41:52	9.891	0.004	39.339	198.169	21.047
09:42:07	9.906	0.002	40.410	219.064	7.844
09:42:22	9.920	0.002	41.081	220.993	1.984
09:42:37	9.931	0.000	41.579	221.360	-0.117
09:42:52	9.934	0.089	41.823	221.441	-0.487
09:43:07	7.761	9.431	28.168	214.953	-0.550
09:43:22	6.085	13.711	6.800	181.514	-0.466
09:43:37	5.963	13.915	2.509	72.495	-0.296
09:43:52	5.951	13.938	1.545	4.762	-0.127
09:44:07	5.944	13.950	1.089	1.124	-0.005

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   9:45
Stop time   10:12
REFERENCE METHOD RUN 4

		Channel 1 CO2 FF Outlet 1 %dv	Channel 2 O2 FF Outlet 1 %dv	Channel 3 SO2 FF Outlet 1 ppmdv	Channel 4 NOX FF Outlet 1 ppmdv	Channel 5 CO FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.055	0.030	-0.021	0.486	-0.501
C_{ui}	Initial upscale	5.953	13.935	41.495	221.265	48.898
C_{of}	Final zero	0.065	0.030	-0.010	0.548	-0.514
C_{uf}	Final upscale	5.960	13.941	41.450	221.194	48.996
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.494	8.538	2.437	166.946	9.931
C_{Gas}	**Bias adjusted**	**10.458**	**8.626**	**2.655**	**169.662**	**10.174**

Clock Time (at end of sample period)

041410 130218

	CO2	O2	SO2	NOX	CO
09:46	9.437	9.876	3.049	156.107	12.095
09:47	9.566	9.705	2.814	159.235	13.772
09:48	9.739	9.475	2.798	161.508	14.012
09:49	10.168	8.891	2.833	164.123	16.344
09:50	10.285	8.758	2.733	164.945	15.800
09:51	10.138	8.924	2.355	159.353	14.102
09:52	10.606	8.371	2.316	163.997	13.012
09:53	10.847	8.143	2.279	174.229	12.954
09:54	10.906	8.038	2.059	169.994	10.394
09:55	11.005	7.962	2.170	167.674	10.729
09:56	10.684	8.260	2.128	161.416	9.055
09:57	10.659	8.310	2.208	164.756	9.966
09:58	10.183	8.801	2.205	169.772	9.593
09:59	10.660	8.310	2.318	176.390	8.748
10:00	10.489	8.502	2.306	175.513	8.486
10:01	10.573	8.468	2.316	179.929	11.468
10:02	10.632	8.344	2.124	168.972	9.875
10:03	10.817	8.195	2.267	169.640	10.080
10:04	10.597	8.380	2.250	160.295	10.996
10:05	10.819	8.196	2.545	167.790	9.554
10:06	10.343	8.658	2.375	161.726	6.539
10:07	11.335	7.635	2.549	167.664	6.171
10:08	10.360	8.667	2.608	168.295	4.764
10:09	10.765	8.196	2.449	164.365	4.508
10:10	11.056	7.965	2.720	177.546	5.969
10:11	10.040	9.083	2.628	167.293	4.133
10:12	10.626	8.425	2.409	165.022	5.015

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   10:13
Stop Time   10:17
CALIBRATION BIAS 04

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	CO_2	O_2	SO_2	NOX	CO
	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
	%dv	%dv	ppmdv	ppmdv	ppmdv

System Response to Calibration Gasses (C_S)

		Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
C_{of}	Zero gas	0.065	0.030	-0.010	0.548	-0.514
C_{uf}	Upscale gas	5.960	13.941	41.450	221.194	48.996

Analyzer Calibration Error Reponses (C_{Dir})

C_{oce}	Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce}	Upscale gas	5.942	14.094	43.504	226.086	49.020

Actual Upscale Gas Value (C_{MA})

C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

	13.900	14.100	89.900	453.000	98.500

System Bias as Perce   3

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
Zero gas	0.4%	0.2%	0.1%	0.1%	-0.2%
Upscale gas	0.1%	-1.1%	-2.3%	-1.1%	0.0%

System Bias Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

C_{oi}	Zero gas	0.055	0.030	-0.021	0.486	-0.501
C_{ui}	Upscale gas	5.953	13.935	41.495	221.265	48.898

Drift Assessment as Percent of Calibration Span Value (D) (3%)

Zero gas	0.1%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	0.0%	-0.1%	0.0%	0.1%

Drift Assessment Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
10:13:59	0.081	0.035	0.050	0.644	47.015
10:14:14	0.072	0.031	0.003	0.611	48.723
10:14:29	0.063	0.031	-0.024	0.611	48.954
10:14:44	0.061	0.027	-0.010	0.423	49.014
10:14:59	0.315	0.029	0.015	0.333	49.019
10:15:14	7.611	0.013	14.403	3.223	47.352
10:15:29	9.782	0.006	34.717	48.718	37.919
10:15:44	9.896	0.003	39.242	185.470	20.054
10:15:59	9.920	0.004	40.495	218.218	7.093
10:16:14	9.939	0.002	41.070	220.912	1.327
10:16:29	9.951	0.000	41.525	221.294	-0.285
10:16:44	9.909	0.648	41.754	221.376	-0.537
10:16:59	7.190	11.137	25.457	221.579	-0.552
10:17:14	6.044	13.812	6.160	143.460	-0.454
10:17:29	5.970	13.926	2.362	21.221	-0.283
10:17:44	5.957	13.943	1.390	4.965	-0.070
10:17:59	5.951	13.955	0.929	1.010	0.037

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time 10:19
Stop time 10:46
REFERENCE METHOD RUN 5

		Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.065	0.030	-0.010	0.548	-0.514
C_{ui}	Initial upscale	5.960	13.941	41.450	221.194	48.996
C_{of}	Final zero	0.058	0.032	0.006	0.499	-0.535
C_{uf}	Final upscale	5.951	13.934	41.450	220.893	48.938
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.200	8.926	3.526	169.251	7.820
C_{Gas}	**Bias adjusted**	**10.166**	**9.019**	**3.822**	**172.155**	**8.127**

Clock Time (at end of sample period)

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	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
10:20	10.633	8.386	4.256	166.548	7.875
10:21	10.191	8.894	3.825	172.821	9.037
10:22	10.309	8.736	3.374	174.306	9.333
10:23	10.595	8.411	3.377	181.642	8.007
10:24	10.152	8.941	3.483	181.506	8.172
10:25	10.357	8.717	3.422	177.452	8.789
10:26	10.495	8.549	3.479	175.067	8.314
10:27	10.264	8.843	3.342	170.659	8.466
10:28	10.570	8.462	3.241	163.354	8.026
10:29	10.396	8.656	3.134	168.689	7.002
10:30	10.301	8.818	3.087	170.836	8.353
10:31	10.332	8.711	3.070	163.590	7.147
10:32	10.156	8.923	3.224	166.239	6.704
10:33	10.409	8.648	3.467	170.539	7.250
10:34	10.444	8.576	3.275	174.923	6.920
10:35	10.433	8.610	3.556	174.147	6.990
10:36	10.689	8.408	4.157	178.407	6.269
10:37	9.703	9.543	3.821	167.349	5.290
10:38	9.952	9.234	3.411	167.477	6.853
10:39	10.106	9.045	3.620	166.508	7.716
10:40	9.891	9.331	4.050	168.696	8.045
10:41	9.758	9.513	4.170	163.468	8.495
10:42	10.043	9.143	4.243	162.436	8.844
10:43	9.878	9.376	3.926	162.143	7.953
10:44	9.624	9.685	3.101	158.722	7.624
10:45	9.763	9.532	2.863	158.295	7.904
10:46	9.947	9.316	3.238	163.948	9.771

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   10:47
Stop Time   10:51
CALIBRATION BIAS 05

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	CO_2	O_2	SO_2	NOX	CO
	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
	%dv	%dv	ppmdv	ppmdv	ppmdv

System Response to Calibration Gasses (C_s)

		Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
C_{of}	Zero gas	0.058	0.032	0.006	0.499	-0.535
C_{uf}	Upscale gas	5.951	13.934	41.450	220.893	48.938

Analyzer Calibration Error Reponses (C_{Dir})

C_{oce}	Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce}	Upscale gas	5.942	14.094	43.504	226.086	49.020

Actual Upscale Gas Value (C_{MA})

C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

		13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

	Zero gas	0.4%	0.2%	0.1%	0.1%	-0.2%
	Upscale gas	0.1%	-1.1%	-2.3%	-1.1%	-0.1%

System Bias Status

	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_s)

C_{oi}	Zero gas	0.065	0.030	-0.010	0.548	-0.514
C_{ui}	Upscale gas	5.960	13.941	41.450	221.194	48.996

Drift Assessment as Percent of Calibration Span Value (D) (3%)

	Zero gas	-0.1%	0.0%	0.0%	0.0%	0.0%
	Upscale gas	-0.1%	-0.1%	0.0%	-0.1%	-0.1%

Drift Assessment Status

	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

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10:47:27	0.072	0.038	0.119	0.643	46.579
10:47:42	0.064	0.036	0.035	0.496	48.539
10:47:57	0.059	0.031	0.005	0.496	48.962
10:48:12	0.051	0.030	-0.022	0.504	48.954
10:48:27	0.346	0.031	0.093	0.472	48.899
10:48:42	7.698	0.014	15.678	0.447	47.554
10:48:57	9.780	0.005	35.318	112.178	36.620
10:49:12	9.896	0.005	39.243	196.386	20.388
10:49:27	9.917	0.000	40.451	218.616	6.448
10:49:42	9.928	0.001	41.174	220.521	1.350
10:49:57	9.941	0.000	41.545	220.952	-0.342
10:50:12	9.888	0.767	41.630	221.204	-0.565
10:50:27	7.119	11.320	23.547	206.569	-0.566
10:50:42	6.038	13.814	5.631	133.578	-0.474
10:50:57	5.960	13.917	2.392	46.870	-0.270
10:51:12	5.949	13.938	1.521	2.906	-0.055
10:51:27	5.944	13.946	1.078	0.977	0.019

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time 10:52
Stop time 11:19
REFERENCE METHOD RUN 6

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.058	0.032	0.006	0.499	-0.535
C_{ui}	Initial upscale	5.951	13.934	41.450	220.893	48.938
C_{of}	Final zero	0.061	0.032	-0.015	0.562	-0.560
C_{uf}	Final upscale	5.964	13.929	41.462	220.605	48.953
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.826	9.372	3.630	172.059	10.002
C_{Gas}	**Bias adjusted**	**9.786**	**9.475**	**3.936**	**175.253**	**10.274**

Clock Time (at end of sample period)

041410 130218

	CO2	O2	SO2	NOX	CO
10:53	9.953	9.211	3.344	166.599	7.580
10:54	9.929	9.263	3.106	170.820	8.582
10:55	9.740	9.500	3.465	168.614	9.935
10:56	9.934	9.238	3.974	170.955	9.773
10:57	10.138	8.971	4.425	175.476	10.716
10:58	9.806	9.444	4.364	171.134	11.204
10:59	9.852	9.370	3.700	170.981	10.878
11:00	10.101	9.015	3.366	179.192	10.808
11:01	10.057	9.062	3.181	176.223	9.726
11:02	9.928	9.252	3.184	170.442	8.591
11:03	9.833	9.413	3.302	168.319	8.630
11:04	9.662	9.646	3.852	171.650	9.599
11:05	9.744	9.515	4.240	172.155	10.016
11:06	9.783	9.481	4.340	179.412	10.546
11:07	9.603	9.693	4.151	174.294	8.664
11:08	9.783	9.429	3.726	174.422	9.590
11:09	9.800	9.395	3.305	171.624	9.159
11:10	9.665	9.590	3.292	172.859	9.863
11:11	9.737	9.474	3.525	171.514	10.868
11:12	9.814	9.365	3.735	175.146	12.210
11:13	9.461	9.847	3.697	167.953	10.473
11:14	9.368	9.968	3.545	170.240	10.954
11:15	9.763	9.418	3.676	173.832	12.949
11:16	10.037	9.048	3.957	172.485	11.776
11:17	9.797	9.351	3.491	167.751	9.824
11:18	9.862	9.243	3.157	169.031	8.717
11:19	10.151	8.840	2.906	172.469	8.414

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   11:20
Stop Time   11:25
CALIBRATION BIAS 06

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.061	0.032	-0.015	0.562	-0.560
C_{uf} Upscale gas	5.964	13.929	41.462	220.605	48.953
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce} Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.1%	0.1%	-0.2%
Upscale gas	0.2%	-1.2%	-2.3%	-1.2%	-0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.058	0.032	0.006	0.499	-0.535
C_{ui} Upscale gas	5.951	13.934	41.450	220.893	48.938
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.1%	0.0%	0.0%	-0.1%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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11:20:31	0.108	0.053	0.396	5.991	29.068
11:20:46	0.087	0.042	0.152	1.408	41.975
11:21:01	0.074	0.037	0.059	0.692	47.214
11:21:16	0.067	0.033	0.002	0.562	48.791
11:21:31	0.061	0.031	-0.010	0.570	48.912
11:21:46	0.055	0.031	-0.037	0.554	48.982
11:22:01	0.397	0.032	0.129	0.521	48.966
11:22:16	7.814	0.014	17.692	0.643	47.199
11:22:31	9.785	0.004	35.631	56.321	36.741
11:22:46	9.888	0.002	39.316	195.824	18.193
11:23:01	9.911	0.002	40.518	217.224	6.535
11:23:16	9.926	0.002	41.164	220.358	0.939
11:23:31	9.938	0.004	41.499	220.757	-0.313
11:23:46	9.943	0.010	41.724	220.700	-0.558
11:24:01	8.125	8.199	31.165	221.025	-0.586
11:24:16	6.124	13.636	7.964	147.814	-0.537
11:24:31	5.975	13.908	2.865	62.336	-0.337
11:24:46	5.963	13.934	1.657	8.319	-0.088
11:25:01	5.954	13.944	1.157	1.376	-0.018

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   11:26
Stop time   11:53
REFERENCE METHOD RUN 7

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.061	0.032	-0.015	0.562	-0.560
C_{ui}	Initial upscale	5.964	13.929	41.462	220.605	48.953
C_{of}	Final zero	0.056	0.031	-0.026	0.584	-0.528
C_{uf}	Final upscale	5.946	13.920	41.443	220.155	48.913
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.153	8.943	2.445	160.407	10.411
C_{Gas}	**Bias adjusted**	**10.118**	**9.044**	**2.670**	**163.610**	**10.673**

Clock Time (at end of sample period)

041410 130218

Time	CO2	O2	SO2	NOX	CO
11:27	9.611	9.648	3.115	163.997	9.076
11:28	9.783	9.432	2.643	170.761	10.406
11:29	10.293	8.765	2.644	181.337	12.011
11:30	10.286	8.773	2.757	190.059	10.908
11:31	9.810	9.372	2.370	187.271	8.818
11:32	9.881	9.268	2.156	185.820	8.644
11:33	10.152	8.931	2.189	185.513	9.752
11:34	9.981	9.182	2.363	158.533	10.214
11:35	9.568	9.731	2.361	132.369	9.716
11:36	9.577	9.712	2.301	126.417	10.376
11:37	10.571	8.472	2.435	143.708	13.442
11:38	10.453	8.567	2.664	162.733	12.834
11:39	10.489	8.477	2.582	160.606	12.079
11:40	10.120	8.920	2.355	159.701	10.726
11:41	10.486	8.463	2.205	158.215	10.533
11:42	10.301	8.696	2.263	156.840	10.983
11:43	9.890	9.222	2.203	144.027	10.146
11:44	10.575	8.399	2.455	157.444	11.094
11:45	10.480	8.492	2.737	166.595	9.744
11:46	10.223	8.845	2.775	158.789	9.186
11:47	10.160	8.892	2.500	148.706	8.192
11:48	10.004	9.114	2.432	150.810	10.042
11:49	10.633	8.434	2.471	159.638	10.682
11:50	10.058	9.084	2.483	154.929	9.061
11:51	9.906	9.272	2.161	145.950	8.372
11:52	10.437	8.622	2.132	155.822	10.808
11:53	10.413	8.673	2.274	164.404	13.262

QA/QC_____
Date_____

March 23, 2010
Start Time   11:54
Stop Time   11:58
CALIBRATION BIAS 07

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv

System Response to Calibration Gasses (C_S)

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{of}	Zero gas	0.056	0.031	-0.026	0.584	-0.528
C_{uf}	Upscale gas	5.946	13.920	41.443	220.155	48.913

Analyzer Calibration Error Reponses (C_{Dir})

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{oce}	Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce}	Upscale gas	5.942	14.094	43.504	226.086	49.020

Actual Upscale Gas Value (C_{MA})

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

	Ch1	Ch2	Ch3	Ch4	Ch5
	13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	0.4%	0.2%	0.1%	0.1%	-0.2%
Upscale gas	0.0%	-1.2%	-2.3%	-1.3%	-0.1%

System Bias Status

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{oi}	Zero gas	0.061	0.032	-0.015	0.562	-0.560
C_{ui}	Upscale gas	5.964	13.929	41.462	220.605	48.953

Drift Assessment as Percent of Calibration Span Value (D) (3%)

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	-0.1%	-0.1%	0.0%	-0.1%	0.0%

Drift Assessment Status

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130218

Time	CO2	O2	SO2	NOX	CO
11:54:23	0.086	0.041	0.169	1.669	41.920
11:54:38	0.071	0.036	0.052	0.668	47.279
11:54:53	0.063	0.031	-0.021	0.611	48.724
11:55:08	0.055	0.031	-0.024	0.611	48.855
11:55:23	0.050	0.030	-0.032	0.529	48.920
11:55:38	0.446	0.033	0.115	0.448	48.966
11:55:53	7.906	0.014	17.727	6.959	46.891
11:56:08	9.781	0.006	35.656	52.137	36.114
11:56:23	9.880	0.006	39.360	180.912	18.468
11:56:38	9.904	0.006	40.537	217.427	6.106
11:56:53	9.914	0.005	41.087	219.829	1.000
11:57:08	9.921	0.005	41.495	220.114	-0.365
11:57:23	9.931	0.028	41.747	220.521	-0.573
11:57:38	7.957	8.778	30.252	220.456	-0.560
11:57:53	6.097	13.671	7.518	160.920	-0.453
11:58:08	5.960	13.901	2.746	35.352	-0.291
11:58:23	5.943	13.924	1.589	8.751	-0.116
11:58:38	5.936	13.934	1.083	1.188	-0.005

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   12:00
Stop time   12:27
REFERENCE METHOD RUN 8

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.056	0.031	-0.026	0.584	-0.528
C_{ui}	Initial upscale	5.946	13.920	41.443	220.155	48.913
C_{of}	Final zero	0.054	0.031	0.042	0.477	-0.496
C_{uf}	Final upscale	5.958	13.949	41.508	221.962	49.083
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.996	9.145	2.772	159.701	11.440
C_{Gas}	**Bias adjusted**	**9.963**	**9.242**	**2.993**	**162.398**	**11.636**

Clock Time (at end of sample period)

041410 130218

12:01	10.451	8.622	3.116	157.558	13.471
12:02	10.303	8.728	2.464	156.986	11.013
12:03	10.343	8.695	2.260	162.855	10.230
12:04	10.573	8.482	2.284	175.446	10.978
12:05	10.084	9.012	2.135	178.335	10.718
12:06	10.125	8.994	1.965	176.089	9.596
12:07	9.933	9.215	1.953	170.440	9.821
12:08	9.742	9.487	1.915	164.459	9.955
12:09	10.090	9.024	2.030	161.982	11.252
12:10	10.071	9.083	2.424	165.928	12.286
12:11	9.679	9.599	2.396	157.025	12.470
12:12	9.948	9.229	2.411	153.480	15.093
12:13	9.903	9.293	2.559	153.750	13.986
12:14	9.815	9.386	2.373	150.399	12.359
12:15	10.173	8.907	2.544	151.036	11.455
12:16	10.192	8.877	2.688	160.307	10.822
12:17	9.919	9.249	2.606	161.262	9.609
12:18	9.631	9.623	2.585	148.099	9.857
12:19	9.576	9.681	2.718	138.677	11.002
12:20	10.234	8.813	3.094	146.471	12.818
12:21	9.736	9.490	3.465	151.592	11.051
12:22	9.747	9.435	3.341	146.862	11.654
12:23	10.034	9.041	3.417	162.017	13.295
12:24	9.958	9.137	3.494	165.861	11.272
12:25	9.593	9.650	3.710	161.919	10.706
12:26	9.819	9.316	4.166	159.316	10.856
12:27	10.216	8.838	4.744	173.773	11.252

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   12:28
Stop Time   12:32
CALIBRATION BIAS 08

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.054	0.031	0.042	0.477	-0.496
C_{uf} Upscale gas	5.958	13.949	41.508	221.962	49.083
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce} Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.3%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	0.1%	-1.0%	-2.2%	-0.9%	0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{ol} Zero gas	0.056	0.031	-0.026	0.584	-0.528
C_{ul} Upscale gas	5.946	13.920	41.443	220.155	48.913
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.1%	0.0%	0.0%
Upscale gas	0.1%	0.2%	0.1%	0.4%	0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130218

	CO2	O2	SO2	NOX	CO
12:28:16	0.081	0.043	0.313	1.156	42.831
12:28:31	0.067	0.036	0.163	0.733	47.582
12:28:46	0.059	0.032	0.078	0.660	48.998
12:29:01	0.055	0.031	0.024	0.504	49.111
12:29:16	0.049	0.030	0.024	0.268	49.114
12:29:31	2.043	0.030	1.073	0.244	49.026
12:29:46	9.079	0.009	22.522	25.511	45.175
12:30:01	9.846	0.006	36.599	151.185	32.106
12:30:16	9.864	-0.020	39.481	207.611	13.828
12:30:31	9.923	0.003	40.544	220.952	4.410
12:30:46	9.937	0.002	41.164	221.815	0.309
12:31:01	9.940	0.000	41.610	221.929	-0.417
12:31:16	9.822	1.145	41.750	222.141	-0.544
12:31:31	6.942	11.756	24.210	211.347	-0.544
12:31:46	6.028	13.851	6.147	163.182	-0.401
12:32:01	5.968	13.934	2.574	42.581	-0.210
12:32:16	5.954	13.952	1.623	3.272	-0.026
12:32:31	5.951	13.962	1.169	0.936	0.062

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SS CEM Version 06-2004a

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QA/QC_____
Date_____

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   12:33
Stop time   13:00
REFERENCE METHOD RUN 9

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.054	0.031	0.042	0.477	-0.496
C_{ul}	Initial upscale	5.958	13.949	41.508	221.962	49.083
C_{of}	Final zero	0.066	0.034	0.060	0.567	-0.500
C_{uf}	Final upscale	5.955	13.941	41.338	220.508	49.048
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.068	9.152	2.052	159.449	13.363
C_{Gas}	**Bias adjusted**	**10.031**	**9.243**	**2.172**	**162.014**	**13.480**

Clock Time (at end of sample period)

041410 130218

	CO2	O2	SO2	NOX	CO
12:34	10.532	8.548	7.341	168.820	9.147
12:35	10.565	8.490	6.895	167.713	11.929
12:36	10.548	8.547	4.062	168.832	10.710
12:37	10.226	8.854	2.510	156.351	10.626
12:38	10.643	8.418	1.898	163.462	14.315
12:39	10.088	9.026	1.390	150.808	12.139
12:40	10.168	8.985	1.234	158.832	14.750
12:41	10.184	8.951	1.220	154.833	13.162
12:42	10.198	8.923	1.562	160.385	15.645
12:43	11.243	7.841	1.829	166.783	16.132
12:44	9.986	9.256	1.740	163.653	11.540
12:45	10.397	8.717	1.442	162.218	10.614
12:46	10.207	8.942	1.300	169.530	11.805
12:47	10.304	8.907	1.145	170.619	12.644
12:48	10.234	8.928	1.109	161.044	10.240
12:49	9.700	9.634	1.204	154.286	10.371
12:50	10.011	9.250	1.298	151.699	14.541
12:51	10.495	8.639	1.515	155.450	15.847
12:52	10.194	9.026	1.705	164.666	14.979
12:53	9.943	9.315	1.603	161.251	12.685
12:54	9.561	9.805	1.518	159.601	12.089
12:55	9.462	9.950	1.256	158.272	12.680
12:56	9.589	9.784	1.281	161.429	13.960
12:57	9.440	10.001	1.560	157.495	16.229
12:58	9.165	10.344	1.707	150.519	16.787
12:59	8.973	10.535	1.739	137.242	16.333
13:00	9.780	9.496	2.337	149.327	18.915

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   13:01
Stop Time   13:06
CALIBRATION BIAS 09

	Channel 1 CO2 FF Outlet 1 %dv	Channel 2 O2 FF Outlet 1 %dv	Channel 3 SO2 FF Outlet 1 ppmdv	Channel 4 NOX FF Outlet 1 ppmdv	Channel 5 CO FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.066	0.034	0.060	0.567	-0.500
C_{uf} Upscale gas	5.955	13.941	41.338	220.508	49.048
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce} Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	0.1%	-1.1%	-2.4%	-1.2%	0.0%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.054	0.031	0.042	0.477	-0.496
C_{ui} Upscale gas	5.958	13.949	41.508	221.962	49.083
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.1%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	-0.2%	-0.3%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

042010 144119

	CO2	O2	SO2	NOX	CO
13:01:45	0.104	0.049	0.493	3.671	37.656
13:02:00	0.085	0.043	0.220	0.806	44.956
13:02:15	0.072	0.037	0.114	0.611	48.342
13:02:30	0.068	0.035	0.068	0.595	49.023
13:02:45	0.058	0.031	-0.003	0.497	49.062
13:03:00	0.260	0.033	0.023	0.285	49.060
13:03:15	7.438	0.016	12.811	1.042	47.544
13:03:30	9.762	0.008	33.706	50.501	38.178
13:03:45	9.888	0.006	38.743	189.500	19.818
13:04:00	9.909	0.006	40.187	217.102	7.332
13:04:15	9.922	0.006	40.928	220.196	1.294
13:04:30	9.933	0.004	41.428	220.570	-0.204
13:04:45	9.852	0.982	41.659	220.757	-0.505
13:05:00	7.030	11.529	25.143	220.846	-0.550
13:05:15	6.033	13.827	6.493	130.362	-0.444
13:05:30	5.962	13.925	2.710	20.920	-0.268
13:05:45	5.952	13.943	1.726	4.159	-0.049
13:06:00	5.951	13.954	1.232	0.969	0.091

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   13:07
Stop time   13:34
REFERENCE METHOD RUN 10

		Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.066	0.034	0.060	0.567	-0.500
C_{ui}	Initial upscale	5.955	13.941	41.338	220.508	49.048
C_{of}	Final zero	0.067	0.030	0.148	0.423	-0.443
C_{uf}	Final upscale	5.954	13.919	41.466	221.115	49.113
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.453	8.626	4.436	167.073	9.866
C_{Gas}	**Bias adjusted**	**10.425**	**8.719**	**4.710**	**170.119**	**10.055**

Clock Time (at end of sample period)

041410 130218

13:08	10.072	8.974	2.388	172.151	15.230
13:09	10.754	8.194	2.133	178.447	14.492
13:10	10.810	8.199	2.572	184.282	13.185
13:11	9.932	9.198	2.813	164.304	12.180
13:12	10.299	8.781	2.864	163.952	11.808
13:13	10.734	8.279	3.104	162.147	9.933
13:14	10.180	8.981	3.404	173.639	11.266
13:15	10.527	8.515	2.931	156.960	10.643
13:16	10.233	8.895	2.772	168.044	12.259
13:17	10.537	8.480	2.726	170.242	10.455
13:18	10.168	8.933	2.862	179.394	10.128
13:19	10.605	8.431	2.790	176.158	9.623
13:20	10.243	8.835	3.068	175.480	9.698
13:21	10.984	8.017	4.091	175.519	9.999
13:22	10.673	8.423	4.762	180.830	9.243
13:23	10.214	8.893	3.995	161.534	7.336
13:24	10.910	8.169	4.663	172.481	9.257
13:25	10.085	9.110	4.670	157.517	7.456
13:26	10.877	8.171	5.829	153.671	7.423
13:27	10.454	8.694	6.795	168.380	8.281
13:28	10.493	8.589	6.058	152.023	6.934
13:29	10.725	8.360	6.841	169.406	8.790
13:30	10.146	8.959	6.361	155.374	7.519
13:31	10.484	8.614	6.821	160.501	8.062
13:32	10.198	8.908	6.950	155.584	7.479
13:33	10.832	8.251	8.242	167.367	10.009
13:34	10.061	9.062	7.278	155.584	7.693

