



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

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REPORT ON RELATIVE ACCURACY TEST AUDIT

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

Client Reference No: Service Agreement
CleanAir Project No: 11182-4
Revision 0: May 11, 2011

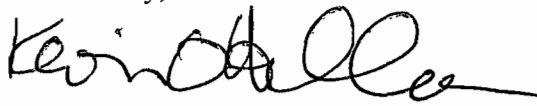
To the best of our knowledge, the data presented in this report are accurate, complete, error free, legible and representative of the actual emissions during the test program. Clean Air Engineering operates in conformance with the requirements of ASTM D7036-04 Standard Practice for Competence of Air Emission Testing Bodies.

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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
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REVISION HISTORY

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REPORT ON RELATIVE ACCURACY TEST AUDIT

DRAFT REPORT REVISION HISTORY

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FINAL REPORT REVISION HISTORY

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PROJECT OVERVIEW

1-1

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:

B. Hooper – Wheelabrator
S. Brown – CleanAir
A. Obuchowski – CleanAir

Test Program Parameters

The testing performed at the Units 1, 2 and 3 fabric filter (FF) baghouse outlets from March 28 through 30, 2011, included the following emissions measurements:

- carbon monoxide (CO)
- nitrogen oxide (NO_x)
- sulfur dioxide (SO₂)
- carbon dioxide (CO₂)
- oxygen (O₂)

PROJECT OVERVIEW

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 2-30 on pages 2-1 through 2-15.

**Table 1-1:
 Summary of Test Results**

Monitor	CEM Serial Number	RM Avg	CEM Avg	Difference	95% CC	Relative Accuracy Result	Limit	Basis of Limit
<u>Unit 1 FF Outlet CEMS (units of RATA)</u>								
SO ₂ (ppmdv @ 7% O ₂)	278	3.1	3.1	0.0	0.191	0.6%	20%	S ¹
NO _x (ppmdv @ 7% O ₂)	278	193.7	199.0	-5.3	0.793	3.0%	10%	S ²
CO (ppmdv @ 7% O ₂)	278	11.5	12.0	-0.4	0.190	0.4	5 ppm	Mean Diff. ³
CO ₂ (lb/hr)	278	10	11	-1	0	15.0%	20%	RM ⁴
<u>Unit 2 FF Outlet CEMS (units of RATA)</u>								
SO ₂ (ppmdv @ 7% O ₂)	277	4.8	4.8	0.0	0.403	1.4%	20%	S ¹
NO _x (ppmdv @ 7% O ₂)	277	191.7	192.9	-1.3	1.218	1.2%	10%	S ²
CO (ppmdv @ 7% O ₂)	277	13.0	13.2	-0.3	0.328	0.4	5 ppm	Mean Diff. ³
CO ₂ (lb/hr)	277	60,821	68,755	-7,934	1,652	15.8%	20%	RM ⁴
<u>Unit 3 FF Outlet CEMS (units of RATA)</u>								
SO ₂ (ppmdv @ 7% O ₂)	279	11.9	13.7	-1.8	1.167	10.1%	20%	S ¹
NO _x (ppmdv @ 7% O ₂)	279	187.2	199.2	-12.0	0.990	6.3%	10%	S ²
CO (ppmdv @ 7% O ₂)	279	9.3	10.2	-1.0	0.291	1	5 ppm	Mean Diff. ³
CO ₂ (lb/hr)	279	61,784	72,059	-10,275	1,031	18.3%	20%	RM ⁴

¹ SO₂ 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 the absolute mean difference per 40CFR60 Section 60.58b.

⁴ Limit from 40 CFR 60 Appendix B Performance Specification 6.

Basis of Limit: RM = Reference Method S = Standard

PROJECT OVERVIEW

1-3

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 G with the plant CEM run data.

A NO_x analyzer converter check was performed after the final bias check each day and is presented along with each respective calibration error check in Appendix H.

During this year's test program, a mass emission rate-based (lb/hr) RATA on each unit's newly-installed carbon dioxide (CO₂) continuous emission rate monitoring system (CO₂ CERMS) was also performed in conjunction with the usual sulfur dioxide (SO₂), nitrogen oxide (NO_x) and carbon monoxide (CO) RATAs. Each CO₂ CERMS consists of a new CO₂ channel configured in the Sick 100e analyzer and an optical-based stack gas flow rate monitor located in each FF outlet duct.

The CO₂ CERMS was installed on each unit to meet EPA Greenhouse Gas Monitoring and Reporting requirements in 40 CFR 98. The CO₂ CERMS RATA was performed utilizing EPA Methods 2, 3A and 4. Flow data was obtained from a distinct pitot traverse performed during each RATA run and moisture data was obtained from simultaneous wet method (26A or 13B) testing.

Oxygen (O₂), flow and ppm_{dv} of all measured constituents are presented in Section 2 of this report for comparison purposes only.

All RATA runs were 27 minutes in duration with 10 runs being performed on each unit with the exception of the following:

- On Unit 3, the CO₂ lb/hr RATA relative accuracy was close to the allowable 20% after 10 runs. One (1) additional 27-minute run was performed.

End of Section 1 – Project Overview

RESULTS

**Table 2-1:
Relative Accuracy Unit 1 FF Outlet – Oxygen (%dv)**

Run No.	Start Time	Date (2011)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference
1	8:27	Mar 28	9.16	9.20	-0.04	-0.42%
2	9:12	Mar 28	8.83	8.90	-0.07	-0.76%
3	9:52	Mar 28	10.63	10.60	0.03	0.26%
4	10:35	Mar 28	8.92	8.90	0.02	0.19%
5	11:14	Mar 28	8.70	8.70	0.00	0.01%
6	12:03	Mar 28	9.50	9.50	0.00	-0.04%
7	12:41	Mar 28	9.47	9.50	-0.03	-0.29%
8	13:32	Mar 28	9.58	9.60	-0.02	-0.23%
9	14:10	Mar 28	9.87	9.90	-0.03	-0.32%
10	15:02	Mar 28	9.37	9.40	-0.03	-0.33%
Average			9.40	9.42	-0.02	-0.19%

Standard Deviation 0.028

Confidence Coefficient (CC) 0.020

Avg. Absolute Difference (%dv) 0.03

**Table 2-2:
Relative Accuracy Unit 1 FF Outlet – Volumetric Flow (FPM)**

Run No.	Start Time	Date (2011)	RM Data (fpm)	CEMS Data (fpm)	Difference (%dv)	Percent Difference
1	8:27	Mar 28	2,653	2,608	45	1.68%
2	9:12	Mar 28	2,591	2,455	136	5.26%
3	9:52	Mar 28	2,709	2,661	48	1.76%
4	10:35	Mar 28	2,658	2,728	-70	-2.63%
5	11:14	Mar 28	2,556	2,661	-105	-4.10%
6	12:03	Mar 28	2,721	2,745	-24	-0.87%
7	12:41	Mar 28	2,713	2,761	-48	-1.77%
8	13:32	Mar 28	2,749	2,772	-23	-0.85%
9	14:10	Mar 28	2,704	2,866	-162	-6.00%
10	15:02	Mar 28	2,918	2,842	76	2.61%
Average			2,697	2,710	-13	-0.47%

Standard Deviation 89.817

Confidence Coefficient (CC) 64.247

Relative Accuracy (as % of RM) 2.9%

Avg. Absolute Difference (fpm) 74

RESULTS

**Table 2-3:
 Relative Accuracy Unit 1 FF Outlet – Carbon Dioxide (lb/hr)**

Run No.	Start Time	Date (2011)	RM Data (lb/hr)	CEMS Data (lb/hr)	Difference (lb/hr)	Percent Difference
1	8:27	Mar 28	61,662	67,863	-6,201	-10.06%
2	9:12	Mar 28	61,888	65,361	-3,473	-5.61%
3	9:52	Mar 28	55,681	60,814	-5,133	-9.22%
4	10:35	Mar 28	62,038	71,893	-9,855	-15.89%
5	11:14	Mar 28	60,878	71,356	-10,478	-17.21%
6	12:03	Mar 28	60,554	68,750	-8,196	-13.53%
7	12:41	Mar 28	61,237	70,049	-8,812	-14.39%
8	13:32	Mar 28	61,284	69,679	-8,395	-13.70%
9	14:10	Mar 28	58,713	69,921	-11,208	-19.09% *
10	15:02	Mar 28	65,754	72,061	-6,307	-9.59%
Average			61,220	68,647	-7,428	-12.13%

Standard Deviation 2299.365
 Confidence Coefficient (CC) 1767.445
 Relative Accuracy (as % of RM) 15.0% Limit 20.0%

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

**Table 2-4:
 Relative Accuracy Unit 1 FF Outlet – Carbon Dioxide (%dv)**

Run No.	Start Time	Date (2011)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference
1	8:27	Mar 28	10.13	10.80	-0.67	-6.62%
2	9:12	Mar 28	10.38	11.10	-0.72	-6.94%
3	9:52	Mar 28	8.93	9.50	-0.57	-6.37%
4	10:35	Mar 28	10.26	11.00	-0.74	-7.24%
5	11:14	Mar 28	10.46	11.20	-0.74	-7.12%
6	12:03	Mar 28	9.73	10.40	-0.67	-6.94%
7	12:41	Mar 28	9.87	10.60	-0.73	-7.43%
8	13:32	Mar 28	9.78	10.50	-0.72	-7.33%
9	14:10	Mar 28	9.53	10.20	-0.67	-6.99%
10	15:02	Mar 28	9.91	10.60	-0.69	-6.99%
Average			9.90	10.59	-0.69	-7.00%

Standard Deviation 0.053
 Confidence Coefficient (CC) 0.038
 Avg. Absolute Difference (%dv) 0.69

RESULTS**Table 2-5:
Relative Accuracy Unit 1 FF Outlet - Sulfur Dioxide (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	8:27	Mar 28	5.25	5.40	-0.15	-2.85%
2	9:12	Mar 28	3.71	3.70	0.01	0.15%
3	9:52	Mar 28	3.94	3.80	0.14	3.44%
4	10:35	Mar 28	1.35	1.70	-0.35	-25.71%
5	11:14	Mar 28	0.15	0.90	-0.75	-520.09% *
6	12:03	Mar 28	1.49	1.90	-0.41	-27.30%
7	12:41	Mar 28	1.47	1.60	-0.13	-8.80%
8	13:32	Mar 28	2.58	2.50	0.08	3.26%
9	14:10	Mar 28	4.99	4.60	0.39	7.73%
10	15:02	Mar 28	2.69	2.60	0.09	3.24%
Average			3.05	3.09	-0.04	-1.23%

Standard Deviation 0.249

Confidence Coefficient (CC) 0.191

Relative Accuracy (as % of RM) 7.5% Limits 20.0%

Relative Accuracy (as % of Applicable Std.) 0.8% 20.0%

Standard = 29 (ppm@7%O₂)

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

**Table 2-6:
Relative Accuracy Unit 1 FF Outlet - Sulfur Dioxide (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	8:27	Mar 28	4.43	4.60	-0.17	-3.75%
2	9:12	Mar 28	3.22	3.20	0.02	0.52%
3	9:52	Mar 28	2.91	2.80	0.11	3.72%
4	10:35	Mar 28	1.17	1.50	-0.33	-28.67%
5	11:14	Mar 28	0.13	0.80	-0.67	-528.05%
6	12:03	Mar 28	1.22	1.60	-0.38	-30.66%
7	12:41	Mar 28	1.21	1.30	-0.09	-7.53%
8	13:32	Mar 28	2.11	2.10	0.01	0.24%
9	14:10	Mar 28	3.96	3.60	0.36	9.02%
10	15:02	Mar 28	2.23	2.10	0.13	5.79%
Average			2.26	2.36	-0.10	-4.53%

Standard Deviation 0.297

Confidence Coefficient (CC) 0.212

Relative Accuracy (as % of RM) 13.9%

Avg. Absolute Difference (ppmdv) 0.23

RESULTS

**Table 2-7:
 Relative Accuracy Unit 1 FF Outlet - Nitrogen Oxides (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	8:27	Mar 28	195.50	199.60	-4.10	-2.10%
2	9:12	Mar 28	194.26	200.90	-6.64	-3.42%
3	9:52	Mar 28	188.49	193.40	-4.91	-2.60%
4	10:35	Mar 28	192.35	198.70	-6.35	-3.30%
5	11:14	Mar 28	194.62	201.40	-6.78	-3.48% *
6	12:03	Mar 28	194.12	199.80	-5.68	-2.93%
7	12:41	Mar 28	194.04	199.90	-5.86	-3.02%
8	13:32	Mar 28	195.42	199.30	-3.88	-1.99%
9	14:10	Mar 28	192.51	198.70	-6.19	-3.21%
10	15:02	Mar 28	196.47	200.90	-4.43	-2.25%
Average			193.68	199.02	-5.34	-2.76%

Standard Deviation 1.032
 Confidence Coefficient (CC) 0.793
 Relative Accuracy (as % of RM) 3.2% Limits 20.0%
 Relative Accuracy (as % of Applicable Std.) 3.0% 10.0%
 Standard = 205 (ppm@7%O₂)

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

**Table 2-8:
 Relative Accuracy Unit 1 FF Outlet - Nitrogen Oxides (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	8:27	Mar 28	165.09	168.70	-3.6	-2.19%
2	9:12	Mar 28	168.64	174.20	-5.6	-3.30%
3	9:52	Mar 28	139.30	142.70	-3.4	-2.44%
4	10:35	Mar 28	165.83	170.80	-5.0	-3.00%
5	11:14	Mar 28	170.80	176.10	-5.3	-3.10%
6	12:03	Mar 28	159.25	163.80	-4.5	-2.86%
7	12:41	Mar 28	159.53	164.30	-4.8	-2.99%
8	13:32	Mar 28	159.18	162.50	-3.3	-2.08%
9	14:10	Mar 28	152.79	157.80	-5.0	-3.28%
10	15:02	Mar 28	162.99	166.00	-3.0	-1.84%
Average			160.34	164.69	-4.3	-2.71%

Standard Deviation 0.927
 Confidence Coefficient (CC) 0.663
 Relative Accuracy (as % of RM) 3.1%
 Avg. Absolute Difference (ppmdv) 4.3

RESULTS

**Table 2-9:
Relative Accuracy Unit 1 FF Outlet - Carbon Monoxide (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	8:27	Mar 28	6.39	6.70	-0.31	-4.87%
2	9:12	Mar 28	5.41	5.80	-0.39	-7.17%
3	9:52	Mar 28	13.50	14.10	-0.60	-4.41%
4	10:35	Mar 28	6.65	7.40	-0.75	-11.28%
5	11:14	Mar 28	7.28	7.60	-0.32	-4.36%
6	12:03	Mar 28	9.88	10.00	-0.12	-1.23%
7	12:41	Mar 28	14.67	15.50	-0.83	-5.62%
8	13:32	Mar 28	20.04	20.20	-0.16	-0.78%
9	14:10	Mar 28	19.99	20.50	-0.51	-2.54%
10	15:02	Mar 28	20.01	20.90	-0.89	-4.43% *
Average			11.54	11.98	-0.44	-3.83%

Standard Deviation 0.247

Confidence Coefficient (CC) 0.190

Relative Accuracy (as % of RM) 5.5% Limits 10.0%

Avg. Absolute Difference (ppm@7%O₂) 0.4 5

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

**Table 2-10:
Relative Accuracy Unit 1 FF Outlet - Carbon Monoxide (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	8:27	Mar 28	5.40	5.60	-0.20	-3.79%
2	9:12	Mar 28	4.70	5.00	-0.30	-6.43%
3	9:52	Mar 28	9.98	10.30	-0.32	-3.21%
4	10:35	Mar 28	5.73	6.30	-0.57	-9.89%
5	11:14	Mar 28	6.39	6.60	-0.21	-3.26%
6	12:03	Mar 28	8.10	8.20	-0.10	-1.18%
7	12:41	Mar 28	12.06	12.70	-0.64	-5.26%
8	13:32	Mar 28	16.33	16.40	-0.07	-0.45%
9	14:10	Mar 28	15.87	16.20	-0.33	-2.10%
10	15:02	Mar 28	16.60	17.10	-0.50	-3.00% *
Average			9.40	9.70	-0.30	-3.24%

Standard Deviation 0.192

Confidence Coefficient (CC) 0.148

Relative Accuracy (as % of RM) 4.8%

Avg. Absolute Difference (ppmdv) 0.30

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

RESULTS

**Table 2-11:
 Relative Accuracy Unit 2 FF Outlet – Oxygen (%dv)**

Run No.	Start Time	Date (2011)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference
1	9:36	Mar 29	9.84	9.50	0.34	3.45%
2	10:18	Mar 29	8.85	8.60	0.25	2.79%
3	10:55	Mar 29	9.37	9.10	0.27	2.89%
4	11:32	Mar 29	8.94	8.60	0.34	3.78%
5	12:10	Mar 29	8.78	8.50	0.28	3.16%
6	12:47	Mar 29	9.03	8.70	0.33	3.67%
7	13:25	Mar 29	9.29	8.90	0.39	4.22%
8	14:02	Mar 29	9.25	8.90	0.35	3.80%
9	14:49	Mar 29	7.86	7.60	0.26	3.33%
10	15:25	Mar 29	8.29	8.00	0.29	3.46%
Average			8.95	8.64	0.31	3.46%

Standard Deviation 0.047

Confidence Coefficient (CC) 0.034

Avg. Absolute Difference (%dv) 0.31

**Table 2-12:
 Relative Accuracy Unit 2 FF Outlet - Volumetric Flow (FPM)**

Run No.	Start Time	Date (2011)	RM Data (fpm)	CEMS Data (fpm)	Difference (%dv)	Percent Difference
1	9:36	Mar 29	2,669	2,802	-133	-4.96%
2	10:18	Mar 29	2,512	2,640	-128	-5.10%
3	10:55	Mar 29	2,486	2,694	-208	-8.38%
4	11:32	Mar 29	2,592	2,646	-54	-2.07%
5	12:10	Mar 29	2,596	2,623	-27	-1.04%
6	12:47	Mar 29	2,666	2,750	-84	-3.14%
7	13:25	Mar 29	2,699	2,726	-27	-0.99%
8	14:02	Mar 29	2,269	2,623	-354	-15.61%
9	14:49	Mar 29	2,431	2,617	-186	-7.64%
10	15:25	Mar 29	2,328	2,265	63	2.70%
Average			2,525	2,639	-114	-4.50%

Standard Deviation 117.035

Confidence Coefficient (CC) 83.716

Relative Accuracy (as % of RM) 7.8%

Avg. Absolute Difference (fpm) 126

RESULTS

**Table 2-13:
Relative Accuracy Unit 2 FF Outlet - Carbon Dioxide (lb/hr)**

Run No.	Start Time	Date (2011)	RM Data (lb/hr)	CEMS Data (lb/hr)	Difference (lb/hr)	Percent Difference
1	9:36	Mar 29	59,208	68,074	-8,866	-14.97%
2	10:18	Mar 29	60,258	68,923	-8,665	-14.38%
3	10:55	Mar 29	57,825	68,063	-10,238	-17.71%
4	11:32	Mar 29	61,969	68,737	-6,768	-10.92%
5	12:10	Mar 29	62,408	69,027	-6,619	-10.61%
6	12:47	Mar 29	62,480	70,768	-8,288	-13.26%
7	13:25	Mar 29	61,896	69,410	-7,514	-12.14%
8	14:02	Mar 29	52,010	66,111	-14,101	-27.11% *
9	14:49	Mar 29	62,761	73,576	-10,815	-17.23%
10	15:25	Mar 29	58,585	62,214	-3,629	-6.19%
Average			60,821	68,755	-7,934	-13.04%

Standard Deviation 2148.646

Confidence Coefficient (CC) 1651.593

Relative Accuracy (as % of RM) 15.8% Limit 20.0%

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

**Table 2-14:
Relative Accuracy Unit 2 FF Outlet - Carbon Dioxide (%dv)**

Run No.	Start Time	Date (2011)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference
1	9:36	Mar 29	9.60	10.10	-0.50	-5.18%
2	10:18	Mar 29	10.38	10.90	-0.52	-4.97%
3	10:55	Mar 29	9.99	10.50	-0.51	-5.07%
4	11:32	Mar 29	10.28	10.80	-0.52	-5.07%
5	12:10	Mar 29	10.45	11.00	-0.55	-5.22%
6	12:47	Mar 29	10.20	10.70	-0.50	-4.92%
7	13:25	Mar 29	10.03	10.60	-0.57	-5.64%
8	14:02	Mar 29	10.01	10.50	-0.49	-4.91%
9	14:49	Mar 29	11.26	11.70	-0.44	-3.94%
10	15:25	Mar 29	10.96	11.40	-0.44	-4.01%
Average			10.32	10.82	-0.50	-4.87%

Standard Deviation 0.040

Confidence Coefficient (CC) 0.028

Avg. Absolute Difference (%dv) 0.50

RESULTS

2-8

**Table 2-15:
 Relative Accuracy Unit 2 FF Outlet - Sulfur Dioxide (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	9:36	Mar 29	1.10	0.70	0.40	36.19%
2	10:18	Mar 29	8.04	8.80	-0.76	-9.47% *
3	10:55	Mar 29	9.49	10.20	-0.71	-7.48%
4	11:32	Mar 29	1.51	0.90	0.61	40.30%
5	12:10	Mar 29	1.52	0.90	0.62	40.82%
6	12:47	Mar 29	2.96	2.60	0.36	12.07%
7	13:25	Mar 29	4.78	5.00	-0.22	-4.57%
8	14:02	Mar 29	6.98	7.30	-0.32	-4.58%
9	14:49	Mar 29	5.91	6.10	-0.19	-3.22%
10	15:25	Mar 29	9.12	9.80	-0.68	-7.49%
Average			4.82	4.83	-0.02	-0.32%

Standard Deviation 0.524
 Confidence Coefficient (CC) 0.403
 Relative Accuracy (as % of RM) 8.7% Limits 20.0%
 Relative Accuracy (as % of Applicable Std.) 1.4% 20.0%
 Standard = 29 (ppm@7%O₂)

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

**Table 2-16:
 Relative Accuracy Unit 2 FF Outlet - Sulfur Dioxide (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	9:36	Mar 29	0.87	0.60	0.27	31.26%
2	10:18	Mar 29	6.97	7.80	-0.83	-11.90%
3	10:55	Mar 29	7.87	8.60	-0.73	-9.25%
4	11:32	Mar 29	1.30	0.80	0.50	38.34%
5	12:10	Mar 29	1.33	0.80	0.53	39.68%
6	12:47	Mar 29	2.52	2.20	0.32	12.87%
7	13:25	Mar 29	3.99	4.20	-0.21	-5.18%
8	14:02	Mar 29	5.85	6.60	-0.75	-12.83%
9	14:49	Mar 29	5.54	5.90	-0.36	-6.44%
10	15:25	Mar 29	8.27	9.10	-0.83	-10.00%
Average			4.45	4.66	-0.21	-4.67%

Standard Deviation 0.569
 Confidence Coefficient (CC) 0.407
 Relative Accuracy (as % of RM) 13.8%
 Avg. Absolute Difference (ppmdv) 0.53

RESULTS

**Table 2-17:
Relative Accuracy Unit 2 FF Outlet - Nitrogen Oxides (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	9:36	Mar 29	177.85	176.30	1.55	0.87%
2	10:18	Mar 29	181.18	180.70	0.48	0.27%
3	10:55	Mar 29	189.27	192.90	-3.63	-1.92% *
4	11:32	Mar 29	198.64	201.10	-2.46	-1.24%
5	12:10	Mar 29	189.27	190.70	-1.43	-0.75%
6	12:47	Mar 29	196.27	199.00	-2.73	-1.39%
7	13:25	Mar 29	196.27	199.50	-3.23	-1.64%
8	14:02	Mar 29	190.82	192.60	-1.78	-0.93%
9	14:49	Mar 29	207.30	208.90	-1.60	-0.77%
10	15:25	Mar 29	187.46	187.60	-0.14	-0.07%
Average			191.68	192.93	-1.26	-0.66%

Standard Deviation 1.585

Confidence Coefficient (CC) 1.218

Relative Accuracy (as % of RM) 1.3% Limits 20.0%

Relative Accuracy (as % of Applicable Std.) 1.2% 10.0%

Standard = 205 (ppm@7%O₂)