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 1

March 23, 2010
Start Time   13:35
Stop Time   13:40
CALIBRATION BIAS 10

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_s)					
C_{of} Zero gas	0.067	0.030	0.148	0.423	-0.443
C_{uf} Upscale gas	5.954	13.919	41.466	221.115	49.113
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.006	0.002	-0.110	0.038	-0.345
C_{mce} Upscale gas	5.942	14.094	43.504	226.086	49.020
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.3%	0.1%	-0.1%
Upscale gas	0.1%	-1.2%	-2.3%	-1.1%	0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_s)					
C_{oi} Zero gas	0.066	0.034	0.060	0.567	-0.500
C_{ui} Upscale gas	5.955	13.941	41.338	220.508	49.048
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.1%	0.0%	0.1%
Upscale gas	0.0%	-0.2%	0.1%	0.1%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130218

13:35:34	0.091	0.040	0.441	1.042	42.763
13:35:49	0.084	0.036	0.278	0.733	47.586
13:36:04	0.073	0.032	0.194	0.521	49.034
13:36:19	0.067	0.031	0.139	0.464	49.116
13:36:34	0.061	0.029	0.112	0.285	49.114
13:36:49	0.055	0.028	0.104	0.252	49.111
13:37:04	4.665	0.021	6.763	4.721	48.554
13:37:19	9.571	0.006	31.010	49.377	42.595
13:37:34	9.863	0.005	38.530	137.176	25.406
13:37:49	9.908	0.005	40.283	218.193	10.797
13:38:04	9.920	0.005	40.985	220.505	2.489
13:38:19	9.924	0.002	41.522	221.367	0.049
13:38:34	9.927	0.107	41.892	221.474	-0.438
13:38:50	7.592	10.057	29.112	217.574	-0.471
13:39:04	6.087	13.702	7.917	194.530	-0.419
13:39:19	5.966	13.907	2.952	61.367	-0.254
13:39:34	5.951	13.918	1.744	5.031	-0.033
13:39:49	5.944	13.932	1.304	0.936	0.059
13:40:04	5.951	13.843	1.032	0.700	0.130

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Date: **March 24, 2010**
Start Time   7:13
Stop Time   7:28
CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	CO2	O2	SO2	NOX	CO
	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
	%dv	%dv	ppmdv	ppmdv	ppmdv
Instrument Information					
Manufacturer:	Servomex	Servomex	Wstrn	T.E.I.	T.E.I.
Model:	1415C	1420C	Rsrch 921L	42i-HL	48i
Detection:	NDIR	Paramagn.	UV Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	204217	205832	205184	205956	205194
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Response Time (seconds)					
	45	45	45	45	45
Manufacturer Certified Cylinder Value (C_V)					
Zero	0.000	0.000	0.000	0.000	0.000
Low	5.910	6.010	44.900	225.000	48.200
Mid					
High	13.900	14.100	89.900	453.000	98.500
Actual gas to be used for bias checks					
	5.910	14.100	44.900	225.000	48.200
Cylinder ID					
Zero	AAL14589	AAL14589	AAL14589	AAL14589	AAL14589
Low	ALM033730	ALM046255	ALM010885	ALM010885	EB0011451
Mid					
High	ALM046255	ALM033730	CC124384	CC124384	ALM054744
Analyzer Calibration Response (C_{Dir})					
Zero	0.008	0.006	-0.047	-0.043	0.118
Low	5.945	6.026	43.542	226.181	49.082
Mid	9.880	0.074	72.123	441.956	-0.303
High	13.936	14.112	89.970	453.819	98.971

Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)

Zero	0.1%	0.0%	-0.1%	0.0%	0.1%
Low	0.3%	0.1%	-1.5%	0.3%	0.9%
Mid	N/A	N/A	N/A	N/A	N/A
High	0.3%	0.1%	0.1%	0.2%	0.5%
Calibration Error Status					
Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	N/A	N/A	N/A	N/A	N/A
High	OK	OK	OK	OK	OK

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07:13:21	0.015	0.008	0.006	0.432	0.256
07:13:36	0.012	0.006	-0.027	0.049	-0.181
07:13:21	0.015	0.008	0.006	0.432	0.256
07:13:36	0.012	0.006	-0.027	0.049	-0.181
07:13:51	0.006	0.006	-0.040	0.016	0.124
07:14:06	0.012	0.005	-0.044	-0.024	0.125
07:14:21	0.006	0.006	-0.055	-0.122	0.106
07:14:36	0.864	3.893	-0.026	-0.122	0.103
07:14:51	5.254	13.194	-0.016	-0.114	0.088

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Date: **March 24, 2010**
Start Time   7:13
Stop Time   7:28
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
07:15:06	5.915	14.081	-0.034	-0.122	0.120
07:15:21	5.956	14.124	-0.052	-0.106	0.122
07:15:36	5.964	14.130	-0.044	-0.106	0.122
07:15:51	6.426	12.771	-0.037	-0.122	0.155
07:16:06	12.435	6.876	-0.096	-0.122	0.155
07:16:21	13.840	6.067	-0.064	-0.016	0.122
07:16:36	13.925	6.028	-0.042	-0.089	0.101
07:16:51	13.940	6.025	-0.023	-0.114	0.028
07:17:06	13.944	6.025	-0.002	-0.114	-0.039
07:17:21	12.869	4.656	9.731	-0.106	-0.078
07:17:36	10.139	0.466	69.211	28.799	-0.057
07:17:51	9.935	0.024	86.976	156.712	-0.028
07:18:06	9.932	0.001	89.535	414.245	-0.099
07:18:21	9.931	-0.001	90.045	449.629	-0.225
07:18:36	9.929	-0.001	90.130	453.000	-0.317
07:18:51	9.929	0.000	89.924	453.569	-0.314
07:19:06	9.928	-0.002	89.970	454.017	-0.314
07:19:21	9.927	-0.004	90.017	453.870	-0.317
07:19:36	9.774	0.182	79.818	454.123	-0.312
07:19:51	9.939	0.044	46.533	417.875	-0.280
07:20:06	10.025	-0.010	43.311	318.128	-0.317
07:20:21	10.035	-0.014	43.310	247.546	-0.314
07:20:36	10.036	-0.016	43.388	227.505	-0.312
07:20:51	10.041	-0.016	43.464	226.358	-0.319
07:21:06	10.035	-0.015	43.554	226.211	-0.335
07:21:21	10.038	-0.014	43.608	225.974	-0.366
07:21:36	8.959	0.127	40.545	226.040	-0.317
07:21:51	1.200	0.052	11.730	198.559	2.502
07:22:06	0.090	0.007	1.577	118.079	21.719
07:22:21	0.035	0.006	0.401	31.705	53.926
07:22:36	0.031	0.006	0.169	2.108	86.822
07:22:51	0.023	0.005	0.099	0.725	97.991
07:23:06	0.023	0.005	0.098	0.627	99.521
07:23:21	0.021	0.006	0.083	0.611	99.038
07:23:36	0.014	0.006	0.068	0.611	98.932
07:23:51	0.017	0.006	0.068	0.611	98.943
07:24:06	0.128	0.134	0.228	0.611	99.012
07:24:21	0.047	0.030	0.388	0.529	95.914
07:24:36	0.016	0.006	0.174	0.578	81.139
07:24:51	0.010	0.006	0.078	0.505	66.128
07:25:06	0.009	0.004	0.070	0.122	52.873
07:25:21	0.010	0.005	0.027	-0.081	49.903
07:25:36	0.006	0.006	0.047	-0.033	49.416
07:25:51	0.006	0.004	0.047	-0.024	49.180
07:26:06	0.007	0.006	0.037	-0.008	49.037
07:26:21	0.005	0.005	0.042	-0.024	49.030
07:26:36	0.080	0.472	0.040	-0.024	49.048
07:26:51	0.040	1.001	0.353	1.449	46.543
07:27:06	0.006	1.007	0.794	8.067	33.102
07:27:21	0.006	1.007	0.933	32.080	17.786
07:27:36	0.004	1.007	0.959	42.784	5.022

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

Date: | ⸱ ⸱ **March 24, 2010**
Start Time   7:13
Stop Time   7:28
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
	%dv	%dv	ppmdv	ppmdv	ppmdv
07:27:51	0.000	1.007	0.993	44.640	1.146
07:28:06	0.004	1.007	1.037	45.031	0.122
07:28:21	0.002	1.007	1.040	45.242	0.122

<u>NOX Conversion Efficiency</u>
NO2 = 49.7
Efficiency =   90.8%

QA/QC_____
Date_____

March 24, 2010
Start Time   7:32
Stop Time   7:36
CALIBRATION BIAS 00

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.012	0.020	-0.005	0.095	-0.056
C_{uf} Upscale gas	5.927	13.966	41.158	221.967	49.052
Analyzer Calibration Error Reponses (C_{Dlr})					
C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.0%	0.1%	0.0%	0.0%	-0.2%
Upscale gas	-0.1%	-1.0%	-2.7%	-0.9%	0.0%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	N/A	N/A	N/A	N/A	N/A
C_{ui} Upscale gas	N/A	N/A	N/A	N/A	N/A
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	N/A	N/A	N/A	N/A	N/A
Upscale gas	N/A	N/A	N/A	N/A	N/A
Drift Assessment Status					
Zero gas	N/A	N/A	N/A	N/A	N/A
Upscale gas	N/A	N/A	N/A	N/A	N/A

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07:32:58	0.012	0.022	-0.013	0.122	49.038
07:33:13	0.012	0.018	-0.005	0.114	49.037
07:33:28	0.011	0.020	0.002	0.049	49.081
07:33:43	0.643	0.026	0.202	-0.024	49.221
07:33:58	8.203	0.009	18.476	0.106	47.266
07:34:13	9.776	0.004	35.692	82.890	36.389
07:34:28	9.870	0.005	39.049	210.240	19.077
07:34:43	9.894	0.004	40.205	219.438	6.782
07:34:58	9.902	0.005	40.873	221.864	1.372
07:35:13	9.913	0.005	41.304	222.011	0.089
07:35:28	9.771	1.341	41.298	222.027	-0.139
07:35:43	6.831	11.913	21.315	216.280	-0.113
07:35:58	5.983	13.850	5.175	97.005	0.085
07:36:13	5.936	13.949	2.268	26.797	0.207
07:36:28	5.925	13.969	1.410	1.718	0.319
07:36:43	5.919	13.980	1.050	0.888	0.330

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   7:38
Stop time   8:05
REFERENCE METHOD RUN 1

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.012	0.020	-0.005	0.095	-0.056
C_{ul}	Initial upscale	5.927	13.966	41.158	221.967	49.052
C_{of}	Final zero	0.056	0.036	0.146	0.584	-0.112
C_{uf}	Final upscale	5.948	13.968	41.681	221.218	48.887
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.239	8.998	10.631	156.799	8.295
C_{Gas}	**Bias adjusted**	**10.216**	**9.073**	**11.467**	**159.109**	**8.233**

Clock Time (at end of sample period)

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	CO2	O2	SO2	NOX	CO
07:39	10.672	8.532	7.642	152.723	8.648
07:40	9.818	9.512	6.745	159.444	6.037
07:41	10.532	8.652	6.990	156.254	6.493
07:42	10.228	9.032	7.991	155.008	7.897
07:43	9.926	9.372	8.827	152.534	6.699
07:44	10.434	8.782	12.605	165.659	8.149
07:45	9.943	9.366	13.044	167.786	6.549
07:46	10.538	8.652	12.977	165.547	7.381
07:47	9.967	9.310	11.064	166.304	6.736
07:48	10.423	8.755	9.549	166.665	7.617
07:49	9.989	9.313	8.825	161.007	6.431
07:50	10.311	8.905	9.569	160.670	6.790
07:51	10.158	9.099	11.069	159.487	7.470
07:52	10.272	8.962	11.006	156.398	7.554
07:53	10.498	8.738	12.202	159.911	9.256
07:54	9.946	9.384	10.121	155.002	6.805
07:55	10.624	8.565	10.097	155.967	7.021
07:56	10.389	8.836	12.133	160.098	7.374
07:57	10.357	8.833	12.160	153.502	8.046
07:58	10.311	8.904	14.385	145.507	10.984
07:59	10.345	8.834	14.843	148.356	11.526
08:00	10.332	8.845	14.539	149.902	11.591
08:01	9.968	9.325	13.060	150.690	10.496
08:02	10.473	8.748	10.998	150.751	11.574
08:03	9.460	9.927	8.395	148.523	10.332
08:04	10.535	8.547	8.542	154.841	10.153
08:05	9.998	9.215	7.658	155.031	8.370

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   8:06
Stop Time   8:11
CALIBRATION BIAS 01

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv

System Response to Calibration Gasses (C_S)

C_{of} Zero gas	0.056	0.036	0.146	0.584	-0.112
C_{uf} Upscale gas	5.948	13.968	41.681	221.218	48.887

Analyzer Calibration Error Reponses (C_{Dir})

C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082

Actual Upscale Gas Value (C_{MA})

C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

	13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.3%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	0.0%	-1.0%	-2.1%	-1.1%	-0.2%

System Bias Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

C_{oi} Zero gas	0.012	0.020	-0.005	0.095	-0.056
C_{ui} Upscale gas	5.927	13.966	41.158	221.967	49.052

Drift Assessment as Percent of Calibration Span Value (D) (3%)

Zero gas	0.3%	0.1%	0.2%	0.1%	-0.1%
Upscale gas	0.2%	0.0%	0.6%	-0.2%	-0.2%

Drift Assessment Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130243

Time					
08:06:52	0.098	0.055	0.630	6.455	30.090
08:07:07	0.075	0.044	0.334	0.928	42.170
08:07:22	0.063	0.039	0.197	0.660	47.422
08:07:37	0.057	0.036	0.137	0.611	48.778
08:07:52	0.049	0.033	0.104	0.480	48.933
08:08:07	0.047	0.031	0.070	0.423	48.949
08:08:22	1.636	0.039	1.056	0.415	48.860
08:08:37	8.925	0.012	23.445	5.169	45.596
08:08:52	9.836	0.006	37.380	76.068	33.005
08:09:07	9.898	0.004	39.912	213.879	15.443
08:09:22	9.916	0.005	40.907	219.341	5.172
08:09:37	9.930	0.004	41.389	220.968	0.894
08:09:52	9.937	0.005	41.752	221.196	0.011
08:10:07	9.888	0.706	41.902	221.490	-0.165
08:10:22	7.128	11.253	24.664	221.409	-0.174
08:10:37	6.030	13.836	5.927	107.750	0.003
08:10:52	5.956	13.951	2.403	34.913	0.135
08:11:07	5.946	13.972	1.468	2.043	0.231
08:11:22	5.942	13.981	1.060	1.010	0.267

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   8:12
Stop time   8:39
REFERENCE METHOD RUN 2

		Channel 1 CO_2 FF Outlet 2 %dv	Channel 2 O_2 FF Outlet 2 %dv	Channel 3 SO_2 FF Outlet 2 ppmdv	Channel 4 NOX FF Outlet 2 ppmdv	Channel 5 CO FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.056	0.036	0.146	0.584	-0.112
C_{ul}	Initial upscale	5.948	13.968	41.681	221.218	48.887
C_{of}	Final zero	0.060	0.034	0.110	0.565	-0.161
C_{uf}	Final upscale	5.959	13.966	41.665	221.430	49.023
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.244	8.925	5.579	158.936	6.587
C_{Gas}	Bias adjusted	**10.211**	**8.997**	**5.892**	**161.411**	**6.601**

Clock Time (at end of sample period)

041410 130243

08:13	10.630	8.416	5.781	165.869	8.597
08:14	10.100	9.069	4.633	169.294	6.279
08:15	9.972	9.187	4.672	168.704	5.063
08:16	10.072	9.065	5.424	169.662	7.132
08:17	10.322	8.760	5.318	168.620	7.580
08:18	9.930	9.259	4.403	158.726	6.091
08:19	10.822	8.221	4.564	153.291	7.208
08:20	10.287	8.891	4.463	153.238	8.591
08:21	10.077	9.085	3.884	150.897	6.517
08:22	11.683	7.336	4.340	157.179	7.990
08:23	10.675	8.448	4.453	159.731	6.150
08:24	10.129	9.012	4.036	163.282	4.898
08:25	10.015	9.181	3.701	162.420	4.856
08:26	10.225	8.943	4.846	157.993	5.697
08:27	10.303	8.834	6.133	153.073	5.968
08:28	10.228	8.928	6.304	154.159	5.803
08:29	10.030	9.223	6.277	153.801	5.455
08:30	9.466	9.960	5.561	151.500	5.420
08:31	9.856	9.441	6.016	154.263	7.344
08:32	10.008	9.246	6.418	156.417	7.634
08:33	10.693	8.454	7.942	157.029	7.486
08:34	9.754	9.567	7.253	153.970	6.201
08:35	10.623	8.461	6.878	155.444	6.431
08:36	10.326	8.799	6.597	156.750	6.663
08:37	10.174	8.969	6.557	159.746	6.670
08:38	10.392	8.724	7.284	165.690	7.390
08:39	9.789	9.486	6.906	160.535	6.739

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   8:40
Stop Time   8:44
CALIBRATION BIAS 02

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.060	0.034	0.110	0.565	-0.161
C_{uf} Upscale gas	5.959	13.966	41.665	221.430	49.023
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.2%	0.1%	-0.3%
Upscale gas	0.1%	-1.0%	-2.1%	-1.0%	-0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.056	0.036	0.146	0.584	-0.112
C_{ui} Upscale gas	5.948	13.968	41.681	221.218	48.887
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.1%	0.0%	0.0%	0.0%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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08:40:29	0.131	0.068	0.985	18.682	21.906
08:40:44	0.092	0.050	0.435	3.598	36.676
08:40:59	0.077	0.041	0.234	0.855	44.991
08:41:14	0.069	0.036	0.142	0.635	48.324
08:41:29	0.057	0.033	0.122	0.611	48.998
08:41:44	0.054	0.033	0.065	0.448	49.032
08:41:59	0.267	0.034	0.091	0.480	49.038
08:42:14	7.503	0.018	14.800	0.977	47.368
08:42:29	9.775	0.006	35.139	50.720	37.929
08:42:44	9.897	0.006	39.479	190.606	19.880
08:42:59	9.923	0.006	40.720	218.152	7.702
08:43:14	9.938	0.004	41.353	221.099	1.674
08:43:29	9.948	0.004	41.719	221.498	0.156
08:43:44	9.940	0.348	41.924	221.693	-0.202
08:43:59	7.416	10.541	27.279	221.913	-0.208
08:44:14	6.060	13.803	6.410	135.409	-0.072
08:44:29	5.971	13.949	2.369	28.531	0.091
08:44:44	5.956	13.967	1.418	5.356	0.217
08:44:59	5.949	13.981	1.014	1.148	0.269

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   8:46
Stop time   9:13
REFERENCE METHOD RUN 3

		Channel 1 CO2 FF-Outlet 2 %dv	Channel 2 O2 FF Outlet 2 %dv	Channel 3 SO2 FF Outlet 2 ppmdv	Channel 4 NOX FF Outlet 2 ppmdv	Channel 5 CO FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.060	0.034	0.110	0.565	-0.161
C_{ui}	Initial upscale	5.959	13.966	41.665	221.430	49.023
C_{of}	Final zero	0.051	0.023	0.066	0.475	-0.141
C_{uf}	Final upscale	5.957	13.961	41.890	220.952	48.871
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.096	9.103	7.222	157.061	5.993
C_{Gas}	**Bias adjusted**	**10.053**	**9.182**	**7.684**	**159.612**	**6.032**

Clock Time (at end of sample period)

041410 130243

	CO2	O2	SO2	NOX	CO
08:47	9.928	9.272	7.389	165.313	5.221
08:48	10.385	8.705	7.033	166.848	6.080
08:49	10.750	8.380	7.903	165.067	7.061
08:50	9.817	9.451	7.152	155.352	5.417
08:51	10.587	8.505	6.890	152.798	5.645
08:52	10.362	8.771	7.656	160.840	6.187
08:53	9.937	9.274	7.511	157.348	5.252
08:54	10.175	8.943	6.645	156.433	5.586
08:55	10.092	9.082	6.190	162.096	6.229
08:56	9.836	9.370	5.951	156.732	5.920
08:57	10.587	8.491	7.144	158.071	6.069
08:58	9.636	9.693	6.560	157.397	5.847
08:59	9.448	9.857	5.591	160.214	5.178
09:00	10.437	8.650	6.790	163.702	7.455
09:01	9.833	9.421	6.146	163.883	5.793
09:02	9.997	9.179	6.154	159.965	5.277
09:03	10.266	8.916	6.988	161.640	6.955
09:04	9.679	9.665	6.847	159.925	5.216
09:05	10.223	8.967	8.106	155.993	6.304
09:06	9.805	9.515	8.831	157.829	6.205
09:07	10.406	8.760	9.490	160.944	6.933
09:08	9.936	9.327	9.580	151.925	6.346
09:09	10.021	9.214	9.120	147.770	6.188
09:10	9.790	9.504	7.884	147.391	5.638
09:11	10.595	8.520	8.092	147.257	6.263
09:12	10.201	8.954	6.427	143.864	6.286
09:13	9.854	9.383	4.927	144.042	5.270

QA/QC_____
Date_____

March 24, 2010
Start Time   9:14
Stop Time   9:18
CALIBRATION BIAS 03

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.051	0.023	0.066	0.475	-0.141
C_{uf} Upscale gas	5.957	13.961	41.890	220.952	48.871
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.3%	0.1%	0.1%	0.1%	-0.3%
Upscale gas	0.1%	-1.1%	-1.8%	-1.2%	-0.2%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.060	0.034	0.110	0.565	-0.161
C_{ui} Upscale gas	5.959	13.966	41.665	221.430	49.023
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.1%	-0.1%	0.0%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.2%	-0.1%	-0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:14:04	0.119	0.061	0.767	16.052	25.113
09:14:19	0.097	0.047	0.355	2.222	37.911
09:14:34	0.073	0.038	0.190	0.652	45.727
09:14:49	0.063	0.035	0.130	0.578	48.332
09:15:04	0.063	0.033	0.088	0.545	48.832
09:15:19	0.042	0.015	0.052	0.439	48.936
09:15:34	0.048	0.022	0.057	0.439	48.975
09:15:49	4.355	0.024	5.976	0.496	48.702
09:16:04	9.550	0.006	30.720	14.530	42.248
09:16:19	9.876	0.002	38.768	153.512	27.621
09:16:34	9.915	0.003	40.536	214.107	11.123
09:16:49	9.930	0.001	41.275	220.399	3.427
09:17:04	9.943	0.003	41.740	220.863	0.436
09:17:19	9.951	0.002	41.993	220.903	-0.085
09:17:34	9.809	1.345	41.936	221.091	-0.195
09:17:49	6.891	11.906	22.081	204.705	-0.192
09:18:04	6.029	13.856	5.115	147.472	-0.036
09:18:19	5.966	13.946	2.090	43.378	0.137
09:18:34	5.957	13.965	1.240	3.036	0.230
09:18:49	5.948	13.971	0.884	0.904	0.257

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   9:20
Stop time   9:47
REFERENCE METHOD RUN 4

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.051	0.023	0.066	0.475	-0.141
C_{ui}	Initial upscale	5.957	13.961	41.890	220.952	48.871
C_{of}	Final zero	0.054	0.029	0.043	0.434	-0.140
C_{uf}	Final upscale	5.955	13.947	41.811	221.009	49.031
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.936	9.284	10.698	154.804	5.422
C_{Gas}	**Bias adjusted**	**9.894**	**9.373**	**11.434**	**157.481**	**5.461**

Clock Time (at end of sample period)

041410 130243

	Clock Time	CO2	O2	SO2	NOX	CO
	09:21	10.270	8.847	8.070	157.578	4.859
	09:22	10.278	8.838	7.508	156.054	4.976
	09:23	10.096	9.114	7.855	152.165	5.427
	09:24	9.881	9.361	9.088	149.976	4.822
	09:25	10.249	8.893	12.533	156.079	4.647
	09:26	10.136	9.104	14.599	160.155	5.088
	09:27	9.700	9.616	14.077	154.536	4.711
	09:28	9.510	9.845	12.885	148.683	5.241
	09:29	9.871	9.363	14.134	151.984	5.514
	09:30	9.759	9.473	13.192	150.460	4.778
	09:31	10.459	8.658	13.992	152.342	5.878
	09:32	9.684	9.609	10.873	155.551	4.943
	09:33	10.097	9.037	9.464	152.892	4.880
	09:34	9.731	9.543	9.059	153.506	5.256
	09:35	9.692	9.545	9.078	151.547	4.312
	09:36	10.007	9.218	12.093	155.224	5.914
	09:37	9.501	9.819	13.659	154.750	4.936
	09:38	9.766	9.497	16.934	166.549	6.993
	09:39	9.954	9.252	17.638	168.175	6.631
	09:40	9.613	9.701	14.694	167.991	6.375
	09:41	10.253	8.844	11.617	173.399	6.181
	09:42	10.528	8.604	8.943	170.208	6.611
	09:43	9.681	9.587	6.276	152.859	5.676
	09:44	9.920	9.297	5.172	140.686	6.547
	09:45	9.673	9.602	4.334	135.495	5.116
	09:46	10.068	9.104	4.978	141.003	5.358
	09:47	9.904	9.307	6.096	149.862	4.716

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time 9:48
Stop Time 9:52
CALIBRATION BIAS 04

	Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.054	0.029	0.043	0.434	-0.140
C_{uf} Upscale gas	5.955	13.947	41.811	221.009	49.031
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Perce	3				
Zero gas	0.3%	0.2%	0.1%	0.1%	-0.3%
Upscale gas	0.1%	-1.2%	-1.9%	-1.1%	-0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.051	0.023	0.066	0.475	-0.141
C_{ui} Upscale gas	5.957	13.961	41.890	220.952	48.871
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	-0.1%	0.0%	0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130243

09:48:02	0.097	0.048	0.526	6.048	31.655
09:48:17	0.079	0.039	0.274	0.977	42.772
09:48:32	0.069	0.036	0.150	0.668	47.495
09:48:47	0.057	0.031	0.076	0.619	48.791
09:49:02	0.055	0.030	0.024	0.383	48.980
09:49:17	0.050	0.025	0.027	0.301	49.055
09:49:32	0.046	0.024	0.003	0.285	49.057
09:49:47	4.237	0.023	6.033	1.262	48.697
09:50:02	9.532	0.006	31.127	5.454	42.787
09:50:17	9.875	0.001	38.950	143.614	27.310
09:50:32	9.913	0.000	40.641	214.750	11.831
09:50:47	9.923	0.000	41.237	220.318	3.233
09:51:02	9.937	0.002	41.615	220.806	0.526
09:51:17	9.945	0.001	41.876	221.050	-0.072
09:51:32	9.901	0.695	41.942	221.172	-0.197
09:51:47	7.169	11.178	24.737	207.693	-0.182
09:52:02	6.043	13.814	5.719	152.910	-0.041
09:52:17	5.963	13.930	2.214	49.532	0.124
09:52:32	5.952	13.952	1.319	3.370	0.204
09:52:47	5.951	13.958	0.949	0.936	0.256

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   9:54
Stop time   10:21
REFERENCE METHOD RUN 5

		Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.054	0.029	0.043	0.434	-0.140
C_{ui}	Initial upscale	5.955	13.947	41.811	221.009	49.031
C_{of}	Final zero	0.052	0.028	0.033	0.410	-0.168
C_{uf}	Final upscale	5.953	13.949	41.794	220.933	48.993
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.953	9.302	11.410	149.649	7.217
C_{Gas}	**Bias adjusted**	**9.914**	**9.394**	**12.226**	**152.238**	**7.226**

Clock Time (at end of sample period)

041410 130243

09:55	9.729	9.612	10.753	149.520	4.504
09:56	10.643	8.522	10.452	155.079	6.202
09:57	10.058	9.204	9.366	155.415	5.616
09:58	10.571	8.610	10.340	156.416	6.861
09:59	9.893	9.433	11.472	156.309	6.133
10:00	10.664	8.473	15.258	152.448	6.463
10:01	9.984	9.278	17.851	151.762	6.625
10:02	10.263	8.909	17.642	152.562	6.154
10:03	10.155	9.065	16.997	153.431	7.500
10:04	9.668	9.703	13.125	151.577	7.623
10:05	9.784	9.572	10.554	151.402	7.745
10:06	9.842	9.442	8.411	149.564	7.907
10:07	9.930	9.347	8.570	150.330	8.623
10:08	9.907	9.388	7.950	147.900	6.926
10:09	9.693	9.641	7.633	142.719	8.228
10:10	9.809	9.456	7.827	147.698	7.239
10:11	9.862	9.413	9.088	152.058	7.151
10:12	9.731	9.575	10.020	147.684	7.920
10:13	9.771	9.523	12.043	148.423	9.495
10:14	9.757	9.498	13.248	147.277	7.425
10:15	9.791	9.473	14.474	142.808	7.695
10:16	9.660	9.593	14.289	139.361	7.970
10:17	9.700	9.575	11.464	142.289	8.685
10:18	9.671	9.582	9.457	143.087	7.734
10:19	10.106	9.007	9.079	151.138	7.757
10:20	10.252	8.875	10.332	151.429	6.985
10:21	9.838	9.386	10.386	150.828	5.693

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   10:21
Stop Time   10:26
CALIBRATION BIAS 05

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.052	0.028	0.033	0.410	-0.168
C_{uf}	Upscale gas	5.953	13.949	41.794	220.933	48.993
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce}	Upscale gas	5.945	14.112	43.542	226.181	49.082
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.3%	0.2%	0.1%	0.1%	-0.3%
	Upscale gas	0.1%	-1.2%	-1.9%	-1.2%	-0.1%
System Bias Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)						
C_{oi}	Zero gas	0.054	0.029	0.043	0.434	-0.140
C_{ui}	Upscale gas	5.955	13.947	41.811	221.009	49.031
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
	Upscale gas	0.0%	0.0%	0.0%	0.0%	0.0%
Drift Assessment Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

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	CO2	O2	SO2	NOX	CO
10:21:55	0.110	0.056	0.790	14.017	25.757
10:22:10	0.084	0.041	0.342	1.327	38.274
10:22:25	0.072	0.037	0.163	0.733	46.304
10:22:40	0.060	0.031	0.099	0.611	48.440
10:22:55	0.055	0.031	0.029	0.546	48.907
10:23:10	0.053	0.029	0.039	0.333	48.956
10:23:25	0.048	0.025	0.031	0.350	48.998
10:23:40	0.679	0.027	0.337	0.390	49.026
10:23:55	8.276	0.009	20.440	2.117	46.621
10:24:10	9.813	0.002	36.985	59.455	36.876
10:24:25	9.911	0.000	40.028	198.600	17.538
10:24:40	9.928	0.000	41.050	218.340	6.787
10:24:55	9.934	0.000	41.560	220.659	1.192
10:25:10	9.950	0.001	41.820	221.090	0.102
10:25:25	9.951	0.000	42.001	221.050	-0.168
10:25:40	9.408	3.268	40.128	221.147	-0.217
10:25:55	6.467	12.891	15.062	208.921	-0.121
10:26:10	5.995	13.892	3.832	147.252	0.046
10:26:25	5.960	13.938	1.812	19.357	0.138
10:26:40	5.956	13.950	1.162	2.581	0.220
10:26:55	5.945	13.958	0.848	0.847	0.269

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SS CEM Version 06-2004e

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QA/QC_____
Date_____

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   10:28
Stop time   10:55
REFERENCE METHOD RUN 6

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.052	0.028	0.033	0.410	-0.168
C_{ui}	Initial upscale	5.953	13.949	41.794	220.933	48.993
C_{of}	Final zero	0.063	0.029	0.101	0.504	-0.151
C_{uf}	Final upscale	5.969	13.972	41.664	220.649	48.870
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.232	8.950	10.441	152.266	5.803
C_{Gas}	**Bias adjusted**	**10.186**	**9.029**	**11.180**	**155.024**	**5.854**

Clock Time (at end of sample period)

041410 130243

Time	CO2	O2	SO2	NOX	CO
10:29	10.397	8.610	6.344	146.500	5.694
10:30	10.358	8.730	7.155	146.374	5.200
10:31	10.399	8.764	8.006	148.775	5.386
10:32	9.823	9.422	7.212	152.534	4.317
10:33	10.747	8.344	9.101	148.036	5.499
10:34	10.232	8.920	9.833	152.674	5.103
10:35	10.651	8.429	11.612	153.671	4.932
10:36	10.536	8.565	10.592	155.737	5.953
10:37	9.974	9.236	8.438	153.046	4.546
10:38	10.305	8.842	8.214	152.790	4.803
10:39	10.147	9.043	8.937	153.160	5.504
10:40	10.229	8.912	9.441	148.563	5.669
10:41	10.045	9.199	9.337	148.968	5.410
10:42	9.814	9.477	9.415	146.247	5.117
10:43	9.947	9.312	9.965	150.423	5.482
10:44	10.030	9.184	10.766	152.670	5.606
10:45	10.478	8.642	11.421	155.771	5.606
10:46	10.218	8.950	10.547	157.483	5.528
10:47	10.178	8.997	10.317	156.846	5.359
10:48	10.291	8.881	12.633	154.662	5.813
10:49	10.053	9.212	13.739	152.543	7.332
10:50	10.204	8.992	13.140	153.299	6.012
10:51	10.456	8.768	14.262	158.954	6.533
10:52	9.918	9.395	12.038	149.011	6.120
10:53	10.353	8.869	12.794	151.136	8.249
10:54	10.203	9.015	12.958	155.395	7.908
10:55	10.286	8.947	13.685	155.922	7.987

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   10:56
Stop Time   11:01
CALIBRATION BIAS 06

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.063	0.029	0.101	0.504	-0.151
C_{uf} Upscale gas	5.969	13.972	41.664	220.649	48.870
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.2%	0.1%	-0.3%
Upscale gas	0.2%	-1.0%	-2.1%	-1.2%	-0.2%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.052	0.028	0.033	0.410	-0.168
C_{ui} Upscale gas	5.953	13.949	41.794	220.933	48.993
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.1%	0.0%	0.1%	0.0%	0.0%
Upscale gas	0.1%	0.2%	-0.1%	-0.1%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130243

10:56:55	0.096	0.041	0.571	2.369	37.083
10:57:10	0.081	0.035	0.301	0.749	44.746
10:57:25	0.071	0.031	0.184	0.513	48.360
10:57:40	0.062	0.029	0.093	0.496	48.863
10:57:55	0.056	0.028	0.027	0.504	48.902
10:58:10	0.722	0.029	0.225	0.464	48.846
10:58:25	8.326	0.008	19.233	16.776	46.572
10:58:40	9.838	0.001	36.858	125.673	36.822
10:58:55	9.924	0.000	39.989	192.983	17.514
10:59:10	9.943	0.000	40.865	219.210	6.748
10:59:25	9.958	0.000	41.325	220.277	1.172
10:59:40	9.968	0.000	41.736	220.781	0.016
10:59:55	9.871	1.091	41.931	220.887	-0.194
11:00:10	6.970	11.747	23.446	209.906	-0.195
11:00:25	6.041	13.860	5.433	164.973	-0.065
11:00:40	5.975	13.955	2.216	46.797	0.114
11:00:55	5.969	13.975	1.351	3.484	0.226
11:01:10	5.964	13.986	0.970	0.912	0.261

QA/QC_____
Date_____

March 24, 2010
Start Time   11:02
Stop time   11:29
REFERENCE METHOD RUN 7

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.063	0.029	0.101	0.504	-0.151
C_{ui}	Initial upscale	5.969	13.972	41.664	220.649	48.870
C_{of}	Final zero	0.058	0.027	0.024	0.551	-0.161
C_{uf}	Final upscale	5.969	13.963	41.789	221.004	48.975
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.342	8.855	9.679	162.316	6.300
C_{Gas}	**Bias adjusted**	**10.285**	**8.929**	**10.363**	**165.242**	**6.341**

Clock Time (at end of sample period)

041410 130243

Time	CO2	O2	SO2	NOX	CO
11:03	9.800	9.513	7.918	144.274	5.598
11:04	10.177	9.036	6.819	153.983	6.753
11:05	10.768	8.440	6.662	160.989	7.893
11:06	10.047	9.222	6.670	158.287	6.674
11:07	10.968	8.176	8.748	160.376	6.921
11:08	10.389	8.842	8.953	164.511	5.744
11:09	9.791	9.530	8.704	160.295	4.472
11:10	10.788	8.382	12.267	160.033	6.152
11:11	10.204	9.076	14.224	153.863	5.927
11:12	10.032	9.241	15.241	151.624	5.180
11:13	10.580	8.605	14.934	157.729	6.110
11:14	9.967	9.313	11.202	153.110	4.862
11:15	10.646	8.526	9.933	156.252	6.008
11:16	10.132	9.150	7.667	170.531	6.890
11:17	10.019	9.253	6.228	162.302	5.710
11:18	10.295	8.923	7.300	168.103	7.530
11:19	10.530	8.643	8.609	173.091	6.585
11:20	10.301	8.873	9.187	176.052	6.880
11:21	9.937	9.322	8.460	171.319	6.252
11:22	10.497	8.610	8.070	165.379	6.687
11:23	10.526	8.580	8.098	162.841	6.465
11:24	10.537	8.573	10.520	162.786	5.603
11:25	10.444	8.669	13.187	161.492	6.101
11:26	10.281	8.877	11.884	163.801	7.161
11:27	10.431	8.664	9.777	166.447	6.425
11:28	10.898	8.191	10.486	169.365	7.800
11:29	10.249	8.868	9.579	173.712	5.717

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QA/QC_____
Date_____

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   11:30
Stop Time   11:34
CALIBRATION BIAS 07

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv

System Response to Calibration Gasses (C_S)

C_{of} Zero gas	0.058	0.027	0.024	0.551	-0.161
C_{uf} Upscale gas	5.969	13.963	41.789	221.004	48.975

Analyzer Calibration Error Reponses (C_{Dir})

C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082

Actual Upscale Gas Value (C_{MA})

C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

	13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.4%	0.2%	0.1%	0.1%	-0.3%
Upscale gas	0.2%	-1.1%	-1.9%	-1.1%	-0.1%

System Bias Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

C_{ol} Zero gas	0.063	0.029	0.101	0.504	-0.151
C_{ul} Upscale gas	5.969	13.972	41.664	220.649	48.870

Drift Assessment as Percent of Calibration Span Value (D) (3%)

Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	0.1%	0.1%	0.1%

Drift Assessment Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130243

11:30:25	0.102	0.046	0.609	5.674	30.872
11:30:40	0.086	0.037	0.293	1.197	42.108
11:30:55	0.075	0.033	0.129	0.684	47.536
11:31:10	0.064	0.028	0.059	0.603	48.728
11:31:25	0.058	0.028	0.008	0.611	48.916
11:31:40	0.053	0.025	0.006	0.440	49.022
11:31:55	0.199	0.027	0.031	0.301	48.985
11:32:10	7.334	0.012	15.632	10.435	47.992
11:32:25	9.784	0.002	35.898	53.423	38.113
11:32:40	9.908	0.000	39.842	174.139	21.980
11:32:55	9.935	0.000	40.856	218.242	7.735
11:33:10	9.945	0.000	41.468	220.765	2.007
11:33:25	9.962	0.000	41.825	221.066	0.119
11:33:40	9.971	0.097	42.074	221.180	-0.179
11:33:55	7.713	9.712	28.881	221.245	-0.197
11:34:10	6.094	13.765	6.748	167.969	-0.106
11:34:25	5.984	13.944	2.497	32.910	0.098
11:34:40	5.965	13.966	1.503	6.252	0.151
11:34:55	5.957	13.979	1.056	1.091	0.246

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Date_____

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   11:36
Stop time   12:03
REFERENCE METHOD RUN 8

		Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.058	0.027	0.024	0.551	-0.161
C_{ui}	Initial upscale	5.969	13.963	41.789	221.004	48.975
C_{of}	Final zero	0.059	0.031	0.053	0.461	-0.129
C_{uf}	Final upscale	5.958	13.973	41.743	220.798	49.035
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.111	9.053	7.239	155.399	5.407
C_{Gas}	**Bias adjusted**	**10.062**	**9.129**	**7.748**	**158.130**	**5.444**

Clock Time (at end of sample period)

041410 130243

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
11:37	10.312	8.762	6.282	163.455	4.888
11:38	9.890	9.301	6.005	163.396	4.665
11:39	10.025	9.124	6.083	163.508	4.742
11:40	10.041	9.107	5.818	158.899	5.487
11:41	10.090	9.051	5.880	154.617	6.027
11:42	10.235	8.863	6.831	150.810	6.786
11:43	9.987	9.200	7.431	146.793	6.013
11:44	10.066	9.068	8.015	144.438	5.616
11:45	10.344	8.773	8.520	155.230	6.527
11:46	9.903	9.270	7.044	161.467	4.569
11:47	11.076	7.938	7.701	170.057	5.057
11:48	10.311	8.823	6.796	168.234	4.322
11:49	9.916	9.275	6.095	161.109	3.606
11:50	10.095	9.037	7.135	155.018	4.152
11:51	10.438	8.639	7.402	157.210	4.752
11:52	9.920	9.291	6.814	152.074	4.799
11:53	9.885	9.328	6.369	152.112	5.017
11:54	10.450	8.639	7.233	155.755	5.309
11:55	9.909	9.272	7.313	150.798	5.161
11:56	10.125	9.035	7.452	149.603	4.727
11:57	10.341	8.796	9.239	148.358	6.881
11:58	9.737	9.553	7.870	150.897	5.286
11:59	10.176	8.984	8.274	153.508	5.874
12:00	9.661	9.684	7.647	149.658	5.845
12:01	10.165	9.020	7.783	146.984	6.788
12:02	9.859	9.420	8.050	156.070	6.485
12:03	10.053	9.188	8.373	155.716	6.607

QA/QC_____
Date_____

March 24, 2010
Start Time   12:04
Stop Time   12:09
CALIBRATION BIAS 08

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.059	0.031	0.053	0.461	-0.129
C_{uf} Upscale gas	5.958	13.973	41.743	220.798	49.035
Analyzer Calibration Error Reponses (C_{0lr})					
C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.1%	0.1%	-0.3%
Upscale gas	0.1%	-1.0%	-2.0%	-1.2%	0.0%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.058	0.027	0.024	0.551	-0.161
C_{ul} Upscale gas	5.969	13.963	41.789	221.004	48.975
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	-0.1%	0.1%	-0.1%	0.0%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130243

12:04:39	0.084	0.043	0.247	1.302	40.653
12:04:54	0.074	0.035	0.135	0.660	47.113
12:05:09	0.063	0.034	0.081	0.611	48.739
12:05:24	0.061	0.031	0.049	0.513	49.003
12:05:39	0.055	0.027	0.029	0.260	49.045
12:05:54	0.424	0.030	0.114	0.268	49.057
12:06:09	7.887	0.012	17.646	16.492	47.556
12:06:24	9.801	0.005	36.318	72.666	36.355
12:06:39	9.903	0.004	39.816	177.411	20.278
12:06:54	9.930	0.001	40.902	218.388	6.891
12:07:09	9.939	0.002	41.444	220.570	1.718
12:07:24	9.950	0.000	41.805	220.741	0.109
12:07:39	9.904	0.738	41.980	221.082	-0.181
12:07:54	7.121	11.348	24.536	220.944	-0.181
12:08:09	6.041	13.836	5.560	172.324	-0.024
12:08:24	5.970	13.943	2.229	33.366	0.129
12:08:39	5.959	13.962	1.411	4.550	0.177
12:08:54	5.958	13.976	1.042	0.985	0.247
12:09:09	5.958	13.981	0.804	0.603	0.271

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   12:10
Stop time   12:37
REFERENCE METHOD RUN 9

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.059	0.031	0.053	0.461	-0.129
C_{ui}	Initial upscale	5.958	13.973	41.743	220.798	49.035
C_{of}	Final zero	0.065	0.033	0.109	0.510	-0.127
C_{uf}	Final upscale	5.968	13.956	41.834	221.259	49.115
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.975	9.284	7.212	147.144	6.618
C_{Gas}	**Bias adjusted**	**9.929**	**9.363**	**7.677**	**149.623**	**6.608**

Clock Time (at end of sample period)

041410 130243

	CO2	O2	SO2	NOX	CO
12:11	10.243	8.895	5.161	157.092	4.118
12:12	10.030	9.148	5.282	151.772	3.792
12:13	10.100	9.068	6.196	150.688	4.470
12:14	9.922	9.333	6.359	147.704	4.536
12:15	9.892	9.368	8.131	147.924	4.707
12:16	10.246	8.893	9.185	154.579	5.277
12:17	9.939	9.323	8.842	152.047	4.770
12:18	10.023	9.186	8.275	149.909	4.434
12:19	10.023	9.230	8.275	145.067	5.809
12:20	9.943	9.309	7.765	145.236	5.284
12:21	9.964	9.329	8.469	146.321	6.856
12:22	9.658	9.672	7.963	144.963	5.336
12:23	10.083	9.139	8.030	150.456	6.784
12:24	10.074	9.150	10.050	144.681	6.182
12:25	9.642	9.738	8.437	142.804	6.775
12:26	9.817	9.476	7.408	142.792	6.351
12:27	9.829	9.506	8.017	144.854	7.349
12:28	9.867	9.442	7.997	147.859	7.821
12:29	9.702	9.654	8.100	142.098	8.876
12:30	9.801	9.502	7.290	137.304	9.827
12:31	9.821	9.497	6.741	143.732	10.437
12:32	10.327	8.851	6.149	141.217	9.197
12:33	10.604	8.591	5.985	147.574	9.003
12:34	10.012	9.219	5.139	149.894	6.796
12:35	10.284	8.925	4.966	148.980	7.908
12:36	9.615	9.768	4.763	149.868	7.294
12:37	9.863	9.465	5.748	145.480	8.702

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time 12:38
Stop Time 12:43
CALIBRATION BIAS 09

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv

System Response to Calibration Gasses (C_S)

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{of}	Zero gas	-0.065	0.033	0.109	0.510	-0.127
C_{uf}	Upscale gas	5.968	13.956	41.834	221.259	49.115

Analyzer Calibration Error Reponses (C_{Dir})

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{oca}	Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mca}	Upscale gas	5.945	14.112	43.542	226.181	49.082

Actual Upscale Gas Value (C_{MA})

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

	Ch1	Ch2	Ch3	Ch4	Ch5
	13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	0.4%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	0.2%	-1.1%	-1.9%	-1.1%	0.0%

System Bias Status

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

		Ch1	Ch2	Ch3	Ch4	Ch5
C_{oi}	Zero gas	0.059	0.031	0.053	0.461	-0.129
C_{ui}	Upscale gas	5.958	13.973	41.743	220.798	49.035

Drift Assessment as Percent of Calibration Span Value (D) (3%)

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	0.0%	0.0%	0.1%	0.0%	0.0%
Upscale gas	0.1%	-0.1%	0.1%	0.1%	0.1%

Drift Assessment Status

	Ch1	Ch2	Ch3	Ch4	Ch5
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130243

Time	CO2	O2	SO2	NOX	CO
12:38:53	0.097	0.047	0.425	1.921	36.603
12:39:08	0.085	0.039	0.241	0.733	45.175
12:39:23	0.068	0.037	0.155	0.733	48.360
12:39:38	0.067	0.031	0.104	0.504	49.112
12:39:53	0.061	0.032	0.067	0.293	49.117
12:40:08	0.404	0.033	0.166	0.244	49.117
12:40:23	7.845	0.015	16.977	5.975	47.315
12:40:38	9.801	0.008	36.270	120.480	37.491
12:40:53	9.909	0.007	39.937	190.810	20.068
12:41:08	9.942	0.004	40.946	219.862	7.386
12:41:23	9.947	0.002	41.481	221.009	1.734
12:41:38	9.960	0.001	41.866	221.294	0.150
12:41:53	9.960	0.083	42.154	221.474	-0.111
12:42:08	7.764	9.549	30.466	218.111	-0.189
12:42:23	6.089	13.752	7.363	199.463	-0.081
12:42:38	5.978	13.939	2.632	66.545	0.108
12:42:53	5.964	13.960	1.516	5.202	0.242
12:43:08	5.960	13.970	1.058	0.985	0.299

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 2

March 24, 2010
Start Time   12:44
Stop time   13:11
REFERENCE METHOD RUN 10

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.065	0.033	0.109	0.510	-0.127
C_{ui}	Initial upscale	5.968	13.956	41.834	221.259	49.115
C_{of}	Final zero	0.063	0.029	0.153	0.472	-0.122
C_{uf}	Final upscale	5.967	13.962	41.919	220.410	48.964
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.083	9.127	10.862	160.899	6.302
C_{Gas}	**Bias adjusted**	**10.031**	**9.208**	**11.542**	**163.798**	**6.300**

Clock Time (at end of sample period)

041410 130243

	CO2	O2	SO2	NOX	CO
12:45	10.161	9.003	7.724	150.967	7.584
12:46	10.245	8.878	5.218	156.341	6.987
12:47	10.478	8.659	6.196	162.912	7.790
12:48	9.951	9.256	9.779	164.678	5.997
12:49	10.298	8.870	12.911	164.318	7.294
12:50	9.861	9.386	12.766	166.772	6.199
12:51	9.799	9.520	12.340	163.256	6.812
12:52	9.858	9.396	12.099	161.970	6.439
12:53	9.651	9.712	12.398	159.428	7.373
12:54	9.817	9.479	9.450	153.378	7.085
12:55	9.954	9.294	9.503	155.490	7.874
12:56	10.282	8.868	9.868	163.734	8.367
12:57	10.110	9.092	9.590	157.346	7.004
12:58	10.308	8.857	9.265	153.893	5.736
12:59	10.059	9.175	8.229	161.467	6.073
13:00	10.137	9.049	9.126	161.644	4.746
13:01	10.328	8.858	11.304	164.744	5.756
13:02	9.986	9.229	12.028	161.815	4.527
13:03	10.200	9.029	14.308	168.913	5.967
13:04	10.117	9.071	15.796	169.752	5.870
13:05	10.184	9.047	18.175	169.933	6.046
13:06	9.578	9.791	15.321	161.333	5.284
13:07	10.381	8.752	12.647	160.484	6.001
13:08	10.115	9.044	9.753	157.928	6.139
13:09	10.380	8.705	9.163	156.982	5.494
13:10	10.346	8.775	9.272	159.209	5.234
13:11	9.669	9.622	9.048	155.582	4.483

QA/QC_____
Date_____

March 24, 2010
Start Time   13:12
Stop Time   13:16
CALIBRATION BIAS 10

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv

System Response to Calibration Gasses (C_s)

C_{of} Zero gas	0.063	0.029	0.153	0.472	-0.122
C_{uf} Upscale gas	5.967	13.962	41.919	220.410	48.964

Analyzer Calibration Error Reponses (C_{Dir})

C_{oce} Zero gas	0.008	0.006	-0.047	-0.043	0.118
C_{mce} Upscale gas	5.945	14.112	43.542	226.181	49.082

Actual Upscale Gas Value (C_{MA})

C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

	13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.4%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	0.2%	-1.1%	-1.8%	-1.3%	-0.1%

System Bias Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

C_{ol} Zero gas	0.065	0.033	0.109	0.510	-0.127
C_{ui} Upscale gas	5.968	13.956	41.834	221.259	49.115

Drift Assessment as Percent of Calibration Span Value (D) (3%)

Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.1%	-0.2%	-0.2%

Drift Assessment Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130243

13:12:28	0.109	0.050	0.764	4.070	28.890
13:12:43	0.089	0.039	0.418	1.376	41.426
13:12:58	0.079	0.037	0.251	0.733	47.235
13:13:13	0.067	0.033	0.184	0.562	48.790
13:13:28	0.061	0.029	0.132	0.529	49.031
13:13:43	0.061	0.026	0.144	0.325	48.987
13:13:58	2.942	0.031	3.434	0.252	48.876
13:14:13	9.350	0.008	28.666	46.202	44.073
13:14:28	9.873	0.008	38.838	136.052	30.286
13:14:43	9.917	0.006	40.695	203.997	13.561
13:14:58	9.943	0.006	41.394	219.218	4.183
13:15:13	9.946	0.006	41.770	220.204	0.723
13:15:28	9.951	0.006	42.089	220.513	-0.016
13:15:43	9.736	1.793	41.898	220.513	-0.165
13:15:58	6.752	12.260	20.578	220.635	-0.184
13:16:13	6.022	13.878	4.790	139.740	-0.016
13:16:28	5.975	13.949	2.139	14.782	0.127
13:16:43	5.964	13.964	1.377	3.736	0.233
13:16:58	5.961	13.973	1.035	0.904	0.269

QA/QC_____
Date_____

Date: **March 22, 2010**
Start Time   6:08
Stop Time   6:37
CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	CO2	O2	SO2	NOX	CO
	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
	%dv	%dv	ppmdv	ppmdv	ppmdv
Instrument Information					
Manufacturer:	Servomex	Servomex	Wstrn	T.E.I.	T.E.I.
Model:	1415C	1420C	Rsrch 921L	42i-HL	48i
Detection:	NDIR	Paramagn.	UV Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	204217	205832	205184	205956	205194
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Response Time (seconds)					
	45	45	45	45	45
Manufacturer Certified Cylinder Value (C_v)					
Zero	0.000	0.000	0.000	0.000	0.000
Low	5.910	6.010	44.900	225.000	48.200
Mid					
High	13.900	14.100	89.900	453.000	98.500
Actual gas to be used for bias checks					
	5.910	14.100	44.900	225.000	48.200
Cylinder ID					
Zero	AAL14589	AAL14589	AAL14589	AAL14589	AAL14589
Low	ALM033730	ALM046255	ALM010885	ALM010885	EB0011451
Mid					
High	ALM046255	ALM033730	CC124384	CC124384	ALM054744
Analyzer Calibration Response (C_{Dir})					
Zero	0.000	0.012	-0.106	0.049	0.124
Low	5.975	6.017	43.196	223.761	49.126
Mid	5.975	14.100	-0.050	0.100	0.714
High	13.905	14.102	89.954	453.258	98.770

Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)

Zero	0.0%	0.1%	-0.1%	0.0%	0.1%
Low	0.5%	0.1%	-1.9%	-0.3%	0.9%
Mid	N/A	N/A	N/A	N/A	N/A
High	0.0%	0.0%	0.1%	0.1%	0.3%
Calibration Error Status					
Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	N/A	N/A	N/A	N/A	N/A
High	OK	OK	OK	OK	OK

041410 130313

06:08:02	-0.045	0.015	-0.231	0.049	0.263
06:08:17	-0.008	0.015	-0.085	0.065	0.008
06:08:02	-0.045	0.015	-0.231	0.049	0.263
06:08:17	-0.008	0.015	-0.085	0.065	0.008
06:08:32	0.000	0.013	-0.098	0.057	0.103
06:08:47	0.000	0.012	-0.116	0.065	0.140
06:09:02	0.000	0.012	-0.106	0.024	0.129
06:09:17	0.000	0.010	-0.100	0.081	0.131
06:09:32	1.719	6.695	-0.117	0.073	0.101

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Date: **March 22, 2010**
Start Time   6:08
Stop Time   6:37
CALIBRATION ERROR