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

**Table 2-18:
Relative Accuracy Unit 2 FF Outlet - Nitrogen Oxides (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	9:36	Mar 29	141.52	144.70	-3.2	-2.24%
2	10:18	Mar 29	157.11	159.80	-2.7	-1.71%
3	10:55	Mar 29	156.98	164.00	-7.0	-4.47%
4	11:32	Mar 29	170.94	177.30	-6.4	-3.72%
5	12:10	Mar 29	165.07	170.30	-5.2	-3.17%
6	12:47	Mar 29	167.59	174.00	-6.4	-3.83%
7	13:25	Mar 29	163.91	171.50	-7.6	-4.63%
8	14:02	Mar 29	159.91	166.40	-6.5	-4.06%
9	14:49	Mar 29	194.45	200.50	-6.1	-3.11%
10	15:25	Mar 29	170.10	174.70	-4.6	-2.70%
Average			164.76	170.32	-5.6	-3.38%

Standard Deviation 1.620

Confidence Coefficient (CC) 1.159

Relative Accuracy (as % of RM) 4.1%

Avg. Absolute Difference (ppmdv) 5.6

RESULTS

**Table 2-19:
 Relative Accuracy Unit 2 FF Outlet - Carbon Monoxide (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	9:36	Mar 29	14.20	14.20	0.00	-0.02%
2	10:18	Mar 29	11.74	12.50	-0.76	-6.43%
3	10:55	Mar 29	14.87	15.50	-0.63	-4.25%
4	11:32	Mar 29	10.13	10.50	-0.37	-3.64%
5	12:10	Mar 29	14.54	13.90	0.64	4.42%
6	12:47	Mar 29	14.84	15.30	-0.46	-3.10%
7	13:25	Mar 29	16.72	16.90	-0.18	-1.07%
8	14:02	Mar 29	12.30	12.30	0.00	0.01%
9	14:49	Mar 29	4.03	4.80	-0.77	-19.12% *
10	15:25	Mar 29	7.58	8.10	-0.52	-6.83%
Average			12.99	13.24	-0.25	-1.94%

Standard Deviation 0.427
 Confidence Coefficient (CC) 0.328
 Relative Accuracy (as % of RM) 4.5% Limits 10.0%
 Avg. Absolute Difference (ppm@7%O₂) 0.4 5

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

**Table 2-20:
 Relative Accuracy Unit 2 FF Outlet - Carbon Monoxide (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	9:36	Mar 29	11.30	11.50	-0.2	-1.79%
2	10:18	Mar 29	10.18	11.00	-0.8	-8.01%
3	10:55	Mar 29	12.33	13.20	-0.9	-7.03%
4	11:32	Mar 29	8.72	9.30	-0.6	-6.67%
5	12:10	Mar 29	12.68	12.50	0.2	1.44%
6	12:47	Mar 29	12.67	13.30	-0.6	-4.96%
7	13:25	Mar 29	13.96	14.50	-0.5	-3.84%
8	14:02	Mar 29	10.31	10.30	0.0	0.09%
9	14:49	Mar 29	3.78	4.70	-0.9	-24.34%
10	15:25	Mar 29	6.88	7.50	-0.6	-9.01%
Average			10.28	10.78	-0.5	-4.85%

Standard Deviation 0.375
 Confidence Coefficient (CC) 0.268
 Relative Accuracy (as % of RM) 7.5%
 Avg. Absolute Difference (ppmdv) 0.5

RESULTS

**Table 2-21:
Relative Accuracy Unit 3 FF Outlet – Oxygen (%dv)**

Run No.	Start Time	Date (2011)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference
1	7:44	Mar 30	8.36	8.50	-0.14	-1.66%
2	8:21	Mar 30	8.05	8.20	-0.15	-1.88%
3	9:06	Mar 30	7.52	7.70	-0.18	-2.34%
4	9:44	Mar 30	7.67	7.90	-0.23	-3.00%
5	10:21	Mar 30	7.61	7.90	-0.29	-3.78%
6	10:58	Mar 30	7.60	7.80	-0.20	-2.59%
7	11:38	Mar 30	7.98	8.20	-0.22	-2.74%
8	12:16	Mar 30	7.95	8.20	-0.25	-3.17%
9	13:04	Mar 30	9.12	9.30	-0.18	-1.95%
10	13:41	Mar 30	8.91	9.00	-0.09	-1.01%
Average			8.08	8.27	-0.19	-2.38%

Standard Deviation 0.058
Confidence Coefficient (CC) 0.041
Avg. Absolute Difference (%dv) 0.19

**Table 2-22:
Relative Accuracy Unit 3 FF Outlet – Volumetric Flow (FPM)**

Run No.	Start Time	Date (2011)	RM Data (fpm)	CEMS Data (fpm)	Difference (%dv)	Percent Difference
1	7:44	Mar 30	2,549	2,723	-174	-6.81%
2	8:21	Mar 30	2,473	2,601	-128	-5.19%
3	9:06	Mar 30	2,372	2,574	-202	-8.53%
4	9:44	Mar 30	2,345	2,573	-228	-9.70%
5	10:21	Mar 30	2,149	2,603	-454	-21.10%
6	10:58	Mar 30	2,269	2,568	-299	-13.18%
7	11:38	Mar 30	2,340	2,601	-261	-11.18%
8	12:16	Mar 30	2,330	2,615	-285	-12.21%
9	13:04	Mar 30	2,673	3,016	-343	-12.85%
10	13:41	Mar 30	2,674	2,895	-221	-8.26%
11	14:19	Mar 30	2,492	2,874	-382	-15.34%
Average			2,424	2,695	-271	-11.16%

Standard Deviation 95.375
Confidence Coefficient (CC) 64.070
Relative Accuracy (as % of RM) 13.8%
Avg. Absolute Difference (fpm) 271

RESULTS

**Table 2-23:
 Relative Accuracy Unit 3 FF Outlet - Carbon Dioxide (lb/hr)**

Run No.	Start Time	Date (2011)	RM Data (lb/hr)	CEMS Data (lb/hr)	Difference (lb/hr)	Percent Difference
1	7:44	Mar 30	62,490	72,048	-9,558	-15.30%
2	8:21	Mar 30	62,091	70,063	-7,972	-12.84%
3	9:06	Mar 30	62,878	72,356	-9,478	-15.07%
4	9:44	Mar 30	61,585	71,881	-10,296	-16.72%
5	10:21	Mar 30	56,375	72,338	-15,963	-28.32% *
6	10:58	Mar 30	59,745	71,850	-12,105	-20.26%
7	11:38	Mar 30	60,711	71,261	-10,550	-17.38%
8	12:16	Mar 30	60,818	71,830	-11,012	-18.11%
9	13:04	Mar 30	62,463	74,541	-12,078	-19.34%
10	13:41	Mar 30	63,277	72,705	-9,428	-14.90%
11	14:19	Mar 30	62,922	77,221	-14,299	-22.73% *
Average			61,784	72,059	-10,275	-16.63%

Standard Deviation 1341.291
 Confidence Coefficient (CC) 1031.006
 Relative Accuracy (as % of RM) 18.3% Limit 20.0%

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

**Table 2-24:
 Relative Accuracy Unit 3 FF Outlet - Carbon Dioxide (%dv)**

Run No.	Start Time	Date (2011)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference
1	7:44	Mar 30	10.78	11.10	-0.32	-2.98%
2	8:21	Mar 30	11.04	11.30	-0.26	-2.35%
3	9:06	Mar 30	11.55	11.80	-0.25	-2.17%
4	9:44	Mar 30	11.46	11.70	-0.24	-2.13%
5	10:21	Mar 30	11.43	11.60	-0.17	-1.49%
6	10:58	Mar 30	11.47	11.70	-0.23	-2.03%
7	11:38	Mar 30	11.26	11.50	-0.24	-2.17%
8	12:16	Mar 30	11.33	11.50	-0.17	-1.54%
9	13:04	Mar 30	10.14	10.30	-0.16	-1.56%
10	13:41	Mar 30	10.28	10.50	-0.22	-2.17%
11	14:19	Mar 30	11.07	11.20	-0.13	-1.16%
Average			11.07	11.29	-0.22	-1.98%

Standard Deviation 0.055
 Confidence Coefficient (CC) 0.037
 Avg. Absolute Difference (%dv) 0.22

RESULTS

**Table 2-25:
Relative Accuracy Unit 3 FF Outlet - Sulfur Dioxide (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	7:44	Mar 30	10.82	13.80	-2.98	-27.58%
2	8:21	Mar 30	6.22	11.90	-5.68	-91.31% *
3	9:06	Mar 30	20.09	23.00	-2.91	-14.49%
4	9:44	Mar 30	13.25	16.30	-3.05	-23.03%
5	10:21	Mar 30	14.28	16.70	-2.42	-16.96%
6	10:58	Mar 30	14.89	18.20	-3.31	-22.19%
7	11:38	Mar 30	9.64	9.70	-0.06	-0.58%
8	12:16	Mar 30	13.06	14.60	-1.54	-11.80%
9	13:04	Mar 30	4.25	3.70	0.55	13.02%
10	13:41	Mar 30	7.22	7.30	-0.08	-1.09%
Average			11.95	13.70	-1.75	-14.69%

Standard Deviation 1.518

Confidence Coefficient (CC) 1.167

Relative Accuracy (as % of RM) 24.5% Limits 20.0%

Relative Accuracy (as % of Applicable Std.) 10.1% 20.0%

Standard = 29 (ppm@7%O₂)

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

**Table 2-26:
Relative Accuracy Unit 3 FF Outlet - Sulfur Dioxide (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	7:44	Mar 30	9.76	12.30	-2.54	-26.05%
2	8:21	Mar 30	5.75	10.80	-5.05	-87.80%
3	9:06	Mar 30	19.33	21.90	-2.57	-13.29%
4	9:44	Mar 30	12.61	15.20	-2.59	-20.53%
5	10:21	Mar 30	13.65	15.70	-2.05	-15.02%
6	10:58	Mar 30	14.25	17.20	-2.95	-20.72%
7	11:38	Mar 30	8.96	8.90	0.06	0.71%
8	12:16	Mar 30	12.17	13.40	-1.23	-10.12%
9	13:04	Mar 30	3.60	3.10	0.50	14.00%
10	13:41	Mar 30	6.23	6.40	-0.17	-2.74%
Average			10.63	12.49	-1.86	-17.48%

Standard Deviation 1.681

Confidence Coefficient (CC) 1.203

Relative Accuracy (as % of RM) 28.8%

Avg. Absolute Difference (ppmdv) 2.0

RESULTS

**Table 2-27:
 Relative Accuracy Unit 3 FF Outlet - Nitrogen Oxides (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O ₂)	CEMS Data (ppm@7%O ₂)	Difference (ppm@7%O ₂)	Percent Difference
1	7:44	Mar 30	183.52	198.30	-14.78	-8.05% *
2	8:21	Mar 30	184.86	199.00	-14.14	-7.65%
3	9:06	Mar 30	185.14	196.70	-11.56	-6.25%
4	9:44	Mar 30	188.84	200.30	-11.46	-6.07%
5	10:21	Mar 30	191.63	202.30	-10.67	-5.57%
6	10:58	Mar 30	185.92	196.10	-10.18	-5.47%
7	11:38	Mar 30	188.80	200.30	-11.50	-6.09%
8	12:16	Mar 30	184.97	197.20	-12.23	-6.61%
9	13:04	Mar 30	185.53	198.10	-12.57	-6.77%
10	13:41	Mar 30	189.02	202.60	-13.58	-7.19%
Average			187.19	199.18	-11.99	-6.40%

Standard Deviation 1.289
 Confidence Coefficient (CC) 0.990
 Relative Accuracy (as % of RM) 6.9% Limits 20.0%
 Relative Accuracy (as % of Applicable Std.) 6.3% 10.0%
 Standard = 205 (ppm@7%O₂)

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

**Table 2-28:
 Relative Accuracy Unit 3 FF Outlet - Nitrogen Oxides (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	7:44	Mar 30	165.55	177.00	-11.45	-6.92%
2	8:21	Mar 30	170.91	181.20	-10.29	-6.02%
3	9:06	Mar 30	178.15	186.20	-8.05	-4.52%
4	9:44	Mar 30	179.74	187.70	-7.96	-4.43%
5	10:21	Mar 30	183.19	189.90	-6.71	-3.66%
6	10:58	Mar 30	177.85	184.60	-6.75	-3.79%
7	11:38	Mar 30	175.48	183.10	-7.62	-4.34%
8	12:16	Mar 30	172.35	180.30	-7.95	-4.61%
9	13:04	Mar 30	157.21	165.10	-7.89	-5.02%
10	13:41	Mar 30	163.05	172.40	-9.35	-5.74%
Average			172.35	180.75	-8.40	-4.87%

Standard Deviation 1.519
 Confidence Coefficient (CC) 1.087
 Relative Accuracy (as % of RM) 5.5%
 Avg. Absolute Difference (ppmdv) 8.4

RESULTS

**Table 2-29:
Relative Accuracy Unit 3 FF Outlet - Carbon Monoxide (ppm @ 7% O₂)**

Run No.	Start Time	Date (2011)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference
1	7:44	Mar 30	7.50	9.20	-1.70	-22.66% *
2	8:21	Mar 30	12.92	14.60	-1.68	-13.04%
3	9:06	Mar 30	17.82	18.50	-0.68	-3.83%
4	9:44	Mar 30	5.44	6.30	-0.86	-15.76%
5	10:21	Mar 30	6.01	7.00	-0.99	-16.55%
6	10:58	Mar 30	4.18	5.00	-0.82	-19.72%
7	11:38	Mar 30	6.10	7.00	-0.90	-14.84%
8	12:16	Mar 30	4.15	5.00	-0.85	-20.44%
9	13:04	Mar 30	9.17	10.60	-1.43	-15.55%
10	13:41	Mar 30	17.67	18.10	-0.43	-2.42%
Average			9.27	10.23	-0.96	-10.36%

Standard Deviation 0.379
 Confidence Coefficient (CC) 0.291
 Relative Accuracy (as % of RM) 13.5% Limits 10.0%
 Avg. Absolute Difference (ppm@7%O2) 1.0 5

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

**Table 2-30:
Relative Accuracy Unit 3 FF Outlet - Carbon Monoxide (ppmdv)**

Run No.	Start Time	Date (2011)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Percent Difference
1	7:44	Mar 30	6.77	8.20	-1.43	-21.19%
2	8:21	Mar 30	11.94	13.30	-1.36	-11.38%
3	9:06	Mar 30	17.15	17.50	-0.35	-2.06%
4	9:44	Mar 30	5.18	5.90	-0.72	-13.90%
5	10:21	Mar 30	5.74	6.60	-0.86	-14.95%
6	10:58	Mar 30	4.00	4.70	-0.70	-17.64%
7	11:38	Mar 30	5.66	6.40	-0.74	-12.98%
8	12:16	Mar 30	3.87	4.60	-0.73	-18.92%
9	13:04	Mar 30	7.77	8.80	-1.03	-13.21%
10	13:41	Mar 30	15.24	15.30	-0.06	-0.36%
Average			8.33	9.13	-0.80	-9.58%

Standard Deviation 0.415
 Confidence Coefficient (CC) 0.297
 Relative Accuracy (as % of RM) 13.1%
 Avg. Absolute Difference (ppmdv) 0.80

DESCRIPTION OF INSTALLATION**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 O₂ analyzer, programmable logic controller (PLC) and heated probe and sample line. The FF outlet 100 /e systems monitor O₂, CO₂, CO, SO₂ and 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 3-4.

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 SO₂ and an integrated heated zirconium oxide (ZrO₂) electrochemical cell for O₂, 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.

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 SO₂, NO_x, CO, CO₂ and O₂ measurement signals and operational status outputs are sent to the ESC 8816 data logger.

DESCRIPTION OF INSTALLATION

3-2

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.

DESCRIPTION OF INSTALLATION

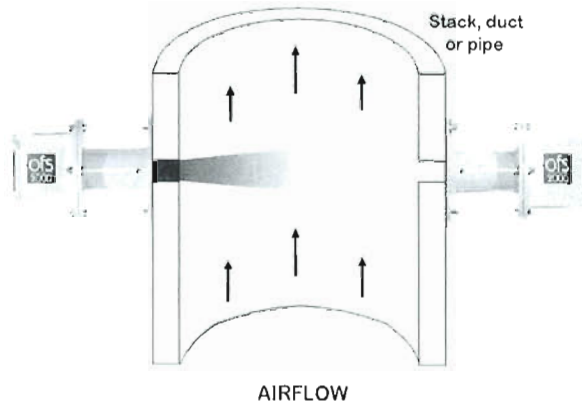
3-3

GAS FLOW MONITOR SYSTEM DESCRIPTION

The stack gas flow monitor is a primary component of the CO₂ CERM. Stack flow, along with flue gas temperature and CO₂ and H₂O data from the CEMS, is used to calculate and record mass CO₂ emissions in lbs/hr.

A stack gas flow monitor is installed on each MWC unit (see Table 3-1 below).

The stack gas flow monitor is an Optical Scientific Inc. Model OFS 2000W Optical Flow Sensor. It consists of three (3) major components: the light transmitter, the receiver and control unit. The ESC Data Logger performs stack gas flow monitor data acquisition, data reduction and reporting functions.



The OFS 2000W uses an optical scintillation technique to continually measure gas velocity at the measurement location. The optical scintillation technique relies on advanced Digital Signal Processing (DSP) electronics to detect and measure the velocity of flue gas turbulence patterns in the stack gas flow stream. The technique provides a monitor path length averaged air velocity which is converted to gas volumetric flow rate using the duct cross-sectional area.

**Table 3-1:
Stack Flow Monitor Information - Unit 1, 2 & 3**

Channel	Range	Sampling Location	Manufacturer/ Model Number	Serial Number
Stack Flow (velocity)	0-7872 feet/minute	#1 FF Outlet	Optical Scientific Inc. Model OFS 2000W	10080543
		#2 FF Outlet		10080544
		#3 FF Outlet		10080542

DESCRIPTION OF INSTALLATION

CEMS SCHEMATIC

Figure 3-1 is a general schematic of each of the outlet CEM systems. Figure 3-2, on page 3-5, presents the RM and CEM outlet sampling locations, as well as a general facility process flow diagram.

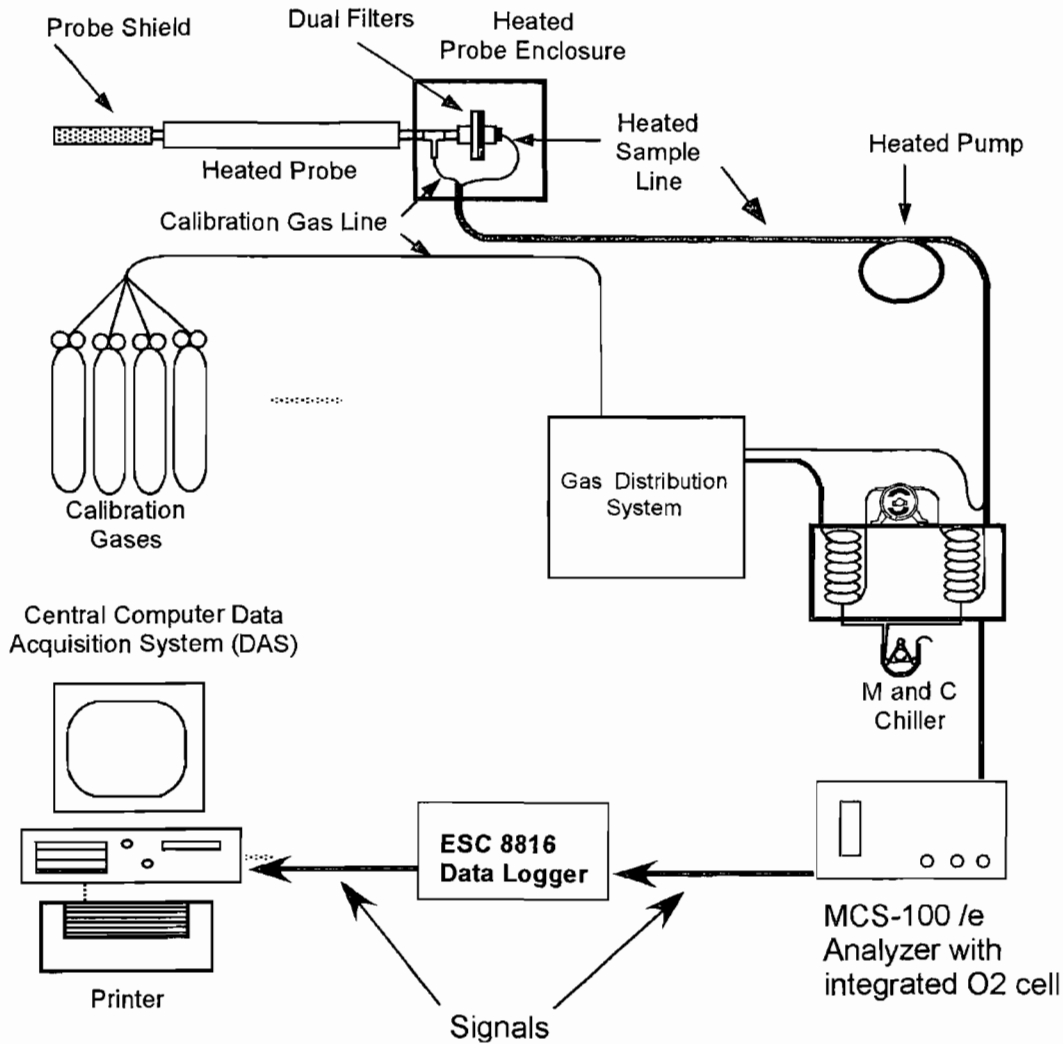


Figure 3-1: General CEMS Schematic

DESCRIPTION OF INSTALLATION

3-5

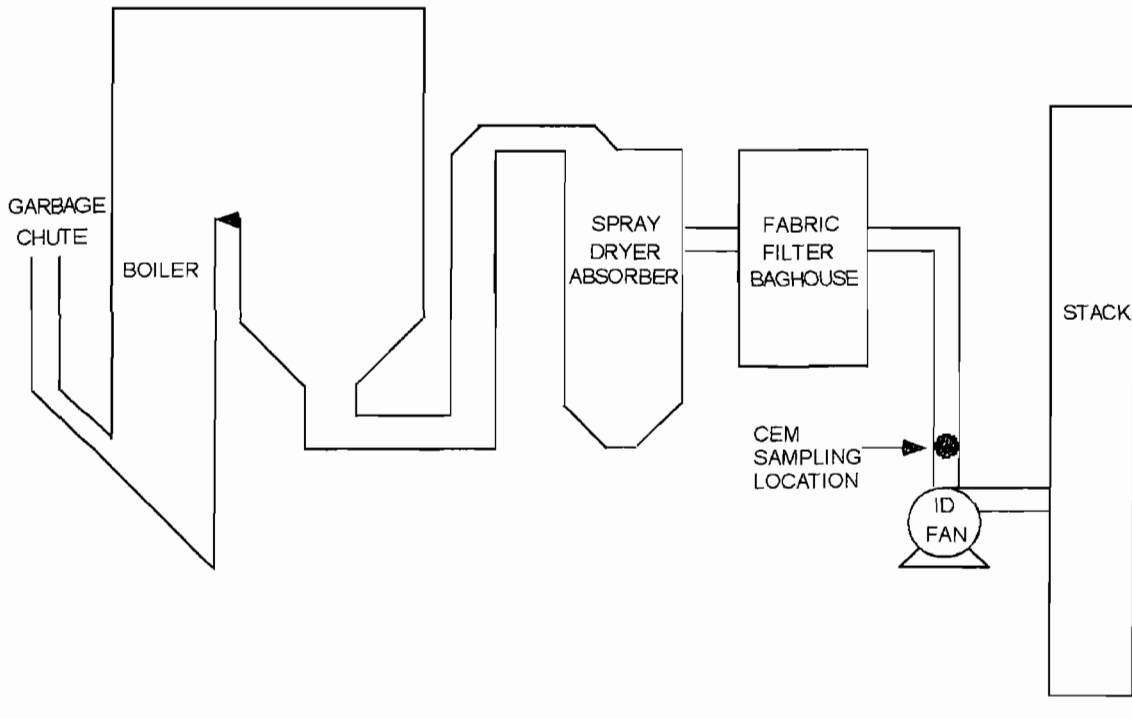


Figure 3-2: Process Flow Diagram and CEM Locations

DESCRIPTION OF INSTALLATION

DESCRIPTION OF SAMPLING LOCATIONS

Sampling point locations were determined according to EPA Method 1 and Performance Specification 2.

Table 3-2 outlines the sampling point configurations. Figures 3-3 and 3-4, on pages 3-7 and 3-8, illustrate the sampling points and orientation of sampling ports for each of the sources tested in the program.

**Table 3-2:
 Sampling Points**

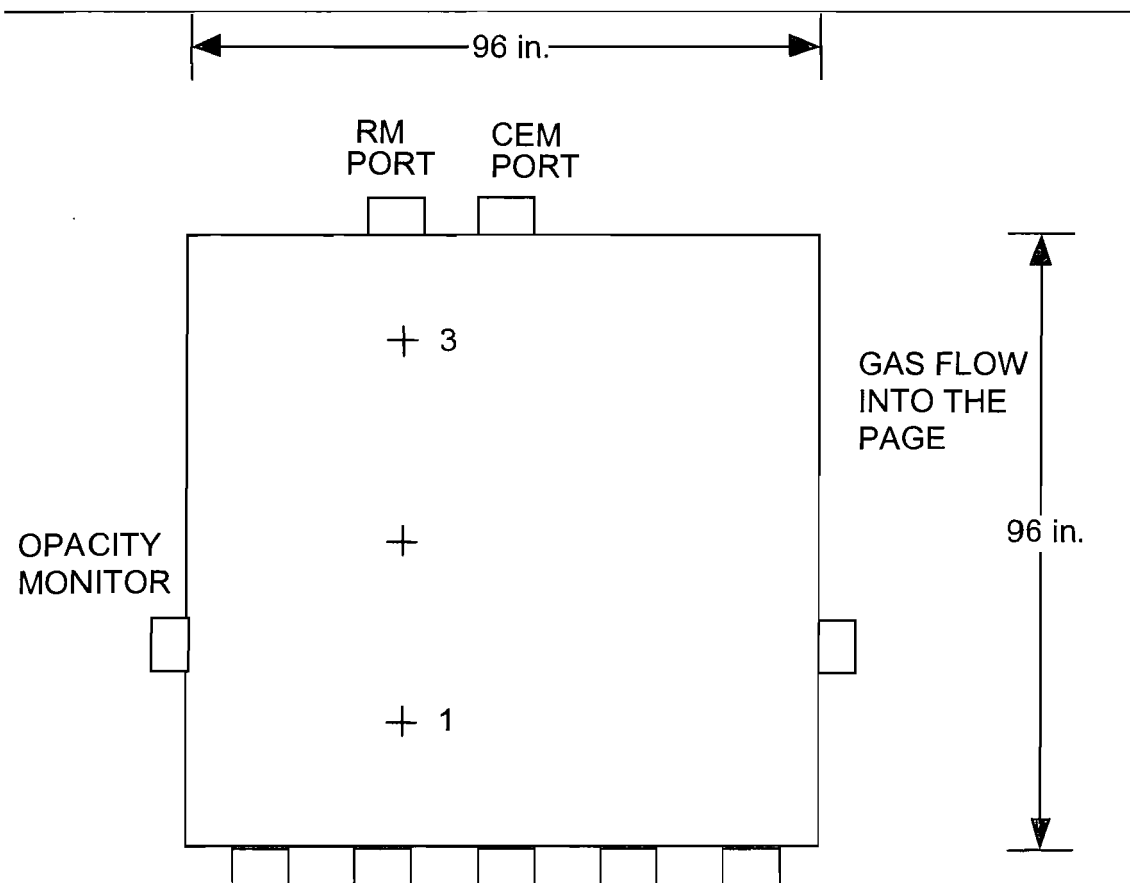
Location Constituent	Methods	Run No.	Ports	Points per Port	Minutes per Point	Total Minutes	Figure
<u>Unit 1 FF Outlet</u>							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3
Volumetric Flow	1-4 ¹	1-10	5	5	varies	varies	3-4
<u>Unit 2 FF Outlet</u>							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3
Volumetric Flow	1-4 ¹	1-10	5	5	varies	varies	3-4
<u>Unit 3 FF Outlet</u>							
CEM	3A, 6C, 7E, 10	1-10/11 ²	1	3	9	27	3-3
Volumetric Flow	1-4 ¹	1-11 ²	5	5	varies	varies	3-4

¹ Moistures were obtained from the concurrent Method 26 or Method 13B sample trains.

² Eleven (11) CO₂ RATA test runs were performed with Runs 11 and 12 being 21 minutes in duration.

DESCRIPTION OF INSTALLATION

3-7



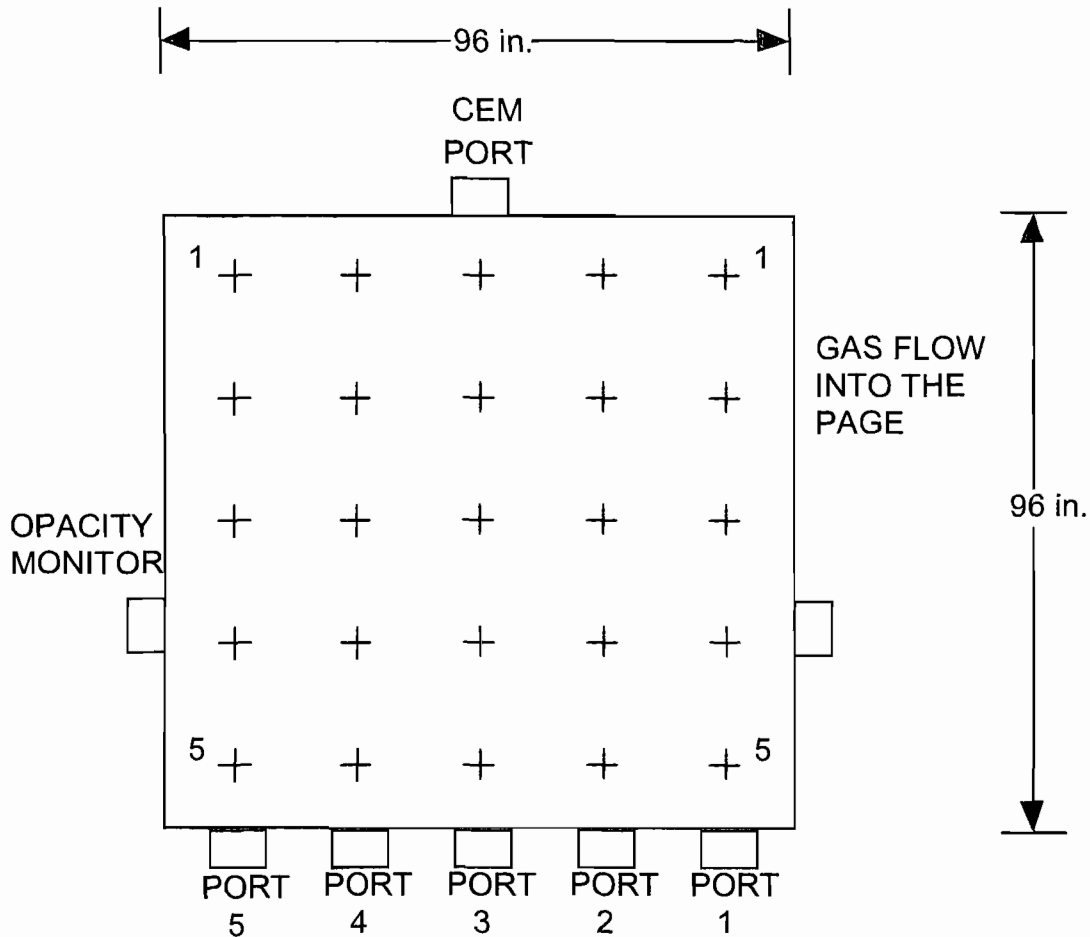
Sampling Point	Port to Point Distance (in.)
1	80
2	48
3	16

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)

DESCRIPTION OF INSTALLATION



<u>Traverse Point</u>	<u>Port to Point Distance (in.)</u>
1	86.4
2	67.2
3	48.0
4	28.8
5	9.6

Equivalent diameters to upstream disturbance: 2.0
 Equivalent diameters to downstream disturbance: 0.5

Limit: 2.0
 Limit: 0.5

**Figure 3-4: FF Outlets – Velocity Traverse Point Determination
 (Units 1, 2 and 3 are identical)**

METHODOLOGY

Clean Air Engineering followed procedures as detailed in EPA Methods 1, 2, 3A, 4, 6C, 7E and 10, as well as Performance Specifications 2, 3, 4A and 6. 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 1	"Sample and Velocity Traverses for Stationary Sources"
Method 2	"Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)"
Method 3A	"Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
Method 4	"Determination of Moisture Content in Stack Gases"
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"
PS6	"Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources"

These methods appear in detail in Title 40 of the Code of Federal Regulations (CFR) and are located on the internet at <http://ecfr.gpoaccess.gov>.

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 as prescribed in CleanAir's internal Quality Manual. Results of all QA/QC activities performed by CleanAir are summarized in Appendix D.

End of Section 4 – Methodology

WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

APPENDIX

5-1

TEST METHOD SPECIFICATIONS	A
SAMPLE CALCULATIONS	B
PARAMETERS	C
QA/QC DATA	D
FIELD DATA	E
FIELD DATA PRINTOUTS	F
PLANT CEM DATA	G
REFERENCE METHOD DATA.....	H

TEST METHOD SPECIFICATIONS

A

I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: KRO

Date: 5/11/2011



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Specification Sheet for

EPA Methods 6C, 7E and 10

Source Location Name(s)
Pollutant(s) to be Determined

Units 1, 2 and 3 FF Outlets
Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x) and Carbon Monoxide (CO)

Other Parameters to be Determined from Train O2 and CO2 (EPA Method 3A)

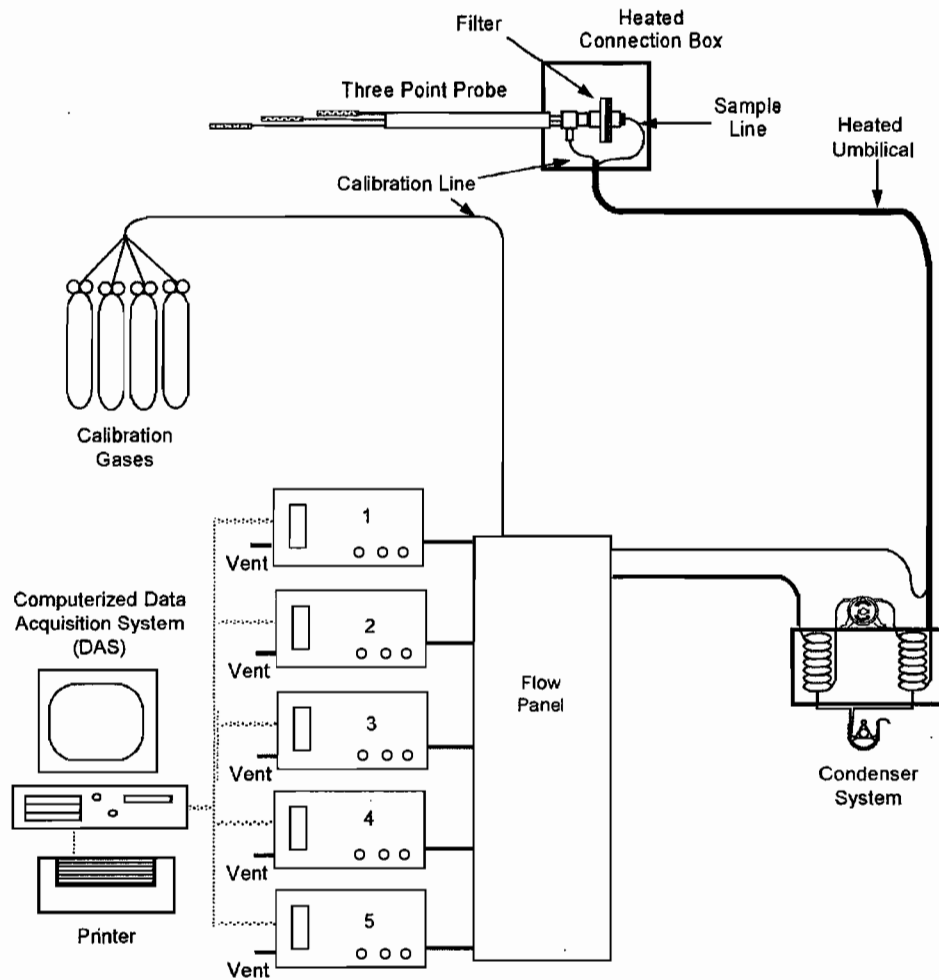
	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	27 minutes
No. of Sample Traverse Points	N/A	3
Sample Time per Point	N/A	9 minutes
Sampling Rate	Constant Rate	Constant Rate
Sampling Probe		
Nozzle Material	N/A	None
Nozzle Design	N/A	N/A
Probe 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

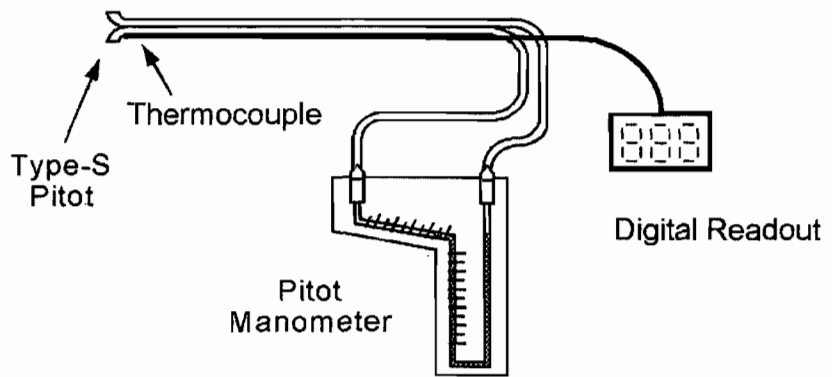
	<u>Standard Method Specification</u>	<u>Actual Specification Used</u>
Instrument Span Range		
Oxygen (O ₂)	≤ 1.33 x Expected Maximum	0-14.1
Carbon Dioxide (CO ₂)	≤ 1.33 x Expected Maximum	0-13.9%
Sulfur Dioxide (SO ₂)	≤ 1.33 x Expected Maximum	0-89.9 ppm
Nitrogen Oxides (NO _x)	≤ 1.33 x Expected Maximum	0-453 ppm
Carbon Monoxide (CO)	≤ 1.33 x Expected Maximum	0-95.7 ppm
Total Hydrocarbon (THC)	N/A	N/A
Hydrogen Chloride (HCl)	N/A	N/A
Ammonia (NH ₃)	N/A	N/A
Data Acquisition		
Data Recorder	Strip chart, Analog Computer or Digital Recorder	Digital Recorder
Recorder Resolution	0.5 Percent of Span	0.1 Percent of Span
Data Storage	Manually or Automatic	Automatic
Measurement Freq. ≤60 min. Sample Time	1-min. intervals or 30 measurements (less restrictive)	One reading per second
Recording Freq. ≤60 min. Sample Time	1-min. intervals or 30 measurements (less restrictive)	One Minute Average (60, 1 second readings)
Measurement Freq. >60 min. Sample Time	2-min. intervals or 96 measurements (less restrictive)	N/A
Recording Freq. >60 min. Sample Time	2-min. intervals or 96 measurements (less restrictive)	N/A
Calibration Gas Specifications		
Oxygen (O ₂)	EPA Protocol 1	EPA Protocol 1
Carbon Dioxide (CO ₂)	EPA Protocol 1	EPA Protocol 1
Sulfur Dioxide (SO ₂)	EPA Protocol 1	EPA Protocol 1
Nitrogen Oxides (NO _x)	EPA Protocol 1	EPA Protocol 1
Carbon Monoxide (CO)	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, 224, 225, 453
2	SO ₂	Western Research 921H	0-89.9 ppm	0, 44.3, 45.2, 89.9
3	CO	T.E.I. 48i	0-95.7 ppm	0, 48.3, 95.7
4	O ₂	Servomex 1420C	0-14.1 %	0, 6.05, 14.1
5	CO ₂	Servomex 1415C	0-13.9 %	0, 5.93, 13.9

EPA Method 2 Sampling Train Configuration



Specification Sheet for EPA Method 26A (modified)

Note: Modification includes the use of full-size impingers instead of midjet impingers.

Source Location Name(s) Units 1-3 1-3 FF Outlets
 Pollutant(s) to be Determined Hydrogen Chloride (HCl)
 Other Parameters to be Determined from Train Gas Density, Moisture

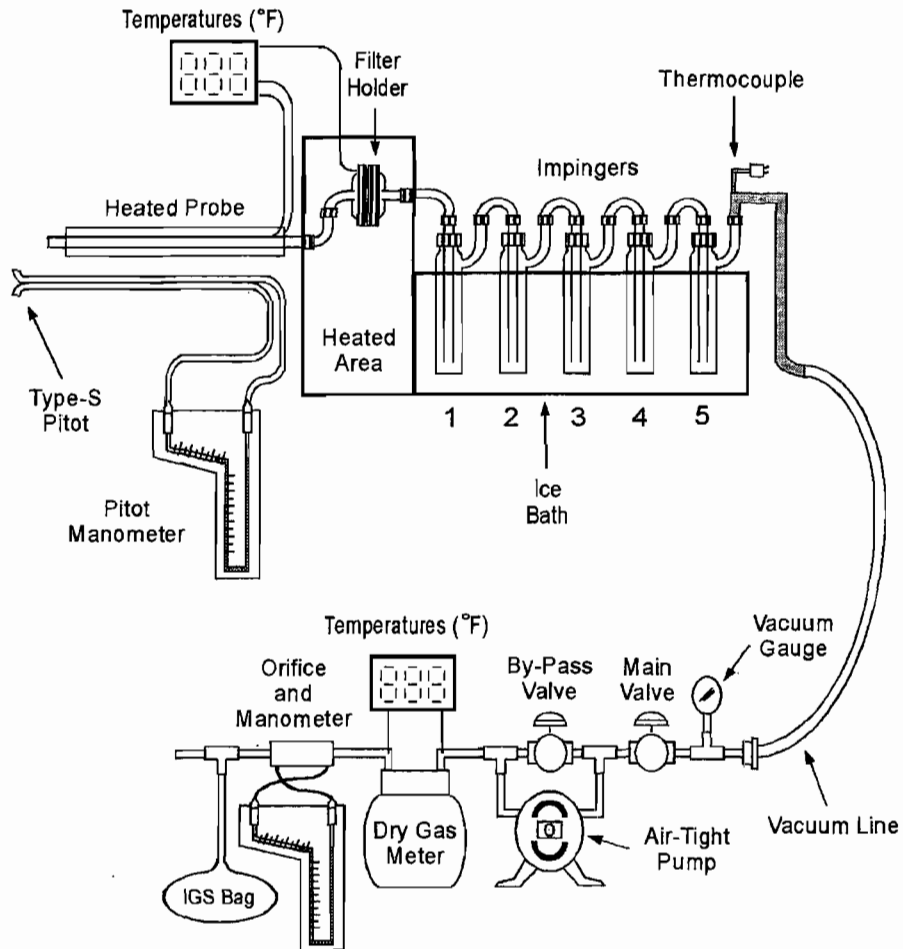
	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	60 minutes
No. of Sample Traverse Points	N/A	1
Sample Time per Point	N/A	60 minutes
Sampling Rate	Constant Rate (±10%)	Constant Rate (±10%)
Sampling Probe		
Nozzle Material	N/A	None
Nozzle Design	N/A	N/A
Probe Liner Material	Borosilicate Glass	Borosilicate Glass
Effective Probe Length	N/A	4 feet
Probe Temperature Set-Point	>248°F	350°F @ Inlet, Stack Temp @ FF Outlet
Velocity Measuring Equipment		
Pitot Tube Design	None	None
Pitot Tube Coefficient	N/A	N/A
Pitot Tube Calibration by	N/A	N/A
Pitot Tube Attachment	N/A	N/A
Metering System Console		
Meter Type	Dry Gas Meter or Critical Orifice	Dry Gas Meter
Meter Accuracy	±2%	±1%
Meter Resolution	N/A	0.01 cubic feet
Meter Size	2 liters/minute	0.1 dcf/revolution
Meter Calibrated Against	Wet Test Meter	Wet Test Meter
Pump Type	Diaphragm or equivalent	Rotary Vane
Temperature Measurements	Dial Thermometer or equivalent	Type K Thermocouple/Pyrometer
Temperature Resolution	2°F-5.4°F	1.0°F
ΔP Differential Pressure Gauge	N/A	N/A
ΔH Differential Pressure Gauge	N/A	Inclined Manometer
Barometer	Mercury, aneroid or other.	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	After Probe	Exit of Probe
Filter Holder Material	Teflon or Quartz	Borosilicate Glass
Filter Support Material	Teflon Frit	Teflon
Cyclone Material	N/A	None
Filter Heater Set-Point	>248°F	350°F @ Inlet, Stack Temp @ FF Outlet
Filter Material	Teflon/Glass Mat (Quartz, Optional High Temp>410F)	Quartz Fiber @ Inlet, Teflon on Glass @ Outlet
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

Specification Sheet for

EPA Method 26A (modified)

	<u>Standard Method Specification</u>	<u>Actual Specification Used</u>
Impinger Train Description		
Type of Glassware Connections	Ground Glass or Equivalent	Screw Joint with Silicone Gasket
Connection to Probe or Filter by	Direct Glass Connection	Direct Glass Connection
Number of Impingers	5 or 6 (Midget Impingers)	5
Impinger Stem Types		
Impinger 1	Shortened Stem	Shortened Stem (open tip)
Impinger 2	Greenburg-Smith	Greenburg-Smith
Impinger 3	Greenburg-Smith	Greenburg-Smith
Impinger 4	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 5	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 6		
Impinger 7		
Impinger 8		
Gas Density Determination		
Sample Collection	N/A	Single Point Integrated
Sample Collection Medium	N/A	Vinyl Bag
Sample Analysis	N/A	CEM
Sample Recovery Information		
Probe Brush Material	N/A	N/A
Probe Rinse Reagent	N/A	N/A
Probe Rinse Wash Bottle Material	N/A	N/A
Probe Rinse Storage Container	N/A	N/A
Filter Recovered?	No	No
Filter Storage Container	N/A	N/A
Impinger Contents Recovered?	Yes	Yes
Impinger Rinse Reagent	Deionized Distilled Water	Deionized Distilled Water
Impinger Wash Bottle	Polyethylene or glass	Polyethylene
Impinger Storage Container	Polyethylene	Polyethylene
Analytical Information		
Method 4 H ₂ O Determination by	N/A	Gravimetric
Filter Preparation Conditions	N/A	N/A
Front-Half Rinse Preparation	N/A	N/A
Back-Half Analysis	Ion Chromatography	Ion Chromatography
Additional Analysis	None	None