	Channel 1 CO2 FF Outlet 3 %dv	Channel 2 O2 FF Outlet 3 %dv	Channel 3 SO2 FF Outlet 3 ppmdv	Channel 4 NOX FF Outlet 3 ppmdv	Channel 5 CO FF Outlet 3 ppmdv
06:09:47	5.648	13.705	-0.122	0.098	0.112
06:10:02	5.987	14.057	-0.104	0.065	0.132
06:10:17	6.007	14.075	-0.122	0.065	0.139
06:10:32	6.015	14.094	-0.116	0.073	0.153
06:10:47	6.016	14.104	-0.098	0.089	0.181
06:11:02	6.021	14.108	-0.065	0.081	0.186
06:11:17	6.614	12.776	-0.106	0.081	0.171
06:11:32	12.811	6.782	-0.223	0.024	0.194
06:11:47	13.971	6.054	-0.152	0.057	0.161
06:12:02	14.015	6.022	-0.132	0.057	0.125
06:12:17	13.964	6.015	-0.125	0.073	-0.003
06:12:32	13.902	6.014	-0.129	0.098	-0.050
06:12:47	13.906	6.012	-0.130	0.114	-0.068
06:13:02	13.906	6.009	-0.101	0.098	-0.059
06:13:17	10.897	8.571	-0.016	0.122	-0.006
06:13:32	6.313	13.709	0.057	0.155	0.404
06:13:47	5.996	14.078	-0.010	0.146	1.112
06:14:02	5.981	14.094	-0.049	0.106	1.177
06:14:17	5.972	14.102	-0.056	0.106	0.673
06:14:32	5.971	14.103	-0.046	0.089	0.291
06:14:47	5.894	13.480	-0.052	0.106	0.140
06:15:02	8.651	2.421	-0.062	25.030	0.215
06:15:17	9.658	0.339	13.311	118.445	0.316
06:15:32	9.872	0.031	76.565	348.042	0.308
06:15:47	9.898	0.005	90.849	445.714	0.133
06:16:02	9.902	0.001	92.458	447.977	0.000
06:16:17	9.902	0.001	92.874	449.092	-0.236
06:16:32	9.902	0.000	93.029	452.991	-0.317
06:16:47	9.905	0.000	92.676	453.163	-0.315
06:17:02	9.906	0.000	89.939	453.236	-0.315
06:17:17	9.904	-0.001	89.955	453.285	-0.314
06:17:32	9.906	0.000	89.968	453.252	-0.314
06:17:47	9.481	0.429	80.563	453.244	-0.319
06:18:02	9.704	0.159	39.079	400.627	-0.255
06:18:17	9.992	0.000	40.345	225.788	-0.085
06:18:32	10.006	-0.006	42.178	208.490	-0.060
06:18:47	10.011	-0.012	42.728	218.852	-0.173
06:19:02	10.013	-0.012	42.963	222.605	-0.289
06:19:17	10.012	-0.014	43.114	223.313	-0.330
06:19:32	10.016	-0.013	43.223	223.589	-0.369
06:19:47	10.015	-0.013	43.251	223.761	-0.368
06:20:02	9.692	0.262	42.271	223.932	-0.338
06:20:17	1.895	0.250	15.025	218.136	1.983
06:20:32	0.133	0.017	1.996	100.806	14.143
06:20:47	0.042	0.006	0.498	29.988	47.167
06:21:02	0.032	0.006	0.223	2.149	76.345
06:21:17	0.031	0.006	0.098	1.164	93.324
06:21:32	0.029	0.004	0.072	0.798	98.201
06:21:47	0.030	0.007	0.022	0.684	99.060
06:22:02	0.020	0.006	0.019	0.611	98.745
06:22:17	0.019	0.006	0.021	0.611	98.769
06:22:32	0.019	0.006	0.024	0.611	98.797

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

Date: **March 22, 2010**
Start Time   6:08
Stop Time   6:37
CALIBRATION ERROR

	Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
06:22:47	0.025	0.014	0.021	0.611	98.802
06:23:02	0.033	0.013	0.070	0.644	97.507
06:23:17	0.016	0.004	0.044	0.888	88.192
06:23:32	0.012	0.004	0.006	0.652	71.984
06:23:47	0.012	0.005	0.021	0.448	56.921
06:24:02	0.011	0.002	-0.006	0.390	51.057
06:24:17	0.011	0.002	0.008	0.350	49.296
06:24:32	0.012	0.004	0.013	0.350	49.043
06:24:47	0.011	0.002	0.024	0.342	49.038
06:36:59	0.012	1.009	0.876	43.492	0.183
06:37:14	0.012	1.010	0.904	44.380	0.147
06:37:29	0.012	1.008	0.933	44.982	0.144
06:37:44	0.010	1.007	0.933	45.275	0.132
06:37:59	0.010	1.007	0.962	45.551	0.140

<u>NOX Conversion Efficiency</u>
NO2 = 49.7
Efficiency =   91.4%

QA/QC_____
Date_____

March 22, 2010
Start Time   6:28
Stop Time   6:34
CALIBRATION BIAS 00

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.004	0.037	-0.143	0.122	-0.144
C_{uf} Upscale gas	5.905	13.982	41.646	223.326	49.047
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce} Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.0%	0.2%	0.0%	0.0%	-0.3%
Upscale gas	-0.5%	-0.8%	-1.7%	-0.1%	-0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	N/A	N/A	N/A	N/A	N/A
C_{ui} Upscale gas	N/A	N/A	N/A	N/A	N/A
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	N/A	N/A	N/A	N/A	N/A
Upscale gas	N/A	N/A	N/A	N/A	N/A
Drift Assessment Status					
Zero gas	N/A	N/A	N/A	N/A	N/A
Upscale gas	N/A	N/A	N/A	N/A	N/A

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Time					
06:28:58	0.004	0.039	-0.144	0.122	49.047
06:29:13	0.007	0.037	-0.140	0.122	49.043
06:29:28	0.003	0.035	-0.145	0.122	49.052
06:29:43	0.004	0.037	-0.122	0.122	49.055
06:29:58	0.006	0.036	-0.124	0.122	49.050
06:30:13	0.221	3.329	-0.129	0.114	49.045
06:30:28	7.394	1.944	10.144	1.375	46.020
06:30:43	9.724	0.094	32.060	50.786	35.189
06:30:58	9.854	0.020	38.066	188.751	16.436
06:31:13	9.876	0.012	39.678	218.331	6.408
06:31:28	9.892	0.012	40.425	222.442	1.187
06:31:43	9.895	0.011	40.933	223.069	0.124
06:31:58	9.906	0.011	41.258	223.093	-0.140
06:32:13	9.911	0.008	41.501	223.256	-0.147
06:32:28	9.913	0.009	41.664	223.329	-0.144
06:32:43	9.919	0.009	41.775	223.394	-0.150
06:32:58	9.808	0.989	41.529	223.573	-0.195
06:33:13	3.458	15.982	30.567	223.557	-0.146
06:33:28	0.312	20.508	12.671	133.887	0.143
06:33:43	1.775	18.097	5.156	24.762	0.236
06:33:58	5.498	14.239	2.406	4.933	0.301
06:34:13	5.877	13.990	1.227	1.416	0.280
06:34:28	5.902	13.980	0.785	0.993	0.279
06:34:43	5.905	13.983	0.529	0.684	0.329
06:34:58	5.906	13.983	0.397	0.627	0.376

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   7:44
Stop time   8:11
REFERENCE METHOD RUN 1

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.004	0.037	-0.143	0.122	-0.144
C_{ui}	Initial upscale	5.905	13.982	41.646	223.326	49.047
C_{of}	Final zero	0.052	0.035	0.026	0.798	-0.029
C_{uf}	Final upscale	5.944	13.935	41.635	222.097	49.071
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.723	9.595	9.908	142.449	6.998
C_{Gas}	**Bias adjusted**	**9.718**	**9.681**	**10.731**	**143.745**	**6.948**

Clock Time (at end of sample period)

041410 130313

	CO2	O2	SO2	NOX	CO
07:45	9.760	9.517	9.684	139.092	7.944
07:46	9.365	10.036	8.501	139.105	7.259
07:47	9.600	9.760	7.542	138.500	7.486
07:48	9.442	9.935	6.939	133.203	6.286
07:49	9.814	9.442	6.880	137.965	6.792
07:50	9.650	9.678	7.906	143.441	7.048
07:51	10.239	8.934	8.218	149.542	8.075
07:52	9.339	10.070	7.733	138.317	6.246
07:53	9.683	9.647	7.320	140.466	6.647
07:54	10.161	8.989	7.823	143.175	6.196
07:55	9.929	9.303	8.780	147.316	6.190
07:56	9.816	9.388	8.521	136.170	4.657
07:57	9.729	9.594	8.783	140.812	6.118
07:58	9.853	9.363	9.042	134.984	6.603
07:59	9.932	9.326	9.559	142.021	7.337
08:00	10.019	9.185	10.766	142.823	7.263
08:01	9.636	9.726	11.906	144.337	6.097
08:02	9.552	9.829	12.718	142.155	5.458
08:03	9.637	9.749	13.849	146.498	6.160
08:04	9.336	10.140	14.007	144.866	7.538
08:05	9.752	9.601	16.015	147.468	8.131
08:06	9.853	9.470	17.418	147.243	7.493
08:07	9.610	9.823	16.477	147.131	8.558
08:08	9.674	9.687	11.687	145.690	8.127
08:09	9.392	10.039	8.146	145.161	7.501
08:10	9.794	9.548	6.203	146.618	7.929
08:11	9.949	9.290	5.079	142.039	7.807

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time 8:13
Stop Time 8:18
CALIBRATION BIAS 01

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_s)					
C_{of} Zero gas	0.052	0.035	0.026	0.798	-0.029
C_{uf} Upscale gas	5.944	13.935	41.635	222.097	49.071
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce} Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.1%	0.2%	-0.2%
Upscale gas	-0.2%	-1.2%	-1.7%	-0.4%	-0.1%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_s)					
C_{oi} Zero gas	0.004	0.037	-0.143	0.122	-0.144
C_{ui} Upscale gas	5.905	13.982	41.646	223.326	49.047
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.3%	0.0%	0.2%	0.1%	0.1%
Upscale gas	0.3%	-0.3%	0.0%	-0.3%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130313

08:13:50	0.281	0.171	1.862	84.819	18.141
08:14:05	0.103	0.050	0.814	18.779	25.976
08:14:20	0.076	0.040	0.360	4.632	37.213
08:14:35	0.062	0.037	0.174	1.514	46.102
08:14:50	0.055	0.037	0.070	0.912	48.422
08:15:05	0.051	0.035	0.014	0.749	49.063
08:15:20	0.049	0.033	-0.006	0.733	49.070
08:15:35	0.265	0.038	0.007	0.717	49.081
08:15:50	7.502	0.023	13.302	11.380	47.785
08:16:05	9.758	0.005	34.479	55.808	37.314
08:16:20	9.881	0.006	39.525	175.409	21.560
08:16:35	9.902	0.005	40.778	219.203	7.559
08:16:50	9.914	0.005	41.361	221.783	2.134
08:17:05	9.921	0.004	41.688	222.108	0.163
08:17:20	9.877	0.685	41.856	222.401	-0.081
08:17:35	7.120	11.182	24.389	222.425	-0.099
08:17:50	6.026	13.809	5.884	167.725	0.095
08:18:05	5.952	13.919	2.250	29.532	0.186
08:18:20	5.942	13.937	1.166	5.356	0.291
08:18:35	5.937	13.948	0.733	1.237	0.342

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QA/QC_____
Date_____

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   8:20
Stop time   8:47
REFERENCE METHOD RUN 2

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{ol}	Initial zero	0.052	0.035	0.026	0.798	-0.029
C_{ul}	Initial upscale	5.944	13.935	41.635	222.097	49.071
C_{of}	Final zero	0.065	0.034	0.066	0.730	-0.038
C_{uf}	Final upscale	5.953	13.940	41.943	221.891	49.104
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.920	9.291	11.708	145.991	7.069
C_{Gas}	**Bias adjusted**	**9.895**	**9.387**	**12.545**	**147.701**	**6.970**

Clock Time (at end of sample period)

041410 130313

	CO2	O2	SO2	NOX	CO
08:21	9.671	9.655	11.343	145.706	7.379
08:22	9.925	9.291	12.159	143.081	7.572
08:23	9.664	9.657	11.932	138.071	7.899
08:24	10.033	9.172	12.274	141.146	9.105
08:25	10.185	8.949	13.254	141.500	7.564
08:26	9.775	9.500	13.506	146.744	8.612
08:27	9.988	9.181	12.517	145.623	8.203
08:28	9.841	9.343	11.286	147.114	6.684
08:29	10.351	8.748	11.071	152.550	7.219
08:30	9.611	9.647	10.372	147.688	5.713
08:31	10.308	8.730	11.256	151.469	5.931
08:32	10.053	9.061	12.164	152.892	5.866
08:33	10.277	8.803	12.718	154.436	6.129
08:34	9.591	9.690	10.976	152.367	5.424
08:35	9.962	9.224	11.818	152.208	6.340
08:36	9.557	9.759	10.885	147.690	5.754
08:37	9.876	9.394	11.582	144.650	8.060
08:38	10.074	9.089	12.414	142.389	6.846
08:39	9.700	9.618	13.074	151.834	6.834
08:40	10.113	9.011	13.468	142.104	6.982
08:41	9.825	9.451	13.763	139.086	6.871
08:42	10.081	9.103	13.270	145.293	7.978
08:43	9.946	9.270	12.319	139.442	6.815
08:44	9.828	9.398	10.986	137.477	6.705
08:45	9.743	9.543	9.115	146.150	7.595
08:46	9.819	9.413	8.523	143.022	7.050
08:47	10.033	9.146	8.081	150.018	7.746

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   8:48
Stop Time   8:52

CALIBRATION BIAS 02

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.065	0.034	0.066	0.730	-0.038
C_{uf} Upscale gas	5.953	13.940	41.943	221.891	49.104
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce} Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.5%	0.2%	0.2%	0.2%	-0.2%
Upscale gas	-0.2%	-1.2%	-1.4%	-0.4%	0.0%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.052	0.035	0.026	0.798	-0.029
C_{ui} Upscale gas	5.944	13.935	41.635	222.097	49.071
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.1%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.1%	0.0%	0.3%	0.0%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

`041410  130313`

08:48:13	0.120	0.061	0.869	16.068	23.676
08:48:28	0.086	0.040	0.366	1.481	37.301
08:48:43	0.079	0.042	0.210	0.977	45.506
08:48:58	0.071	0.037	0.112	0.733	48.635
08:49:13	0.065	0.032	0.062	0.725	49.101
08:49:28	0.059	0.033	0.022	0.733	49.128
08:49:43	1.125	0.036	0.389	0.553	49.083
08:49:58	8.665	0.017	19.510	0.993	47.028
08:50:13	9.827	0.012	36.479	70.892	34.772
08:50:28	9.892	0.009	39.891	212.422	18.136
08:50:43	9.914	0.008	41.114	219.577	6.247
08:50:58	9.921	0.006	41.659	221.620	1.409
08:51:13	9.930	0.008	41.970	221.945	0.157
08:51:28	9.928	0.247	42.199	222.108	-0.078
08:51:43	7.454	10.364	28.495	222.019	-0.095
08:51:58	6.053	13.782	6.895	124.209	0.057
08:52:13	5.965	13.929	2.392	51.266	0.171
08:52:28	5.950	13.940	1.278	2.719	0.285
08:52:43	5.945	13.950	0.865	1.400	0.340

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   8:54
Stop time   9:21
REFERENCE METHOD RUN 3

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks					
C_{oi} Initial zero	0.065	0.034	0.066	0.730	-0.038
C_{ul} Initial upscale	5.953	13.940	41.943	221.891	49.104
C_{of} Final zero	0.056	0.034	0.075	0.633	-0.079
C_{uf} Final upscale	5.953	13.941	42.055	220.933	48.974
C_{ma} Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)					
C_{Avg} Average conc.	9.408	9.966	9.896	138.221	6.726
C_{Gas} **Bias adjusted**	**9.375**	**10.071**	**10.522**	**140.200**	**6.661**

Clock Time (at end of sample period)

`041410 130313`

	CO2	O2	SO2	NOX	CO
08:55	9.456	9.942	10.414	134.438	6.146
08:56	9.467	9.922	11.937	134.204	6.042
08:57	9.416	9.963	11.756	132.963	6.175
08:58	9.623	9.754	12.227	141.962	6.860
08:59	9.582	9.765	14.089	139.068	7.065
09:00	9.928	9.321	19.252	144.133	7.460
09:01	9.505	9.880	19.529	144.204	7.057
09:02	9.224	10.225	13.710	144.172	6.956
09:03	9.295	10.094	9.532	140.281	5.749
09:04	9.494	9.833	7.222	139.040	5.677
09:05	9.470	9.905	5.787	142.971	6.251
09:06	9.378	9.995	4.781	143.331	6.648
09:07	9.554	9.775	4.302	141.675	7.982
09:08	9.590	9.718	4.054	141.317	7.111
09:09	8.899	10.569	4.280	139.622	7.052
09:10	9.036	10.401	5.401	134.302	6.264
09:11	9.403	9.939	6.272	133.181	6.066
09:12	9.750	9.523	8.481	135.293	7.052
09:13	9.484	9.863	10.346	134.921	7.306
09:14	9.008	10.475	10.694	131.864	5.947
09:15	8.873	10.617	9.261	127.707	5.874
09:16	9.438	9.911	9.600	132.900	6.674
09:17	9.848	9.391	11.483	139.616	8.086
09:18	9.613	9.707	12.825	142.908	7.772
09:19	9.141	10.329	12.073	140.019	6.748
09:20	9.064	10.406	9.317	139.005	6.490
09:21	9.479	9.872	8.568	136.870	7.105

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   9:21
Stop Time   9:26
CALIBRATION BIAS 03

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv

System Response to Calibration Gasses (C_S)

C_{of}	Zero gas	0.056	0.034	0.075	0.633	-0.079
C_{uf}	Upscale gas	5.953	13.941	42.055	220.933	48.974

Analyzer Calibration Error Reponses (C_{Dir})

C_{oce}	Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce}	Upscale gas	5.975	14.102	43.196	223.761	49.126

Actual Upscale Gas Value (C_{MA})

C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

		13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

	Zero gas	0.4%	0.2%	0.2%	0.1%	-0.2%
	Upscale gas	-0.2%	-1.1%	-1.3%	-0.6%	-0.2%

System Bias Status

	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

C_{oi}	Zero gas	0.065	0.034	0.066	0.730	-0.038
C_{ui}	Upscale gas	5.953	13.940	41.943	221.891	49.104

Drift Assessment as Percent of Calibration Span Value (D) (3%)

	Zero gas	-0.1%	0.0%	0.0%	0.0%	0.0%
	Upscale gas	0.0%	0.0%	0.1%	-0.2%	-0.1%

Drift Assessment Status

	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

041410 130313

09:21:59	0.164	0.103	1.841	45.340	15.170
09:22:14	0.099	0.056	0.726	6.235	30.504
09:22:29	0.080	0.044	0.363	1.042	40.983
09:22:44	0.071	0.039	0.225	0.757	47.375
09:22:59	0.057	0.036	0.119	0.676	48.687
09:23:14	0.055	0.035	0.078	0.611	48.960
09:23:29	0.055	0.031	0.027	0.611	48.975
09:23:44	1.167	0.034	0.462	0.611	48.985
09:23:59	8.732	0.014	20.199	0.611	46.807
09:24:14	9.832	0.008	36.871	96.394	33.462
09:24:29	9.898	0.006	40.217	209.540	17.831
09:24:44	9.915	0.006	41.322	218.983	5.260
09:24:59	9.925	0.007	41.804	220.627	1.283
09:25:14	9.931	0.004	42.076	220.928	0.029
09:25:29	9.934	0.242	42.286	221.245	-0.150
09:25:44	7.451	10.399	28.356	213.447	-0.109
09:25:59	6.052	13.782	7.176	136.606	0.023
09:26:14	5.965	13.926	2.624	58.250	0.138
09:26:29	5.950	13.944	1.405	3.158	0.220
09:26:44	5.946	13.952	0.960	1.351	0.295

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   9:28
Stop time   9:55
REFERENCE METHOD RUN 4

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.056	0.034	0.075	0.633	-0.079
C_{ui}	Initial upscale	5.953	13.941	42.055	220.933	48.974
C_{of}	Final zero	0.054	0.035	0.163	0.603	-0.072
C_{uf}	Final upscale	5.959	13.959	41.471	220.578	48.869
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.428	10.049	10.187	139.108	8.677
C_{Gas}	**Bias adjusted**	**9.387**	**10.148**	**10.856**	**141.549**	**8.611**

Clock Time (at end of sample period)

`041410  130313`

	CO2	O2	SO2	NOX	CO
09:29	9.240	10.241	16.665	139.111	7.651
09:30	8.839	10.747	14.533	135.818	7.744
09:31	8.538	11.119	12.849	135.374	7.975
09:32	8.628	10.989	10.564	142.871	8.816
09:33	9.213	10.231	8.773	150.433	10.079
09:34	9.780	9.516	7.573	155.863	10.380
09:35	9.324	10.116	6.388	150.590	10.273
09:36	9.170	10.309	5.438	144.202	9.819
09:37	9.179	10.291	4.626	133.341	8.273
09:38	9.388	10.036	4.082	132.782	8.489
09:39	10.013	9.221	4.871	139.831	9.832
09:40	10.304	8.900	7.371	150.993	10.422
09:41	9.762	9.628	8.572	152.096	9.460
09:42	9.358	10.151	8.134	137.173	7.015
09:43	9.317	10.218	7.393	132.822	6.593
09:44	9.543	9.932	8.819	133.594	7.187
09:45	9.860	9.543	11.092	141.669	8.385
09:46	10.093	9.263	12.904	146.359	8.945
09:47	9.728	9.750	12.788	141.327	8.429
09:48	9.451	10.121	12.116	133.545	8.207
09:49	9.547	10.003	10.068	129.111	8.206
09:50	10.014	9.360	11.632	138.702	8.155
09:51	9.502	10.080	12.972	138.411	9.984
09:52	8.872	10.804	12.010	118.700	8.684
09:53	9.141	10.439	12.298	124.603	7.778
09:54	9.380	10.143	14.356	135.393	8.434
09:55	9.372	10.181	16.167	141.188	9.073

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   9:55
Stop Time   10:00
CALIBRATION BIAS 04

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.054	0.035	0.163	0.603	-0.072
C_{uf}	Upscale gas	5.959	13.959	41.471	220.578	48.869
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce}	Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Perce		3				
	Zero gas	0.4%	0.2%	0.3%	0.1%	-0.2%
	Upscale gas	-0.1%	-1.0%	-1.9%	-0.7%	-0.3%
System Bias Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)						
C_{ol}	Zero gas	0.056	0.034	0.075	0.633	-0.079
C_{ul}	Upscale gas	5.953	13.941	42.055	220.933	48.974
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	0.0%	0.0%	0.1%	0.0%	0.0%
	Upscale gas	0.0%	0.1%	-0.7%	-0.1%	-0.1%
Drift Assessment Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

041410 130313

	CO2	O2	SO2	NOX	CO
09:55:42	0.277	0.241	3.272	69.280	13.923
09:55:57	0.110	0.066	1.161	21.669	24.179
09:56:12	0.082	0.047	0.539	1.880	36.790
09:56:27	0.067	0.041	0.313	0.692	45.418
09:56:42	0.060	0.035	0.207	0.619	48.118
09:56:57	0.052	0.036	0.139	0.611	48.789
09:57:12	0.049	0.033	0.144	0.578	48.904
09:57:27	0.516	0.030	0.194	0.586	48.913
09:57:42	8.077	0.013	16.550	0.529	47.227
09:57:57	9.813	0.006	35.953	114.562	36.993
09:58:12	9.906	0.004	39.945	199.129	19.860
09:58:27	9.919	0.000	41.011	218.592	6.917
09:58:42	9.941	0.003	41.468	220.399	1.614
09:58:57	9.945	0.001	41.897	220.627	0.083
09:59:12	9.500	2.860	41.047	220.708	-0.101
09:59:27	6.515	12.786	17.944	199.121	-0.124
09:59:42	6.004	13.898	4.448	89.141	0.008
09:59:57	5.965	13.949	1.928	24.127	0.134
10:00:12	5.958	13.959	1.157	2.141	0.231
10:00:27	5.953	13.968	0.830	0.904	0.301

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   10:01
Stop time   10:28
REFERENCE METHOD RUN 5

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.054	0.035	0.163	0.603	-0.072
C_{ui}	Initial upscale	5.959	13.959	41.471	220.578	48.869
C_{of}	Final zero	0.054	0.031	0.108	0.529	-0.117
C_{uf}	Final upscale	5.956	13.948	41.623	220.125	48.781
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.730	9.712	10.420	138.048	9.635
C_{Gas}	**Bias adjusted**	**9.688**	**9.804**	**11.151**	**140.744**	**9.587**

Clock Time (at end of sample period)

041410 130313

	CO2	O2	SO2	NOX	CO
10:02	9.596	9.878	6.679	136.264	12.727
10:03	9.633	9.845	9.208	134.959	13.105
10:04	9.629	9.892	7.913	132.706	14.157
10:05	9.440	10.141	8.251	132.186	12.308
10:06	9.207	10.438	8.095	129.245	12.961
10:07	9.322	10.289	7.644	124.927	14.238
10:08	9.715	9.759	7.157	131.081	16.070
10:09	9.954	9.480	7.792	138.413	14.206
10:10	9.750	9.709	8.008	134.473	13.522
10:11	9.529	10.012	8.400	138.321	12.230
10:12	9.263	10.325	7.459	126.201	9.874
10:13	9.564	9.965	6.972	129.772	8.877
10:14	9.863	9.581	7.761	139.383	8.784
10:15	10.120	9.216	14.111	146.665	10.319
10:16	9.565	9.937	18.344	151.514	8.880
10:17	9.171	10.401	15.072	139.978	6.972
10:18	9.555	9.865	10.602	139.017	6.738
10:19	10.012	9.255	8.423	147.613	7.460
10:20	10.094	9.145	6.694	149.341	7.147
10:21	10.480	8.762	6.315	150.091	6.914
10:22	9.807	9.523	6.805	135.700	5.710
10:23	10.058	9.299	9.370	145.816	6.119
10:24	9.818	9.541	11.551	129.882	4.590
10:25	9.868	9.517	15.116	140.513	5.903
10:26	10.122	9.232	18.991	140.114	6.619
10:27	9.800	9.586	19.227	137.644	6.500
10:28	9.784	9.634	19.383	145.472	7.227

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   10:29
Stop Time   10:34
CALIBRATION BIAS 05

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.054	0.031	0.108	0.529	-0.117
C_{uf} Upscale gas	5.956	13.948	41.623	220.125	48.781
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce} Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	0.2%	0.1%	-0.2%
Upscale gas	-0.1%	-1.1%	-1.7%	-0.8%	-0.4%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.054	0.035	0.163	0.603	-0.072
C_{ui} Upscale gas	5.959	13.959	41.471	220.578	48.869
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	0.2%	-0.1%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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10:29:22	0.241	0.158	3.026	58.054	10.951
10:29:37	0.110	0.061	1.140	15.710	23.311
10:29:52	0.081	0.045	0.547	1.709	37.521
10:30:07	0.071	0.038	0.265	0.692	45.525
10:30:22	0.061	0.034	0.157	0.611	48.124
10:30:37	0.052	0.030	0.111	0.488	48.760
10:30:52	0.051	0.029	0.055	0.488	48.781
10:31:07	0.857	0.031	0.410	0.488	48.801
10:31:22	8.508	0.009	20.037	0.488	46.245
10:31:37	9.832	0.001	36.824	129.092	35.031
10:31:52	9.908	0.001	40.182	201.799	17.843
10:32:07	9.926	0.000	41.200	219.137	6.195
10:32:22	9.936	-0.001	41.700	219.869	1.283
10:32:37	9.945	-0.011	41.970	220.196	-0.011
10:32:52	9.507	2.862	40.685	220.310	-0.174
10:33:07	6.521	12.759	16.907	193.773	-0.166
10:33:22	6.000	13.884	4.169	87.505	-0.016
10:33:37	5.964	13.936	1.812	22.263	0.098
10:33:52	5.955	13.949	1.087	2.157	0.199
10:34:07	5.948	13.958	0.736	0.920	0.256

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QA/QC_____
Date_____

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   10:35
Stop time   11:02
REFERENCE METHOD RUN 6

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{ol}	Initial zero	0.054	0.031	0.108	0.529	-0.117
C_{ui}	Initial upscale	5.956	13.948	41.623	220.125	48.781
C_{of}	Final zero	0.049	0.025	0.004	0.485	-0.187
C_{uf}	Final upscale	5.961	13.937	41.768	219.571	48.624
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.146	9.118	9.150	147.815	7.813
C_{Gas}	Bias adjusted	**10.100**	**9.211**	**9.807**	**151.109**	**7.859**

Clock Time (at end of sample period)