Modified EPA Method 26A Sampling Train Configuration

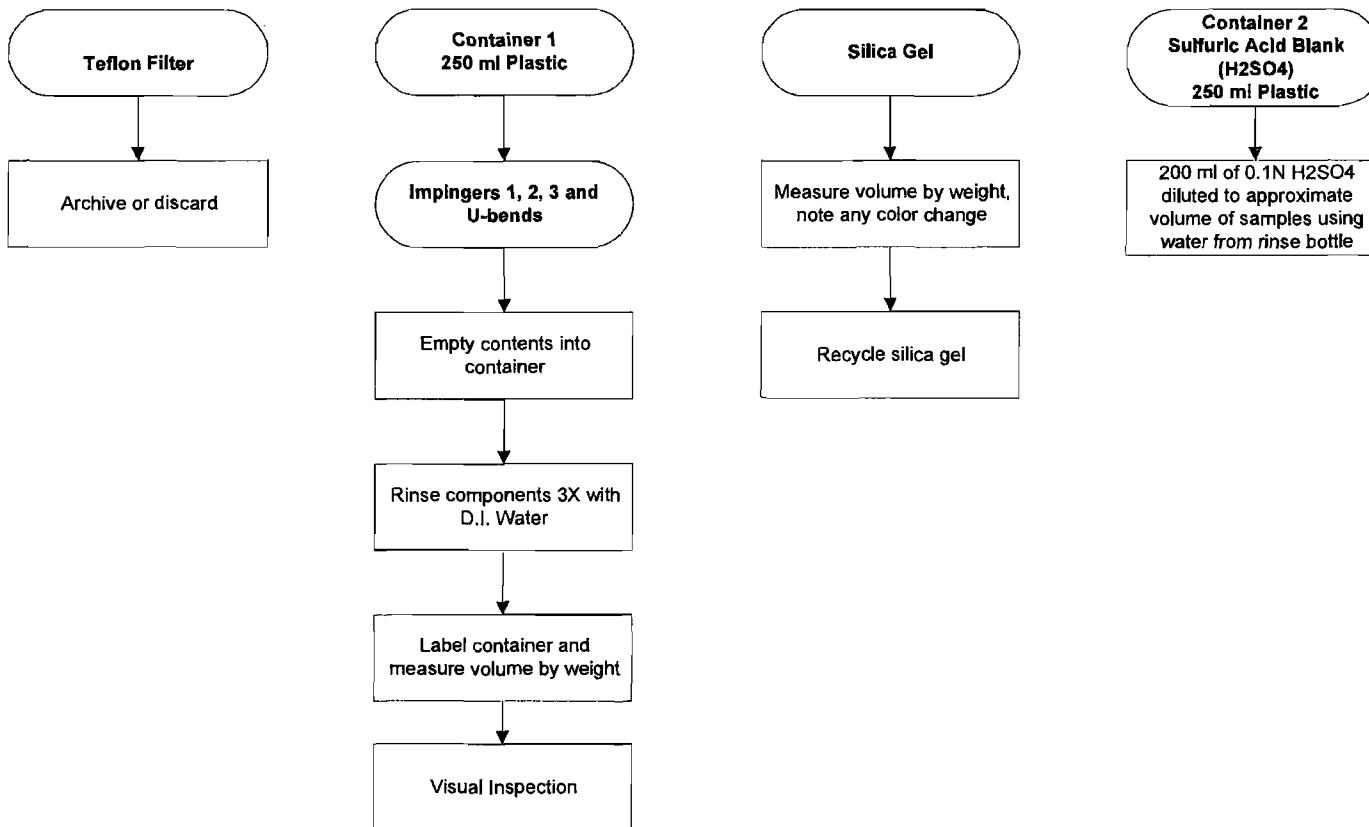


Impinger Contents

Impinger 1	50 ml 0.1 N H ₂ SO ₄
Impinger 2	100 ml 0.1 N H ₂ SO ₄
Impinger 3	100 ml 0.1 N H ₂ SO ₄
Impinger 4	Empty
Impinger 5	Silica Gel

**EPA Method 26
Sample Recovery Flowchart**
(without Cl2)
(Modified)

- Tare all sample containers before sample collection
- Mark all liquid levels and final weights on the outside of each sample container
- Seal all sample containers with Teflon tape
- If recycling, bake silica gel for two hours at 350 degrees F (175 degrees C)



Specification Sheet for EPA Method 13B

Source Location Name(s) Units 1 ,2 and 3 FF Outlets
 Pollutant(s) to be Determined Total Fluoride (F)
 Other Parameters to be Determined from Trai Gas Density, Moisture, Flow Rate

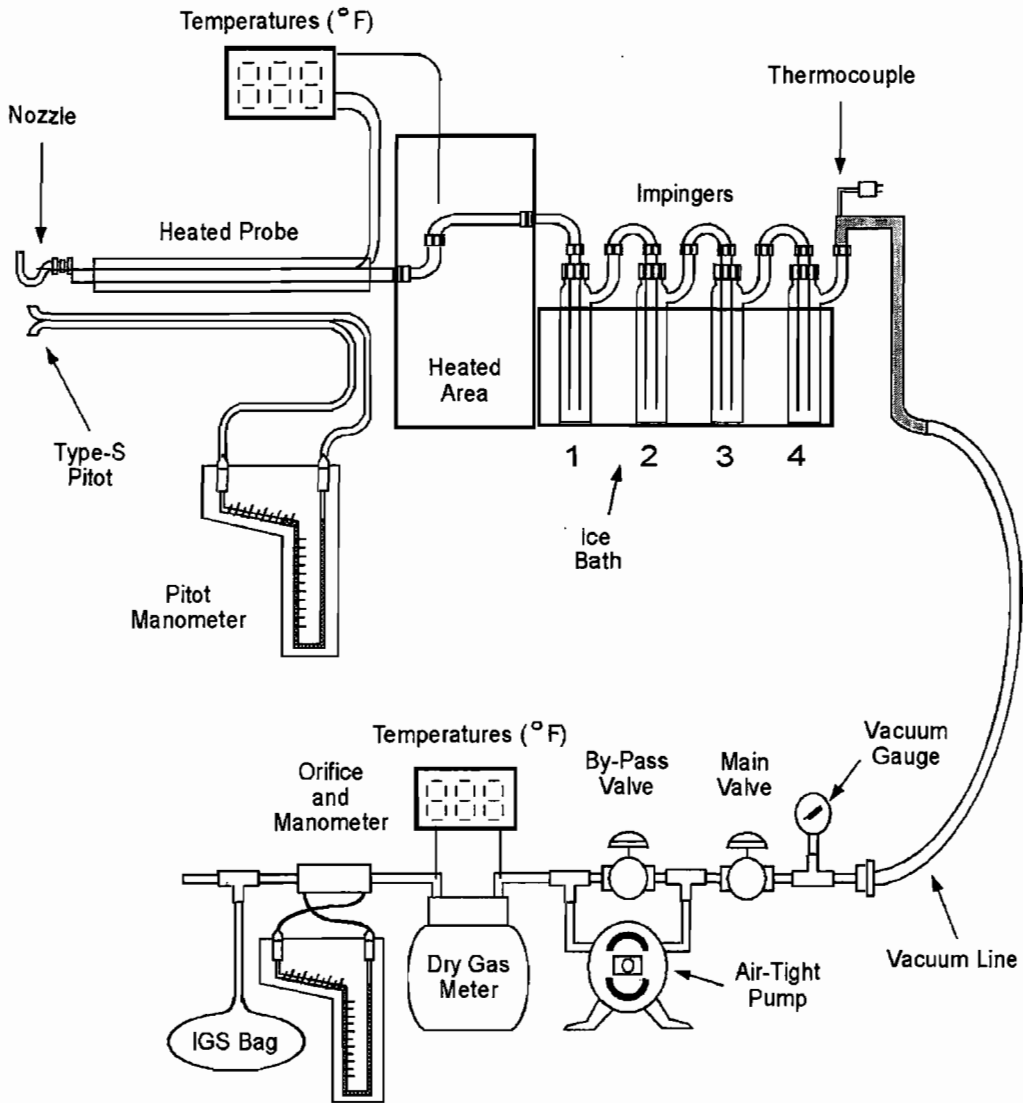
	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	62.5 minutes
No. of Sample Traverse Points	N/A	25
Sample Time per Point	N/A	2.5 minutes
Sampling Rate	Isokinetic (90-110%) 1 cfm maximum	Isokinetic (90-110%) 1 cfm maximum
Sampling Probe		
Nozzle Material	Stainless Steel or Glass	Borosilicate Glass
Nozzle Design	Button-Hook or Elbow	Button-Hook
Probe Liner Material	Stainless Steel or Glass	Borosilicate Glass
Effective Probe Length	N/A	8 feet
Probe Temperature Set-Point	248°F±25°F (optional)	248°F±25°F
Velocity Measuring Equipment		
Pitot Tube Design	Type S	Type S
Pitot Tube Coefficient	N/A	0.818
Pitot Tube Calibration by	Geometric or Wind Tunnel	Wind-Tunnel
Pitot Tube Attachment	Attached to Probe	Attached to Probe
Metering System Console		
Meter Type	Dry Gas Meter	Dry Gas Meter
Meter Accuracy	±2%	±1%
Meter Resolution	N/A	0.01 cubic feet
Meter Size	N/A	0.1 dcf/revolution
Meter Calibrated Against	Wet Test Meter or Standard DGM	Wet Test Meter
Pump Type	N/A	Rotary Vane
Temperature Measurements	N/A	Type K Thermocouple/Pyrometer
Temperature Resolution	5.4°F	1.0°F
ΔP Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
ΔH Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
Barometer	Mercury or Aneroid	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	Exit of Probe or Between 3rd and 4th impingers	Exit of Probe
Filter Holder Material	Borosilicate Glass or Stainless Steel	Borosilicate Glass
Filter Support Material	Stainless Steel if filter at probe exit; Glass Frit if filter after 3rd impinger	Teflon
Cyclone Material	N/A	None
Filter Heater Set-Point	248°F±25°F if after probe, unheated if after 3rd imp.	248°F±25°F
Filter Material	Low F filter with >95% Collection Eff. if after probe, Whatman No. 1 if after 3rd impinger	Teflon Mat
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

Specification Sheet for

EPA Method 13B

	Standard Method Specification	Actual Specification Used
Impinger Train Description		
Type of Glassware Connections	Ground Glass or Equivalent	Screw Joint with Silicone Gasket
Connection to Probe or Filter by	Direct Glass Connection	Direct Glass Connection
Number of Impingers	4	4
Impinger Stem Types		
Impinger 1	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 2	Greenburg-Smith	Greenburg-Smith
Impinger 3	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 4	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 5		
Impinger 6		
Impinger 7		
Impinger 8		
Gas Density Determination		
Sample Collection	Multi-point integrated	Multi-Point Integrated
Sample Collection Medium	Flexible Gas Bag	Vinyl Bag
Sample Analysis	Orsat or Fyrite Analyzer	CEM
Sample Recovery Information		
Probe Brush Material	Nylon Bristle	Nylon Bristle
Probe Rinse Reagent	Deionized distilled water	Deionized Distilled Water
Probe Rinse Wash Bottle Material	Glass or Polyethylene	Teflon
Probe Rinse Storage Container	Polyethylene	Polyethylene
Filter Recovered?	Yes	Yes
Filter Storage Container	Polyethylene	Polyethylene
Impinger Contents Recovered?	Yes	Yes
Impinger Rinse Reagent	Deionized Distilled Water	Deionized Distilled Water
Impinger Wash Bottle	Glass or Polyethylene	Teflon
Impinger Storage Container	Polyethylene	Polyethylene
Analytical Information		
Method 4 H ₂ O Determination by	Volumetric or Gravimetric	Gravimetric and Volumetric
Filter Preparation Conditions	See analytical flow chart	See Analytical Flow Chart
Front-Half Rinse Preparation	See analytical flow chart	See Analytical Flow Chart
Back-Half Analysis	Ion Specific Electrode	Ion Chromatography
Additional Analysis	N/A	None

EPA Method 13B Sampling Train Configuration

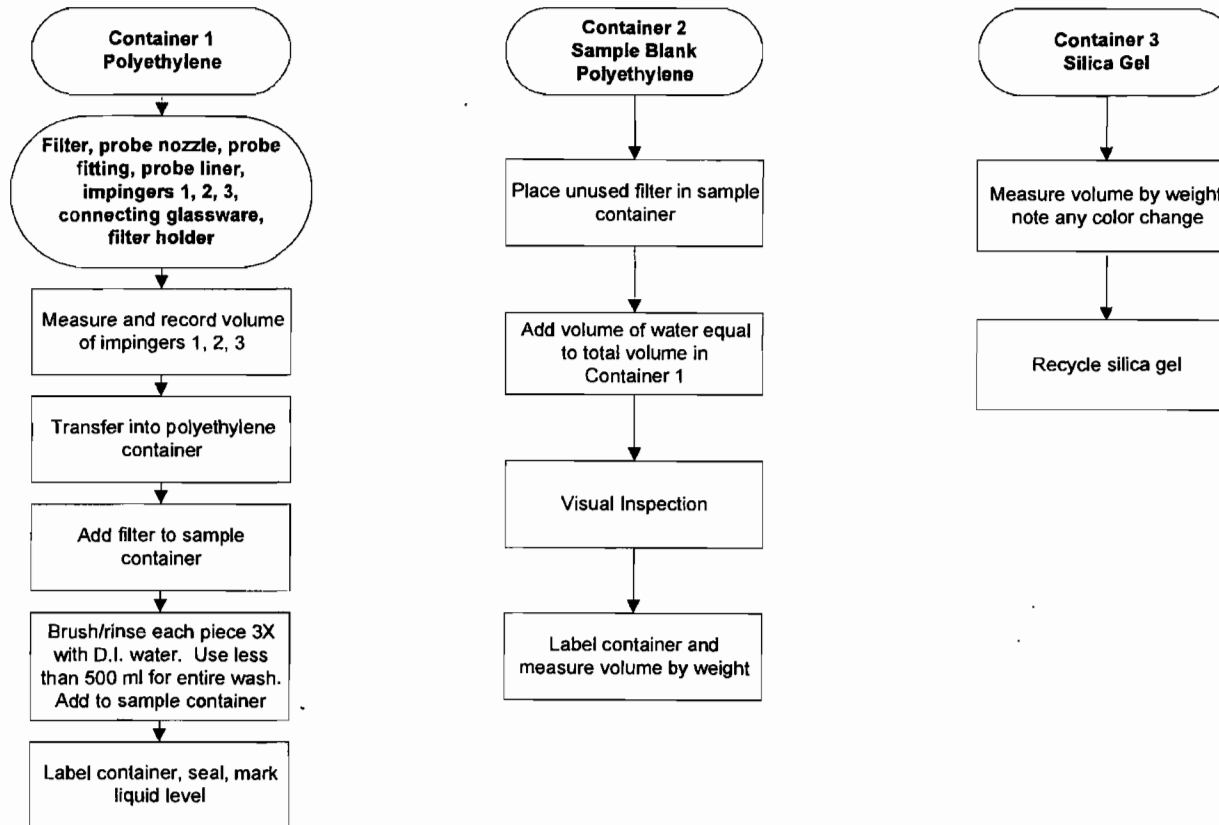


Impinger Contents

Impinger 1	100 ml DI H ₂ O
Impinger 2	100 ml DI H ₂ O
Impinger 3	Empty
Impinger 4	Silica Gel

EPA Method 13B Sample Recovery Flowchart

- Tare all sample containers before sample collection
- Mark all liquid levels and final weights on the outside of each sample container
- Seal all sample containers with Teflon tape
- If recycling, bake silica gel for two hours at 350 degrees F (175 degrees C)



WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

SAMPLE CALCULATIONS

B

I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: KRO

Date: 5/11/2011



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**CEM Field 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.

042511 084142

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 = 44.720 ppmvd
 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)

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

Where:

C_{mce} = average concentration of a calibration series = 44.720 ppmvd
 In this case the low cal series for channel 3

C_{ma} = concentration of actual calibration gas value = 44.300 ppmvd

I_{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)

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

Where:

C_{mce} = average concentration of a calibration series = 44.720 ppmvd
 In this case the low cal series for channel 3

C_{ma} = concentration of actual calibration gas value = 44.300 ppmvd

Span = instrument span value = 89.900

I_{cal} = limit for calibration error for non-hydrocarbons = 2.0%

E = calibration error check value = 0.47% **Pass**

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

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

Where:

C_{mce} = average concentration of a calibration series = 44.720 ppmvd
 in this case the Low cal series for channel 3

C_{mf} = calibration error response concentration for Cal01 = 42.711 ppmvd

Span = instrument span value = 89.900 ppmvd

I_{bias} = limit for system bias error = 5.0%

E_{bias} = calibration bias error check value = 2.24% **Pass**

**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.

042511 064506

1. SO2 concentration (ppmdv)

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

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

Where:

C_{DC}	= drift corrected average concentration	=	4.434	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)	=	4.434	ppmdv
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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)	=	4.434	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)	=	7.372E-07	lb/dscf
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Ft. Lauderdale, FL

FF Outlet 1

3. SO2 concentration (lb/scf)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	= 7.372E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscf/min
Q _s	= volumetric flow rate (standard cubic feet/min)	= 114936.3872	scf/min

C (lb/scf)	= SO2 concentration (lb/scf)	= 5.697E-07	lb/scf
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4. SO2 concentration (lb/acf)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	= 7.372E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscf/min
Q _a	= volumetric flow rate (actual cubic feet/min)	= 169770.8345	acf/min

C (lb/acf)	= SO2 concentration (lb/acf)	= 3.857E-07	lb/acf
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5. SO2 concentration (%dv)

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

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	= 4.434	ppmdv
100	= conversion factor from decimal to percentage	= 1.00E+02	
10 ⁶	= conversion factor from decimal to ppm	= 1.00E+06	

C (%dv)	= SO2 concentration (%dv)	= 0.0004%	%dv
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6. SO2 concentration (mg/dscm)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	= 7.372E-07	lb/dscf
k ₂	= conversion factor from lb to mg	= 453515	mg/lb
35.31	= conversion factor from dscf to dscm	= 35.31	ft ³ /m ³

C (mg/dscm)	= SO2 concentration (mg/dscm)	= 11.805	mg/dscm
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7. SO2 concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	7.372E-07	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft ³ /m ³
68	= standard temperature (°F)	=	68	°F
32	= normal temperature (°F)	=	32	°F
460	= °F to °R conversion constant	=	460	
C (mg/Nm3 dry)	= SO2 concentration (mg/Nm3 dry)	=	12.669	mg/Nm ³ dry

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

$$C(\text{ppmdv} @ x\% \text{O}_2) = C(\text{ppmdv}) \times \left(\frac{20.9 - x}{20.9 - \text{O}_2} \right)$$

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	4.434	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O ₂	= proportion of oxygen in the gas stream by volume (%)	=	9.162	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2)	= SO2 concentration corrected to 7% O2 (ppmdv example)	=	5.250	ppmdv @ 7%O2

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

$$C(\text{ppmdv} @ y\% \text{CO}_2) = C(\text{ppmdv}) \times \left(\frac{y}{\text{CO}_2} \right)$$

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	4.434	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO ₂	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.130	%
C (ppmdv - CO2)	= SO2 concentration corrected to 12% CO2 (ppmdv example)	=	5.252	ppmdv @ 12%CO2

10. SO2 emission rate (lb/hr)

$$E_{\text{lb/hr}} = C(\text{lb} / \text{dscf}) \times Q_{\text{std}} \times 60$$

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	7.372E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
E _{lb/hr}	= SO2 emission rate (lb/hr)	=	3.929	lb/hr

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FF Outlet 1

CEM Analyte Calculations

11. SO2 emission rate (kg/hr)

$$E_{kg/hr} = C (lb / dscf) \times Q_{std} \times 60 \times 0.454$$

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	7.372E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
0.454	= conversion factor (kg/lb)	=	0.454	kg/lb
E _{kg/hr}	= SO2 emission rate (kg/hr)	=	1.782	kg/hr

12. SO2 emission rate (gm/sec)

$$E_{gm/sec} = C (lb / dscf) \times Q_{std} \times \frac{454}{60}$$

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	7.372E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (sec/min)	=	60	sec/min
454	= conversion factor (g/lb)	=	453.515	kg/lb
E _{gm/sec}	= SO2 emission rate (gm/sec)	=	0.495	gm/sec

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 FF Outlet 1

**CEM RATA Sample Calculations
 for SO2 FF Outlet 1**

Sample data taken from

Run 1
Channel 3

 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.

042011 112135

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	=	5.400	ppm@7%O2
C_R	= SO2 value from CleanAir RM Data	=	5.250	ppm@7%O2
D	= SO2 value difference between 2 methods	=	-0.150	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= SO2 value from CleanAir RM Data	=	5.250	ppm@7%O2
D	= SO2 value difference between 2 methods	=	-0.150	ppm@7%O2
$D\%$	= SO2 value difference as a percentage of RM Data	=	-2.8%	

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

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

Where:

$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	5.400	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average SO2 value from Plant CEM Data	=	3.089	ppm@7%O2

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

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

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	5.250	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	5.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.249	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	=	0.249	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.191	ppm@7%O2

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

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

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	5.250	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	5.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.191	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	7.492%	
	Limit =		20.000%	

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Ft. Lauderdale, FL

FF Outlet 1

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

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

Where:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	5.250	ppm@7%O2
$C_{P,i}$	= SO2 value from Plant CEM Data for ith run	=	5.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.191	
C_{std}	= SO2 value of applicable standard	=	29.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	0.788%	
		Limit =	20.000%	

**CEM Field 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.

042511 080134

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 = 225.118 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)

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

Where:

C_{mce} = average concentration of a calibration series = 225.118 ppmdv
 In this case the low cal series for channel 4

C_{ma} = concentration of actual calibration gas value = 224.000 ppmdv

I_{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)

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

Where:

C_{mce} = average concentration of a calibration series = 225.118 ppmdv
 In this case the low cal series for channel 4

C_{ma} = concentration of actual calibration gas value = 224.000 ppmdv

Span = instrument span value = 453.000

I_{cal} = limit for calibration error for non-hydrocarbons = 2.0%

E = calibration error check value = 0.25% **Pass**

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

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

Where:

C_{mce} = average concentration of a calibration series = 225.118 ppmdv
 in this case the Low cal series for channel 4

C_{mf} = calibration error response concentration for Cal01 = 223.712 ppmdv

Span = instrument span value = 453.000 ppmdv

I_{bias} = limit for system bias error = 5.0%

E_{bias} = calibration bias error check value = 0.31% **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)	=	223.712	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	220.947	ppmdv
Span	= instrument span value	=	453.000	ppmdv
l_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.61%	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	=	161.274	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average NOX concentration for Run 1	=	163.897	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	=	224.000	ppmdv
C	= average NOX concentration for Run 1	=	163.897	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	223.712	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	220.947	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.130	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.146	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	165.092	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.

042511 084535

1. NOX concentration (ppmdv)

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

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

Where:

C_{DC}	= drift corrected average concentration	=	165.092	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)	=	165.092	ppmdv
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2. NOX concentration (lb/dscf)

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

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	165.092	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)	=	1.971E-05	lb/dscf
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3. NOX concentration (lb/scf)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.971E-05	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscf/min
Q_s	= volumetric flow rate (standard cubic feet/min)	=	114936.3872	scf/min
C (lb/scf)	= NOX concentration (lb/scf)	=	1.523E-05	lb/scf

4. NOX concentration (lb/acf)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.971E-05	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscf/min
Q_a	= volumetric flow rate (actual cubic feet/min)	=	169770.8345	acf/min
C (lb/acf)	= NOX concentration (lb/acf)	=	1.031E-05	lb/acf

5. NOX concentration (%dv)

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

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	165.092	ppmdv
100	= conversion factor from decimal to percentage	=	1.00E+02	
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
C (%dv)	= NOX concentration (%dv)	=	0.0165%	%dv

6. NOX concentration (mg/dscm)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.971E-05	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft ³ /m ³
C (mg/dscm)	= NOX concentration (mg/dscm)	=	315.664	mg/dscm

7. NOX concentration (mg/Nm³ dry)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.971E-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/Nm ³ dry)	= NOX concentration (mg/Nm ³ dry)	=	338.761	mg/Nm ³ dry

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

$$C(\text{ppmdv} @ x\% \text{O}_2) = C(\text{ppmdv}) \times \left(\frac{20.9 - x}{20.9 - \text{O}_2} \right)$$

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	165.092	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O ₂	= proportion of oxygen in the gas stream by volume (%)	=	9.162	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O ₂)	= NOX concentration corrected to 7% O ₂ (ppmdv example)	=	195.499	ppmdv @ 7%O ₂

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

$$C(\text{ppmdv} @ y\% \text{CO}_2) = C(\text{ppmdv}) \times \left(\frac{y}{\text{CO}_2} \right)$$

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	165.092	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO ₂	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.130	%
C (ppmdv -CO ₂)	= NOX concentration corrected to 12% CO ₂ (ppmdv example)	=	195.573	ppmdv @ 12%CO ₂

10. NOX emission rate (lb/hr)

$$E_{\text{lb/hr}} = C(\text{lb} / \text{dscf}) \times Q_{\text{std}} \times 60$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.971E-05	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
E _{lb/hr}	= NOX emission rate (lb/hr)	=	105.052	lb/hr

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CEM Analyte Calculations

11. NOX emission rate (kg/hr)

$$E_{kg/hr} = C (lb / dscf) \times Q_{std} \times 60 \times 0.454$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.971E-05	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
0.454	= conversion factor (kg/lb)	=	0.454	kg/lb
E _{kg/hr}	= NOX emission rate (kg/hr)	=	47.643	kg/hr

12. NOX emission rate (gm/sec)

$$E_{gm/sec} = C (lb / dscf) \times Q_{std} \times \frac{454}{60}$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.971E-05	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (sec/min)	=	60	sec/min
454	= conversion factor (g/lb)	=	453.515	kg/lb
E _{gm/sec}	= NOX emission rate (gm/sec)	=	13.234	gm/sec

CEM RATA Sample Calculations
for NOX FF Outlet 1

Sample data taken from

Run 1
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.