`041410 130313`

	CO2	O2	SO2	NOX	CO
10:36	9.822	9.594	3.475	146.640	11.361
10:37	9.971	9.381	3.696	152.137	11.706
10:38	10.057	9.298	4.844	156.353	12.811
10:39	10.178	9.088	5.537	155.834	11.410
10:40	10.133	9.153	6.539	161.463	10.215
10:41	10.096	9.163	6.556	153.353	8.544
10:42	10.179	9.074	6.330	152.308	6.839
10:43	10.066	9.226	7.133	154.251	8.028
10:44	10.149	9.120	8.330	149.129	7.869
10:45	10.160	9.064	8.435	143.895	6.932
10:46	10.235	9.018	9.142	150.018	6.346
10:47	9.948	9.315	9.061	127.945	5.031
10:48	10.124	9.122	11.613	136.876	5.985
10:49	10.774	8.428	16.314	145.602	6.186
10:50	9.722	9.677	17.218	138.171	5.129
10:51	9.985	9.303	16.760	132.507	6.134
10:52	9.787	9.547	13.630	129.501	6.263
10:53	10.142	9.103	11.397	138.616	7.275
10:54	10.880	8.291	9.226	144.884	7.836
10:55	10.248	9.044	7.637	157.330	19.668
10:56	9.926	9.332	6.072	147.155	7.407
10:57	9.620	9.757	5.566	155.464	7.335
10:58	10.229	8.937	5.823	153.755	5.860
10:59	10.271	8.891	6.965	154.216	5.377
11:00	10.891	8.247	10.986	156.115	5.415
11:01	10.452	8.699	13.513	155.385	4.502
11:02	9.904	9.324	15.261	142.104	3.494

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   11:03
Stop Time   11:08
CALIBRATION BIAS 06

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.049	0.025	0.004	0.485	-0.187
C_{uf} Upscale gas	5.961	13.937	41.768	219.571	48.624
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce} Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	0.1%	0.1%	-0.3%
Upscale gas	-0.1%	-1.2%	-1.6%	-0.9%	-0.5%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.054	0.031	0.108	0.529	-0.117
C_{ui} Upscale gas	5.956	13.948	41.623	220.125	48.781
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	-0.1%
Upscale gas	0.0%	-0.1%	0.2%	-0.1%	-0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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11:03:30	0.161	0.095	1.946	50.688	11.885
11:03:45	0.096	0.048	0.723	6.976	28.191
11:04:00	0.078	0.038	0.352	1.295	40.190
11:04:15	0.065	0.034	0.143	0.774	46.965
11:04:30	0.056	0.032	0.036	0.545	48.391
11:04:45	0.051	0.027	0.000	0.488	48.584
11:05:00	0.038	0.017	-0.024	0.423	48.633
11:05:15	0.414	0.025	0.062	0.382	48.653
11:05:30	7.978	0.009	16.951	15.539	47.108
11:05:45	9.810	0.002	36.127	69.434	36.081
11:06:00	9.908	0.002	39.946	178.372	19.834
11:06:15	9.929	-0.001	41.034	217.281	6.439
11:06:30	9.943	0.000	41.556	219.341	1.607
11:06:45	9.953	-0.002	41.794	219.560	-0.008
11:07:00	9.958	0.063	41.952	219.813	-0.235
11:07:15	7.740	9.571	29.390	219.902	-0.234
11:07:30	6.077	13.746	7.034	167.351	-0.093
11:07:45	5.973	13.919	2.323	33.871	0.082
11:08:00	5.958	13.942	1.188	6.732	0.135
11:08:15	5.953	13.951	0.788	1.408	0.226

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QA/QC_____
Date_____

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Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time 11:09
Stop time 11:36
REFERENCE METHOD RUN 7

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.049	0.025	0.004	0.485	-0.187
C_{ui}	Initial upscale	5.961	13.937	41.768	219.571	48.624
C_{of}	Final zero	0.054	0.028	-0.091	0.469	-0.232
C_{uf}	Final upscale	5.946	13.937	41.718	219.701	48.657
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.850	9.474	11.089	142.546	6.307
C_{Gas}	**Bias adjusted**	**9.811**	**9.576**	**11.963**	**145.856**	**6.430**

Clock Time (at end of sample period)

041410 130313

11:10	9.844	9.447	6.497	130.216	4.530
11:11	9.930	9.378	5.548	138.341	6.005
11:12	10.130	9.087	5.056	137.131	6.461
11:13	9.852	9.469	5.191	140.132	5.455
11:14	9.862	9.492	6.147	138.598	6.088
11:15	9.507	9.939	7.185	135.633	5.737
11:16	9.666	9.731	8.625	139.031	6.312
11:17	9.844	9.499	10.960	143.164	6.533
11:18	10.043	9.229	10.300	149.156	7.584
11:19	10.039	9.260	15.145	150.639	8.212
11:20	9.760	9.646	17.783	149.219	7.326
11:21	9.732	9.660	16.209	143.885	5.949
11:22	9.555	9.781	13.805	146.168	5.725
11:23	9.896	9.403	12.011	148.909	5.550
11:24	10.457	8.685	9.901	152.251	4.977
11:25	9.923	9.381	8.628	148.252	4.660
11:26	9.635	9.714	6.954	141.445	5.072
11:27	9.797	9.535	5.863	145.525	5.975
11:28	9.933	9.347	5.438	141.461	4.979
11:29	9.833	9.461	6.576	140.949	5.225
11:30	10.009	9.248	9.926	137.534	5.342
11:31	10.011	9.282	16.604	143.382	6.752
11:32	9.850	9.490	21.362	144.744	8.157
11:33	9.829	9.505	28.615	144.052	7.423
11:34	9.669	9.701	19.647	140.077	6.966
11:35	9.758	9.590	11.368	138.681	7.795
11:36	9.578	9.835	8.071	140.181	9.493

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   11:37
Stop Time   11:42
CALIBRATION BIAS 07

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_s)						
C_{of}	Zero gas	0.054	0.028	-0.091	0.469	-0.232
C_{uf}	Upscale gas	5.946	13.937	41.718	219.701	48.657
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce}	Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.4%	0.1%	0.0%	0.1%	-0.4%
	Upscale gas	-0.2%	-1.2%	-1.6%	-0.9%	-0.5%
System Bias Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_s)						
C_{ol}	Zero gas	0.049	0.025	0.004	0.485	-0.187
C_{ul}	Upscale gas	5.961	13.937	41.768	219.571	48.624
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
	Upscale gas	-0.1%	0.0%	-0.1%	0.0%	0.0%
Drift Assessment Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

`041410  130313`

	CO2	O2	SO2	NOX	CO
11:37:33	0.159	0.096	1.227	70.631	18.284
11:37:48	0.095	0.050	0.466	3.321	30.222
11:38:03	0.080	0.042	0.142	1.360	41.758
11:38:18	0.067	0.037	0.006	0.757	46.838
11:38:33	0.058	0.029	-0.062	0.521	48.293
11:38:48	0.056	0.027	-0.101	0.488	48.619
11:39:03	0.047	0.027	-0.111	0.399	48.684
11:39:18	0.908	0.028	0.337	0.366	48.668
11:39:33	8.558	0.009	20.360	13.358	46.170
11:39:48	9.805	-0.018	37.004	68.978	35.427
11:40:03	9.916	0.001	40.132	190.061	17.247
11:40:18	9.939	0.000	41.063	217.721	6.289
11:40:33	9.951	-0.002	41.473	219.390	1.122
11:40:48	9.961	0.001	41.796	219.804	-0.052
11:41:03	9.927	0.638	41.885	219.910	-0.267
11:41:18	7.144	11.260	24.423	220.016	-0.278
11:41:33	6.045	13.825	5.356	142.157	-0.150
11:41:48	5.944	13.926	1.812	20.505	-0.015
11:42:03	5.936	13.930	0.892	4.892	0.039
11:42:18	5.958	13.955	0.589	1.270	0.228

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   11:43
Stop time   12:10
REFERENCE METHOD RUN 8

		Channel 1 CO_2	Channel 2 O_2	Channel 3 SO_2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.054	0.028	-0.091	0.469	-0.232
C_{ui}	Initial upscale	5.946	13.937	41.718	219.701	48.657
C_{of}	Final zero	0.053	0.025	-0.257	0.496	-0.234
C_{uf}	Final upscale	5.977	13.952	41.417	219.325	48.562
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.915	9.396	7.180	141.708	7.330
C_{Gas}	**Bias adjusted**	**9.865**	**9.492**	**7.911**	**145.074**	**7.463**

Clock Time (at end of sample period)

041410 130313

Clock Time	CO_2	O_2	SO_2	NOX	CO
11:44	10.228	8.967	3.964	148.616	8.643
11:45	10.271	8.918	4.626	152.137	8.451
11:46	9.754	9.597	5.194	145.574	7.729
11:47	9.685	9.719	5.399	139.587	8.740
11:48	9.542	9.863	5.070	119.076	7.254
11:49	9.976	9.336	5.438	140.883	6.961
11:50	10.115	9.181	5.873	146.087	7.253
11:51	9.789	9.598	7.608	135.560	6.439
11:52	9.767	9.630	9.042	133.952	6.653
11:53	10.070	9.212	9.531	141.176	7.606
11:54	10.003	9.293	10.380	142.534	7.712
11:55	10.350	8.850	10.591	144.204	7.001
11:56	9.923	9.398	9.076	148.453	6.389
11:57	9.995	9.245	8.378	137.664	6.346
11:58	10.260	8.934	17.990	149.312	5.831
11:59	10.103	9.172	30.857	147.507	5.070
12:00	10.152	9.090	11.911	142.778	5.315
12:01	9.544	9.887	6.651	133.415	6.116
12:02	9.878	9.465	4.768	136.233	6.669
12:03	9.910	9.385	3.787	141.386	6.922
12:04	9.888	9.402	3.074	146.577	7.216
12:05	9.827	9.505	2.549	146.494	8.375
12:06	9.632	9.736	2.109	140.527	8.147
12:07	9.410	10.037	2.022	137.265	7.185
12:08	9.658	9.712	2.307	137.654	8.579
12:09	9.894	9.405	2.613	139.176	9.779
12:10	10.073	9.160	3.049	152.283	9.536

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   12:11
Stop Time   12:16
CALIBRATION BIAS 08

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv

System Response to Calibration Gasses (C_S)

		CO2	O2	SO2	NOX	CO
C_{of}	Zero gas	0.053	0.025	-0.257	0.496	-0.234
C_{uf}	Upscale gas	5.977	13.952	41.417	219.325	48.562

Analyzer Calibration Error Reponses (C_{Dir})

C_{oce}	Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce}	Upscale gas	5.975	14.102	43.196	223.761	49.126

Actual Upscale Gas Value (C_{MA})

C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200

Calibration Span Value (CS)

	13.900	14.100	89.900	453.000	98.500

System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.4%	0.1%	-0.2%	0.1%	-0.4%
Upscale gas	0.0%	-1.1%	-2.0%	-1.0%	-0.6%

System Bias Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

Previous System Response to Calibration Gases (C_S)

C_{ol}	Zero gas	0.054	0.028	-0.091	0.469	-0.232
C_{ul}	Upscale gas	5.946	13.937	41.718	219.701	48.657

Drift Assessment as Percent of Calibration Span Value (D) (3%)

Zero gas	0.0%	0.0%	-0.2%	0.0%	0.0%
Upscale gas	0.2%	0.1%	-0.3%	-0.1%	-0.1%

Drift Assessment Status

Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130313

	CO2	O2	SO2	NOX	CO
12:11:33	0.095	0.047	0.186	5.576	30.691
12:11:48	0.080	0.036	-0.039	1.050	41.649
12:12:03	0.066	0.030	-0.148	0.709	46.978
12:12:18	0.058	0.027	-0.243	0.562	48.283
12:12:33	0.055	0.024	-0.256	0.488	48.519
12:12:48	0.047	0.024	-0.274	0.439	48.570
12:13:03	0.891	0.025	0.093	0.366	48.596
12:13:18	8.581	0.006	19.692	0.366	46.525
12:13:33	9.856	0.000	36.708	82.556	34.341
12:13:48	9.931	0.000	39.855	207.863	18.374
12:14:03	9.956	-0.002	40.778	216.899	5.758
12:14:18	9.965	-0.003	41.159	218.999	1.193
12:14:33	9.967	-0.004	41.449	219.341	-0.075
12:14:48	9.956	0.330	41.644	219.634	-0.270
12:15:03	7.383	10.719	26.422	215.165	-0.262
12:15:18	6.071	13.805	5.863	122.914	-0.168
12:15:33	5.986	13.935	1.833	50.192	0.049
12:15:48	5.974	13.956	0.861	2.825	0.117
12:16:03	5.971	13.965	0.523	1.384	0.176

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SS CEM Version 06-2004a

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QA/QC_____
Date_____

E - 70

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   12:17
Stop time   12:44
REFERENCE METHOD RUN 9

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.053	0.025	-0.257	0.496	-0.234
C_{ui}	Initial upscale	5.977	13.952	41.417	219.325	48.562
C_{of}	Final zero	0.020	0.014	-0.209	0.412	-0.253
C_{uf}	Final upscale	5.967	13.936	41.404	219.072	48.525
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.067	9.191	10.399	144.969	6.504
C_{Gas}	**Bias adjusted**	**9.987**	**9.288**	**11.463**	**148.648**	**6.666**

Clock Time (at end of sample period)

041410 130313

Time	CO2	O2	SO2	NOX	CO
12:18	10.084	9.090	4.328	147.577	6.640
12:19	10.623	8.488	4.626	152.698	6.422
12:20	10.172	9.021	5.082	154.198	6.215
12:21	9.828	9.441	5.273	131.856	4.841
12:22	10.041	9.206	5.217	141.192	6.131
12:23	10.008	9.222	5.542	134.035	5.742
12:24	10.087	9.167	7.398	142.586	6.145
12:25	9.921	9.378	8.714	132.945	5.605
12:26	9.851	9.496	9.721	135.824	6.528
12:27	9.937	9.366	10.153	136.227	6.436
12:28	10.185	9.053	13.947	144.764	6.672
12:29	10.400	8.820	16.319	150.545	6.999
12:30	10.667	8.577	18.198	162.670	7.241
12:31	9.546	9.901	15.118	159.658	5.593
12:32	10.163	9.078	11.733	153.808	6.481
12:33	9.779	9.575	8.422	148.234	6.161
12:34	10.097	9.140	6.462	141.168	6.166
12:35	9.886	9.401	5.464	139.491	6.812
12:36	10.576	8.574	5.877	149.066	9.695
12:37	9.872	9.413	6.929	143.109	7.401
12:38	9.688	9.619	7.942	133.022	7.502
12:39	10.124	9.093	9.039	151.964	7.167
12:40	10.137	9.093	13.300	147.859	5.759
12:41	10.095	9.177	17.315	154.406	7.294
12:42	9.948	9.317	20.123	143.716	5.882
12:43	10.116	9.167	22.386	146.111	6.427
12:44	9.970	9.299	16.139	135.431	5.655

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   12:45
Stop Time   12:50
CALIBRATION BIAS 09

		Channel 1 CO2 FF Outlet 3 %dv	Channel 2 O2 FF Outlet 3 %dv	Channel 3 SO2 FF Outlet 3 ppmdv	Channel 4 NOX FF Outlet 3 ppmdv	Channel 5 CO FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.020	0.014	-0.209	0.412	-0.253
C_{uf}	Upscale gas	5.967	13.936	41.404	219.072	48.525
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mce}	Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.1%	0.0%	-0.1%	0.1%	-0.4%
	Upscale gas	-0.1%	-1.2%	-2.0%	-1.0%	-0.6%
System Bias Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)						
C_{oi}	Zero gas	0.053	0.025	-0.257	0.496	-0.234
C_{ui}	Upscale gas	5.977	13.952	41.417	219.325	48.562
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	-0.2%	-0.1%	0.1%	0.0%	0.0%
	Upscale gas	-0.1%	-0.1%	0.0%	-0.1%	0.0%
Drift Assessment Status						
	Zero gas	OK	OK	OK	OK	OK
	Upscale gas	OK	OK	OK	OK	OK

041410 130313

Time	CO2	O2	SO2	NOX	CO
12:45:31	0.677	0.643	1.050	20.122	20.386
12:45:46	0.195	0.103	0.661	2.710	34.001
12:46:01	0.078	0.036	0.342	2.947	42.504
12:46:16	0.065	0.030	0.055	1.767	46.675
12:46:31	0.059	0.027	-0.075	0.537	47.970
12:46:46	-0.034	-0.003	-0.186	0.455	48.231
12:47:01	0.049	0.023	-0.217	0.415	48.519
12:47:16	0.044	0.023	-0.223	0.366	48.553
12:47:31	0.884	0.024	0.130	0.366	48.503
12:47:46	8.578	0.000	19.289	22.417	46.105
12:48:01	9.843	-0.002	36.423	132.544	35.587
12:48:16	9.915	-0.003	39.712	196.654	17.540
12:48:31	9.943	-0.002	40.768	217.916	6.276
12:48:46	9.955	0.000	41.267	218.910	1.089
12:49:01	9.961	-0.004	41.416	219.056	-0.033
12:49:16	9.945	0.414	41.530	219.251	-0.267
12:49:31	7.313	10.899	26.056	215.784	-0.288
12:49:46	6.054	13.799	5.900	181.709	-0.204
12:50:01	5.978	13.919	1.758	48.661	0.015
12:50:16	5.964	13.938	0.811	4.395	0.104
12:50:31	5.959	13.950	0.510	1.245	0.166

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time 12:51
Stop time 13:18
REFERENCE METHOD RUN 10

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{ol}	Initial zero	0.020	0.014	-0.209	0.412	-0.253
C_{ui}	Initial upscale	5.967	13.936	41.404	219.072	48.525
C_{of}	Final zero	0.059	0.023	-0.216	0.447	-0.271
C_{uf}	Final upscale	5.967	13.934	41.193	218.532	48.432
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.150	9.083	10.690	147.189	6.404
C_{Gas}	**Bias adjusted**	**10.081**	**9.184**	**11.793**	**151.214**	**6.592**

Clock Time (at end of sample period)

041410 130313

12:52	10.388	8.887	6.682	152.766	7.175
12:53	9.537	9.819	7.782	133.252	6.429
12:54	9.927	9.391	8.668	149.585	7.788
12:55	10.406	8.769	11.182	147.593	5.905
12:56	9.951	9.373	13.638	152.395	6.868
12:57	10.015	9.225	16.504	145.006	7.006
12:58	9.791	9.557	16.700	144.518	7.415
12:59	10.239	9.000	18.553	144.540	8.062
13:00	10.391	8.799	15.985	149.363	8.113
13:01	9.860	9.456	13.010	144.923	7.262
13:02	10.148	9.055	9.177	136.414	6.869
13:03	9.618	9.741	6.855	142.247	6.512
13:04	10.511	8.605	5.505	145.657	5.925
13:05	10.334	8.771	4.724	151.715	4.731
13:06	10.741	8.343	4.411	154.638	4.978
13:07	9.954	9.272	4.349	152.422	4.534
13:08	9.837	9.385	4.684	146.009	4.242
13:09	9.920	9.347	5.804	150.126	5.708
13:10	10.342	8.824	6.984	143.368	5.508
13:11	10.185	9.028	9.348	147.069	5.986
13:12	10.748	8.422	12.118	151.398	6.336
13:13	9.803	9.554	12.787	150.374	6.843
13:14	10.232	8.970	12.815	143.718	6.525
13:15	9.794	9.526	12.278	144.854	5.779
13:16	10.116	9.102	13.984	142.257	5.751
13:17	10.536	8.619	15.282	147.815	6.867
13:18	10.737	8.409	18.829	160.090	7.795

QA/QC_____
Date_____

Wheelabrator South Broward
CleanAir Project No. 10955
Ft. Lauderdale, FL
FF Outlet 3

March 22, 2010
Start Time   13:20
Stop Time   13:24
CALIBRATION BIAS 10

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.059	0.023	-0.216	0.447	-0.271
C_{uf} Upscale gas	5.967	13.934	41.193	218.532	48.432
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oca} Zero gas	0.000	0.012	-0.106	0.049	0.124
C_{mca} Upscale gas	5.975	14.102	43.196	223.761	49.126
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	-0.1%	0.1%	-0.4%
Upscale gas	-0.1%	-1.2%	-2.2%	-1.2%	-0.7%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gases (C_S)					
C_{oi} Zero gas	0.020	0.014	-0.209	0.412	-0.253
C_{ui} Upscale gas	5.967	13.936	41.404	219.072	48.525
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.3%	0.1%	0.0%	0.0%	0.0%
Upscale gas	0.0%	0.0%	-0.2%	-0.1%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

041410 130313

	CO2	O2	SO2	NOX	CO
13:20:07	0.079	0.033	0.033	0.855	45.032
13:20:22	0.071	0.030	-0.098	0.700	47.897
13:20:37	0.065	0.024	-0.150	0.488	48.347
13:20:52	0.057	0.023	-0.231	0.488	48.472
13:21:07	0.055	0.023	-0.267	0.366	48.428
13:21:22	0.839	0.025	0.138	0.366	48.396
13:21:37	8.525	0.004	20.057	0.529	46.538
13:21:52	9.844	-0.002	36.441	69.564	34.274
13:22:07	9.924	-0.003	39.673	208.596	17.577
13:22:22	9.945	-0.002	40.640	216.069	5.800
13:22:37	9.957	-0.004	41.115	218.234	1.117
13:22:52	9.957	-0.002	41.423	218.559	-0.101
13:23:07	9.794	1.484	41.042	218.803	-0.309
13:23:22	6.813	12.113	20.088	218.803	-0.317
13:23:37	6.032	13.843	4.378	97.200	-0.186
13:23:52	5.975	13.922	1.508	24.990	0.049
13:24:07	5.965	13.939	0.743	1.994	0.096
13:24:22	5.960	13.943	0.526	1.180	0.144

QA/QC_____
Date_____

WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

CleanAir Project No: 10955-3

CEM MONITOR AND PROCESS DATA   **F**

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Plant Name: SBWD   Page: 1
General Average Report
Reporting Period: 03/23/2010 to 03/23/2010

Site Name: UNIT1   Time of Report: 03/23/10 08:38
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)
03/23/10	08:04	6.1	190.4	31.1	9:3	5.1	159.2	26.0	182.4
	08:05	6.2	193.7	31.1	9.5	5.1	159.0	25.6	182.7
	08:06	6.1	195.4	27.4	9.0	5.2	166.8	23.4	183.6
	08:07	6.4	203.0	25.2	9.1	5.4	172.2	21.4	183.7
	08:08	6.2	209.2	27.8	9.2	5.3	176.6	23.5	184.4
	08:09	5.7	210.2	31.1	9.0	4.9	179.4	26.5	184.8
	08:10	5.3	212.2	23.2	9.1	4.6	180.7	19.7	183.1
	08:11	5.1	210.5	21.9	9.3	4.2	175.8	18.3	183.6
	08:12	5.3	204.6	25.4	9.1	4.4	173.0	21.5	182.7
	08:13	5.6	206.3	24.2	8.9	4.8	177.8	20.8	186.6
	08:14	6.8	204.3	17.5	8.2	6.2	187.1	16.0	186.5
	08:15	7.3	200.2	17.1	8.8	6.4	174.2	14.9	184.7
	08:16	6.1	190.5	18.1	9.1	5.2	161.7	15.3	184.6
	08:17	5.5	182.9	15.8	8.7	4.8	160.6	13.9	186.7
	08:18	5.8	187.3	15.6	8.5	5.1	167.3	13.9	188.9
	08:19	6.2	189.0	12.7	8.1	5.7	174.6	11.7	187.1
	08:20	6.1	190.9	14.1	8.6	5.3	168.6	12.4	187.4
	08:21	5.5	189.2	13.5	8.3	5.0	171.7	12.2	189.8
	08:22	6.2	194.6	11.5	8.2	5.6	177.7	10.5	188.1
	08:23	6.5	198.8	14.3	8.6	5.7	176.2	12.6	191.1
	08:24	6.9	193.4	11.6	8.0	6.4	179.6	10.7	187.3
	08:25	6.3	198.2	11.2	8.8	5.5	171.9	9.7	186.9
	08:26	5.8	192.2	13.8	8.6	5.1	169.7	12.2	185.7
	08:27	6.6	188.9	15.9	8.9	5.7	163.7	13.8	186.7
	08:28	6.9	181.3	16.5	8.7	6.1	159.1	14.5	184.1
	08:29	6.7	187.0	18.6	9.3	5.6	156.5	15.6	183.7
	08:30	6.3	186.0	19.8	9.1	5.3	157.5	16.7	181.1

Average =		6.1	195.9	19.5	8.8	5.3	170.3	16.8	185.5
Geometric Avg. =		6.1	195.7	18.5	8.8	5.3	170.1	16.1	185.5
Maximum =		7.3	212.2	31.1	9.5	6.4	187.1	26.5	191.1
Minimum =		5.1	181.3	11.2	8.0	4.2	156.5	9.7	181.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		165.2	5290.2	525.9	238.0	143.7	4598.4	453.5	5007.7

*   - 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

Run 2   Unit 1   South

General Average Report

Reporting Period: 03/23/2010 to 03/23/2010

Site Name: UNIT1   Time of Report: 03/23/10 09:13

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)
03/23/10	08:38	5.8	201.9	8.9	8.5	5.2	180.0	7.9	186.1
	08:39	6.3	196.1	13.6	8.8	5.5	170.2	11.8	186.7
	08:40	5.3	186.2	11.6	8.5	4.7	165.9	10.3	183.2
	08:41	4.1	189.5	12.5	9.1	3.5	161.5	10.7	182.7
	08:42	3.4	195.4	13.1	8.9	2.9	168.3	11.3	184.0
	08:43	3.2	192.9	13.7	8.6	2.9	170.2	12.1	184.0
	08:44	3.6	196.8	13.5	9.0	3.0	167.9	11.5	183.3
	08:45	3.5	196.0	10.6	9.0	3.0	168.4	9.1	184.8
	08:46	3.4	188.5	12.9	9.0	2.9	161.7	11.1	183.5
	08:47	3.7	193.3	12.6	9.3	3.1	160.9	10.5	180.6
	08:48	3.5	197.6	16.4	9.4	2.9	163.0	13.5	180.3
	08:49	3.8	198.2	15.8	9.2	3.2	166.5	13.3	182.1
	08:50	4.4	197.4	18.7	8.9	3.8	169.8	16.1	183.0
	08:51	4.4	197.5	18.1	9.1	3.7	168.1	15.4	182.6
	08:52	4.2	194.2	16.4	8.9	3.6	168.2	14.2	183.4
	08:53	3.8	198.1	12.9	8.6	3.4	174.6	11.4	182.8
	08:54	3.6	205.7	11.8	9.0	3.1	176.0	10.1	181.7
	08:55	4.2	199.7	11.7	9.0	3.6	170.6	10.0	182.2
	08:56	4.5	197.6	11.6	9.0	3.9	169.7	9.9	182.6
	08:57	4.3	198.4	10.0	9.0	3.7	169.4	8.5	180.2
	08:58	3.9	201.2	11.1	9.5	3.2	164.7	9.1	179.7
	08:59	3.9	199.3	14.4	9.5	3.2	163.8	11.8	181.8
	09:00	4.0	200.1	13.9	9.0	3.4	171.6	11.9	183.0
	09:01	4.1	200.6	14.7	9.0	3.5	171.4	12.6	183.7
	09:02	3.9	196.3	14.7	9.0	3.3	168.7	12.7	182.3
	09:03	3.6	191.6	13.0	9.3	3.0	160.1	10.8	181.8
	09:04	3.6	189.2	13.3	9.2	3.0	159.1	11.2	181.6

Average =		4.1	196.3	13.4	9.0	3.5	167.8	11.4	182.7
Geometric Avg. =		4.0	196.2	13.2	9.0	3.4	167.7	11.3	182.7
Maximum =		6.3	205.7	18.7	9.5	5.5	180.0	16.1	186.7
Minimum =		3.2	186.2	8.9	8.5	2.9	159.1	7.9	179.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		110.1	5299.5	361.5	243.4	94.3	4530.6	308.8	4933.7

*   - 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: 03/23/2010 to 03/23/2010

Page: 1

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/23/10 09:47

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)
03/23/10	09:12	4.9	194.4	20.1	8.5	4.4	173.6	18.0	188.0
	09:13	4.9	202.4	14.7	7.8	4.7	191.1	13.9	186.7
	09:14	4.2	211.3	11.1	8.7	3.7	185.1	9.7	183.1
	09:15	3.1	216.8	13.0	9.0	2.6	185.2	11.1	184.7
	09:16	2.7	214.0	12.1	8.4	2.5	193.0	10.9	187.5
	09:17	3.4	213.2	11.2	8.2	3.1	194.6	10.2	187.5
	09:18	4.0	202.1	11.5	8.7	3.6	177.8	10.1	186.3
	09:19	3.9	196.5	12.1	8.7	3.4	171.9	10.6	187.5
	09:20	3.6	194.2	12.2	8.5	3.2	172.7	10.9	187.6
	09:21	3.6	192.5	10.6	8.8	3.1	167.7	9.3	186.4
	09:22	3.2	182.9	10.2	8.8	2.8	158.9	8.8	185.3
	09:23	3.2	184.4	13.6	8.8	2.8	160.2	11.8	186.4
	09:24	3.3	185.3	11.1	8.5	2.9	164.7	9.9	185.9
	09:25	3.6	186.6	12.2	8.8	3.1	163.1	10.7	184.4
	09:26	3.6	185.6	11.1	9.2	3.0	156.5	9.3	181.4
	09:27	3.3	181.7	14.2	9.4	2.7	149.8	11.7	182.0
	09:28	3.4	188.3	14.7	9.0	2.9	160.8	12.6	185.0
	09:29	3.5	193.9	12.5	8.6	3.1	171.3	11.1	183.9
	09:30	3.4	195.1	12.7	8.9	2.9	169.1	11.0	183.7
	09:31	2.9	204.4	17.4	8.7	2.6	179.0	15.3	185.5
	09:32	2.9	212.7	14.1	8.6	2.6	188.1	12.4	184.8
	09:33	3.1	215.4	16.5	8.9	2.7	186.3	14.3	184.0
	09:34	3.1	216.4	15.4	9.1	2.6	183.5	13.1	184.0
	09:35	3.0	205.4	15.3	9.0	2.6	175.8	13.1	182.3
	09:36	3.2	197.8	14.8	9.4	2.7	164.4	12.3	181.3
	09:37	3.3	189.9	13.8	9.5	2.7	155.5	11.3	181.5
	09:38	3.4	185.7	15.4	9.4	2.8	153.1	12.7	180.8

		SO2ORPT1	NOXRPT_1	CORPT_1	O2OUT_1	SO2OUT_1	NOXPPM_1	COPPM_1	STMRPT_1
Average =		3.5	198.1	13.5	8.8	3.0	172.3	11.7	184.7
Geometric Avg. =		3.4	197.8	13.3	8.8	3.0	171.9	11.5	184.7
Maximum =		4.9	216.8	20.1	9.5	4.7	194.6	18.0	188.0
Minimum =		2.7	181.7	10.2	7.8	2.5	149.8	8.8	180.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		93.7	5349.0	363.6	238.0	81.6	4652.7	315.8	4987.5

* - 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 4   Unit 1   South

Site Name: UNIT1   Time of Report: 03/23/10 10:21
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)
03/23/10	09:46	2.7	205.7	17.9	9.9	2.1	163.5	14.2	178.5
	09:47	2.8	206.7	18.1	9.7	2.3	167.1	14.7	179.9
	09:48	2.8	204.0	21.2	9.4	2.3	168.8	17.6	183.1
	09:49	2.7	196.7	18.4	8.9	2.3	170.5	15.9	183.8
	09:50	2.5	191.5	16.9	8.8	2.2	166.1	14.6	184.1
	09:51	2.2	190.8	16.4	8.9	1.9	165.4	14.2	187.2
	09:52	2.0	194.7	14.4	8.3	1.8	176.8	13.1	188.9
	09:53	1.9	196.0	12.3	8.2	1.8	178.6	11.2	189.4
	09:54	1.8	187.5	12.5	8.0	1.6	174.3	11.6	190.3
	09:55	1.9	184.6	10.0	8.1	1.7	170.2	9.2	191.4
	09:56	1.9	183.6	11.1	8.2	1.7	167.4	10.1	190.8
	09:57	2.0	194.9	11.7	8.4	1.8	174.6	10.4	187.7
	09:58	2.0	203.8	10.9	8.7	1.8	179.1	9.6	188.4
	09:59	1.9	205.4	11.5	8.5	1.7	183.5	10.3	189.4
	10:00	1.9	204.2	14.0	8.3	1.7	184.4	12.7	187.9
	10:01	1.9	206.8	11.7	8.7	1.7	182.1	10.3	188.5
	10:02	1.7	190.5	10.8	8.1	1.6	175.2	9.9	188.0
	10:03	2.0	191.9	13.4	8.5	1.8	171.8	12.0	188.6
	10:04	2.0	186.0	10.0	8.1	1.9	171.0	9.2	188.6
	10:05	2.2	190.9	7.3	8.5	2.0	170.8	6.5	187.6
	10:06	2.0	187.4	7.6	8.3	1.8	169.7	6.9	190.3
	10:07	2.1	189.3	5.7	8.0	2.0	176.3	5.3	188.7
	10:08	2.3	197.5	6.2	8.8	2.0	172.3	5.4	191.2
	10:09	2.1	190.2	6.4	7.9	1.9	177.4	6.0	190.6
	10:10	2.3	197.5	5.0	8.3	2.0	179.4	4.5	186.7
	10:11	2.4	199.3	6.6	9.0	2.1	171.2	5.7	186.8
	10:12	2.2	197.5	6.4	8.6	1.9	174.1	5.7	184.2
---	---	---	---	---	---	---	---	---	---
	Average =	2.2	195.4	11.6	8.6	1.9	173.4	10.3	187.4
	Geometric Avg. =	2.1	195.2	10.8	8.5	1.9	173.3	9.6	187.4
	Maximum =	2.8	206.8	21.2	9.9	2.3	184.4	17.6	191.4
	Minimum =	1.7	183.6	5.0	7.9	1.6	163.5	4.5	178.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
	Total =	58.1	5274.8	314.4	230.9	51.4	4681.8	276.8	5060.5

*   - 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   Page: 1
General Average Report
Reporting Period: 03/23/2010 to 03/23/2010

Site Name: UNIT1   Time of Report: 03/23/10 10:54
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)
03/23/10	10:20	3.6	206.8	10.5	8.7	3.2	180.9	9.2	183.6
	10:21	3.2	209.2	10.5	8.8	2.8	182.1	9.1	184.1
	10:22	3.1	212.6	10.6	8.5	2.7	189.0	9.4	184.7
	10:23	3.3	216.8	9.1	8.8	2.8	189.1	7.9	184.7
	10:24	3.3	212.2	11.1	8.8	2.9	185.2	9.7	184.0
	10:25	3.2	209.0	9.9	8.7	2.8	182.8	8.7	184.5
	10:26	3.2	201.5	9.5	8.7	2.8	177.5	8.3	185.0
	10:27	3.1	192.8	9.9	8.6	2.7	170.2	8.7	184.6
	10:28	3.0	200.1	10.0	8.7	2.6	175.5	8.7	185.0
	10:29	3.0	199.6	9.2	8.6	2.6	176.1	8.1	184.5
	10:30	2.8	197.1	9.8	8.9	2.5	170.5	8.4	183.9
	10:31	3.0	200.7	8.6	8.9	2.6	172.8	7.4	184.9
	10:32	3.0	200.6	8.5	8.6	2.7	177.0	7.5	184.9
	10:33	3.0	207.4	9.4	8.8	2.6	181.2	8.3	185.1
	10:34	3.1	205.6	7.5	8.6	2.8	182.1	6.7	186.8
	10:35	3.5	203.2	7.6	8.4	3.2	183.2	6.9	185.3
	10:36	3.8	209.6	7.7	9.3	3.2	174.6	6.4	183.1
	10:37	3.3	206.3	9.2	9.3	2.8	172.6	7.7	182.7
	10:38	3.3	204.2	10.7	9.1	2.8	173.0	9.0	182.5
	10:39	3.8	209.8	11.3	9.3	3.2	174.8	9.4	181.2
	10:40	4.1	205.6	10.5	9.4	3.4	169.5	8.6	182.4
	10:41	4.2	202.0	10.8	9.2	3.5	169.9	9.1	183.5
	10:42	4.0	202.0	10.2	9.3	3.4	168.4	8.5	181.9
	10:43	3.2	202.2	10.1	9.6	2.6	163.7	8.2	179.8
	10:44	2.8	202.0	12.4	9.6	2.3	164.2	10.1	182.2
	10:45	3.0	202.4	11.2	9.3	2.5	168.7	9.3	180.9
	10:46	3.3	203.0	9.7	9.6	2.6	165.0	7.9	179.3
Average =		3.3	204.6	9.8	9.0	2.8	175.5	8.4	183.5
Geometric Avg. =		3.3	204.5	9.8	9.0	2.8	175.4	8.4	183.5
Maximum =		4.2	216.8	12.4	9.6	3.5	189.1	10.1	186.8
Minimum =		2.8	192.8	7.5	8.4	2.3	163.7	6.4	179.3
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		89.3	5524.5	265.5	242.3	76.5	4739.4	227.4	4955.1

```
*     - 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
```

Run 6   Unit 1   South

Site Name: UNIT1   Time of Report: 03/23/10 11:27
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)
03/23/10	10:53	2.8	206.5	10.7	9.2	2.3	174.0	9.0	181.3
	10:54	3.0	210.3	13.2	9.3	2.5	175.2	11.0	180.3
	10:55	3.7	213.4	12.6	9.5	3.0	174.8	10.3	181.0
	10:56	4.1	214.8	14.5	9.2	3.4	181.2	12.2	183.0
	10:57	4.4	212.1	13.8	9.1	3.7	180.2	11.7	181.9
	10:58	4.3	213.7	14.4	9.5	3.5	175.6	11.8	182.8
	10:59	3.5	219.4	13.9	9.3	2.9	183.0	11.6	184.5
	11:00	3.1	218.5	11.7	9.1	2.7	185.7	9.9	184.9
	11:01	3.0	212.3	10.5	9.1	2.5	180.2	8.9	183.3
	11:02	3.1	210.0	11.5	9.3	2.6	175.2	9.6	182.8
	11:03	3.4	214.6	11.6	9.4	2.8	177.0	9.6	181.1
	11:04	3.9	218.3	13.1	9.7	3.2	176.0	10.5	181.4
	11:05	4.3	224.0	12.5	9.5	3.5	184.1	10.2	182.4
	11:06	4.3	226.1	11.0	9.6	3.5	184.4	9.0	182.6
	11:07	4.0	223.7	12.3	9.7	3.2	181.0	10.0	182.4
	11:08	3.5	218.7	11.9	9.5	2.9	180.1	9.8	182.2
	11:09	3.2	218.8	13.1	9.4	2.7	180.3	10.8	181.1
	11:10	3.3	220.3	15.0	9.6	2.7	178.7	12.2	181.9
	11:11	3.4	220.3	15.3	9.4	2.8	181.6	12.6	182.3
	11:12	3.7	215.7	13.6	9.4	3.0	177.9	11.2	179.1
	11:13	3.8	221.9	15.1	9.9	3.0	175.9	12.0	178.2
	11:14	3.7	226.4	17.8	9.8	3.0	180.1	14.2	180.9
	11:15	3.9	218.7	15.1	9.3	3.3	182.0	12.6	184.2
	11:16	3.9	208.6	12.3	9.2	3.3	176.3	10.4	184.7
	11:17	3.4	210.3	11.4	9.4	2.8	174.7	9.5	184.5
	11:18	2.9	211.0	10.7	9.2	2.5	177.8	9.0	184.9
	11:19	2.6	209.2	10.0	8.8	2.2	181.8	8.7	185.4
Average =		3.6	216.2	12.9	9.4	2.9	179.1	10.7	182.4
Geometric Avg. =		3.5	216.1	12.8	9.4	2.9	179.0	10.6	182.4
Maximum =		4.4	226.4	17.8	9.9	3.7	185.7	14.2	185.4
Minimum =		2.6	206.5	10.0	8.8	2.2	174.0	8.7	178.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		96.1	5837.6	348.5	253.4	79.5	4834.6	288.3	4925.0

*   - 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

Run 7 Unit 1 South

Plant Name: SBWD

General Average Report

Reporting Period: 03/23/2010 to 03/23/2010

Page: 1

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/23/10 12:01

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)
03/23/10	11:27	2.5	216.0	15.2	9.6	2.0	176.1	12.4	182.8
	11:28	2.4	224.5	15.1	9.2	2.0	188.9	12.7	186.8
	11:29	2.5	224.6	12.4	8.7	2.2	197.9	10.9	186.0
	11:30	2.4	230.5	9.7	9.1	2.0	196.1	8.2	183.4
	11:31	2.1	236.6	11.8	9.4	1.8	195.8	9.8	183.6
	11:32	2.1	230.5	12.9	9.2	1.8	194.5	10.9	185.9
	11:33	2.2	197.5	12.7	9.0	1.9	168.9	10.9	184.5
	11:34	2.4	168.6	13.1	9.5	2.0	138.1	10.7	181.6
	11:35	2.4	162.0	15.0	9.8	1.9	129.3	12.0	182.8
	11:36	2.2	171.1	16.8	9.1	1.9	145.0	14.2	186.5
	11:37	2.4	187.2	13.7	8.5	2.1	167.3	12.2	186.8
	11:38	2.4	186.1	13.5	8.5	2.2	165.7	12.0	186.6
	11:39	2.3	189.4	13.0	8.7	2.0	165.8	11.4	186.5
	11:40	2.2	188.5	13.1	8.8	1.9	164.4	11.4	187.9
	11:41	2.0	181.7	12.9	8.5	1.8	161.9	11.5	186.1
	11:42	2.1	176.6	13.1	9.1	1.8	149.9	11.1	185.7
	11:43	2.1	183.6	13.1	8.8	1.8	159.9	11.4	187.4
	11:44	2.4	193.5	10.9	8.5	2.1	172.7	9.8	187.7
	11:45	2.4	186.7	10.4	8.6	2.2	165.7	9.3	186.9
	11:46	2.4	180.7	12.0	9.1	2.0	153.9	10.2	185.7
	11:47	2.3	182.3	13.1	9.0	2.0	155.7	11.2	186.7
	11:48	2.2	184.8	11.7	8.6	2.0	162.9	10.4	186.2
	11:49	2.2	186.9	10.6	8.9	1.9	161.5	9.1	184.2
	11:50	2.2	181.5	11.1	9.3	1.8	151.3	9.3	184.1
	11:51	2.0	184.4	15.1	8.9	1.7	159.5	13.0	185.9
	11:52	1.9	191.2	16.4	8.6	1.7	168.7	14.5	187.2
	11:53	2.1	196.4	15.7	8.7	1.8	172.8	13.8	187.8
Average =		2.3	193.5	13.1	8.9	1.9	166.3	11.3	185.7
Geometric Avg. =		2.3	192.5	13.0	8.9	1.9	165.4	11.2	185.7
Maximum =		2.5	236.6	16.8	9.8	2.2	197.9	14.5	187.9
Minimum =		1.9	162.0	9.7	8.5	1.7	129.3	8.2	181.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		61.1	5223.4	354.0	241.6	52.5	4489.9	304.2	5013.3

```
*    - 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
```

F-9

Plant Name: SBWD   Page: 1
General Average Report
Reporting Period: 03/23/2010 to 03/23/2010

Site Name: UNIT1   Time of Report: 03/23/10 12:35
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)
03/23/10	12:01	2.5	189.4	12.7	8.8	2.1	164.3	11.0	186.7
	12:02	2.1	192.6	13.0	8.7	1.9	169.1	11.4	187.1
	12:03	2.2	206.9	13.6	8.6	1.9	183.7	12.1	185.4
	12:04	2.2	217.5	11.7	9.0	1.9	186.8	10.0	185.0
	12:05	1.9	212.3	11.8	9.0	1.7	182.2	10.1	184.1
	12:06	1.9	212.3	12.2	9.3	1.6	177.9	10.2	182.5
	12:07	1.9	209.5	13.2	9.5	1.5	172.5	10.8	181.6
	12:08	1.9	199.6	16.4	9.2	1.6	168.1	13.8	183.0
	12:09	2.2	199.8	14.0	9.0	1.8	170.8	12.0	180.3
	12:10	2.3	196.5	18.5	9.5	1.9	160.7	15.1	180.5
	12:11	2.4	190.1	19.1	9.4	2.0	157.0	15.8	183.1
	12:12	2.5	189.6	15.2	9.2	2.1	159.1	12.7	182.0
	12:13	2.4	187.0	14.6	9.4	2.0	154.2	12.0	184.0
	12:14	2.5	182.6	14.1	9.0	2.2	156.4	12.0	184.0
	12:15	2.6	191.5	12.5	8.9	2.2	165.3	10.8	183.6
	12:16	2.5	196.4	11.6	9.1	2.1	166.2	9.8	182.6
	12:17	2.5	187.1	14.0	9.6	2.1	152.5	11.4	180.1
	12:18	2.7	177.9	15.9	9.8	2.1	142.7	12.7	181.8
	12:19	2.9	174.7	14.3	9.0	2.5	149.2	12.2	182.2
	12:20	3.4	186.0	13.6	9.3	2.9	155.8	11.4	181.2
	12:21	3.6	187.0	16.8	9.5	2.9	152.8	13.7	182.8
	12:22	3.4	196.8	14.7	9.1	2.9	166.7	12.4	184.8
	12:23	3.5	202.4	12.8	9.1	3.0	172.0	10.9	183.6
	12:24	4.1	204.1	13.8	9.5	3.3	167.3	11.3	181.2
	12:25	4.4	202.6	14.8	9.5	3.6	166.4	12.1	183.6
	12:26	4.8	206.8	14.6	8.9	4.2	178.5	12.6	185.8
	12:27	5.8	206.5	12.4	9.1	4.9	175.0	10.5	183.2

Average =		2.9	196.5	14.1	9.2	2.4	165.7	11.9	183.2
Geometric Avg. =		2.7	196.2	14.0	9.2	2.3	165.3	11.8	183.2
Maximum =		5.8	217.5	19.1	9.8	4.9	186.8	15.8	187.1
Minimum =		1.9	174.7	11.6	8.6	1.5	142.7	9.8	180.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		77.0	5305.4	381.6	248.0	64.8	4473.2	321.1	4946.0

*   - 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   Page: 1
General Average Report
Reporting Period: 03/23/2010 to 03/23/2010

Site Name: UNIT1   Time of Report: 03/23/10 13:08
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)
03/23/10	12:34	7.4	197.7	15.1	8.6	6.6	175.0	13.4	189.2
	12:35	6.7	196.0	13.1	8.5	6.0	175.0	11.7	189.2
	12:36	3.9	190.9	12.7	8.6	3.5	169.0	11.2	187.6
	12:37	2.4	183.9	17.2	8.8	2.1	160.4	15.0	188.6
	12:38	1.8	185.8	14.2	8.6	1.6	165.0	12.6	186.9
	12:39	1.5	180.4	18.9	9.0	1.3	155.0	16.2	185.7
	12:40	1.3	189.8	15.7	9.0	1.1	162.0	13.4	184.1
	12:41	1.3	188.4	18.5	8.9	1.1	162.0	15.9	185.5
	12:42	1.5	189.6	19.0	8.8	1.3	165.3	16.6	190.0
	12:43	1.6	184.8	12.8	8.0	1.5	171.3	11.8	186.6
	12:44	1.7	195.7	12.9	9.2	1.4	164.9	10.8	185.5
	12:45	1.4	195.1	14.8	8.8	1.2	169.8	12.9	185.2
	12:46	1.2	202.7	16.1	8.9	1.1	175.2	13.9	185.0
	12:47	1.1	201.8	13.5	9.0	1.0	173.1	11.5	185.2
	12:48	1.0	194.3	13.1	9.0	0.9	165.7	11.2	183.6
	12:49	1.1	192.0	19.3	9.5	0.9	157.1	15.8	183.9
	12:50	1.2	186.6	19.5	9.3	1.0	156.3	16.3	185.6
	12:51	1.4	189.2	17.4	8.7	1.3	166.5	15.3	185.7
	12:52	1.6	199.0	15.5	9.0	1.4	169.8	13.2	186.5
	12:53	1.6	201.4	15.1	9.4	1.3	167.3	12.6	183.8
	12:54	1.5	205.6	16.0	9.8	1.2	164.6	12.8	180.4
	12:55	1.4	207.7	17.9	9.9	1.1	164.2	14.2	179.1
	12:56	1.3	209.4	21.2	9.8	1.1	166.9	16.9	179.1
	12:57	1.6	203.9	23.1	10.0	1.2	159.7	18.1	176.5
	12:58	1.7	196.0	22.0	10.3	1.3	149.0	16.7	174.8
	12:59	1.8	188.6	25.9	10.4	1.4	142.3	19.6	177.6
	13:00	2.3	190.2	24.2	9.6	1.8	154.7	19.6	178.3
Average =		2.0	194.3	17.2	9.2	1.7	164.0	14.4	184.0
Geometric Avg. =		1.7	194.2	16.9	9.1	1.5	163.8	14.2	184.0
Maximum =		7.4	209.4	25.9	10.4	6.6	175.2	19.6	190.0
Minimum =		1.0	180.4	12.7	8.0	0.9	142.3	10.8	174.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		54.6	5246.3	464.7	247.3	46.7	4427.1	389.4	4969.0

* - 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: 03/23/2010 to 03/23/2010

Page: 1

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/23/10 13:42

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)
03/23/10	13:08	1.9	210.8	16.6	8.7	1.6	184.4	14.5	187.9
	13:09	2.0	206.1	15.1	8.0	1.9	190.9	14.0	188.5
	13:10	2.6	204.0	13.9	8.8	2.3	178.1	12.1	187.0
	13:11	2.8	193.9	13.7	9.3	2.4	162.5	11.4	187.0
	13:12	2.8	189.5	13.8	9.3	2.3	157.6	11.5	188.9
	13:13	2.8	191.2	13.0	9.8	2.3	152.9	10.4	186.7
	13:14	2.5	188.7	15.4	9.7	2.0	152.6	12.4	188.7
	13:15	2.3	193.1	13.7	8.5	2.1	171.9	12.2	188.0
	13:16	2.3	201.3	12.9	8.9	2.0	173.7	11.1	188.5
	13:17	2.5	210.9	10.8	8.6	2.2	187.1	9.6	187.5
	13:18	2.5	210.1	12.9	8.8	2.2	182.9	11.2	188.9
	13:19	2.7	207.3	10.7	8.6	2.4	183.3	9.4	188.2
	13:20	3.1	206.1	12.3	8.6	2.7	181.9	10.9	191.0
	13:21	4.0	201.7	8.7	7.9	3.7	188.1	8.1	188.1
	13:22	4.1	196.6	10.8	8.9	3.5	169.3	9.3	189.6
	13:23	4.0	194.4	9.7	8.3	3.7	175.8	8.8	189.3
	13:24	4.4	187.6	8.8	8.6	3.9	165.9	7.8	187.5
	13:25	5.4	183.2	10.1	9.0	4.7	157.1	8.7	189.7
	13:26	6.6	191.0	9.0	8.2	6.0	175.0	8.2	185.9
	13:27	6.5	186.9	9.4	9.0	5.5	159.6	8.0	187.7
	13:28	6.4	185.7	10.2	8.1	5.9	170.4	9.3	186.5
	13:29	6.9	185.6	9.4	8.8	6.0	161.4	8.2	186.6
	13:30	6.6	182.3	9.4	8.6	5.8	161.2	8.3	185.1
	13:31	7.2	191.0	11.4	9.1	6.1	162.2	9.7	187.5
	13:32	7.8	185.7	11.7	8.2	7.1	169.2	10.7	186.0
	13:33	8.4	187.8	8.6	8.9	7.3	162.5	7.4	186.6
	13:34	8.0	189.4	9.3	8.5	7.2	169.2	8.3	185.2
Average =		4.4	194.9	11.5	8.7	3.9	170.6	10.1	187.7
Geometric Avg. =		3.9	194.7	11.3	8.7	3.4	170.3	9.9	187.7
Maximum =		8.4	210.9	16.6	9.8	7.3	190.9	14.5	191.0
Minimum =		1.9	182.3	8.6	7.9	1.6	152.6	7.4	185.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		119.3	5261.9	311.2	235.8	104.8	4606.6	271.6	5068.1

```
*    - 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
```

Run 1   Unit 2   South

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/24/10 08:14

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)
03/24/10	07:39	8.8	172.7	8.2	8.2	8.1	157.7	7.4	184.3
	07:40	8.3	194.4	8.9	9.3	6.9	162.7	7.4	184.4
	07:41	8.1	182.8	10.5	8.8	7.1	159.2	9.2	184.6
	07:42	9.3	180.4	9.0	8.8	8.1	157.3	7.9	182.1
	07:43	10.9	190.0	11.1	9.3	9.1	158.7	9.3	183.2
	07:44	14.6	196.7	9.2	8.7	12.9	172.9	8.1	182.4
	07:45	16.1	203.8	10.2	9.1	13.6	172.7	8.6	185.9
	07:46	15.4	194.0	9.1	8.8	13.5	169.6	8.0	183.5
	07:47	13.7	199.9	10.1	9.3	11.5	167.3	8.5	184.5
	07:48	11.2	194.7	8.8	9.0	9.6	167.2	7.5	183.5
	07:49	10.5	192.7	9.2	9.3	8.8	161.1	7.7	182.6
	07:50	11.1	192.0	10.2	9.1	9.4	163.3	8.7	183.2
	07:51	12.7	187.4	9.7	9.1	10.7	159.0	8.3	183.1
	07:52	12.9	185.8	12.3	9.1	11.0	157.8	10.5	184.8
	07:53	13.4	183.8	9.4	8.8	11.7	160.2	8.2	183.1
	07:54	12.2	186.4	9.7	9.3	10.1	155.0	8.0	184.7
	07:55	11.5	184.7	9.8	8.9	10.0	160.1	8.5	184.5
	07:56	13.2	182.8	10.4	8.8	11.5	159.0	9.1	184.4
	07:57	14.0	176.2	13.5	8.9	12.0	151.9	11.6	184.5
	07:58	16.4	169.9	14.4	8.9	14.2	146.6	12.5	183.3
	07:59	17.3	173.2	15.0	8.9	14.9	149.3	13.0	183.9
	08:00	17.0	175.4	13.4	8.9	14.7	151.7	11.6	182.5
	08:01	15.7	180.4	14.7	9.2	13.3	152.1	12.4	183.2
	08:02	12.5	175.9	13.6	8.9	10.8	152.0	11.8	180.5
	08:03	10.6	187.5	13.7	9.6	8.6	151.9	11.1	183.5
	08:04	9.4	178.4	11.3	8.6	8.3	157.9	10.0	184.4
	08:05	9.1	186.0	9.6	9.0	7.8	159.2	8.3	183.4
Average =		12.4	185.5	10.9	9.0	10.7	159.0	9.4	183.6
Geometric Avg. =		12.1	185.3	10.8	9.0	10.4	158.9	9.2	183.6
Maximum =		17.3	203.8	15.0	9.6	14.9	172.9	13.0	185.9
Minimum =		8.1	169.9	8.2	8.2	6.9	146.6	7.4	180.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		336.0	5007.8	295.2	242.4	288.2	4293.3	253.0	4958.1

```
*    - 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: 03/24/2010 to 03/24/2010

Site Name: UNIT2   Time of Report: 03/24/10 08:48
Data Averaging Type: 1m   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)
03/24/10	08:13	5.2	192.6	7.7	8.3	4.7	174.7	7.0	184.4
	08:14	4.4	202.2	7.3	9.0	3.8	173.1	6.3	183.8
	08:15	4.7	205.6	10.3	9.2	3.9	172.5	8.7	183.7
	08:16	5.1	201.7	10.4	9.1	4.4	171.5	8.8	185.2
	08:17	4.5	192.5	8.1	8.9	3.9	165.6	7.0	182.8
	08:18	3.8	186.5	10.7	9.2	3.2	156.6	9.0	186.0
	08:19	3.7	170.7	10.5	8.3	3.4	154.7	9.5	185.0
	08:20	3.6	179.0	8.5	9.1	3.0	152.1	7.2	184.6
	08:21	3.1	178.4	11.1	8.8	2.7	155.6	9.7	190.1
	08:22	3.1	165.7	7.4	7.6	3.0	159.0	7.1	187.7
	08:23	3.4	184.9	6.9	8.6	3.0	163.3	6.1	185.6
	08:24	3.0	193.9	7.0	9.1	2.6	165.0	6.0	184.3
	08:25	2.9	193.4	8.6	9.2	2.5	162.7	7.2	184.0
	08:26	4.3	183.7	8.5	9.0	3.7	156.8	7.2	182.1
	08:27	5.3	178.9	8.0	8.9	4.6	154.7	6.9	182.8
	08:28	5.3	180.8	7.6	8.8	4.6	157.5	6.7	184.5
	08:29	5.5	185.8	7.7	9.3	4.6	155.4	6.4	181.9
	08:30	5.8	195.1	11.1	9.8	4.6	156.4	8.9	180.2
	08:31	6.1	193.3	10.5	9.4	5.1	160.0	8.7	181.0
	08:32	7.1	187.4	10.2	8.9	6.1	161.4	8.8	184.9
	08:33	8.0	179.3	8.0	8.4	7.1	160.7	7.1	182.2
	08:34	7.4	189.9	9.4	9.4	6.2	157.0	7.8	186.0
	08:35	6.6	176.7	8.1	8.5	5.9	157.6	7.2	183.9
	08:36	6.3	184.7	9.0	8.9	5.4	160.1	7.8	184.0
	08:37	6.6	189.0	10.0	8.9	5.8	163.6	8.7	185.9
	08:38	7.0	191.6	8.6	8.8	6.1	166.5	7.5	184.0
	08:39	7.0	194.0	11.7	9.4	5.8	160.9	9.7	185.7
Average =		5.1	187.3	9.0	8.9	4.4	161.3	7.7	184.3
Geometric Avg. =		4.9	187.1	8.9	8.9	4.2	161.2	7.7	184.3
Maximum =		8.0	205.6	11.7	9.8	7.1	174.7	9.7	190.1
Minimum =		2.9	165.7	6.9	7.6	2.5	152.1	6.0	180.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		138.9	5057.5	243.1	240.8	119.5	4354.6	209.0	4976.2

* - 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: 03/24/2010 to 03/24/2010

Site Name: UNIT2   Time of Report: 03/24/10 09:21
Data Averaging Type: 1m   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)
03/24/10	08:47	7.3	198.4	9.2	9.0	6.2	169.8	7.9	186.7
	08:48	7.9	183.1	8.0	8.2	7.2	166.9	7.3	185.7
	08:49	7.9	185.6	7.2	9.1	6.7	158.1	6.2	184.0
	08:50	7.2	181.5	9.0	9.0	6.2	155.3	7.7	186.1
	08:51	7.5	180.3	7.2	8.4	6.7	161.6	6.5	185.0
	08:52	8.0	188.3	8.0	9.1	6.8	159.7	6.8	185.1
	08:53	7.0	188.2	8.5	9.2	5.9	158.9	7.2	185.7
	08:54	6.1	188.6	8.4	8.8	5.3	163.8	7.3	182.9
	08:55	6.2	193.6	8.4	9.4	5.1	159.9	6.9	184.2
	08:56	6.5	183.3	8.6	8.7	5.6	160.4	7.5	185.8
	08:57	6.9	188.2	6.6	8.9	6.0	162.0	5.7	182.3
	08:58	6.4	206.9	10.2	9.7	5.1	166.5	8.2	183.9
	08:59	6.8	194.9	9.2	8.7	6.0	170.7	8.1	184.0
	09:00	6.6	196.0	6.9	8.8	5.8	171.0	6.0	181.5
	09:01	6.5	197.4	9.3	9.2	5.5	166.8	7.8	182.6
	09:02	7.1	188.4	8.2	8.5	6.3	167.7	7.3	181.8
	09:03	7.6	197.5	7.7	9.2	6.4	166.8	6.5	181.1
	09:04	8.4	189.5	9.9	9.0	7.2	162.3	8.5	180.5
	09:05	9.8	193.2	8.9	9.1	8.3	164.1	7.6	181.5
	09:06	10.1	190.4	9.8	8.9	8.8	164.9	8.5	180.9
	09:07	10.4	183.5	8.2	9.0	8.9	157.6	7.0	181.4
	09:08	10.2	178.9	8.2	9.0	8.7	152.7	7.0	181.4
	09:09	9.1	179.9	8.2	9.2	7.7	151.7	6.9	182.8
	09:10	8.6	172.6	9.5	8.8	7.5	150.4	8.3	184.4
	09:11	7.0	164.6	7.4	8.5	6.3	147.1	6.6	183.4
	09:12	5.4	173.2	8.3	9.1	4.6	147.6	7.0	184.2
	09:13	4.6	171.1	9.1	8.8	4.0	149.0	7.9	184.8
Average =		7.5	186.6	8.5	8.9	6.5	160.5	7.3	183.5
Geometric Avg. =		7.4	186.3	8.4	8.9	6.4	160.3	7.2	183.5
Maximum =		10.4	206.9	10.2	9.7	8.9	171.0	8.5	186.7
Minimum =		4.6	164.6	6.6	8.2	4.0	147.1	5.7	180.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		203.2	5037.2	228.3	241.3	174.9	4333.2	196.3	4953.7