042011 112535

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

$$D = C_R - C_P$$

Where:

C_P	= NOX value from Plant CEM Data	=	199.600	ppm@7%O2
C_R	= NOX value from CleanAir RM Data	=	195.499	ppm@7%O2
D	= NOX value difference between 2 methods	=	-4.101	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= NOX value from CleanAir RM Data	=	195.499	ppm@7%O2
D	= NOX value difference between 2 methods	=	-4.101	ppm@7%O2
$D\%$	= NOX value difference as a percentage of RM Data	=	-2.1%	

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

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

Where:

$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	199.600	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average NOX value from Plant CEM Data	=	199.022	ppm@7%O2

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FF Outlet 1

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

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

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	195.499	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	199.600	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	1.032	ppm@7%O2

5. Confidence Coefficient

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

Where:

STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	1.032	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.793	ppm@7%O2

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

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

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	195.499	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	199.600	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.793	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	3.165%	
	Limit =		20.000%	

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

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

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	195.499	ppm@7%O2
$C_{P,i}$	= NOX value from Plant CEM Data for ith run	=	199.600	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.793	
C_{std}	= NOX value of applicable standard	=	205.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	2.991%	
		Limit =	10.000%	

**CEM Field 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.

042511 090255

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 = 47.672 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)

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

Where:
 C_{mce} = average concentration of a calibration series = 47.672 ppmdv
 In this case the low cal series for channel 5
 C_{ma} = concentration of actual calibration gas value = 48.300 ppmdv
 I_{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)

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

Where:
 C_{mce} = average concentration of a calibration series = 47.672 ppmdv
 In this case the low cal series for channel 5
 C_{ma} = concentration of actual calibration gas value = 48.300 ppmdv
 Span = instrument span value = 95.700
 I_{cal} = limit for calibration error for non-hydrocarbons = 2.0%
 E = calibration error check value = 0.66% **Pass**

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

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

Where:
 C_{mce} = average concentration of a calibration series = 47.672 ppmdv
 in this case the Low cal series for channel 5
 C_{mf} = calibration error response concentration for Cal01 = 47.574 ppmdv
 Span = instrument span value = 95.700 ppmdv
 I_{bias} = limit for system bias error = 5.0%
 E_{bias} = calibration bias error check value = 0.10% **Pass**

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

$$E_{Drift} = abs \left[\frac{C_{mf} - C_{mi}}{Span} \right] \leq I_{drift}$$

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	47.574	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	47.507	ppmdv
Span	= instrument span value	=	95.700	ppmdv
I_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.07%	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 CO on channel 5	=	7.012	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average CO concentration for Run 1	=	5.700	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	=	48.300	ppmdv
C	= average CO concentration for Run 1	=	5.700	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	47.574	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	47.507	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.441	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.437	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	5.395	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.

042511 084558

1. CO concentration (ppmdv)

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

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

Where:

C_{DC}	= drift corrected average concentration	=	5.395	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)	=	5.395	ppmdv
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2. CO concentration (lb/dscf)

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

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	5.395	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)	=	3.922E-07	lb/dscf
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3. CO concentration (lb/scf)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	= 3.922E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscf/min
Q _s	= volumetric flow rate (standard cubic feet/min)	= 114936.3872	scf/min

C (lb/scf)	= CO concentration (lb/scf)	= 3.031E-07	lb/scf
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4. CO concentration (lb/acf)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	= 3.922E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscf/min
Q _a	= volumetric flow rate (actual cubic feet/min)	= 169770.8345	acf/min

C (lb/acf)	= CO concentration (lb/acf)	= 2.052E-07	lb/acf
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5. CO concentration (%dv)

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

Where:

C (ppmdv)	= CO concentration (ppmdv)	= 5.395	ppmdv
100	= conversion factor from decimal to percentage	= 1.00E+02	
10 ⁶	= conversion factor from decimal to ppm	= 1.00E+06	

C (%dv)	= CO concentration (%dv)	= 0.0005%	%dv
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6. CO concentration (mg/dscm)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	= 3.922E-07	lb/dscf
k ₂	= conversion factor from lb to mg	= 453515	mg/lb
35.31	= conversion factor from dscf to dscm	= 35.31	ft ³ /m ³

C (mg/dscm)	= CO concentration (mg/dscm)	= 6.281	mg/dscm
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7. CO concentration (mg/Nm³ dry)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	3.922E-07	lb/dscf
k ₂	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft ³ /m ³
68	= standard temperature (°F)	=	68	°F
32	= normal temperature (°F)	=	32	°F
460	= °F to °R conversion constant	=	460	
C (mg/Nm ³ dry)	= CO concentration (mg/Nm ³ dry)	=	6.741	mg/Nm ³ dry

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

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

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	5.395	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O ₂	= proportion of oxygen in the gas stream by volume (%)	=	9.162	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O ₂)	= CO concentration corrected to 7% O ₂ (ppmdv example)	=	6.389	ppmdv @ 7%O ₂

9. 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)	=	5.395	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO ₂	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.130	%
C (ppmdv - CO ₂)	= CO concentration corrected to 12% CO ₂ (ppmdv example)	=	6.391	ppmdv @ 12%CO ₂

10. CO emission rate (lb/hr)

$$E_{lb/hr} = C(lb / dscf) \times Q_{std} \times 60$$

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	3.922E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
E _{lb/hr}	= CO emission rate (lb/hr)	=	2.090	lb/hr

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CEM Analyte Calculations

11. CO emission rate (kg/hr)

$$E_{kg/hr} = C (lb / dscf) \times Q_{std} \times 60 \times 0.454$$

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	= 3.922E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscfm
60	= conversion factor (min/hr)	= 60	min/hr
0.454	= conversion factor (kg/lb)	= 0.454	kg/lb
E _{kg/hr}	= CO emission rate (kg/hr)	= 0.948	kg/hr

12. CO emission rate (gm/sec)

$$E_{gm/sec} = C (lb / dscf) \times Q_{std} \times \frac{454}{60}$$

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	= 3.922E-07	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscfm
60	= conversion factor (sec/min)	= 60	sec/min
454	= conversion factor (g/lb)	= 453.515	kg/lb
E _{gm/sec}	= CO emission rate (gm/sec)	= 0.263	gm/sec

**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.

042011 112446

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	=	6.700	ppm@7%O2
C_R	= CO value from CleanAir RM Data	=	6.389	ppm@7%O2
D	= CO value difference between 2 methods	=	-0.311	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= CO value from CleanAir RM Data	=	6.389	ppm@7%O2
D	= CO value difference between 2 methods	=	-0.311	ppm@7%O2
D%	= CO value difference as a percentage of RM Data	=	-4.9%	

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

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

Where:

$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	6.700	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average CO value from Plant CEM Data	=	11.978	ppm@7%O2

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

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

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	6.389	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	6.700	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.247	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	=	0.247	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.190	ppm@7%O2

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

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

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	6.389	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	6.700	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.190	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	5.476%	
		Limit =	10.000%	

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

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

Where:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	6.389	ppm@7%O2
$C_{P,i}$	= CO value from Plant CEM Data for ith run	=	6.700	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.190	
C_{std}	= CO value of applicable standard	=	100.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	0.632%	
		Limit =	5.000%	

**CEM Field Sample Calculations
 for CO2 FF Outlet 1**

Sample data taken from **Run 1**
 and Channel 2

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.

042511 090354

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 = 6.049 %dv
 In this case the low cal series for channel 2

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 = 6.049 %dv
 In this case the low cal series for channel 2
 C_{ma} = concentration of actual calibration gas value = 5.930 %dv
 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 = 6.049 %dv
 In this case the low cal series for channel 2
 C_{ma} = concentration of actual calibration gas value = 5.930 %dv
 Span = instrument span value = 13.900
 l_{cal} = limit for calibration error for non-hydrocarbons = 2.0%

E = calibration error check value = 0.86% **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 = 6.049 %dv
 in this case the Low cal series for channel 2
 C_{mf} = calibration error response concentration for Cal01 = 6.018 %dv
 Span = instrument span value = 13.900 %dv
 l_{bias} = limit for system bias error = 5.0%

E_{bias} = calibration bias error check value = 0.23% **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)	=	6.018	%dv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	5.961	%dv
Span	= instrument span value	=	13.900	%dv
l_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.41%	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 CO2 on channel 2	=	10.151	%dv
N	= total number of readings in Run 1	=	27	
C	= average CO2 concentration for Run 1	=	10.155	%dv

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	=	5.930	%dv
C	= average CO2 concentration for Run 1	=	10.155	%dv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	6.018	%dv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	5.961	%dv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.134	%dv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.080	%dv
C_{DC}	= drift corrected average concentration for Run 1	=	10.130	%dv

**CEM Emissions Sample Calculations
 for CO2 FF Outlet 1**

Sample data taken from Run 1
 and Channel 2

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. CO2 concentration (ppmdv)

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

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

Where:

C_{DC}	= drift corrected average concentration	= 10.130	%dv
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	= 10000	

$C(\text{ppmdv})$	= CO2 concentration (ppmdv)	= 101296.978	ppmdv
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2. CO2 concentration (lb/dscf)

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

Where:

$C(\text{ppmdv})$	= CO2 concentration (ppmdv)	= 101296.978	ppmdv
MW	= Molecular Weight of CO2 gas	= 44.01	lb/lb-mole
10^6	= conversion factor from decimal to ppm	= 1.00E+06	
385.3	= molar volume	= 385.3	dscf/lb-mole

$C(\text{lb/dscf})$	= CO2 concentration (lb/dscf)	= 1.157E-02	lb/dscf
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3. CO2 concentration (lb/scf)

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

Where:

C (lb/dscf)	= CO2 concentration (lb/dscf)	= 1.157E-02	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscfm
Q_s	= volumetric flow rate (standard cubic feet/min)	= 114936.3872	scf/min
C (lb/scf)	= CO2 concentration (lb/scf)	= 8.941E-03	lb/scf

4. CO2 concentration (lb/acf)

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

Where:

C (lb/dscf)	= CO2 concentration (lb/dscf)	= 1.157E-02	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 88821.68787	dscfm
Q_a	= volumetric flow rate (actual cubic feet/min)	= 169770.8345	acf/min
C (lb/acf)	= CO2 concentration (lb/acf)	= 6.053E-03	lb/acf

5. CO2 concentration (%dv)

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

Where:

C (ppmdv)	= CO2 concentration (ppmdv)	= 101296.978	ppmdv
100	= conversion factor from decimal to percentage	= 1.00E+02	
10^6	= conversion factor from decimal to ppm	= 1.00E+06	
C (%dv)	= CO2 concentration (%dv)	= 10.1297%	%dv

6. CO2 concentration (mg/dscm)

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

Where:

C (lb/dscf)	= CO2 concentration (lb/dscf)	= 1.157E-02	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)	= CO2 concentration (mg/dscm)	= 185284.023	mg/dscm

7. CO2 concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= CO2 concentration (lb/dscf)	=	1.157E-02	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)	= CO2 concentration (mg/Nm3 dry)	=	198841.391	mg/Nm ³ dry
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8. CO2 concentration corrected to 7% O2 (ppmdv example)

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

Where:

C (ppmdv)	= CO2 concentration (ppmdv)	=	101296.978	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O ₂	= proportion of oxygen in the gas stream by volume (%)	=	9.162	%
20.9	= oxygen content of ambient air (%)	=	20.9	%

C (ppmdv - O ₂)	= CO2 concentration corrected to 7% O2 (ppmdv example)	=	119954.165	ppmdv @ 7%O ₂
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9. CO2 concentration corrected to 12% CO2 (ppmdv example)

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

Where:

C (ppmdv)	= CO2 concentration (ppmdv)	=	101296.978	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO ₂	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.130	%

C (ppmdv -CO ₂)	= CO2 concentration corrected to 12% CO2 (ppmdv example)	=	120000.000	ppmdv @ 12%CO ₂
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10. CO2 emission rate (lb/hr)

$$E_{lb/hr} = C(lb / dscf) \times Q_{std} \times 60$$

Where:

C (lb/dscf)	= CO2 concentration (lb/dscf)	=	1.157E-02	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
E _{lb/hr}	= CO2 emission rate (lb/hr)	=	61662.215	lb/hr

11. CO2 emission rate (kg/hr)

$$E_{kg/hr} = C (lb / dscf) \times Q_{std} \times 60 \times 0.454$$

Where:

C (lb/dscf)	= CO2 concentration (lb/dscf)	=	1.157E-02	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
0.454	= conversion factor (kg/lb)	=	0.454	kg/lb
E _{kg/hr}	= CO2 emission rate (kg/hr)	=	27964.723	kg/hr

12. CO2 emission rate (gm/sec)

$$E_{gm/sec} = C (lb / dscf) \times Q_{std} \times \frac{454}{60}$$

Where:

C (lb/dscf)	= CO2 concentration (lb/dscf)	=	1.157E-02	lb/dscf
Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	88821.68787	dscfm
60	= conversion factor (sec/min)	=	60	sec/min
454	= conversion factor (g/lb)	=	453.515	kg/lb
E _{gm/sec}	= CO2 emission rate (gm/sec)	=	7767.979	gm/sec

**CEM RATA Sample Calculations
 for CO2 FF Outlet 1**

Sample data taken from

Run 1
and Channel 2

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.

042011 112708

1. CO2 value difference between Plant CEM Data and CleanAir RM Data (lb/hr)

$$D = C_R - C_P$$

Where:

C_P	= CO2 value from Plant CEM Data	=	67863.000	lb/hr
C_R	= CO2 value from CleanAir RM Data	=	61662.215	lb/hr
D	= CO2 value difference between 2 methods	=	-6200.785	lb/hr

2. Percent Value Difference (%)

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

Where:

C_R	= CO2 value from CleanAir RM Data	=	61662.215	lb/hr
D	= CO2 value difference between 2 methods	=	-6200.785	lb/hr
$D\%$	= CO2 value difference as a percentage of RM Data	=	-10.1%	

3. Average CO2 Value (Plant CEM Data example) (lb/hr)

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

Where:

$C_{p,i}$	= CO2 value from Plant CEM Data for ith run	=	67863.000	lb/hr
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average CO2 value from Plant CEM Data	=	68647.333	lb/hr

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

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

Where:

$C_{R,i}$	= CO2 value from CleanAir RM Data for ith run	=	61662.215	lb/hr
$C_{P,i}$	= CO2 value from Plant CEM Data for ith run	=	67863.000	lb/hr
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	2299.365	lb/hr

5. Confidence Coefficient

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

Where:

STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	2299.365	lb/hr
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	1767.445	lb/hr

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

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

Where:

$C_{R,i}$	= CO2 value from CleanAir RM Data for ith run	=	61662.215	lb/hr
$C_{P,i}$	= CO2 value from Plant CEM Data for ith run	=	67863.000	lb/hr
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	1767.445	lb/hr
RA	= relative accuracy (as a percentage of the reference method)	=	15.020%	
	Limit =		20.000%	

**USEPA Modified Method 26A (HCI)
 Sampling and Moisture Sample Calculations**

Sample data taken from Run 1

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. Volume of water collected (wscf)

$$V_{wstd} = (0.04706)(V_k)$$

Where:

V_{lc}	= total volume of liquid collected in impingers and silica gel (ml)	=	253.5	ml
0.04706	= ideal gas conversion factor (ft ³ water vapor/ml or gm)	=	0.04706	ft ³ /ml
V_{wstd}	= volume of water vapor collected at standard conditions (ft ³)	=	11.93	ft ³

2. Volume of gas metered, standard conditions (dscf)

$$V_{mstd} = \frac{(17.64)(V_m) \left(P_{bar} + \frac{\Delta H}{13.6} \right) (Y_d)}{(460 + T_m)}$$

Where:

P_{bar}	= barometric pressure (in. Hg)	=	29.95	in. Hg
T_m	= average dry gas meter temperature (°F)	=	84.92	°F
V_m	= volume of gas sample through the dry gas meter at meter conditions (dcf)	=	41.86	dcf
Y_d	= gas meter correction factor (dimensionless)	=	0.9961	
ΔH	= average pressure drop across meter box orifice (in. H ₂ O)	=	1.50	in. H ₂ O
17.64	= standard temperature to pressure ratio (°R/in. Hg)	=	17.64	°R/in. Hg
13.6	= conversion factor (in. H ₂ O/in. Hg)	=	13.6	in. H ₂ O/in. Hg
460	= °F to °R conversion constant	=	460	
V_{mstd}	= volume of gas sampled through the dry gas meter at standard conditions (dscf)	=	40.575	dscf

3. Sample gas pressure (in. Hg)

$$P_s = P_{bar} + \left(\frac{P_g}{13.6} \right)$$

Where:

P_{bar}	= barometric pressure (in. Hg)	=	29.95	in. Hg
P_g	= sample gas static pressure (in. H ₂ O)	=	-11.00	in. H ₂ O
13.6	= conversion factor (in. H ₂ O/in. Hg)	=	13.6	in. H ₂ O/in. Hg
P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg

4. Actual water vapor pressure at sample gas temperature less than 212°F (in. Hg)

$$P_v = \frac{e^{\left(\frac{18.3036 - \frac{3816.44}{\frac{5}{9}(T_s - 32) + 273.15 - 46.13}}{25.4} \right)}}{25.4}$$

Where:

T_s	= average sample gas temperature (°F)	=	300.75	°F
18.3036	= Antoine coefficient	=	18.3036	°K
3816.44	= Antoine coefficient	=	3816.44	°K
273.15	= temperature conversion factor	=	273.15	°K
46.13	= Antoine coefficient	=	46.13	°K
25.4	= conversion factor	=	25.4	mm Hg/in. Hg
5/9	= Fahrenheit to Celsius conversion factor	=	5/9	°C/°F
32	= temperature conversion (°F)	=	32	°F
P_v	= vapor pressure, actual (in. Hg)	=	29.14	in. Hg

5. Water vapor pressure at gas temperature greater than 212°F (in. Hg)

$$P_v = P_s$$

Where:

P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg
P_v	= water vapor pressure, actual (in. Hg)	=	29.14	in. Hg

6. Moisture measured in sample (% by volume)

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

Where:

V_{mstd}	= volume of gas sampled through the dry gas meter at standard conditions (dscf)	=	40.575	dscf
V_{wstd}	= volume of water collected at standard conditions (scf)	=	11.93	scf
B_{wo}	= proportion of water measured in the gas stream by volume	=	0.2272	
		=	22.72	%

7. Saturated moisture content (% by volume)

$$B_{ws} = \frac{P_v}{P_s}$$

Where:

P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg
P_v	= water vapor pressure, actual (in. Hg)	=	29.14	in. Hg
B_{ws}	= proportion of water vapor in the gas stream by volume at saturated conditions	=	1.0000	
		=	100.00	%

8. Actual water vapor in gas (% by volume)

$$B_w = \text{MINIMUM} [B_{wo}, B_{ws}]$$

Where:

B_{ws}	= proportion of water vapor in the gas stream by volume at saturated conditions	=	1.0000	
B_{wo}	= proportion of water measured in the gas stream by volume	=	0.2272	
B_w	= actual water vapor in gas	=	0.2272	
		=	22.72	%

9. Nitrogen (plus carbon monoxide) in gas stream (% by volume, dry)

$$N_2 + CO = 100 - CO_2 - O_2$$

Where:

CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.1	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.5	%
100	= conversion factor (%)	=	100	%
N_2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	80.48	%

10. Molecular weight of dry gas stream (lb/lb-mole)

$$M_d = (M_{CO_2}) \left(\frac{CO_2}{100} \right) + (M_{O_2}) \left(\frac{O_2}{100} \right) + (M_{N_2+CO}) \left(\frac{N_2 + CO}{100} \right)$$

Where:

M_{CO_2}	= molecular weight of carbon dioxide (lb/lb-mole)	=	44.00	lb/lb-mole
M_{O_2}	= molecular weight of oxygen (lb/lb-mole)	=	32.00	lb/lb-mole
M_{N_2+CO}	= molecular weight of nitrogen and carbon monoxide (lb/lb-mole)	=	28.00	lb/lb-mole
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.1	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.5	%
N_2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	80.5	%
100	= conversion factor (%)	=	100	%
M_d	= dry molecular weight of sample gas (lb/lb-mole)	=	29.99	lb/lb-mole

11. Molecular weight of sample gas (lb/lb-mole)

$$M_s = (M_d)(1 - B_w) + (M_{H_2O})(B_w)$$

Where:

B_w	= proportion of water vapor in the gas stream by volume	=	0.2272	
M_d	= dry molecular weight of sample gas (lb/lb-mole)	=	29.99	lb/lb-mole
M_{H_2O}	= molecular weight of water (lb/lb-mole)	=	18.00	lb/lb-mole
M_s	= molecular weight of sample gas, wet basis (lb/lb-mole)	=	27.26	lb/lb-mole

**USEPA Method 2 (Velocity & Flow Rate)
 Sampling, Velocity and Moisture Sample Calculations**

Sample data taken from Run 1

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. Sample gas pressure (in. Hg)

$$P_s = P_{bar} + \left(\frac{P_g}{13.6} \right)$$

Where:

P_{bar}	= barometric pressure (in. Hg)	=	29.95	in. Hg
P_g	= sample gas static pressure (in. H ₂ O)	=	-11.00	in. H ₂ O
13.6	= conversion factor (in. H ₂ O/in. Hg)	=	85.49	in. H ₂ O/in. Hg
P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg

2. Actual water vapor pressure at sample gas temperature less than 212°F (in. Hg)

$$P_v = \frac{e^{\left(\frac{18.3036 - \frac{3816.44}{\frac{5}{9}(T_s - 32) + 273.15 - 46.13}}{25.4} \right)}}{25.4}$$

Where:

T_s	= average sample gas temperature (°F)	=	299.60	°F
18.3036	= Antoine coefficient	=	18.3036	°K
3816.44	= Antoine coefficient	=	3816.44	°K
273.15	= temperature conversion factor	=	273.15	°K
46.13	= Antoine coefficient	=	46.13	°K
25.4	= conversion factor	=	25.4	mm Hg/in. Hg
5/9	= Fahrenheit to Celsius conversion factor	=	5/9	°C/°F
32	= temperature conversion (°F)	=	32	°F
P_v	= vapor pressure, actual (in. Hg)	=	29.14	in. Hg

3. Water vapor pressure at gas temperature greater than 212°F (in. Hg)

$$P_v = P_s$$

Where:

P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg
P_v	= water vapor pressure, actual (in. Hg)	=	29.14	in. Hg

4. Saturated moisture content (% by volume)

$$B_{ws} = \frac{P_v}{P_s}$$

Where:

P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg
P_v	= water vapor pressure, actual (in. Hg)	=	29.14	in. Hg
B_{ws}	= proportion of water vapor in the gas stream by volume at saturated conditions	=	1.0000	
		=	100.00	%

5. Actual water vapor in gas (% by volume)

$$B_w = \text{MINIMUM} [B_{wo}, B_{ws}]$$

Where:

B_{ws}	= proportion of water vapor in the gas stream by volume at saturated conditions	=	1.0000	
B_{wo}	= proportion of water measured in the gas stream by volume	=	0.2272	
B_w	= actual water vapor in gas	=	0.2272	
		=	22.72	%

6. Nitrogen (plus carbon monoxide) in gas stream (% by volume, dry)

$$N_2 + CO = 100 - CO_2 - O_2$$

Where:

CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.1	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.2	%
100	= conversion factor (%)	=	100	%
N_2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	80.71	%

7. Molecular weight of dry gas stream (lb/lb·mole)

$$M_d = (M_{CO_2}) \frac{(CO_2)}{(100)} + (M_{O_2}) \frac{(O_2)}{(100)} + (M_{N_2+CO}) \frac{(N_2 + CO)}{(100)}$$

Where:

M_{CO_2}	= molecular weight of carbon dioxide (lb/lb·mole)	=	44.00	lb/lb·mole
M_{O_2}	= molecular weight of oxygen (lb/lb·mole)	=	32.00	lb/lb·mole
M_{N_2+CO}	= molecular weight of nitrogen and carbon monoxide (lb/lb·mole)	=	29.99	lb/lb·mole
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.1	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.2	%
N_2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	80.7	%
100	= conversion factor (%)	=	100	%
M_d	= dry molecular weight of sample gas (lb/lb·mole)	=	29.99	lb/lb·mole

8. Molecular weight of sample gas (lb/lb·mole)

$$M_s = (M_d)(1 - B_w) + (M_{H_2O})(B_w)$$

Where:

B_w	= proportion of water vapor in the gas stream by volume	=	0.2272	
M_d	= dry molecular weight of sample gas (lb/lb·mole)	=	29.99	lb/lb·mole
M_{H_2O}	= molecular weight of water (lb/lb·mole)	=	28.00	lb/lb·mole
M_s	= molecular weight of sample gas, wet basis (lb/lb·mole)	=	27.26	lb/lb·mole

9. Velocity of sample gas (ft/sec)

$$V_s = (K_p)(C_p)(\sqrt{\Delta P}) \left(\frac{\sqrt{(T_s + 460)}}{(M_s)(P_s)} \right)$$

Where:

K_p	= velocity pressure constant	=	0.05	
C_p	= pitot tube coefficient	=	0.82	
M_s	= wet molecular weight of sample gas, wet basis (lb/lb-mole)	=	27.26	lb/lb-mole
P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg
T_s	= average sample gas temperature (°F)	=	299.60	°F
$\sqrt{\Delta P}$	= average square roots of velocity heads of sample gas (in. H ₂ O)	=	0.647	$\sqrt{\text{in. H}_2\text{O}}$
460	= °F to °R conversion constant	=	68	
V_s	= sample gas velocity (ft/sec)	=	44.21	ft/sec

10. Volumetric flow rate of sample gas at actual gas conditions (acfm)

$$Q_a = (60)(A_s)(V_s)$$

Where:

A_s	= cross sectional area of sampling location (ft ²)	=	64.00	ft ²
V_s	= sample gas velocity (ft/sec)	=	44.21	ft/sec
60	conversion factor (sec/min)	=	60	sec/min
Q_a	= volumetric flow rate at actual conditions (acfm)	=	2,653	acfm

11. Total flow of sample gas (scfm)

$$Q_s = (Q_a) \left(\frac{P_s}{29.92} \right) \left(\frac{68 + 460}{T_s + 460} \right)$$

Where:

Q_a	= volumetric flow rate at actual conditions (acfm)	=	2,653	acfm
P_s	= absolute sample gas pressure (in. Hg)	=	29.14	in. Hg
29.92	= standard pressure (in. Hg)	=	32.00	in. Hg
T_s	= average sample gas temperature (°F)	=	299.6	°F
68	= standard temperature (°F)	=	0.0945	°F
460	= °F to °R conversion constant	=	68	
Q_s	= volumetric flow rate at standard conditions, wet basis (scfm)	=	169,771	scfm

12. Dry flow of sample gas (dscfm)

$$Q_{std} = (Q_s)(1 - B_w)$$

Where:

B_w	= proportion of water vapor in the gas stream by volume	=	0.2272	
Q_s	= volumetric flow rate at standard conditions, wet basis (scfm)	=	169,771	scfm
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	114,936	dscfm

13. Dry flow of sample gas corrected to 7%O₂ (dscfm)

$$Q_{std7} = (Q_{std}) \left(\frac{20.9 - O_2}{20.9 - 7} \right)$$

Where:

Q _{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	= 114,936	dscfm
O ₂	= proportion of oxygen in the gas stream by volume (%)	= 9.2	%
20.9	= oxygen content of ambient air (%)	= 20.9	%
7	= oxygen content of corrected gas (%)	= 7.0	%
Q _{std7}	= volumetric flow rate at STP and 7%O ₂ , dry basis (dscfm)	= 88,822	dscfm

14. Hourly time basis conversion of volumetric flow rate (Q_{std} example)

$$Q_{std-hr} = (Q_{std-min}) (60)$$

Where

Q _{std-min}	= volumetric flow rate, english units (ft ³ /min)	= 114,936	dscfm
60	= conversion factor (min/hr)	= 60	min/hr
Q _{std-hr}	= volumetric flow rate, hourly basis (dscf/hr)	= 6,896,183	dscf/hr

15. Metric Conversion of Gas Volumes (Q_{std} example)

$$Q_{std-metric} = (Q_{std-english}) \left(\frac{60}{35.31} \right)$$

Where:

Q _{std-english}	= volumetric flow rate, english units (ft ³ /min)	= 114,936	dscfm
35.31	= conversion factor (ft ³ /m ³)	= 460.00	ft ³ /m ³
60	= conversion factor (min/hr)	= 60	min/hr
Q _{std-metric}	= volumetric flow rate, metric units (m ³ /hr)	= 195,304	dry std m ³ /hr

16. Standard to Normal Conversion of Gas Volumes (Q_{std} example)

$$Q_{Normal} = (Q_{std-metric}) \left(\frac{32 + 460}{68 + 460} \right)$$

Where:

Q _{std-metric}	= volumetric flow rate, metric units (dry std m ³ /hr)	= 195,304	dry std m ³ /hr
32	= normal temperature (°F)	= 35.31	°F
68	= standard temperature (°F)	= 0.0945	°F
460	= standard temperature in Rankine (68°F)	= 68	
Q _{Normal}	= volumetric flow rate, metric units (dry Nm ³ /hr)	= 181,988	dry Nm ³ /hr

WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

PARAMETERS

C

I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: KRO

Date: 5/11/2011



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Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2011)	Mar 28				
Start Time	8:27				
End Time	8:54				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.16	10.13	4.43	165.09	5.40
Concentration (ppmdv)		101296.98	4.43	165.09	5.40
Concentration (lb/dscf)		1.157E-02	7.372E-07	1.971E-05	3.922E-07
Concentration (lb/scf)		8.941E-03	5.697E-07	1.523E-05	3.031E-07
Concentration (lb/acf)		6.053E-03	3.857E-07	1.031E-05	2.052E-07
Concentration (%dv)	9.162	10.130	0.0004	0.017	0.0005
Concentration (mg/dscm)		185284.02	11.81	315.66	6.28
Concentration (mg/scm)		143185.64	9.12	243.94	4.85
Concentration (mg/acm)		96937.97	6.18	165.15	3.29
Concentration (mg/Nm3)		198841.39	12.67	338.76	6.74
Concentration @7%O2 (ppm)		119954.17	5.25	195.50	6.39
Concentration @12%CO2 (ppm)		120000.00	5.25	195.57	6.39
Concentration @7%O2 (lb/scf)		1.370E-02	8.730E-07	2.334E-05	4.645E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	8.733E-07	2.335E-05	4.646E-07
Concentration @7%O2 (%v)		11.995	0.001	0.020	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.020	0.001
Concentration @7%O2 (mg/scm)		219410.20	13.98	373.80	7.44
Concentration @12%CO2 (mg/scm)		219494.04	13.98	373.95	7.44
Concentration @7%O2 (mg/Nm3)		235464.61	15.00	401.16	7.98
Concentration @12%CO2 (mg/Nm3)		235554.58	15.01	401.31	7.99
Mass Rate (lb/hr)		61662.21	3.93	105.05	2.09

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1**

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2011)	Mar 28				
Start Time	9:12				
End Time	9:39				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.83	10.38	3.22	168.64	4.70
Concentration (ppmdv)		103792.32	3.22	168.64	4.70
Concentration (lb/dscf)		1.186E-02	5.348E-07	2.014E-05	3.415E-07
Concentration (lb/scf)		9.220E-03	4.159E-07	1.566E-05	2.656E-07
Concentration (lb/acf)		6.220E-03	2.806E-07	1.056E-05	1.792E-07
Concentration (%dv)	8.833	10.379	0.0003	0.017	0.0005
Concentration (mg/dscm)		189848.29	8.56	322.44	5.47
Concentration (mg/scm)		147637.51	6.66	250.75	4.25
Concentration (mg/acm)		99597.84	4.49	169.16	2.87
Concentration (mg/Nm3)		203739.63	9.19	346.04	5.87
Concentration @7%O2 (ppm)		119560.02	3.71	194.26	5.41
Concentration @12%CO2 (ppm)		120000.00	3.72	194.97	5.43
Concentration @7%O2 (lb/scf)		1.366E-02	6.161E-07	2.319E-05	3.934E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	6.183E-07	2.328E-05	3.949E-07
Concentration @7%O2 (%v)		11.956	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.019	0.001
Concentration @7%O2 (mg/scm)		218689.26	9.87	371.43	6.30
Concentration @12%CO2 (mg/scm)		219494.04	9.90	372.79	6.32
Concentration @7%O2 (mg/Nm3)		234690.91	10.59	398.61	6.76
Concentration @12%CO2 (mg/Nm3)		235554.58	10.63	400.07	6.79
Mass Rate (lb/hr)		61887.68	2.79	105.11	1.78

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2011)	Mar 28				
Start Time	9:52				
End Time	10:19				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	10.63	8.93	2.91	139.30	9.98
Concentration (ppmdv)		89313.22	2.91	139.30	9.98
Concentration (lb/dscf)		1.020E-02	4.835E-07	1.663E-05	7.255E-07
Concentration (lb/scf)		7.933E-03	3.760E-07	1.293E-05	5.642E-07
Concentration (lb/acf)		5.353E-03	2.537E-07	8.728E-06	3.807E-07
Concentration (%dv)	10.628	8.931	0.0003	0.014	0.0010
Concentration (mg/dscm)		163364.33	7.74	266.35	11.62
Concentration (mg/scm)		127041.98	6.02	207.13	9.03
Concentration (mg/acm)		85726.45	4.06	139.77	6.10
Concentration (mg/Nm3)		175317.82	8.31	285.84	12.47
Concentration @7%O2 (ppm)		120855.67	3.94	188.49	13.50
Concentration @12%CO2 (ppm)		120000.00	3.91	187.16	13.41
Concentration @7%O2 (lb/scf)		1.380E-02	6.543E-07	2.251E-05	9.817E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	6.497E-07	2.235E-05	9.748E-07
Concentration @7%O2 (%v)		12.086	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.019	0.001
Concentration @7%O2 (mg/scm)		221059.15	10.48	360.41	15.72
Concentration @12%CO2 (mg/scm)		219494.04	10.40	357.86	15.61
Concentration @7%O2 (mg/Nm3)		237234.21	11.24	386.78	16.87
Concentration @12%CO2 (mg/Nm3)		235554.58	11.17	384.05	16.75
Mass Rate (lb/hr)		55680.70	2.64	90.78	3.96

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1**

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2011)	Mar 28				
Start Time	10:35				
End Time	11:02				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.92	10.26	1.17	165.83	5.73
Concentration (ppmdv)		102569.54	1.17	165.83	5.73
Concentration (lb/dscf)		1.172E-02	1.938E-07	1.980E-05	4.168E-07
Concentration (lb/scf)		8.977E-03	1.485E-07	1.517E-05	3.193E-07
Concentration (lb/acf)		6.078E-03	1.006E-07	1.027E-05	2.162E-07
Concentration (%dv)	8.917	10.257	0.0001	0.017	0.0006
Concentration (mg/dscm)		187611.69	3.10	317.07	6.67
Concentration (mg/scm)		143756.25	2.38	242.95	5.11
Concentration (mg/acm)		97326.41	1.61	164.49	3.46
Concentration (mg/Nm3)		201339.38	3.33	340.27	7.16
Concentration @7%O2 (ppm)		118975.20	1.35	192.35	6.65
Concentration @12%CO2 (ppm)		120000.00	1.36	194.01	6.71
Concentration @7%O2 (lb/scf)		1.359E-02	2.248E-07	2.297E-05	4.834E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.268E-07	2.316E-05	4.876E-07
Concentration @7%O2 (%v)		11.898	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.019	0.001
Concentration @7%O2 (mg/scm)		217619.56	3.60	367.79	7.74
Concentration @12%CO2 (mg/scm)		219494.04	3.63	370.95	7.81
Concentration @7%O2 (mg/Nm3)		233542.95	3.86	394.70	8.31
Concentration @12%CO2 (mg/Nm3)		235554.58	3.90	398.10	8.38
Mass Rate (lb/hr)		62037.70	1.03	104.85	2.21

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2011)	Mar 28				
Start Time	11:14				
End Time	11:41				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.70	10.46	0.13	170.80	6.39
Concentration (ppmdv)		104556.18	0.13	170.80	6.39
Concentration (lb/dscf)		1.194E-02	2.118E-08	2.039E-05	4.646E-07
Concentration (lb/scf)		9.151E-03	1.623E-08	1.563E-05	3.560E-07
Concentration (lb/acf)		6.202E-03	1.100E-08	1.059E-05	2.413E-07
Concentration (%dv)	8.701	10.456	0.0000	0.017	0.0006
Concentration (mg/dscm)		191245.49	0.34	326.59	7.44
Concentration (mg/scm)		146540.62	0.26	250.24	5.70
Concentration (mg/acm)		99316.15	0.18	169.60	3.86
Concentration (mg/Nm3)		205239.06	0.36	350.48	7.99
Concentration @7%O2 (ppm)		119135.99	0.15	194.62	7.28
Concentration @12%CO2 (ppm)		120000.00	0.15	196.03	7.34
Concentration @7%O2 (lb/scf)		1.361E-02	2.413E-08	2.324E-05	5.294E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.431E-08	2.341E-05	5.333E-07
Concentration @7%O2 (%v)		11.914	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.020	0.001
Concentration @7%O2 (mg/scm)		217913.67	0.39	372.13	8.48
Concentration @12%CO2 (mg/scm)		219494.04	0.39	374.82	8.54
Concentration @7%O2 (mg/Nm3)		233858.57	0.41	399.35	9.10
Concentration @12%CO2 (mg/Nm3)		235554.58	0.42	402.25	9.16
Mass Rate (lb/hr)		60878.44	0.11	103.96	2.37

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2011)	Mar 28				
Start Time	12:03				
End Time	12:30				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.50	9.73	1.22	159.25	8.10
Concentration (ppmdv)		97251.92	1.22	159.25	8.10
Concentration (lb/dscf)		1.111E-02	2.036E-07	1.901E-05	5.892E-07
Concentration (lb/scf)		8.575E-03	1.572E-07	1.468E-05	4.548E-07
Concentration (lb/acf)		5.795E-03	1.062E-07	9.919E-06	3.073E-07
Concentration (%dv)	9.497	9.725	0.0001	0.016	0.0008
Concentration (mg/dscm)		177885.15	3.26	304.50	9.43
Concentration (mg/scm)		137309.71	2.52	235.04	7.28
Concentration (mg/acm)		92791.82	1.70	158.84	4.92
Concentration (mg/Nm3)		190901.13	3.50	326.78	10.12
Concentration @7%O2 (ppm)		118542.89	1.49	194.12	9.88
Concentration @12%CO2 (ppm)		120000.00	1.51	196.50	10.00
Concentration @7%O2 (lb/scf)		1.354E-02	2.482E-07	2.318E-05	7.181E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.512E-07	2.346E-05	7.270E-07
Concentration @7%O2 (%v)		11.854	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.020	0.001
Concentration @7%O2 (mg/scm)		216828.82	3.97	371.16	11.50
Concentration @12%CO2 (mg/scm)		219494.04	4.02	375.72	11.64
Concentration @7%O2 (mg/Nm3)		232694.34	4.26	398.32	12.34
Concentration @12%CO2 (mg/Nm3)		235554.58	4.32	403.21	12.49
Mass Rate (lb/hr)		60554.04	1.11	103.65	3.21

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2011)	Mar 28				
Start Time	12:41				
End Time	13:08				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.47	9.87	1.21	159.53	12.06
Concentration (ppmdv)		98667.71	1.21	159.53	12.06
Concentration (lb/dscf)		1.127E-02	2.010E-07	1.905E-05	8.771E-07
Concentration (lb/scf)		8.699E-03	1.552E-07	1.470E-05	6.770E-07
Concentration (lb/acf)		5.878E-03	1.048E-07	9.935E-06	4.575E-07
Concentration (%dv)	9.472	9.867	0.0001	0.016	0.0012
Concentration (mg/dscm)		180474.78	3.22	305.03	14.05
Concentration (mg/scm)		139308.65	2.48	235.45	10.84
Concentration (mg/acm)		94132.77	1.68	159.10	7.33
Concentration (mg/Nm3)		193680.26	3.45	327.35	15.07
Concentration @7%O2 (ppm)		120011.79	1.47	194.04	14.67
Concentration @12%CO2 (ppm)		120000.00	1.47	194.02	14.67
Concentration @7%O2 (lb/scf)		1.371E-02	2.445E-07	2.317E-05	1.067E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	2.445E-07	2.317E-05	1.067E-06
Concentration @7%O2 (%v)		12.001	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.019	0.001
Concentration @7%O2 (mg/scm)		219515.60	3.92	371.01	17.08
Concentration @12%CO2 (mg/scm)		219494.04	3.92	370.97	17.08
Concentration @7%O2 (mg/Nm3)		235577.72	4.20	398.16	18.33
Concentration @12%CO2 (mg/Nm3)		235554.58	4.20	398.12	18.33
Mass Rate (lb/hr)		61237.46	1.09	103.50	4.77

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1**

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2011)	Mar 28				
Start Time	13:32				
End Time	13:59				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.58	9.78	2.11	159.18	16.33
Concentration (ppmdv)		97830.11	2.11	159.18	16.33
Concentration (lb/dscf)		1.117E-02	3.500E-07	1.901E-05	1.187E-06
Concentration (lb/scf)		8.610E-03	2.697E-07	1.465E-05	9.145E-07
Concentration (lb/acf)		5.806E-03	1.819E-07	9.876E-06	6.167E-07
Concentration (%dv)	9.578	9.783	0.0002	0.016	0.0016
Concentration (mg/dscm)		178942.71	5.60	304.37	19.01
Concentration (mg/scm)		137879.23	4.32	234.52	14.64
Concentration (mg/acm)		92981.04	2.91	158.15	9.88
Concentration (mg/Nm3)		192036.08	6.01	326.64	20.40
Concentration @7%O2 (ppm)		120100.97	2.58	195.42	20.04
Concentration @12%CO2 (ppm)		120000.00	2.58	195.26	20.03
Concentration @7%O2 (lb/scf)		1.372E-02	4.297E-07	2.333E-05	1.457E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	4.293E-07	2.331E-05	1.456E-06
Concentration @7%O2 (%v)		12.010	0.000	0.020	0.002
Concentration @12%CO2 (%v)		12.000	0.000	0.020	0.002
Concentration @7%O2 (mg/scm)		219678.73	6.88	373.65	23.33
Concentration @12%CO2 (mg/scm)		219494.04	6.87	373.34	23.31
Concentration @7%O2 (mg/Nm3)		235752.78	7.38	400.99	25.04
Concentration @12%CO2 (mg/Nm3)		235554.58	7.38	400.66	25.02
Mass Rate (lb/hr)		61284.46	1.92	104.24	6.51

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1**

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2011)	Mar 28				
Start Time	14:10				
End Time	14:37				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.87	9.53	3.96	152.79	15.87
Concentration (ppmdv)		95333.77	3.96	152.79	15.87
Concentration (lb/dscf)		1.089E-02	6.579E-07	1.824E-05	1.153E-06
Concentration (lb/scf)		8.390E-03	5.069E-07	1.406E-05	8.888E-07
Concentration (lb/acf)		5.655E-03	3.416E-07	9.474E-06	5.990E-07
Concentration (%dv)	9.868	9.533	0.0004	0.015	0.0016
Concentration (mg/dscm)		174376.61	10.53	292.13	18.47
Concentration (mg/scm)		134360.95	8.12	225.10	14.23
Concentration (mg/acm)		90556.15	5.47	151.71	9.59
Concentration (mg/Nm3)		187135.87	11.31	313.51	19.82
Concentration @7%O2 (ppm)		120122.98	4.99	192.51	19.99
Concentration @12%CO2 (ppm)		120000.00	4.98	192.32	19.97
Concentration @7%O2 (lb/scf)		1.372E-02	8.289E-07	2.299E-05	1.453E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	8.281E-07	2.296E-05	1.452E-06
Concentration @7%O2 (%v)		12.012	0.000	0.019	0.002
Concentration @12%CO2 (%v)		12.000	0.000	0.019	0.002
Concentration @7%O2 (mg/scm)		219718.98	13.27	368.10	23.27
Concentration @12%CO2 (mg/scm)		219494.04	13.26	367.72	23.25
Concentration @7%O2 (mg/Nm3)		235795.98	14.25	395.03	24.98
Concentration @12%CO2 (mg/Nm3)		235554.58	14.23	394.63	24.95
Mass Rate (lb/hr)		58712.62	3.55	98.36	6.22

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2011)	Mar 28				
Start Time	15:02				
End Time	15:29				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.37	9.91	2.23	162.99	16.60
Concentration (ppmdv)		99070.52	2.23	162.99	16.60
Concentration (lb/dscf)		1.132E-02	3.706E-07	1.946E-05	1.207E-06
Concentration (lb/scf)		8.726E-03	2.858E-07	1.501E-05	9.307E-07
Concentration (lb/acf)		5.868E-03	1.922E-07	1.009E-05	6.259E-07
Concentration (%dv)	9.369	9.907	0.0002	0.016	0.0017
Concentration (mg/dscm)		181211.58	5.94	311.65	19.33
Concentration (mg/scm)		139736.10	4.58	240.32	14.90
Concentration (mg/acm)		93964.30	3.08	161.60	10.02
Concentration (mg/Nm3)		194470.96	6.37	334.46	20.74
Concentration @7%O2 (ppm)		119420.79	2.69	196.47	20.01
Concentration @12%CO2 (ppm)		120000.00	2.70	197.43	20.11
Concentration @7%O2 (lb/scf)		1.364E-02	4.468E-07	2.346E-05	1.455E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	4.489E-07	2.357E-05	1.462E-06
Concentration @7%O2 (%v)		11.942	0.000	0.020	0.002
Concentration @12%CO2 (%v)		12.000	0.000	0.020	0.002
Concentration @7%O2 (mg/scm)		218434.60	7.15	375.67	23.30
Concentration @12%CO2 (mg/scm)		219494.04	7.19	377.49	23.41
Concentration @7%O2 (mg/Nm3)		234417.62	7.68	403.16	25.00
Concentration @12%CO2 (mg/Nm3)		235554.58	7.72	405.11	25.12
Mass Rate (lb/hr)		65753.57	2.15	113.08	7.01

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 1 FF Outlet

**USEPA Method 2 (Velocity & Flow Rate)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	4
Date (2011)	Mar 28	Mar 28	Mar 28	Mar 28
Start Time (approx.)	08:34	09:16	09:56	10:38
Stop Time (approx.)	08:42	09:23	10:01	10:50
Sampling Conditions				
C _p Pitot tube coefficient	0.8170	0.8170	0.8170	0.8170
P _g Static pressure (in. H ₂ O)	-11.0000	-12.3000	-12.3000	-11.2000
A _s Sample location area (ft ²)	64.0000	64.0000	64.0000	64.0000
P _{bar} Barometric pressure (in. Hg)	29.95	29.95	29.95	29.95
O ₂ Oxygen (dry volume %)	9.1619	8.8331	10.6278	8.9167
CO ₂ Carbon dioxide (dry volume %)	10.1297	10.3792	8.9313	10.2570
N ₂ +CO Nitrogen plus carbon monoxide (dry volume %)	80.7084	80.7876	80.4409	80.8264
T _s Sample temperature (°F)	299.6000	299.8000	299.6000	299.2000
Flow Results				
P _s Sample gas pressure, absolute (in. Hg)	29.1412	29.0456	29.0456	29.1265
P _v Vapor pressure, actual (in. Hg)	29.1412	29.0456	29.0456	29.1265
B _{wo} Moisture measured in sample (% by volume)	22.7210	22.2340	22.2340	23.3756
B _{ws} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w Actual water vapor in gas (% by volume)	22.7210	22.2340	22.2340	23.3756
√ΔP Velocity head (√in. H ₂ O)	0.6474	0.6322	0.6594	0.6479
M _d MW of sample gas, dry (lb/lb-mole)	29.9872	30.0140	29.8541	29.9978
M _s MW of sample gas, wet (lb/lb-mole)	27.2636	27.3428	27.2185	27.1932
V _s Velocity of sample (ft/sec)	44.2112	43.1878	45.1436	44.3028
V _s Velocity of sample (ft/min)	2652.6693	2591.2671	2708.6181	2658.1707
Q _a Volumetric flow rate, actual (acfm)	169,771	165,841	173,352	170,123
Q _s Volumetric flow rate, standard (scfm)	114,936	111,878	116,976	115,177
Q _{std} Volumetric flow rate, dry standard (dscfm)	88,822	87,003	90,967	88,254
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dscfm)	75,007	75,529	67,226	76,084
Q _a Volumetric flow rate, actual (acf/hr)	10,186,250	9,950,465	10,401,093	10,207,375
Q _s Volumetric flow rate, standard (scf/hr)	6,896,183	6,712,690	7,018,536	6,910,637
Q _{std} Volumetric flow rate, dry standard (dscf/hr)	5,329,301	5,220,194	5,458,038	5,295,231
Q _a Volumetric flow rate, actual (m ³ /hr)	288,481	281,803	294,565	289,079
Q _s Volumetric flow rate, standard (m ³ /hr)	195,304	190,107	198,769	195,713
Q _{std} Volumetric flow rate, dry standard (dry m ³ /hr)	150,929	147,839	154,575	149,964
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	127,454	128,342	114,232	129,285
Q _s Volumetric flow rate, normal (Nm ³ /hr)	181,988	177,145	185,217	182,369
Q _{std} Volumetric flow rate, dry normal (Nm ³ /hr)	140,638	137,759	144,036	139,739
Q _{std7} Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	118,764	119,591	106,443	120,470