```
*    - 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   Page: 1
General Average Report
Reporting Period: 03/24/2010 to 03/24/2010

Site Name: UNIT2   Time of Report: 03/24/10 09:58
Data Averaging Type: 1m   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)
03/24/10	09:21	7.5	183.9	7.4	8.7	6.5	160.9	6.5	185.3
	09:22	7.7	178.3	6.8	8.7	6.8	156.6	6.0	182.5
	09:23	9.3	184.1	7.0	9.2	7.9	155.1	5.9	182.3
	09:24	13.0	188.6	7.1	9.0	11.1	161.6	6.1	182.7
	09:25	15.8	187.8	6.4	8.7	13.8	164.2	5.6	182.5
	09:26	16.4	190.5	7.5	9.3	13.6	158.5	6.3	181.0
	09:27	15.6	190.6	8.2	9.6	12.7	154.9	6.7	180.6
	09:28	16.0	187.5	7.2	9.2	13.5	158.0	6.1	180.9
	09:29	15.8	187.0	8.1	9.3	13.3	156.5	6.7	183.0
	09:30	15.4	177.8	7.1	8.5	13.7	158.3	6.4	182.7
	09:31	13.7	189.7	7.2	9.1	11.6	160.7	6.1	183.0
	09:32	11.1	186.8	7.9	9.1	9.4	158.8	6.7	183.4
	09:33	10.4	184.6	6.2	9.0	8.9	158.2	5.3	180.7
	09:34	10.7	192.7	8.4	9.6	8.7	156.9	6.9	181.9
	09:35	12.9	184.2	7.1	8.9	11.1	158.8	6.1	180.4
	09:36	16.3	198.9	9.1	9.7	13.1	159.8	7.3	179.9
	09:37	19.9	206.1	9.4	9.5	16.4	169.6	7.7	180.5
	09:38	21.1	206.8	9.4	9.3	17.6	172.1	7.9	180.1
	09:39	19.3	209.6	8.6	9.5	15.9	172.1	7.0	180.1
	09:40	14.6	210.6	9.5	9.1	12.4	178.6	8.1	182.8
	09:41	10.7	193.5	7.6	8.5	9.6	173.0	6.8	182.3
	09:42	8.3	185.0	8.9	9.3	6.9	154.3	7.5	183.3
	09:43	6.1	168.8	7.9	9.2	5.1	142.2	6.7	182.3
	09:44	4.9	167.0	7.3	9.4	4.0	137.7	6.0	182.2
	09:45	5.0	170.9	7.2	9.1	4.2	144.5	6.1	181.3
	09:46	6.3	182.4	7.4	9.3	5.3	152.4	6.1	184.6
	09:47	8.2	174.2	6.4	8.5	7.3	155.8	5.7	184.7

Average =		12.3	187.7	7.7	9.1	10.4	158.9	6.5	182.1
Geometric Avg. =		11.4	187.4	7.7	9.1	9.6	158.6	6.5	182.1
Maximum =		21.1	210.6	9.5	9.7	17.6	178.6	8.1	185.3
Minimum =		4.9	167.0	6.2	8.5	4.0	137.7	5.3	179.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		331.9	5067.8	208.4	246.4	280.3	4290.1	176.1	4916.8

```
*     - 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
```

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Plant Name: SBWD   Page: 1
General Average Report
Reporting Period: 03/24/2010 to 03/24/2010

Site Name: UNIT2   Time of Report: 03/24/10 10:31
Averaging Type: 1m   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)
03/24/10	09:55	12.4	181.2	8.0	8.9	10.7	156.4	6.9	183.0
	09:56	11.4	185.1	8.6	9.1	9.7	157.0	7.3	182.9
	09:57	11.5	181.9	8.4	8.8	10.0	157.8	7.3	183.3
	09:58	13.5	187.9	8.6	9.3	11.3	157.3	7.2	184.1
	09:59	16.7	178.0	9.7	8.9	14.3	153.3	8.4	184.5
	10:00	21.2	178.3	7.9	9.0	18.1	152.4	6.7	183.7
	10:01	21.6	184.2	9.8	9.2	18.2	154.7	8.2	185.0
	10:02	20.6	180.3	10.4	9.0	17.7	154.9	9.0	182.7
	10:03	17.1	189.8	10.9	9.6	13.8	153.6	8.8	181.2
	10:04	13.5	186.9	10.7	9.6	11.0	152.5	8.7	180.5
	10:05	10.6	187.3	12.7	9.7	8.6	151.3	10.3	182.0
	10:06	9.8	182.5	9.6	9.3	8.2	152.7	8.1	181.8
	10:07	9.2	180.1	10.3	9.4	7.6	149.5	8.6	182.9
	10:08	8.9	178.8	10.8	9.5	7.3	146.7	8.8	182.1
	10:09	8.8	184.3	9.5	9.5	7.2	151.7	7.8	182.4
	10:10	10.1	184.9	9.9	9.3	8.4	154.7	8.3	182.6
	10:11	11.7	184.9	12.8	9.5	9.7	152.0	10.5	182.6
	10:12	14.0	183.7	10.8	9.5	11.5	151.1	8.9	181.9
	10:13	15.9	183.5	10.4	9.5	13.0	150.1	8.5	182.5
	10:14	17.2	174.6	10.6	9.3	14.3	145.6	8.8	182.8
	10:15	17.8	175.5	12.1	9.6	14.4	142.4	9.8	183.3
	10:16	15.0	174.3	10.4	9.4	12.3	143.7	8.5	180.3
	10:17	12.0	180.9	11.1	9.7	9.7	146.3	9.0	180.5
	10:18	10.7	181.3	9.9	9.1	9.1	154.0	8.4	184.4
	10:19	11.4	174.6	8.1	8.6	10.1	154.3	7.1	184.0
	10:20	12.3	183.0	7.7	9.3	10.2	152.4	6.4	184.0
	10:21	10.5	185.6	7.6	9.1	8.9	158.1	6.5	185.7
Average =		13.5	182.0	9.9	9.3	11.3	152.1	8.3	182.8
Geometric Avg. =		13.1	181.9	9.8	9.3	10.9	152.0	8.2	182.8
Maximum =		21.6	189.8	12.8	9.7	18.2	158.1	10.5	185.7
Minimum =		8.8	174.3	7.6	8.6	7.2	142.4	6.4	180.3
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		365.1	4913.5	267.3	250.6	305.4	4106.6	222.9	4936.9

```
*    - 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   Page: 1
General Average Report
Reporting Period: 03/24/2010 to 03/24/2010

Site Name: UNIT2   Time of Report: 03/24/10 11:03
Averaging Type: 1m   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)
03/24/10	10:29	6.2	169.6	7.2	8.7	5.5	149.2	6.3	185.2
	10:30	7.2	170.8	7.6	8.8	6.3	148.1	6.6	186.2
	10:31	7.9	172.6	6.2	8.7	6.9	150.9	5.4	183.0
	10:32	7.7	183.9	7.8	9.4	6.4	152.0	6.5	184.6
	10:33	8.7	168.9	6.6	8.5	7.7	150.9	5.9	183.7
	10:34	10.0	177.6	6.8	8.7	8.7	155.5	5.9	185.6
	10:35	11.7	177.4	8.1	8.5	10.5	158.4	7.2	188.0
	10:36	11.3	176.4	6.3	8.3	10.2	159.7	5.7	185.3
	10:37	9.8	184.8	6.5	9.0	8.4	158.1	5.6	185.1
	10:38	9.1	181.2	7.2	8.8	7.9	157.7	6.3	185.1
	10:39	9.7	179.8	7.7	8.9	8.4	155.7	6.6	184.9
	10:40	10.4	176.8	7.7	8.9	9.0	153.0	6.7	184.7
	10:41	10.3	176.7	7.1	9.0	8.8	151.6	6.1	182.9
	10:42	10.7	181.4	8.0	9.4	8.9	150.2	6.6	182.6
	10:43	11.3	183.5	7.6	9.2	9.5	154.0	6.4	182.6
	10:44	12.3	186.8	8.2	9.1	10.4	158.0	7.0	183.7
	10:45	12.7	183.2	7.6	8.6	11.2	161.5	6.7	184.1
	10:46	11.7	183.2	7.5	8.7	10.3	161.3	6.6	183.8
	10:47	11.5	185.8	7.8	9.1	9.8	158.1	6.7	184.9
	10:48	13.7	183.2	9.9	9.0	11.7	157.1	8.5	183.9
	10:49	15.2	181.7	8.4	9.1	12.9	154.3	7.2	182.2
	10:50	15.2	188.2	8.8	9.2	12.9	159.0	7.5	185.0
	10:51	15.6	182.0	8.0	8.8	13.6	158.8	7.0	183.0
	10:52	14.5	182.4	10.9	9.4	12.1	151.4	9.0	183.6
	10:53	14.5	180.7	10.9	9.0	12.4	155.2	9.3	183.3
	10:54	14.9	184.2	10.6	9.0	12.7	157.6	9.0	183.1
	10:55	15.9	186.4	11.1	9.0	13.7	160.0	9.5	184.0

Average =		11.5	180.3	8.1	8.9	9.9	155.4	7.0	184.2
Geometric Avg. =		11.1	180.3	8.0	8.9	9.6	155.4	6.9	184.2
Maximum =		15.9	188.2	11.1	9.4	13.7	161.5	9.5	188.0
Minimum =		6.2	168.9	6.2	8.3	5.5	148.1	5.4	182.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		309.8	4869.3	218.0	240.7	266.8	4197.0	187.7	4974.2

* - 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: 03/24/2010 to 03/24/2010

Time of Report: 03/24/10 11:40

Site Name: UNIT2

Data Averaging Type: 1m

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)
03/24/10	11:03	9.3	184.8	9.8	9.1	7.8	156.3	8.3	183.9
	11:04	7.9	185.1	10.2	8.5	7.0	165.1	9.1	184.4
	11:05	7.5	184.7	8.6	8.5	6.7	165.4	7.7	184.7
	11:06	8.6	190.9	9.4	8.8	7.5	165.9	8.2	189.0
	11:07	10.0	181.8	6.9	8.0	9.3	169.0	6.4	186.4
	11:08	10.1	195.9	6.5	8.8	8.7	169.8	5.7	183.4
	11:09	11.6	194.5	9.2	9.0	9.9	166.1	7.9	186.4
	11:10	14.7	177.6	7.5	8.2	13.4	161.6	6.8	183.5
	11:11	17.8	185.4	7.6	9.0	15.2	158.2	6.5	184.2
	11:12	18.9	183.3	8.3	8.7	16.6	161.2	7.3	184.5
	11:13	15.9	180.8	6.8	8.6	14.1	160.0	6.0	182.9
	11:14	13.1	186.2	9.1	9.0	11.2	159.9	7.8	185.0
	11:15	10.6	190.6	7.7	8.3	9.7	172.9	7.0	182.6
	11:16	8.3	203.4	8.9	9.2	7.0	171.6	7.5	182.9
	11:17	7.3	197.3	9.9	8.9	6.3	171.0	8.6	180.9
	11:18	8.4	203.5	8.9	8.9	7.2	176.2	7.7	182.2
	11:19	9.8	206.3	9.0	8.5	8.7	183.6	8.0	184.6
	11:20	9.9	204.6	8.4	8.6	8.7	180.9	7.4	182.4
	11:21	9.1	203.6	9.3	9.1	7.8	173.5	7.9	182.8
	11:22	8.3	188.3	7.9	8.4	7.4	169.6	7.1	183.6
	11:23	8.9	185.5	7.8	8.3	8.0	167.5	7.0	184.1
	11:24	12.2	187.0	8.3	8.5	10.9	167.0	7.4	184.0
	11:25	13.7	187.9	9.2	8.5	12.3	168.3	8.2	182.3
	11:26	11.5	195.6	9.1	8.8	10.0	170.7	8.0	184.2
	11:27	10.2	191.3	9.8	8.2	9.3	174.3	8.9	185.2
	11:28	10.3	193.8	7.2	8.3	9.4	176.3	6.6	183.5
	11:29	9.3	202.9	7.3	8.7	8.1	178.0	6.4	184.7
Average =		10.9	191.6	8.5	8.6	9.6	168.9	7.5	184.0
Geometric Avg. =		10.5	191.4	8.4	8.6	9.3	168.8	7.4	184.0
Maximum =		18.9	206.3	10.2	9.2	16.6	183.6	9.1	189.0
Minimum =		7.3	177.6	6.5	8.0	6.3	156.3	5.7	180.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		293.2	5172.4	228.4	233.3	258.6	4559.9	201.2	4968.4

* - 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   Page: 1
General Average Report
Reporting Period: 03/24/2010 to 03/24/2010

Site Name: UNIT2   Time of Report: 03/24/10 12:15
Data Averaging Type: 1m   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)
03/24/10	11:37	5.9	194.1	6.3	8.7	5.2	170.4	5.5	183.6
	11:38	5.9	197.5	7.4	9.0	5.0	168.7	6.3	184.0
	11:39	5.9	194.4	8.0	8.9	5.1	167.5	6.9	183.9
	11:40	5.7	186.6	8.4	9.0	4.9	160.4	7.2	183.3
	11:41	6.1	180.4	8.8	8.7	5.3	157.7	7.7	183.8
	11:42	7.0	174.5	7.3	8.7	6.1	153.5	6.4	183.1
	11:43	7.8	176.8	8.5	9.1	6.6	149.8	7.2	185.0
	11:44	8.3	175.4	8.1	8.6	7.3	155.4	7.2	183.4
	11:45	7.6	190.3	6.6	8.8	6.6	165.6	5.7	182.7
	11:46	7.4	197.4	7.4	8.8	6.5	172.4	6.5	185.9
	11:47	7.0	187.4	5.3	8.0	6.5	174.3	5.0	184.2
	11:48	6.3	196.7	5.7	8.9	5.4	169.4	4.9	183.5
	11:49	6.9	188.8	6.5	9.1	5.8	159.9	5.5	184.3
	11:50	7.4	184.3	7.1	8.9	6.4	159.4	6.1	185.8
	11:51	7.3	181.4	6.4	8.8	6.3	158.5	5.6	183.2
	11:52	6.8	185.5	7.7	9.3	5.6	154.6	6.5	183.3
	11:53	6.8	187.6	7.9	9.1	5.8	159.3	6.7	185.1
	11:54	7.4	176.1	6.4	8.7	6.5	154.8	5.7	182.4
	11:55	7.7	183.9	7.9	9.4	6.3	152.2	6.6	184.1
	11:56	8.6	171.1	8.7	8.6	7.6	151.6	7.7	182.6
	11:57	9.3	179.8	7.3	9.1	7.9	152.6	6.2	182.2
	11:58	8.8	184.8	8.7	9.2	7.4	155.6	7.4	183.4
	11:59	8.5	180.9	7.9	9.0	7.3	154.8	6.8	181.0
	12:00	8.4	182.5	10.3	9.5	6.9	149.9	8.5	180.9
	12:01	8.5	182.8	8.0	9.0	7.3	156.7	6.9	179.8
	12:02	8.4	189.3	9.5	9.1	7.1	161.3	8.1	181.4
	12:03	9.0	187.7	8.2	9.3	7.5	156.4	6.8	182.0

	Average =	7.4	185.1	7.6	8.9	6.4	159.4	6.6	183.3
	Geometric Avg. =	7.3	185.0	7.6	8.9	6.3	159.2	6.5	183.3
	Maximum =	9.3	197.5	10.3	9.5	7.9	174.3	8.5	185.9
	Minimum =	5.7	171.1	5.3	8.0	4.9	149.8	4.9	179.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
	Total =	200.4	4997.7	206.5	241.2	172.4	4302.6	177.4	4948.1

*   - 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

Page: 1

General Average Report

Reporting Period: 03/24/2010 to 03/24/2010

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/24/10 12:46

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)
03/24/10	12:11	4.6	182.5	5.6	8.9	4.0	157.2	4.8	182.7
	12:12	5.1	183.0	6.9	9.2	4.3	154.2	5.8	183.3
	12:13	6.2	178.6	6.7	9.0	5.3	152.4	5.7	181.9
	12:14	6.7	179.0	6.8	9.2	5.6	150.3	5.7	181.7
	12:15	8.7	183.2	7.7	9.3	7.3	153.3	6.4	183.4
	12:16	9.7	181.9	7.1	8.9	8.4	157.2	6.2	182.7
	12:17	9.4	181.9	6.1	9.2	8.0	153.5	5.2	182.9
	12:18	9.2	179.1	8.0	9.2	7.7	150.8	6.8	183.7
	12:19	8.9	173.9	7.6	9.2	7.5	147.0	6.4	182.8
	12:20	8.7	177.2	9.8	9.3	7.3	148.2	8.2	183.1
	12:21	9.2	175.3	7.7	9.2	7.7	147.8	6.5	180.1
	12:22	8.9	183.7	10.0	9.6	7.2	148.7	8.1	180.8
	12:23	9.0	177.9	8.3	9.1	7.6	150.9	7.0	182.9
	12:24	10.9	172.0	9.4	9.1	9.2	145.6	7.9	181.9
	12:25	9.6	175.3	8.9	9.6	7.8	142.8	7.2	180.7
	12:26	8.5	177.1	10.4	9.5	7.0	145.7	8.6	181.4
	12:27	8.8	178.8	10.3	9.4	7.3	148.2	8.5	182.1
	12:28	9.0	180.4	11.8	9.3	7.5	150.1	9.8	182.7
	12:29	9.3	173.6	13.1	9.7	7.5	140.4	10.6	182.1
	12:30	8.3	172.0	14.5	9.7	6.7	138.9	11.7	182.0
	12:31	7.2	175.1	11.9	9.6	5.9	142.9	9.7	182.8
	12:32	6.3	168.6	11.5	9.1	5.4	143.5	9.8	185.6
	12:33	5.7	168.5	8.5	8.6	5.0	148.7	7.5	183.8
	12:34	5.2	179.3	10.8	9.2	4.3	150.6	9.1	184.8
	12:35	4.7	176.5	9.6	9.0	4.0	150.7	8.2	181.8
	12:36	4.7	186.1	12.0	9.7	3.7	149.5	9.6	180.3
	12:37	5.6	177.8	11.3	9.5	4.6	145.2	9.3	179.0

	SO2ORPT2	NOXRPT_2	CORPT_2	O2OUT_2	SO2OUT_2	NOXPPM_2	COPPM_2	STMRPT_2
Average =	7.7	177.7	9.3	9.3	6.4	148.7	7.8	182.3
Geometric Avg. =	7.5	177.7	9.1	9.3	6.2	148.6	7.6	182.3
Maximum =	10.9	186.1	14.5	9.7	9.2	157.2	11.7	185.6
Minimum =	4.6	168.5	5.6	8.6	3.7	138.9	4.8	179.0
Possible Values =	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27
Total =	208.0	4798.0	252.1	250.3	173.9	4014.4	210.2	4923.2

```
*    - 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: 03/24/2010 to 03/24/2010

Site Name: UNIT2   Time of Report: 03/24/10 13:18
Averaging Type: 1m   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)
03/24/10	12:45	7.5	184.4	9.3	9.0	6.4	157.4	7.9	185.4
	12:46	5.4	184.3	9.3	8.6	4.8	163.2	8.3	184.6
	12:47	7.9	193.1	8.1	8.8	6.9	168.0	7.0	183.3
	12:48	12.4	195.3	10.3	9.0	10.6	167.4	8.8	183.2
	12:49	15.0	199.0	8.1	9.0	12.9	171.1	7.0	181.9
	12:50	14.9	201.9	9.2	9.2	12.6	170.2	7.8	181.9
	12:51	14.6	204.0	9.8	9.6	11.9	165.5	7.9	182.8
	12:52	14.8	197.0	9.3	9.4	12.3	163.0	7.7	181.0
	12:53	13.6	194.9	10.8	9.7	10.9	156.9	8.7	180.6
	12:54	11.0	189.7	10.3	9.5	9.0	156.2	8.5	182.0
	12:55	10.9	193.7	11.1	9.2	9.1	162.5	9.3	183.8
	12:56	10.7	188.1	8.0	8.8	9.3	163.3	7.0	183.9
	12:57	10.4	185.4	8.7	9.2	8.8	156.4	7.3	185.8
	12:58	9.6	185.2	7.6	8.8	8.3	161.0	6.6	183.8
	12:59	9.1	195.0	7.3	9.3	7.6	162.9	6.1	184.5
	13:00	10.7	191.1	7.3	8.8	9.3	166.1	6.4	184.4
	13:01	12.6	194.5	6.3	9.1	10.7	165.6	5.3	184.6
	13:02	14.4	196.9	8.4	9.0	12.3	168.4	7.2	183.5
	13:03	17.1	207.2	8.6	9.1	14.4	175.2	7.2	183.7
	13:04	19.2	201.0	7.8	8.8	16.7	175.0	6.8	185.6
	13:05	20.3	199.6	7.4	9.0	17.4	170.4	6.3	183.6
	13:06	17.9	200.2	8.7	9.3	14.9	167.4	7.3	184.6
	13:07	13.5	187.9	7.7	8.6	12.0	165.9	6.8	184.2
	13:08	10.7	186.1	7.3	8.8	9.3	161.8	6.4	186.1
	13:09	10.0	182.7	6.5	8.4	9.0	164.9	5.9	186.3
	13:10	10.2	186.5	6.0	8.8	8.9	161.8	5.2	183.8
	13:11	10.9	193.4	7.4	9.2	9.1	162.2	6.2	184.5

Average =		12.4	193.3	8.4	9.0	10.6	164.8	7.1	183.8
Geometric Avg. =		11.9	193.2	8.3	9.0	10.2	164.7	7.1	183.8
Maximum =		20.3	207.2	11.1	9.7	17.4	175.2	9.3	186.3
Minimum =		5.4	182.7	6.0	8.4	4.8	156.2	5.2	180.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		335.3	5218.1	226.8	244.1	285.5	4449.6	193.0	4963.5

* - 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

General Average Report

Reporting Period: 03/22/2010 to 03/22/2010

Site Name: UNIT3   Time of Report: 03/22/10 08:21

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)
03/22/10	07:45	15.3	190.1	11.8	9.6	12.4	154.3	9.6	184.5
	07:46	12.5	195.1	11.6	10.0	9.8	153.6	9.1	185.0
	07:47	10.1	191.0	10.2	9.8	8.0	152.3	8.1	183.1
	07:48	8.9	191.4	11.5	10.0	7.0	149.9	9.0	184.6
	07:49	8.6	190.4	10.3	9.6	7.0	154.9	8.4	185.0
	07:50	9.6	197.0	13.0	9.6	7.8	159.5	10.5	188.4
	07:51	9.6	193.5	9.7	9.1	8.1	163.6	8.2	185.6
	07:52	9.3	194.7	10.9	10.0	7.3	153.1	8.5	184.8
	07:53	8.2	195.5	10.6	9.8	6.5	156.6	8.5	185.9
	07:54	8.6	192.1	9.9	9.3	7.2	160.7	8.3	186.6
	07:55	9.3	190.3	7.4	9.3	7.8	159.0	6.2	185.8
	07:56	9.0	186.9	10.0	9.5	7.3	153.0	8.2	184.8
	07:57	9.0	187.8	10.7	9.6	7.3	153.1	8.7	184.1
	07:58	9.3	187.9	11.3	9.6	7.5	152.9	9.2	184.4
	07:59	9.8	188.2	11.5	9.3	8.2	156.5	9.5	185.3
	08:00	11.5	191.1	9.7	9.3	9.6	159.0	8.1	184.4
	08:01	14.2	196.7	8.4	9.7	11.4	159.0	6.8	181.8
	08:02	15.8	201.2	8.9	9.9	12.4	158.8	7.1	181.6
	08:03	17.2	202.2	12.0	9.8	13.7	161.4	9.6	179.7
	08:04	18.9	207.7	12.9	10.1	14.6	161.0	10.0	181.7
	08:05	22.0	204.5	11.9	9.8	17.6	163.6	9.5	183.5
	08:06	24.4	201.1	12.5	9.7	19.7	162.3	10.1	184.4
	08:07	22.4	203.2	13.3	9.8	17.8	161.5	10.5	184.2
	08:08	13.5	204.2	11.8	9.9	10.7	161.9	9.4	183.2
	08:09	8.3	205.1	13.0	10.0	6.5	160.2	10.1	182.9
	08:10	5.4	198.2	13.0	9.6	4.4	160.6	10.5	183.1
	08:11	4.1	192.1	12.6	9.5	3.4	157.8	10.3	184.5
Average =		12.0	195.5	11.1	9.7	9.7	157.8	9.0	184.2
Geometric Avg. =		11.1	195.4	11.0	9.7	8.9	157.7	8.9	184.2
Maximum =		24.4	207.7	13.3	10.1	19.7	163.6	10.5	188.4
Minimum =		4.1	186.9	7.4	9.1	3.4	149.9	6.2	179.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		324.5	5279.1	300.2	261.3	261.2	4260.3	242.0	4973.1