Comments:

Average includes 4 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 1 FF Outlet

USEPA Method 2 (Velocity & Flow Rate) Sampling, Velocity and Moisture Parameters

Run No.		5	6	7
Date (2011)		Mar 28	Mar 28	Mar 28
Start Time (approx.)		11:18	12:07	12:44
Stop Time (approx.)		11:32	12:15	12:54
Sampling Conditions				
C _p	Pitot tube coefficient	0.8170	0.8170	0.8170
P _g	Static pressure (in. H ₂ O)	-11.2000	-11.3000	-11.3000
A _s	Sample location area (ft ²)	64.0000	64.0000	64.0000
P _{bar}	Barometric pressure (in. Hg)	29.95	29.95	29.95
O ₂	Oxygen (dry volume %)	8.7011	9.4965	9.4721
CO ₂	Carbon dioxide (dry volume %)	10.4556	9.7252	9.8668
N ₂ +CO	Nitrogen plus carbon monoxide (dry volume %)	80.8433	80.7783	80.6611
T _s	Sample temperature (°F)	298.4000	300.4000	300.4800
Flow Results				
P _s	Sample gas pressure, absolute (in. Hg)	29.1265	29.1191	29.1191
P _v	Vapor pressure, actual (in. Hg)	29.1265	29.1191	29.1191
B _{wo}	Moisture measured in sample (% by volume)	23.3756	22.8099	22.8099
B _{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B _w	Actual water vapor in gas (% by volume)	23.3756	22.8099	22.8099
√ΔP	Velocity head (√in. H ₂ O)	0.6236	0.6629	0.6610
M _d	MW of sample gas, dry (lb/lb-mole)	30.0209	29.9359	29.9576
M _s	MW of sample gas, wet (lb/lb-mole)	27.2110	27.2133	27.2301
V _s	Velocity of sample (ft/sec)	42.6040	45.3566	45.2150
V _s	Velocity of sample (ft/min)	2556.2394	2721.3936	2712.9029
Q _a	Volumetric flow rate, actual (acfm)	163,599	174,169	173,626
Q _s	Volumetric flow rate, standard (scfm)	110,877	117,701	117,321
Q _{std}	Volumetric flow rate, dry standard (dscfm)	84,959	90,853	90,560
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dscfm)	74,562	74,536	74,454
Q _a	Volumetric flow rate, actual (acf/hr)	9,815,959	10,450,152	10,417,547
Q _s	Volumetric flow rate, standard (scf/hr)	6,652,649	7,062,054	7,039,280
Q _{std}	Volumetric flow rate, dry standard (dscf/hr)	5,097,549	5,451,206	5,433,626
Q _a	Volumetric flow rate, actual (m ³ /hr)	277,994	295,954	295,031
Q _s	Volumetric flow rate, standard (m ³ /hr)	188,407	200,002	199,357
Q _{std}	Volumetric flow rate, dry standard (dry m ³ /hr)	144,366	154,381	153,883
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	126,698	126,654	126,515
Q _s	Volumetric flow rate, normal (Nm ³ /hr)	175,561	186,365	185,764
Q _{std}	Volumetric flow rate, dry normal (Nm ³ /hr)	134,522	143,855	143,391
Q _{std7}	Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	118,060	118,018	117,889

Comments:

Average includes 3 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 1 FF Outlet

USEPA Method 2 (Velocity & Flow Rate) Sampling, Velocity and Moisture Parameters

Run No.	8	9	10
Date (2011)	Mar 28	Mar 28	Mar 28
Start Time (approx.)	13:41	14:08	15:08
Stop Time (approx.)	13:47	14:16	15:13
Sampling Conditions			
C _p Pitot tube coefficient	0.8170	0.8170	0.8170
P _g Static pressure (in. H ₂ O)	-11.3000	-11.3000	-11.0000
A _s Sample location area (ft ²)	64.0000	64.0000	64.0000
P _{bar} Barometric pressure (in. Hg)	29.95	29.95	29.95
O ₂ Oxygen (dry volume %)	9.5775	9.8685	9.3687
CO ₂ Carbon dioxide (dry volume %)	9.7830	9.5334	9.9071
N ₂ +CO Nitrogen plus carbon monoxide (dry volume %)	80.6394	80.5981	80.7243
T _s Sample temperature (°F)	302.0000	302.4400	304.7600
Flow Results			
P _s Sample gas pressure, absolute (in. Hg)	29.1191	29.1191	29.1412
P _v Vapor pressure, actual (in. Hg)	29.1191	29.1191	29.1412
B _{wo} Moisture measured in sample (% by volume)	22.9478	22.9478	22.8879
B _{ws} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B _w Actual water vapor in gas (% by volume)	22.9478	22.9478	22.8879
√ΔP Velocity head (√in. H ₂ O)	0.6688	0.6574	0.7092
M _d MW of sample gas, dry (lb/lb-mole)	29.9484	29.9201	29.9599
M _s MW of sample gas, wet (lb/lb-mole)	27.2065	27.1847	27.2225
V _s Velocity of sample (ft/sec)	45.8102	45.0630	48.6366
V _s Velocity of sample (ft/min)	2748.6146	2703.7806	2918.1953
Q _a Volumetric flow rate, actual (acfm)	175,911	173,042	186,764
Q _s Volumetric flow rate, standard (scfm)	118,629	116,626	125,588
Q _{std} Volumetric flow rate, dry standard (dscfm)	91,406	89,863	96,844
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dscfm)	74,456	71,318	80,341
Q _a Volumetric flow rate, actual (acf/hr)	10,554,680	10,382,518	11,205,870
Q _s Volumetric flow rate, standard (scf/hr)	7,117,716	6,997,575	7,535,288
Q _{std} Volumetric flow rate, dry standard (dscf/hr)	5,484,354	5,391,783	5,810,620
Q _a Volumetric flow rate, actual (m ³ /hr)	298,915	294,039	317,357
Q _s Volumetric flow rate, standard (m ³ /hr)	201,578	198,175	213,404
Q _{std} Volumetric flow rate, dry standard (dry m ³ /hr)	155,320	152,698	164,560
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	126,518	121,187	136,518
Q _s Volumetric flow rate, normal (Nm ³ /hr)	187,834	184,663	198,854
Q _{std} Volumetric flow rate, dry normal (Nm ³ /hr)	144,730	142,287	153,340
Q _{std7} Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	117,892	112,924	127,210

Comments:

Average includes 3 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 1 FF Outlet

**USEPA Modified Method 26A (HCl)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	Average
Date (2011)	Mar 28	Mar 28	Mar 28	
Start Time (approx.)	07:48	09:11	10:35	
Stop Time (approx.)	08:48	10:11	11:35	
Sampling Conditions				
Y _d Dry gas meter correction factor	0.9961	0.9961	0.9961	
P _g Static pressure (in. H ₂ O)	-11.0000	-12.3000	-11.2000	
A _s Sample location area (ft ²)	64.0000	64.0000	64.0000	
P _{bar} Barometric pressure (in. Hg)	29.95	29.95	29.95	29.9500
O ₂ Oxygen (dry volume %)	9.4700	9.7700	8.8200	9.3533
CO ₂ Carbon dioxide (dry volume %)	10.0500	9.7600	10.5700	10.1267
N ₂ +CO Nitrogen plus carbon monoxide (dry volume %)	80.4800	80.4700	80.6100	80.5200
V _{lc} Total Liquid collected (ml)	253.50	245.20	260.50	
V _m Volume metered, meter conditions (ft ³)	41.8600	41.8250	41.2700	
T _m Dry gas meter temperature (°F)	84.9167	87.3750	82.4583	
T _s Sample temperature (°F)	300.7500	303.8333	301.5000	302.0278
ΔH Meter box orifice pressure drop (in. H ₂ O)	1.5000	1.5000	1.5000	
θ Total sampling time (min)	60.0	60.0	60.0	
Flow Results				
V _{wstd} Volume of water collected (ft ³)	11.9297	11.5391	12.2591	11.9093
V _{mstd} Volume metered, standard (dscf)	40.5755	40.3595	40.1849	40.3733
P _s Sample gas pressure, absolute (in. Hg)	29.1412	29.0456	29.1265	29.1044
P _v Vapor pressure, actual (in. Hg)	29.1412	29.0456	29.1265	29.1044
B _{wo} Moisture measured in sample (% by volume)	22.7210	22.2340	23.3756	22.7769
B _{ws} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w Actual water vapor in gas (% by volume)	22.7210	22.2340	23.3756	22.7769
M _d MW of sample gas, dry (lb/lb-mole)	29.9868	29.9524	30.0440	29.9944
M _s MW of sample gas, wet (lb/lb-mole)	27.2633	27.2949	27.2286	27.2623

Comments:

Average includes 3 runs.

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Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 1 FF Outlet

**USEPA Method 13B (Total Fluorides)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	Average
Date (2011)	Mar 28	Mar 28	Mar 28	
Start Time (approx.)	12:03	13:33	15:02	
Stop Time (approx.)	13:12	14:44	16:11	
Sampling Conditions				
Y _d Dry gas meter correction factor	0.9837	0.9837	0.9837	
C _p Pitot tube coefficient	0.8120	0.8120	0.8120	
P _g Static pressure (in. H ₂ O)	-11.3000	-11.3000	-11.3000	
A _s Sample location area (ft ²)	64.0000	64.0000	64.0000	
P _{bar} Barometric pressure (in. Hg)	29.95	29.95	29.95	29.9500
D _n Nozzle diameter (in.)	0.2740	0.2740	0.2740	
O ₂ Oxygen (dry volume %)	9.6100	9.5400	9.2900	9.4800
CO ₂ Carbon dioxide (dry volume %)	10.0400	10.0800	10.3300	10.1500
N ₂ +CO Nitrogen plus carbon monoxide (dry volume %)	80.3500	80.3800	80.3800	80.3700
V _{lc} Total Liquid collected (ml)	238.40	239.60	233.10	
V _m Volume metered, meter conditions (ft ³)	39.4900	39.9750	39.0400	
T _m Dry gas meter temperature (°F)	82.2200	90.4200	90.5800	
T _s Sample temperature (°F)	297.0400	299.6400	300.3600	299.0133
ΔH Meter box orifice pressure drop (in. H ₂ O)	1.2460	1.2488	1.1872	
θ Total sampling time (min)	62.5	62.5	62.5	
Flow Results				
V _{wstd} Volume of water collected (ft ³)	11.2191	11.2756	10.9697	11.1548
V _{mstd} Volume metered, standard (dscf)	37.9661	37.8601	36.9583	37.5948
P _s Sample gas pressure, absolute (in. Hg)	29.1191	29.1191	29.1191	29.1191
P _v Vapor pressure, actual (in. Hg)	29.1191	29.1191	29.1191	29.1191
B _{wo} Moisture measured in sample (% by volume)	22.8099	22.9478	22.8879	22.8819
B _{wrs} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w Actual water vapor in gas (% by volume)	22.8099	22.9478	22.8879	22.8819
√ΔP Velocity head (√in. H ₂ O)	0.6822	0.6806	0.6664	0.6764
M _d MW of sample gas, dry (lb/lb-mole)	29.9908	29.9944	30.0244	30.0032
M _s MW of sample gas, wet (lb/lb-mole)	27.2557	27.2419	27.2723	27.2566
V _s Velocity of sample (ft/sec)	46.2535	46.2363	45.2634	45.9177
%I Isokinetic sampling (%)	102.0832	102.3685	102.0954	102.1823
Q _a Volumetric flow rate, actual (acfm)	177,613	177,548	173,811	176,324
Q _s Volumetric flow rate, standard (scfm)	120,561	120,104	117,465	119,377
Q _{std} Volumetric flow rate, dry standard (dscfm)	93,061	92,543	90,580	92,061
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dscfm)	75,587	75,632	75,657	75,625
Q _a Volumetric flow rate, actual (acf/hr)	10,656,802	10,652,853	10,428,685	10,579,447
Q _s Volumetric flow rate, standard (scf/hr)	7,233,669	7,206,239	7,047,918	7,162,608
Q _{std} Volumetric flow rate, dry standard (dscf/hr)	5,583,676	5,552,563	5,434,799	5,523,679
Q _a Volumetric flow rate, actual (m ³ /hr)	301,807	301,695	295,346	299,616
Q _s Volumetric flow rate, standard (m ³ /hr)	204,862	204,085	199,601	202,849
Q _{std} Volumetric flow rate, dry standard (dry m ³ /hr)	158,133	157,252	153,917	156,434
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	128,440	128,517	128,559	128,505
Q _s Volumetric flow rate, normal (Nm ³ /hr)	190,894	190,170	185,992	189,019
Q _{std} Volumetric flow rate, dry normal (Nm ³ /hr)	147,351	146,530	143,422	145,768
Q _{std7} Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	119,683	119,754	119,794	119,744

Comments:

Average includes 3 runs.

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**Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2011)	Mar 29				
Start Time	9:36				
End Time	10:03				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.84	9.60	0.87	141.52	11.30
Concentration (ppmdv)		96023.41	0.87	141.52	11.30
Concentration (lb/dscf)		1.097E-02	1.451E-07	1.690E-05	8.213E-07
Concentration (lb/scf)		8.503E-03	1.125E-07	1.310E-05	6.367E-07
Concentration (lb/acf)		5.776E-03	7.643E-08	8.899E-06	4.325E-07
Concentration (%dv)	9.839	9.602	0.0001	0.014	0.0011
Concentration (mg/dscm)		175638.06	2.32	270.60	13.15
Concentration (mg/scm)		136156.72	1.80	209.77	10.20
Concentration (mg/acm)		92493.84	1.22	142.50	6.93
Concentration (mg/Nm3)		188489.62	2.49	290.40	14.11
Concentration @7%O2 (ppm)		120674.15	1.10	177.85	14.20
Concentration @12%CO2 (ppm)		120000.00	1.09	176.86	14.12
Concentration @7%O2 (lb/scf)		1.378E-02	1.824E-07	2.124E-05	1.032E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	1.814E-07	2.112E-05	1.026E-06
Concentration @7%O2 (%v)		12.067	0.000	0.018	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.018	0.001
Concentration @7%O2 (mg/scm)		220727.14	2.92	340.07	16.53
Concentration @12%CO2 (mg/scm)		219494.04	2.90	338.17	16.44
Concentration @7%O2 (mg/Nm3)		236877.90	3.13	364.95	17.74
Concentration @12%CO2 (mg/Nm3)		235554.58	3.12	362.91	17.64
Mass Rate (lb/hr)		59207.96	0.78	91.22	4.43

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2011)	Mar 29				
Start Time	10:18				
End Time	10:45				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.85	10.38	6.97	157.11	10.18
Concentration (ppmdv)		103841.36	6.97	157.11	10.18
Concentration (lb/dscf)		1.186E-02	1.159E-06	1.876E-05	7.404E-07
Concentration (lb/scf)		9.195E-03	8.985E-07	1.454E-05	5.739E-07
Concentration (lb/acf)		6.247E-03	6.104E-07	9.880E-06	3.900E-07
Concentration (%dv)	8.847	10.384	0.0007	0.016	0.0010
Concentration (mg/dscm)		189937.99	18.56	300.40	11.86
Concentration (mg/scm)		147242.20	14.39	232.87	9.19
Concentration (mg/acm)		100040.23	9.78	158.22	6.24
Concentration (mg/Nm3)		203835.89	19.92	322.38	12.72
Concentration @7%O2 (ppm)		119754.75	8.04	181.18	11.74
Concentration @12%CO2 (ppm)		120000.00	8.06	181.56	11.77
Concentration @7%O2 (lb/scf)		1.368E-02	1.337E-06	2.163E-05	8.538E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	1.339E-06	2.168E-05	8.556E-07
Concentration @7%O2 (%v)		11.975	0.001	0.018	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.018	0.001
Concentration @7%O2 (mg/scm)		219045.44	21.40	346.43	13.67
Concentration @12%CO2 (mg/scm)		219494.04	21.45	347.14	13.70
Concentration @7%O2 (mg/Nm3)		235073.16	22.97	371.78	14.67
Concentration @12%CO2 (mg/Nm3)		235554.58	23.02	372.54	14.70
Mass Rate (lb/hr)		60258.27	5.89	95.30	3.76

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2011)	Mar 29				
Start Time	10:55				
End Time	11:22				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.37	9.99	7.87	156.98	12.33
Concentration (ppmdv)		99933.48	7.87	156.98	12.33
Concentration (lb/dscf)		1.141E-02	1.309E-06	1.874E-05	8.965E-07
Concentration (lb/scf)		8.897E-03	1.020E-06	1.461E-05	6.988E-07
Concentration (lb/acf)		6.058E-03	6.946E-07	9.948E-06	4.758E-07
Concentration (%dv)	9.371	9.993	0.0008	0.016	0.0012
Concentration (mg/dscm)		182790.02	20.96	300.16	14.36
Concentration (mg/scm)		142466.36	16.33	233.95	11.19
Concentration (mg/acm)		97014.34	11.12	159.31	7.62
Concentration (mg/Nm3)		196164.90	22.49	322.12	15.41
Concentration @7%O2 (ppm)		120485.83	9.49	189.27	14.87
Concentration @12%CO2 (ppm)		120000.00	9.45	188.51	14.81
Concentration @7%O2 (lb/scf)		1.376E-02	1.578E-06	2.260E-05	1.081E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	1.572E-06	2.251E-05	1.077E-06
Concentration @7%O2 (%v)		12.049	0.001	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.001
Concentration @7%O2 (mg/scm)		220382.68	25.27	361.89	17.31
Concentration @12%CO2 (mg/scm)		219494.04	25.17	360.43	17.24
Concentration @7%O2 (mg/Nm3)		236508.24	27.12	388.37	18.58
Concentration @12%CO2 (mg/Nm3)		235554.58	27.01	386.81	18.50
Mass Rate (lb/hr)		57825.04	6.63	94.96	4.54

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2011)	Mar 29				
Start Time	11:32				
End Time	11:59				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.94	10.28	1.30	170.94	8.72
Concentration (ppmdv)		102793.09	1.30	170.94	8.72
Concentration (lb/dscf)		1.174E-02	2.157E-07	2.041E-05	6.338E-07
Concentration (lb/scf)		9.151E-03	1.681E-07	1.591E-05	4.940E-07
Concentration (lb/acf)		6.225E-03	1.144E-07	1.082E-05	3.360E-07
Concentration (%dv)	8.938	10.279	0.0001	0.017	0.0009
Concentration (mg/dscm)		188020.58	3.45	326.85	10.15
Concentration (mg/scm)		146543.06	2.69	254.75	7.91
Concentration (mg/acm)		99685.24	1.83	173.29	5.38
Concentration (mg/Nm3)		201778.19	3.71	350.77	10.89
Concentration @7%O2 (ppm)		119448.92	1.51	198.64	10.13
Concentration @12%CO2 (ppm)		120000.00	1.51	199.56	10.18
Concentration @7%O2 (lb/scf)		1.364E-02	2.507E-07	2.372E-05	7.365E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.518E-07	2.383E-05	7.399E-07
Concentration @7%O2 (%v)		11.945	0.000	0.020	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.020	0.001
Concentration @7%O2 (mg/scm)		218486.05	4.01	379.82	11.79
Concentration @12%CO2 (mg/scm)		219494.04	4.03	381.57	11.85
Concentration @7%O2 (mg/Nm3)		234472.83	4.31	407.61	12.66
Concentration @12%CO2 (mg/Nm3)		235554.58	4.33	409.49	12.72
Mass Rate (lb/hr)		61968.68	1.14	107.73	3.35

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2011)	Mar 29				
Start Time	12:10				
End Time	12:37				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.78	10.45	1.33	165.07	12.68
Concentration (ppmdv)		104542.10	1.33	165.07	12.68
Concentration (lb/dscf)		1.194E-02	2.205E-07	1.971E-05	9.220E-07
Concentration (lb/scf)		9.201E-03	1.699E-07	1.519E-05	7.104E-07
Concentration (lb/acf)		6.260E-03	1.156E-07	1.033E-05	4.834E-07
Concentration (%dv)	8.778	10.454	0.0001	0.017	0.0013
Concentration (mg/dscm)		191219.73	3.53	315.62	14.76
Concentration (mg/scm)		147334.99	2.72	243.18	11.38
Concentration (mg/acm)		100250.36	1.85	165.47	7.74
Concentration (mg/Nm3)		205211.41	3.79	338.71	15.84
Concentration @7%O2 (ppm)		119871.37	1.52	189.27	14.54
Concentration @12%CO2 (ppm)		120000.00	1.52	189.48	14.56
Concentration @7%O2 (lb/scf)		1.369E-02	2.528E-07	2.260E-05	1.057E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	2.531E-07	2.262E-05	1.058E-06
Concentration @7%O2 (%v)		11.987	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.019	0.001
Concentration @7%O2 (mg/scm)		219258.76	4.05	361.90	16.93
Concentration @12%CO2 (mg/scm)		219494.04	4.05	362.29	16.95
Concentration @7%O2 (mg/Nm3)		235302.08	4.35	388.38	18.17
Concentration @12%CO2 (mg/Nm3)		235554.58	4.35	388.80	18.19
Mass Rate (lb/hr)		62407.70	1.15	103.01	4.82

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2011)	Mar 29				
Start Time	12:47				
End Time	13:14				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.03	10.20	2.52	167.59	12.67
Concentration (ppmdv)		101986.48	2.52	167.59	12.67
Concentration (lb/dscf)		1.165E-02	4.198E-07	2.001E-05	9.212E-07
Concentration (lb/scf)		8.976E-03	3.235E-07	1.542E-05	7.098E-07
Concentration (lb/acf)		6.102E-03	2.199E-07	1.048E-05	4.826E-07
Concentration (%dv)	9.031	10.199	0.0003	0.017	0.0013
Concentration (mg/dscm)		186545.21	6.72	320.44	14.75
Concentration (mg/scm)		143733.26	5.18	246.90	11.37
Concentration (mg/acm)		97722.38	3.52	167.86	7.73
Concentration (mg/Nm3)		200194.86	7.21	343.88	15.83
Concentration @7%O2 (ppm)		119439.85	2.96	196.27	14.84
Concentration @12%CO2 (ppm)		120000.00	2.97	197.19	14.91
Concentration @7%O2 (lb/scf)		1.364E-02	4.917E-07	2.343E-05	1.079E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	4.940E-07	2.354E-05	1.084E-06
Concentration @7%O2 (%v)		11.944	0.000	0.020	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.020	0.001
Concentration @7%O2 (mg/scm)		218469.45	7.87	375.27	17.28
Concentration @12%CO2 (mg/scm)		219494.04	7.91	377.03	17.36
Concentration @7%O2 (mg/Nm3)		234455.02	8.45	402.73	18.54
Concentration @12%CO2 (mg/Nm3)		235554.58	8.49	404.62	18.63
Mass Rate (lb/hr)		62480.08	2.25	107.32	4.94

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2011)	Mar 29				
Start Time	13:25				
End Time	13:52				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.29	10.03	3.99	163.91	13.96
Concentration (ppmdv)		100339.74	3.99	163.91	13.96
Concentration (lb/dscf)		1.146E-02	6.639E-07	1.957E-05	1.015E-06
Concentration (lb/scf)		8.792E-03	5.093E-07	1.501E-05	7.787E-07
Concentration (lb/acf)		5.971E-03	3.459E-07	1.020E-05	5.289E-07
Concentration (%dv)	9.292	10.034	0.0004	0.016	0.0014
Concentration (mg/dscm)		183533.12	10.63	313.41	16.26
Concentration (mg/scm)		140793.19	8.16	240.43	12.47
Concentration (mg/acm)		95624.98	5.54	163.29	8.47
Concentration (mg/Nm3)		196962.37	11.41	336.34	17.45
Concentration @7%O2 (ppm)		120149.65	4.78	196.27	16.72
Concentration @12%CO2 (ppm)		120000.00	4.78	196.03	16.70
Concentration @7%O2 (lb/scf)		1.372E-02	7.950E-07	2.344E-05	1.216E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	7.940E-07	2.341E-05	1.214E-06
Concentration @7%O2 (%v)		12.015	0.000	0.020	0.002
Concentration @12%CO2 (%v)		12.000	0.000	0.020	0.002
Concentration @7%O2 (mg/scm)		219767.77	12.73	375.29	19.47
Concentration @12%CO2 (mg/scm)		219494.04	12.72	374.82	19.44
Concentration @7%O2 (mg/Nm3)		235848.34	13.66	402.75	20.89
Concentration @12%CO2 (mg/Nm3)		235554.58	13.65	402.25	20.86
Mass Rate (lb/hr)		61896.14	3.59	105.70	5.48