*   - 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

General Average Report
Reporting Period: 03/22/2010 to 03/22/2010

Site Name: UNIT3   Time of Report: 03/22/10 08:55
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)
03/22/10	08:21	13.8	197.8	13.0	9.9	11.0	157.2	10.3	182.2
	08:22	14.9	190.1	11.8	9.7	12.0	153.2	9.5	182.7
	08:23	14.1	188.1	12.2	9.6	11.5	152.3	9.9	184.1
	08:24	14.3	188.2	12.0	9.5	11.7	154.3	9.8	185.9
	08:25	16.0	191.3	12.6	9.3	13.3	159.4	10.5	184.3
	08:26	14.9	195.0	12.8	9.7	12.0	157.6	10.3	183.1
	08:27	13.0	195.1	9.3	9.6	10.6	158.9	7.6	185.9
	08:28	11.5	196.0	9.7	9.3	9.6	163.6	8.1	185.9
	08:29	10.8	195.5	8.0	9.4	8.9	161.8	6.6	184.7
	08:30	11.2	200.0	9.1	9.6	9.1	162.6	7.4	184.5
	08:31	12.2	196.2	8.4	9.1	10.3	166.7	7.1	185.3
	08:32	13.3	195.8	9.5	9.2	11.2	165.0	8.0	185.6
	08:33	12.4	199.8	8.8	9.3	10.3	166.9	7.4	184.3
	08:34	12.6	206.1	9.6	9.6	10.2	167.7	7.8	182.4
	08:35	12.7	201.8	9.0	9.6	10.3	164.4	7.3	182.5
	08:36	12.3	195.1	11.9	9.5	10.1	159.4	9.7	181.4
	08:37	13.1	192.4	10.0	9.6	10.6	155.9	8.1	183.6
	08:38	15.3	197.6	8.9	9.2	12.9	166.5	7.5	183.9
	08:39	15.6	195.1	10.9	9.6	12.8	159.3	8.9	183.9
	08:40	17.2	186.1	9.6	9.3	14.4	155.5	8.0	183.8
	08:41	16.6	189.6	11.5	9.3	13.8	157.9	9.6	184.4
	08:42	14.8	186.5	10.4	9.4	12.3	154.9	8.6	185.4
	08:43	12.7	185.5	9.7	9.6	10.3	150.5	7.9	185.5
	08:44	10.1	192.9	11.3	9.6	8.2	157.0	9.2	182.5
	08:45	8.1	199.1	11.6	9.9	6.4	157.4	9.2	182.9
	08:46	7.7	199.0	9.6	9.6	6.3	162.3	7.8	183.7
	08:47	7.1	201.0	10.4	9.4	5.9	166.1	8.6	184.5

Average =		12.9	194.7	10.4	9.5	10.6	159.8	8.5	184.0
Geometric Avg. =		12.6	194.6	10.3	9.5	10.4	159.7	8.5	184.0
Maximum =		17.2	206.1	13.0	9.9	14.4	167.7	10.5	185.9
Minimum =		7.1	185.5	8.0	9.1	5.9	150.5	6.6	181.4
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		348.2	5256.7	281.4	256.3	286.0	4314.4	230.7	4969.0

*   - 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

General Average Report
Reporting Period: 03/22/2010 to 03/22/2010

Site Name: UNIT3

Data Averaging Type: 1m

Time of Report: 03/22/10 09:29

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)
03/22/10	08:55	13.0	189.9	10.5	10.0	10.2	149.0	8.2	181.8
	08:56	15.0	192.4	10.2	10.1	11.7	149.4	7.9	181.1
	08:57	14.1	194.0	10.0	9.8	11.2	155.0	8.0	180.1
	08:58	16.0	196.1	11.7	9.9	12.7	155.5	9.3	181.4
	08:59	22.5	196.3	11.4	9.6	18.3	159.1	9.2	184.6
	09:00	28.5	197.8	10.2	9.6	23.3	161.1	8.3	184.6
	09:01	24.6	204.6	9.9	10.0	19.2	159.8	7.7	182.4
	09:02	14.3	205.5	8.4	10.4	10.9	155.5	6.3	181.3
	09:03	8.6	197.8	8.0	10.1	6.6	153.3	6.2	181.8
	09:04	6.1	197.9	10.3	9.9	4.8	157.2	8.2	181.8
	09:05	4.7	204.4	11.7	10.1	3.6	158.1	9.0	184.3
	09:06	3.7	195.9	11.5	9.9	3.0	155.0	9.1	184.9
	09:07	3.3	196.7	12.4	10.0	2.6	154.1	9.7	184.4
	09:08	3.3	201.5	9.9	10.2	2.6	155.3	7.6	181.6
	09:09	4.0	201.6	10.1	10.5	3.0	150.5	7.6	180.9
	09:10	5.0	196.4	10.8	10.3	3.8	149.1	8.2	182.3
	09:11	6.1	188.8	11.3	9.8	4.8	150.8	9.0	185.2
	09:12	9.0	187.3	10.5	9.7	7.3	150.8	8.4	184.6
	09:13	11.2	190.7	9.8	10.1	8.7	147.5	7.6	181.4
	09:14	11.0	196.4	8.8	10.6	8.1	145.2	6.5	179.7
	09:15	9.6	195.1	12.1	10.5	7.2	146.6	9.1	181.9
	09:16	10.6	189.7	12.8	9.8	8.5	152.0	10.3	185.5
	09:17	13.4	191.2	10.9	9.5	11.0	156.5	9.0	186.5
	09:18	14.9	199.5	10.9	10.0	11.7	156.9	8.6	184.3
	09:19	12.5	206.7	11.4	10.5	9.3	154.6	8.5	181.8
	09:20	9.2	201.8	10.9	10.4	7.0	153.2	8.2	183.2
	09:21	9.3	192.6	10.1	9.7	7.5	155.8	8.2	187.4
Average =		11.3	196.6	10.6	10.0	8.8	153.6	8.3	183.0
Geometric Avg. =		9.6	196.5	10.5	10.0	7.5	153.5	8.2	183.0
Maximum =		28.5	206.7	12.8	10.6	23.3	161.1	10.3	187.4
Minimum =		3.3	187.3	8.0	9.5	2.6	145.2	6.2	179.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		303.8	5308.3	286.4	271.0	238.7	4146.8	224.0	4940.8

* - 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: 03/22/2010 to 03/22/2010

Site Name: UNIT3   Time of Report: 03/22/10 10:03

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)
03/22/10	09:29	21.5	204.2	12.1	10.6	16.0	151.7	9.0	177.6
	09:30	19.0	211.0	14.0	11.0	13.5	150.0	10.0	175.3
	09:31	14.2	222.0	14.8	11.1	10.0	156.2	10.4	177.3
	09:32	10.2	224.1	15.7	10.7	7.5	164.8	11.6	183.5
	09:33	7.7	215.6	16.4	9.9	6.1	171.2	13.1	189.9
	09:34	6.4	207.4	15.6	9.8	5.1	165.9	12.5	190.4
	09:35	5.3	207.7	14.1	10.3	4.0	159.0	10.8	187.3
	09:36	4.3	199.7	14.2	10.4	3.2	150.9	10.7	183.1
	09:37	3.6	193.2	14.2	10.2	2.8	148.6	10.9	183.7
	09:38	3.5	194.1	14.2	9.9	2.8	154.1	11.3	187.7
	09:39	4.7	192.8	13.4	9.2	4.0	162.6	11.3	189.1
	09:40	6.9	201.5	12.7	9.5	5.7	165.7	10.4	188.0
	09:41	7.3	199.6	10.2	10.2	5.7	153.6	7.8	184.2
	09:42	6.7	195.1	11.4	10.4	5.1	147.6	8.6	181.0
	09:43	7.1	192.5	13.3	10.3	5.4	147.1	10.1	181.2
	09:44	9.9	195.6	13.9	9.9	7.9	154.8	11.0	184.1
	09:45	12.7	195.1	12.7	9.6	10.4	159.2	10.4	185.3
	09:46	14.0	194.8	12.1	9.7	11.2	156.6	9.7	184.0
	09:47	13.7	190.5	13.0	10.1	10.7	148.5	10.1	182.2
	09:48	11.6	188.5	12.3	10.1	9.0	146.0	9.5	182.6
	09:49	11.9	191.3	13.7	9.8	9.5	153.2	11.0	184.8
	09:50	15.0	191.1	13.9	9.6	12.2	154.9	11.3	181.4
	09:51	15.3	185.4	13.0	10.7	11.3	136.6	9.6	178.9
	09:52	15.1	189.0	13.6	10.6	11.1	139.5	10.0	179.2
	09:53	18.0	197.6	13.7	10.3	13.7	150.8	10.5	180.3
	09:54	22.1	202.3	15.5	10.1	17.1	156.7	12.0	180.7
	09:55	19.4	209.9	16.4	10.3	14.9	160.4	12.5	181.4

		SO2ORPT3	NOXRPT_3	CORPT_3	O2OUT_3	SO2OUT_3	NOXPPM_3	COPPM_3	STMRPT_3
Average =		11.4	199.7	13.7	10.2	8.7	154.3	10.6	183.1
Geometric Avg. =		9.9	199.5	13.6	10.1	7.7	154.1	10.5	183.1
Maximum =		22.1	224.1	16.4	11.1	17.1	171.2	13.1	190.4
Minimum =		3.5	185.4	10.2	9.2	2.8	136.6	7.8	175.3
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		307.3	5391.7	370.0	274.1	235.8	4166.0	286.0	4944.1

* - 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: 03/22/2010 to 03/22/2010

Site Name: UNIT3   Time of Report: 03/22/10 10:37
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)
03/22/10	10:02	6.2	195.7	19.2	10.0	4.9	154.0	15.1	184.2
	10:03	9.4	190.5	20.4	9.9	7.5	151.1	16.2	185.5
	10:04	8.1	189.0	17.1	9.9	6.4	149.7	13.6	185.4
	10:05	8.3	191.7	20.8	10.2	6.4	147.3	16.0	183.3
	10:06	8.3	190.9	20.9	10.5	6.2	143.0	15.7	182.1
	10:07	7.8	188.6	24.7	10.5	5.8	141.6	18.6	183.0
	10:08	7.1	189.0	21.3	10.0	5.6	147.5	16.7	186.5
	10:09	7.4	188.8	18.8	9.6	6.0	152.9	15.2	187.9
	10:10	8.0	190.4	16.7	9.8	6.4	152.5	13.4	188.0
	10:11	8.5	191.3	13.8	10.0	6.7	150.6	10.8	184.0
	10:12	7.8	186.2	14.0	10.3	5.9	141.4	10.6	182.7
	10:13	6.8	190.4	13.1	10.0	5.3	148.7	10.2	184.9
	10:14	8.0	195.4	15.6	9.7	6.4	157.3	12.6	187.9
	10:15	16.5	197.4	12.6	9.3	13.7	164.1	10.5	189.2
	10:16	25.9	208.7	10.7	9.8	20.6	166.0	8.5	185.8
	10:17	21.5	206.5	11.3	10.4	16.2	156.0	8.5	184.7
	10:18	12.4	200.8	12.1	10.0	9.7	157.1	9.5	185.3
	10:19	8.1	197.5	10.9	9.4	6.7	163.0	9.0	186.6
	10:20	6.0	198.0	9.0	9.3	5.1	165.7	7.5	190.8
	10:21	5.3	191.3	8.4	8.9	4.6	165.1	7.2	188.5
	10:22	6.3	189.2	9.2	9.6	5.2	154.3	7.5	188.7
	10:23	9.1	189.8	7.5	9.3	7.6	157.9	6.2	185.1
	10:24	12.8	185.7	9.8	9.7	10.3	149.8	7.9	184.3
	10:25	19.8	188.6	9.6	9.5	16.1	154.2	7.8	185.0
	10:26	25.7	189.5	9.7	9.4	21.3	156.9	8.0	184.5
	10:27	28.1	193.0	12.0	9.7	22.7	155.8	9.7	184.2
	10:28	27.0	194.0	9.8	9.6	22.0	158.3	8.0	183.9

Average =		12.1	192.9	14.0	9.8	9.7	154.1	11.1	185.6
Geometric Avg. =		10.4	192.8	13.3	9.8	8.3	154.0	10.6	185.6
Maximum =		28.1	208.7	24.7	10.5	22.7	166.0	18.6	190.8
Minimum =		5.3	185.7	7.5	8.9	4.6	141.4	6.2	182.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		326.1	5207.7	379.0	264.4	261.2	4161.9	300.5	5012.0

* - 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

Run 6   Unit 3 South

Site Name: UNIT3   Time of Report: 03/22/10 11:11
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)
03/22/10	10:36	2.7	204.9	16.7	9.7	2.2	164.7	13.4	182.0
	10:37	3.0	206.9	17.4	9.5	2.4	169.7	14.3	183.8
	10:38	3.8	207.7	14.9	9.4	3.1	172.3	12.4	186.2
	10:39	4.3	210.4	14.7	9.4	3.6	174.2	12.1	187.7
	10:40	5.2	209.6	12.6	9.3	4.3	174.9	10.5	186.9
	10:41	5.3	203.0	8.6	9.4	4.4	168.6	7.2	185.3
	10:42	5.1	204.5	11.3	9.3	4.3	170.3	9.4	185.0
	10:43	6.0	201.4	11.0	9.4	5.0	167.3	9.2	185.7
	10:44	7.4	196.0	10.1	9.3	6.2	163.7	8.4	187.0
	10:45	8.1	194.5	10.2	9.3	6.8	162.7	8.5	186.6
	10:46	8.3	187.6	8.0	9.0	7.1	160.0	6.8	183.9
	10:47	9.1	179.6	9.4	9.5	7.5	147.6	7.8	183.1
	10:48	12.7	182.6	10.2	9.2	10.7	153.5	8.6	187.6
	10:49	19.9	184.2	7.9	8.7	17.5	162.3	6.9	185.2
	10:50	23.8	185.0	10.0	9.5	19.5	151.6	8.2	184.0
	10:51	22.4	184.1	10.3	9.5	18.4	150.8	8.4	181.7
	10:52	17.5	182.6	11.0	9.7	14.1	147.3	8.9	181.6
	10:53	12.2	182.8	10.9	9.2	10.3	154.0	9.1	186.4
	10:54	8.7	185.4	23.8	8.6	7.7	164.0	21.1	187.4
	10:55	7.1	199.9	12.0	8.9	6.1	172.3	10.4	185.8
	10:56	5.5	202.7	11.5	9.5	4.5	166.4	9.5	182.9
	10:57	4.8	211.8	9.7	9.8	3.8	169.0	7.7	183.5
	10:58	4.6	205.1	9.2	9.4	3.8	169.4	7.6	183.8
	10:59	5.7	200.3	9.0	9.2	4.8	167.9	7.6	188.1
	11:00	9.9	192.7	7.0	8.6	8.7	170.3	6.2	188.9
	11:01	14.0	195.3	5.6	9.0	12.0	167.6	4.8	186.9
	11:02	17.6	188.6	4.6	9.5	14.4	154.1	3.8	184.5

Average =		9.4	195.9	11.0	9.3	7.9	163.6	9.2	185.2
Geometric Avg. =		7.9	195.6	10.4	9.3	6.6	163.4	8.7	185.2
Maximum =		23.8	211.8	23.8	9.8	19.5	174.9	21.1	188.9
Minimum =		2.7	179.6	4.6	8.6	2.2	147.3	3.8	181.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		254.8	5289.1	297.6	250.8	213.3	4416.5	248.6	5001.7

*   - 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: 03/22/2010 to 03/22/2010

Site Name: UNIT3   Time of Report: 03/22/10 11:44

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)
03/22/10	11:10	5.6	181.9	9.2	9.7	4.5	146.7	7.4	180.5
	11:11	4.6	188.1	9.9	9.6	3.7	153.0	8.0	182.9
	11:12	4.0	184.1	8.8	9.4	3.3	152.4	7.3	181.5
	11:13	4.4	193.1	8.4	9.6	3.5	156.5	6.8	182.3
	11:14	5.4	187.5	9.0	9.5	4.4	153.2	7.4	182.1
	11:15	7.2	194.9	10.2	9.9	5.7	153.6	8.1	180.9
	11:16	9.3	195.5	10.1	9.8	7.4	156.2	8.1	181.8
	11:17	11.4	198.0	11.8	9.6	9.3	161.2	9.6	184.7
	11:18	11.4	200.8	12.6	9.4	9.5	166.7	10.5	186.5
	11:19	19.9	200.9	10.4	9.3	16.5	167.1	8.6	185.0
	11:20	24.7	201.9	8.6	9.6	20.1	164.2	7.0	183.4
	11:21	22.6	202.8	9.1	9.7	18.1	163.1	7.3	181.8
	11:22	17.9	205.6	9.0	9.9	14.2	162.9	7.1	183.3
	11:23	13.2	204.6	8.0	9.7	10.6	164.8	6.4	187.5
	11:24	9.7	197.8	7.1	9.1	8.2	167.3	6.0	187.0
	11:25	8.0	194.4	7.1	9.5	6.5	159.9	5.8	184.4
	11:26	6.5	199.7	8.9	9.9	5.1	157.3	7.0	182.7
	11:27	5.0	194.9	7.9	9.7	4.0	156.7	6.4	181.7
	11:28	4.7	193.4	8.6	9.6	3.8	156.7	6.9	180.2
	11:29	5.9	189.4	9.2	9.7	4.7	152.9	7.4	182.2
	11:30	10.1	186.7	9.6	9.5	8.3	153.2	7.8	183.0
	11:31	19.9	194.5	11.0	9.5	16.3	159.0	9.0	183.7
	11:32	28.5	196.9	11.5	9.7	22.9	158.7	9.3	183.3
	11:33	36.6	195.5	10.5	9.7	29.4	157.5	8.4	181.7
	11:34	28.7	195.6	12.3	9.8	23.0	156.8	9.8	182.2
	11:35	14.2	193.5	13.4	9.7	11.5	156.5	10.8	181.1
	11:36	8.0	197.0	13.8	9.8	6.4	157.9	11.1	181.9

Average =		12.9	195.1	9.9	9.6	10.4	158.2	8.0	182.9
Geometric Avg. =		10.4	195.1	9.7	9.6	8.4	158.1	7.9	182.9
Maximum =		36.6	205.6	13.8	9.9	29.4	167.3	11.1	187.5
Minimum =		4.0	181.9	7.1	9.1	3.3	146.7	5.8	180.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		347.2	5268.9	266.0	260.0	281.3	4272.1	215.6	4939.3

* - 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

Site Name: UNIT3

Data Averaging Type: 1m

Time of Report: 03/22/10 12:18

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)
03/22/10	11:44	3.1	199.2	13.2	9.2	2.6	168.2	11.1	187.8
	11:45	3.9	197.4	11.5	9.1	3.3	167.5	9.8	186.9
	11:46	4.6	194.1	12.9	9.6	3.7	157.3	10.5	185.5
	11:47	4.5	181.3	11.2	9.9	3.5	144.1	8.9	182.5
	11:48	4.3	181.1	10.8	9.9	3.4	143.6	8.6	182.9
	11:49	4.5	192.2	10.6	9.4	3.7	158.3	8.8	183.9
	11:50	5.2	191.0	10.1	9.4	4.3	157.7	8.4	183.5
	11:51	7.6	185.5	10.6	9.7	6.1	148.9	8.5	182.7
	11:52	9.4	190.2	11.7	9.7	7.5	152.6	9.4	185.1
	11:53	10.7	193.2	11.4	9.3	8.9	160.5	9.5	184.5
	11:54	11.7	190.3	10.5	9.4	9.7	157.9	8.7	187.3
	11:55	10.5	193.3	9.0	9.0	9.0	165.4	7.7	185.6
	11:56	9.1	193.7	9.7	9.4	7.5	159.6	8.0	183.8
	11:57	9.2	193.1	8.8	9.3	7.7	160.6	7.3	186.0
	11:58	29.7	195.1	8.2	9.0	25.3	166.3	7.0	186.5
	11:59	34.5	192.2	9.0	9.2	29.0	161.4	7.5	186.2
	12:00	13.8	188.2	10.0	9.3	11.5	157.3	8.4	181.8
	12:01	6.3	186.2	11.6	9.8	5.0	148.2	9.2	181.8
	12:02	4.1	190.6	11.1	9.6	3.3	155.6	9.0	180.7
	12:03	3.1	193.3	11.6	9.5	2.5	159.1	9.5	181.1
	12:04	2.5	198.5	13.1	9.5	2.1	162.8	10.7	183.2
	12:05	2.1	200.3	13.0	9.7	1.7	162.0	10.5	182.7
	12:06	1.9	196.2	11.5	9.8	1.5	156.1	9.1	180.6
	12:07	1.8	197.4	13.1	10.1	1.4	153.9	10.2	181.7
	12:08	1.8	194.0	15.2	9.7	1.5	155.7	12.2	182.3
	12:09	1.9	194.2	13.6	9.4	1.6	160.1	11.2	184.7
	12:10	2.2	201.6	11.5	9.3	1.8	168.1	9.6	183.3

Average =		7.6	192.7	11.3	9.5	6.3	158.1	9.2	183.9
Geometric Avg. =		5.3	192.6	11.2	9.5	4.3	158.0	9.2	183.9
Maximum =		34.5	201.6	15.2	10.1	29.0	168.2	12.2	187.8
Minimum =		1.8	181.1	8.2	9.0	1.4	143.6	7.0	180.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		204.0	5203.3	304.6	256.5	169.2	4269.0	249.5	4964.3

* - 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   Page: 1
General Average Report
Reporting Period: 03/22/2010 to 03/22/2010

Site Name: UNIT3   Time of Report: 03/22/10 12:53
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)
03/22/10	12:18	3.4	196.0	10.1	9.1	2.9	165.9	8.5	188.3
	12:19	4.0	198.1	7.5	8.8	3.5	172.8	6.5	186.6
	12:20	4.4	185.5	9.3	9.4	3.7	152.9	7.7	185.7
	12:21	4.6	184.2	8.7	9.4	3.8	152.7	7.2	184.7
	12:22	4.7	187.4	9.1	9.6	3.8	152.7	7.4	185.1
	12:23	5.8	185.3	8.3	9.2	4.9	156.6	7.0	184.5
	12:24	8.0	185.2	9.1	9.5	6.6	152.1	7.5	183.7
	12:25	9.7	183.2	9.2	9.5	7.9	150.1	7.5	181.8
	12:26	10.5	187.1	9.7	9.6	8.5	151.6	7.9	181.8
	12:27	13.6	191.4	9.3	9.4	11.2	157.9	7.7	183.6
	12:28	20.3	196.8	11.0	9.2	17.1	166.1	9.2	188.0
	12:29	22.8	201.5	9.8	8.7	19.9	176.3	8.6	188.5
	12:30	24.4	214.3	8.4	9.2	20.6	180.6	7.1	186.0
	12:31	18.2	216.1	11.8	9.9	14.4	171.4	9.3	184.8
	12:32	11.4	200.8	7.7	9.2	9.6	169.4	6.5	182.7
	12:33	7.5	192.1	11.3	9.5	6.1	156.9	9.3	182.9
	12:34	5.5	189.5	10.7	9.4	4.5	156.9	8.8	185.3
	12:35	4.8	191.4	12.9	9.1	4.1	162.6	11.0	187.3
	12:36	5.6	190.5	10.3	9.0	4.8	162.9	8.8	184.0
	12:37	7.7	188.4	11.3	9.8	6.2	151.1	9.1	183.2
	12:38	8.2	197.2	9.7	9.5	6.7	161.2	7.9	182.0
	12:39	11.9	202.8	9.7	9.5	9.7	165.8	8.0	184.1
	12:40	19.6	198.9	9.9	9.2	16.5	167.1	8.3	183.4
	12:41	25.3	198.3	7.8	9.6	20.5	160.8	6.4	183.7
	12:42	30.1	191.4	9.3	9.4	25.0	158.8	7.7	180.8
	12:43	27.1	189.5	10.1	9.7	21.9	153.3	8.2	180.4
	12:44	19.4	185.3	10.2	9.4	16.1	153.5	8.4	184.5
Average =		12.5	193.6	9.7	9.4	10.4	160.7	8.1	184.3
Geometric Avg. =		10.1	193.5	9.6	9.4	8.4	160.5	8.0	184.3
Maximum =		30.1	216.1	12.9	9.9	25.0	180.6	11.0	188.5
Minimum =		3.4	183.2	7.5	8.7	2.9	150.1	6.4	180.4
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		338.4	5228.2	262.1	252.8	280.5	4339.9	217.4	4977.4

* - 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

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Plant Name: SBWD   Page: 1
General Average Report
Reporting Period: 03/22/2010 to 03/22/2010

Site Name: UNIT3   Time of Report: 03/22/10 13:26
Data Averaging Type: 1m   Rolling Average Interval: 1

		SO2ORPT3	NOXRPT_3	CORPT_3	O2OUT_3	SO2OUT_3	NOXPPM_3	COPPM_3	STMRPT_3
Date	Time	(PPMDC)	(PPMDC)	(PPMDC)	(PERCENTD)	(PPMD)	(PPMD)	(PPMD)	(KLB/HR)
03/22/10	12:52	5.6	189.3	8.5	8.9	4.9	163.9	7.4	183.6
	12:53	8.4	193.2	12.5	9.9	6.7	153.3	9.9	182.8
	12:54	9.3	199.4	10.1	9.5	7.6	164.1	8.3	185.3
	12:55	12.7	196.4	11.1	9.1	10.8	167.1	9.4	184.4
	12:56	17.7	202.9	10.0	9.4	14.7	168.6	8.3	184.6
	12:57	22.8	196.9	10.9	9.4	18.8	162.8	9.0	182.8
	12:58	24.5	196.4	11.3	9.5	20.0	160.5	9.3	185.2
	12:59	25.4	192.7	12.7	9.2	21.4	162.6	10.7	186.8
	13:00	22.0	195.0	10.5	9.2	18.6	164.4	8.8	185.2
	13:01	16.2	190.0	10.1	9.6	13.2	154.7	8.3	184.9
	13:02	9.9	187.2	10.6	9.5	8.1	153.9	8.7	182.5
	13:03	7.1	198.9	10.3	9.9	5.6	157.7	8.2	183.2
	13:04	4.9	191.9	7.6	9.1	4.2	163.0	6.5	184.3
	13:05	4.1	196.3	8.0	9.0	3.5	167.7	6.8	187.6
	13:06	3.5	194.4	6.7	8.7	3.1	170.4	5.9	186.1
	13:07	3.6	200.2	7.2	9.4	3.0	166.1	5.9	184.0
	13:08	4.0	201.2	8.9	9.7	3.3	162.5	7.2	181.6
	13:09	4.8	199.4	8.6	9.5	3.9	163.2	7.1	182.1
	13:10	6.0	189.6	9.3	9.2	5.0	159.4	7.8	182.9
	13:11	8.8	192.6	9.1	9.2	7.5	162.6	7.7	187.3
	13:12	12.2	194.4	10.1	8.8	10.6	169.1	8.8	184.5
	13:13	14.2	200.6	9.9	9.6	11.6	163.0	8.1	183.3
	13:14	13.7	195.6	9.3	9.4	11.3	161.5	7.7	180.1
	13:15	13.9	195.6	8.9	9.6	11.3	158.7	7.2	180.0
	13:16	16.1	193.7	9.8	9.4	13.3	160.8	8.2	182.4
	13:17	19.5	196.4	12.4	8.8	17.0	170.7	10.8	186.6
	13:18	24.5	198.4	9.5	8.5	21.9	177.2	8.5	186.9
Average =		12.4	195.5	9.8	9.3	10.4	163.3	8.2	184.1
Geometric Avg. =		10.3	195.5	9.7	9.3	8.6	163.2	8.1	184.1
Maximum =		25.4	202.9	12.7	9.9	21.9	177.2	10.8	187.6
Minimum =		3.5	187.2	6.7	8.5	3.0	153.3	5.9	180.0
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		335.4	5278.5	264.2	250.7	280.8	4409.6	220.5	4970.7

*   - 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