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2011)	Mar 29				
Start Time	14:02				
End Time	14:29				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.25	10.01	5.85	159.91	10.31
Concentration (ppmdv)		100083.89	5.85	159.91	10.31
Concentration (lb/dscf)		1.143E-02	9.726E-07	1.909E-05	7.495E-07
Concentration (lb/scf)		8.770E-03	7.461E-07	1.465E-05	5.749E-07
Concentration (lb/acf)		5.969E-03	5.079E-07	9.970E-06	3.914E-07
Concentration (%dv)	9.251	10.008	0.0006	0.016	0.0010
Concentration (mg/dscm)		183065.14	15.57	305.76	12.00
Concentration (mg/scm)		140434.19	11.95	234.56	9.21
Concentration (mg/acm)		95592.52	8.13	159.66	6.27
Concentration (mg/Nm3)		196460.15	16.71	328.14	12.88
Concentration @7%O2 (ppm)		119426.83	6.98	190.82	12.30
Concentration @12%CO2 (ppm)		120000.00	7.01	191.74	12.36
Concentration @7%O2 (lb/scf)		1.364E-02	1.161E-06	2.278E-05	8.943E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	1.166E-06	2.289E-05	8.986E-07
Concentration @7%O2 (%v)		11.943	0.001	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.001
Concentration @7%O2 (mg/scm)		218445.65	18.58	364.86	14.32
Concentration @12%CO2 (mg/scm)		219494.04	18.67	366.61	14.39
Concentration @7%O2 (mg/Nm3)		234429.48	19.94	391.56	15.37
Concentration @12%CO2 (mg/Nm3)		235554.58	20.04	393.44	15.44
Mass Rate (lb/hr)		52010.01	4.42	86.87	3.41

Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2011)	Mar 29				
Start Time	14:49				
End Time	15:16				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	7.86	11.26	5.54	194.45	3.78
Concentration (ppmdv)		112565.42	5.54	194.45	3.78
Concentration (lb/dscf)		1.286E-02	9.216E-07	2.322E-05	2.748E-07
Concentration (lb/scf)		9.881E-03	7.083E-07	1.784E-05	2.112E-07
Concentration (lb/acf)		6.722E-03	4.819E-07	1.214E-05	1.437E-07
Concentration (%dv)	7.862	11.257	0.0006	0.019	0.0004
Concentration (mg/dscm)		205895.32	14.76	371.79	4.40
Concentration (mg/scm)		158237.19	11.34	285.73	3.38
Concentration (mg/acm)		107648.42	7.72	194.38	2.30
Concentration (mg/Nm3)		220960.84	15.84	399.00	4.72
Concentration @7%O2 (ppm)		120005.62	5.91	207.30	4.03
Concentration @12%CO2 (ppm)		120000.00	5.91	207.29	4.03
Concentration @7%O2 (lb/scf)		1.371E-02	9.826E-07	2.475E-05	2.930E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	9.825E-07	2.475E-05	2.929E-07
Concentration @7%O2 (%v)		12.001	0.001	0.021	0.000
Concentration @12%CO2 (%v)		12.000	0.001	0.021	0.000
Concentration @7%O2 (mg/scm)		219504.31	15.73	396.37	4.69
Concentration @12%CO2 (mg/scm)		219494.04	15.73	396.35	4.69
Concentration @7%O2 (mg/Nm3)		235565.61	16.89	425.37	5.03
Concentration @12%CO2 (mg/Nm3)		235554.58	16.88	425.35	5.03
Mass Rate (lb/hr)		62761.14	4.50	113.33	1.34

**Wheelabrator South Broward
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2**

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2011)	Mar 29				
Start Time	15:25				
End Time	15:52				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.29	10.96	8.27	170.10	6.88
Concentration (ppmdv)		109609.78	8.27	170.10	6.88
Concentration (lb/dscf)		1.252E-02	1.375E-06	2.031E-05	5.002E-07
Concentration (lb/scf)		9.622E-03	1.057E-06	1.561E-05	3.844E-07
Concentration (lb/acf)		6.554E-03	7.200E-07	1.063E-05	2.618E-07
Concentration (%dv)	8.287	10.961	0.0008	0.017	0.0007
Concentration (mg/dscm)		200489.10	22.03	325.25	8.01
Concentration (mg/scm)		154082.34	16.93	249.96	6.16
Concentration (mg/acm)		104949.16	11.53	170.25	4.19
Concentration (mg/Nm3)		215159.04	23.64	349.04	8.60
Concentration @7%O2 (ppm)		120795.48	9.12	187.46	7.58
Concentration @12%CO2 (ppm)		120000.00	9.06	186.23	7.53
Concentration @7%O2 (lb/scf)		1.380E-02	1.516E-06	2.238E-05	5.512E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	1.506E-06	2.224E-05	5.476E-07
Concentration @7%O2 (%v)		12.080	0.001	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.001
Concentration @7%O2 (mg/scm)		220949.07	24.27	358.44	8.83
Concentration @12%CO2 (mg/scm)		219494.04	24.11	356.08	8.77
Concentration @7%O2 (mg/Nm3)		237116.07	26.05	384.66	9.47
Concentration @12%CO2 (mg/Nm3)		235554.58	25.88	382.13	9.41
Mass Rate (lb/hr)		58585.13	6.44	95.04	2.34

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 2 FF Outlet

**USEPA Method 2 (Velocity & Flow Rate)
 Sampling, Velocity and Moisture Parameters**

Run No.		5	6	7
Date (2011)		Mar 29	Mar 29	Mar 29
Start Time (approx.)		12:09	12:50	13:25
Stop Time (approx.)		12:19	12:53	13:34
Sampling Conditions				
C _p	Pitot tube coefficient	0.8170	0.8170	0.8170
P _g	Static pressure (in. H ₂ O)	-10.1000	-10.1000	-10.3000
A _s	Sample location area (ft ²)	64.0000	64.0000	64.0000
P _{bar}	Barometric pressure (in. Hg)	30.00	30.00	30.00
O ₂	Oxygen (dry volume %)	8.7775	9.0312	9.2918
CO ₂	Carbon dioxide (dry volume %)	10.4542	10.1986	10.0340
N ₂ +CO	Nitrogen plus carbon monoxide (dry volume %)	80.7682	80.7702	80.6742
T _s	Sample temperature (°F)	298.8000	299.4000	299.8000
Flow Results				
P _s	Sample gas pressure, absolute (in. Hg)	29.2574	29.2574	29.2426
P _v	Vapor pressure, actual (in. Hg)	29.2574	29.2574	29.2426
B _{w0}	Moisture measured in sample (% by volume)	22.9499	22.9499	23.2873
B _{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B _w	Actual water vapor in gas (% by volume)	22.9499	22.9499	23.2873
√ΔP	Velocity head (√in. H ₂ O)	0.6351	0.6518	0.6589
M _d	MW of sample gas, dry (lb/lb-mole)	30.0238	29.9930	29.9771
M _s	MW of sample gas, wet (lb/lb-mole)	27.2643	27.2406	27.1880
V _s	Velocity of sample (ft/sec)	43.2672	44.4380	44.9882
V _s	Velocity of sample (ft/min)	2596.0327	2666.2778	2699.2935
Q _a	Volumetric flow rate, actual (acfm)	166,146	170,642	172,755
Q _s	Volumetric flow rate, standard (scfm)	113,050	116,017	117,333
Q _{std}	Volumetric flow rate, dry standard (dscfm)	87,105	89,391	90,009
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dscfm)	75,966	76,329	75,169
Q _a	Volumetric flow rate, actual (acf/hr)	9,968,765	10,238,507	10,365,287
Q _s	Volumetric flow rate, standard (scf/hr)	6,782,994	6,961,028	7,039,974
Q _{std}	Volumetric flow rate, dry standard (dscf/hr)	5,226,303	5,363,479	5,400,553
Q _a	Volumetric flow rate, actual (m ³ /hr)	282,321	289,961	293,551
Q _s	Volumetric flow rate, standard (m ³ /hr)	192,098	197,140	199,376
Q _{std}	Volumetric flow rate, dry standard (dry m ³ /hr)	148,012	151,897	152,947
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	129,084	129,701	127,729
Q _s	Volumetric flow rate, normal (Nm ³ /hr)	179,001	183,699	185,782
Q _{std}	Volumetric flow rate, dry normal (Nm ³ /hr)	137,920	141,540	142,519
Q _{std7}	Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	120,283	120,857	119,021

Comments:

Average includes 3 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 2 FF Outlet

USEPA Method 2 (Velocity & Flow Rate) Sampling, Velocity and Moisture Parameters

Run No.	1	2	3	4
Date (2011)	Mar 29	Mar 29	Mar 29	Mar 29
Start Time (approx.)	09:38	10:18	10:58	11:32
Stop Time (approx.)	09:48	10:21	11:04	11:40
Sampling Conditions				
C _p Pitot tube coefficient	0.8170	0.8170	0.8170	0.8170
P _g Static pressure (in. H ₂ O)	-10.6000	-10.6000	-10.1000	-10.1000
A _s Sample location area (ft ²)	64.0000	64.0000	64.0000	64.0000
P _{bar} Barometric pressure (in. Hg)	30.00	30.00	30.00	30.00
O ₂ Oxygen (dry volume %)	9.8394	8.8471	9.3710	8.9382
CO ₂ Carbon dioxide (dry volume %)	9.6023	10.3841	9.9933	10.2793
N ₂ +CO Nitrogen plus carbon monoxide (dry volume %)	80.5582	80.7688	80.6356	80.7825
T _s Sample temperature (°F)	299.0800	298.9600	298.2000	299.0000
Flow Results				
P _s Sample gas pressure, absolute (in. Hg)	29.2206	29.2206	29.2574	29.2574
P _v Vapor pressure, actual (in. Hg)	29.2206	29.2206	29.2574	29.2574
B _{wo} Moisture measured in sample (% by volume)	22.4788	22.4788	22.0601	22.0601
B _{ws} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w Actual water vapor in gas (% by volume)	22.4788	22.4788	22.0601	22.0601
√ΔP Velocity head (√in. H ₂ O)	0.6524	0.6147	0.6091	0.6352
M _d MW of sample gas, dry (lb/lb-mole)	29.9300	30.0153	29.9738	30.0022
M _s MW of sample gas, wet (lb/lb-mole)	27.2482	27.3144	27.3324	27.3545
V _s Velocity of sample (ft/sec)	44.4912	41.8648	41.4273	43.2064
V _s Velocity of sample (ft/min)	2669.4708	2511.8858	2485.6382	2592.3839
Q _a Volumetric flow rate, actual (acfm)	170,846	160,761	159,081	165,913
Q _s Volumetric flow rate, standard (scfm)	116,059	109,225	108,328	112,861
Q _{std} Volumetric flow rate, dry standard (dscfm)	89,970	84,673	84,431	87,964
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dscfm)	71,592	73,421	70,029	75,698
Q _a Volumetric flow rate, actual (acf/hr)	10,250,768	9,645,641	9,544,851	9,954,754
Q _s Volumetric flow rate, standard (scf/hr)	6,963,541	6,553,503	6,499,691	6,771,675
Q _{std} Volumetric flow rate, dry standard (dscf/hr)	5,398,220	5,080,354	5,065,853	5,277,837
Q _a Volumetric flow rate, actual (m ³ /hr)	290,308	273,170	270,316	281,925
Q _s Volumetric flow rate, standard (m ³ /hr)	197,212	185,599	184,075	191,778
Q _{std} Volumetric flow rate, dry standard (dry m ³ /hr)	152,881	143,879	143,468	149,471
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	121,651	124,760	118,995	128,629
Q _s Volumetric flow rate, normal (Nm ³ /hr)	183,765	172,945	171,525	178,702
Q _{std} Volumetric flow rate, dry normal (Nm ³ /hr)	142,457	134,069	133,686	139,280
Q _{std7} Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	113,357	116,253	110,882	119,859

Comments:

Average includes 4 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 2 FF Outlet

**USEPA Method 2 (Velocity & Flow Rate)
 Sampling, Velocity and Moisture Parameters**

Run No.		8	9	10
Date (2011)		Mar 29	Mar 29	Mar 29
Start Time (approx.)		14:00	15:03	15:36
Stop Time (approx.)		14:10	15:10	15:42
Sampling Conditions				
C _p	Pitot tube coefficient	0.8170	0.8170	0.8170
P _g	Static pressure (in. H ₂ O)	-10.3000	-10.3000	-10.3000
A _s	Sample location area (ft ²)	64.0000	64.0000	64.0000
P _{bar}	Barometric pressure (in. Hg)	30.00	30.00	30.00
O ₂	Oxygen (dry volume %)	9.2513	7.8618	8.2871
CO ₂	Carbon dioxide (dry volume %)	10.0084	11.2565	10.9610
N ₂ +CO	Nitrogen plus carbon monoxide (dry volume %)	80.7403	80.8817	80.7519
T _s	Sample temperature (°F)	298.1200	298.5600	297.6400
Flow Results				
P _s	Sample gas pressure, absolute (in. Hg)	29.2426	29.2426	29.2426
P _v	Vapor pressure, actual (in. Hg)	29.2426	29.2426	29.2426
B _{wo}	Moisture measured in sample (% by volume)	23.2873	23.1468	23.1468
B _{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B _w	Actual water vapor in gas (% by volume)	23.2873	23.1468	23.1468
√ΔP	Velocity head (√in. H ₂ O)	0.5544	0.5953	0.5701
M _d	MW of sample gas, dry (lb/lb-mole)	29.9714	30.1155	30.0852
M _s	MW of sample gas, wet (lb/lb-mole)	27.1836	27.3112	27.2879
V _s	Velocity of sample (ft/sec)	37.8155	40.5219	38.7985
V _s	Velocity of sample (ft/min)	2268.9291	2431.3141	2327.9108
Q _a	Volumetric flow rate, actual (acfm)	145,211	155,604	148,986
Q _s	Volumetric flow rate, standard (scfm)	98,844	105,857	101,478
Q _{std}	Volumetric flow rate, dry standard (dscfm)	75,826	81,355	77,989
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dscfm)	63,545	76,311	70,767
Q _a	Volumetric flow rate, actual (acf/hr)	8,712,688	9,336,246	8,939,177
Q _s	Volumetric flow rate, standard (scf/hr)	5,930,662	6,351,428	6,088,687
Q _{std}	Volumetric flow rate, dry standard (dscf/hr)	4,549,571	4,881,277	4,679,353
Q _a	Volumetric flow rate, actual (m ³ /hr)	246,748	264,408	253,163
Q _s	Volumetric flow rate, standard (m ³ /hr)	167,960	179,876	172,435
Q _{std}	Volumetric flow rate, dry standard (dry m ³ /hr)	128,847	138,241	132,522
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	107,978	129,670	120,250
Q _s	Volumetric flow rate, normal (Nm ³ /hr)	156,508	167,612	160,678
Q _{std}	Volumetric flow rate, dry normal (Nm ³ /hr)	120,062	128,815	123,486
Q _{std7}	Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	100,616	120,829	112,052

Comments:

Average includes 3 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 2 FF Outlet

**USEPA Modified Method 26A (HCI)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	4	Average
Date (2011)	Mar 29	Mar 29	Mar 29	Mar 29	
Start Time (approx.)	07:50	09:23	10:39	11:54	
Stop Time (approx.)	08:50	10:23	11:39	12:54	
Sampling Conditions					
Y _d Dry gas meter correction factor	0.9960	0.9960	0.9960	0.9960	
P _g Static pressure (in. H ₂ O)	-10.4000	-10.4000	-10.1000	-10.1000	
A _s Sample location area (ft ²)	64.0000	64.0000	64.0000	64.0000	
P _{bar} Barometric pressure (in. Hg)	30.00	30.00	30.00	30.00	30.0000
O ₂ Oxygen (dry volume %)	9.5600	9.3600	9.0800	8.6900	9.1725
CO ₂ Carbon dioxide (dry volume %)	9.8800	10.0600	10.3900	10.8700	10.3000
N ₂ +CO Nitrogen plus carbon monoxide (dry volume %)	80.5600	80.5800	80.5300	80.4400	80.5275
V _{lc} Total Liquid collected (ml)	239.80	250.80	242.80	255.00	
V _m Volume metered, meter conditions (ft ³)	42.1300	42.4550	42.4950	42.4450	
T _m Dry gas meter temperature (°F)	81.0000	91.7917	96.8750	97.3333	
T _s Sample temperature (°F)	300.0000	299.9167	300.4167	300.9167	300.3125
ΔH Meter box orifice pressure drop (in. H ₂ O)	1.5000	1.5000	1.5000	1.5000	
θ Total sampling time (min)	60.0	60.0	60.0	60.0	
Flow Results					
V _{wstd} Volume of water collected (ft ³)	11.2850	11.8026	11.4262	12.0003	11.6285
V _{mstd} Volume metered, standard (dscf)	41.1971	40.7030	40.3695	40.2888	40.6396
P _s Sample gas pressure, absolute (in. Hg)	29.2353	29.2353	29.2574	29.2574	29.2463
P _v Vapor pressure, actual (in. Hg)	29.2353	29.2353	29.2574	29.2574	29.2463
B _{wo} Moisture measured in sample (% by volume)	21.5025	22.4788	22.0601	22.9499	22.2478
B _{ws} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000	100.0000
B _w Actual water vapor in gas (% by volume)	21.5025	22.4788	22.0601	22.9499	22.2478
M _d MW of sample gas, dry (lb/lb-mole)	29.9632	29.9840	30.0256	30.0868	30.0149
M _s MW of sample gas, wet (lb/lb-mole)	27.3908	27.2901	27.3727	27.3129	27.3416

Comments:

Average includes 4 runs.

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Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 2 FF Outlet

**USEPA Method 13B (Total Fluorides)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	Average	
Date (2011)	Mar 29	Mar 29	Mar 29		
Start Time (approx.)	13:21	14:49	16:11		
Stop Time (approx.)	14:30	15:57	17:23		
Sampling Conditions					
Y _d	Dry gas meter correction factor	0.9960	0.9960	0.9960	
C _p	Pitot tube coefficient	0.8120	0.8120	0.8120	
P _g	Static pressure (in. H ₂ O)	-10.3000	-10.3000	-10.3000	
A _s	Sample location area (ft ²)	64.0000	64.0000	64.0000	
P _{bar}	Barometric pressure (in. Hg)	30.00	30.00	30.00	30.0000
D _n	Nozzle diameter (in.)	0.2740	0.2740	0.2740	
O ₂	Oxygen (dry volume %)	8.8400	7.9100	8.7700	8.5067
CO ₂	Carbon dioxide (dry volume %)	10.6600	11.6500	10.9400	11.0833
N ₂ +CO	Nitrogen plus carbon monoxide (dry volume %)	80.5000	80.4400	80.2900	80.4100
V _{lc}	Total Liquid collected (ml)	235.00	210.90	239.10	
V _m	Volume metered, meter conditions (ft ³)	38.3800	34.5900	37.0200	
T _m	Dry gas meter temperature (°F)	96.8400	94.5200	91.2200	
T _s	Sample temperature (°F)	300.6000	298.9600	299.4000	299.6533
ΔH	Meter box orifice pressure drop (in. H ₂ O)	1.1420	0.9288	1.0764	
θ	Total sampling time (min)	62.5	62.5	62.5	
Flow Results					
V _{watd}	Volume of water collected (ft ³)	11.0591	9.9250	11.2520	10.7454
V _{std}	Volume metered, standard (dscf)	36.4307	32.9534	35.4924	34.9588
P _s	Sample gas pressure, absolute (in. Hg)	29.2426	29.2426	29.2426	29.2426
P _v	Vapor pressure, actual (in. Hg)	29.2426	29.2426	29.2426	29.2426
B _{wo}	Moisture measured in sample (% by volume)	23.2873	23.1468	24.0714	23.5018
B _{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w	Actual water vapor in gas (% by volume)	23.2873	23.1468	24.0714	23.5018
√ΔP	Velocity head (√in. H ₂ O)	0.6482	0.5849	0.6279	0.6203
M _d	MW of sample gas, dry (lb/lb-mole)	30.0592	30.1804	30.1012	30.1136
M _s	MW of sample gas, wet (lb/lb-mole)	27.2509	27.3610	27.1883	27.2667
V _s	Velocity of sample (ft/sec)	43.9569	39.5422	42.5968	42.0320
%I	Isokinetic sampling (%)	103.7614	103.9208	105.2276	104.3033
Q _a	Volumetric flow rate, actual (acfm)	168,795	151,842	163,572	161,403
Q _s	Volumetric flow rate, standard (scfm)	114,523	103,243	111,154	109,640
Q _{std}	Volumetric flow rate, dry standard (dscfm)	87,853	79,346	84,398	83,866
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dscfm)	76,224	74,151	73,651	74,675
Q _a	Volumetric flow rate, actual (acf/hr)	10,127,676	9,110,523	9,814,306	9,684,169
Q _s	Volumetric flow rate, standard (scf/hr)	6,871,357	6,194,603	6,669,266	6,578,408
Q _{std}	Volumetric flow rate, dry standard (dscf/hr)	5,271,203	4,760,752	5,063,878	5,031,944
Q _a	Volumetric flow rate, actual (m ³ /hr)	286,822	258,015	277,947	274,261
Q _s	Volumetric flow rate, standard (m ³ /hr)	194,601	175,435	188,878	186,304
Q _{std}	Volumetric flow rate, dry standard (dry m ³ /hr)	149,284	134,827	143,412	142,508
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	129,522	126,000	125,150	126,891
Q _s	Volumetric flow rate, normal (Nm ³ /hr)	181,333	163,473	176,000	173,602
Q _{std}	Volumetric flow rate, dry normal (Nm ³ /hr)	139,105	125,635	133,634	132,791
Q _{std7}	Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	120,691	117,410	116,617	118,239

Comments:

Average includes 3 runs.

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Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2011)	Mar 30				
Start Time	7:44				
End Time	8:11				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.36	10.78	9.76	165.55	6.77
Concentration (ppmdv)		107792.06	9.76	165.55	6.77
Concentration (lb/dscf)		1.231E-02	1.622E-06	1.977E-05	4.919E-07
Concentration (lb/scf)		9.337E-03	1.230E-06	1.499E-05	3.730E-07
Concentration (lb/acf)		6.383E-03	8.411E-07	1.025E-05	2.550E-07
Concentration (%dv)	8.361	10.779	0.0010	0.017	0.0007
Concentration (mg/dscm)		197164.29	25.98	316.54	7.88
Concentration (mg/scm)		149511.64	19.70	240.04	5.97
Concentration (mg/acm)		102214.81	13.47	164.10	4.08
Concentration (mg/Nm3)		211590.95	27.88	339.70	8.45
Concentration @7%O2 (ppm)		119491.59	10.82	183.52	7.50
Concentration @12%CO2 (ppm)		120000.00	10.86	184.30	7.53
Concentration @7%O2 (lb/scf)		1.365E-02	1.799E-06	2.191E-05	5.453E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	1.806E-06	2.201E-05	5.476E-07
Concentration @7%O2 (%v)		11.949	0.001	0.018	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.018	0.001
Concentration @7%O2 (mg/scm)		218564.10	28.80	350.90	8.73
Concentration @12%CO2 (mg/scm)		219494.04	28.92	352.39	8.77
Concentration @7%O2 (mg/Nm3)		234556.60	30.91	376.57	9.37
Concentration @12%CO2 (mg/Nm3)		235554.58	31.04	378.17	9.41
Mass Rate (lb/hr)		62489.84	8.23	100.33	2.50

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3**

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2011)	Mar 30				
Start Time	8:21				
End Time	8:48				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.05	11.04	5.75	170.91	11.94
Concentration (ppmdv)		110401.14	5.75	170.91	11.94
Concentration (lb/dscf)		1.261E-02	9.562E-07	2.041E-05	8.681E-07
Concentration (lb/scf)		9.563E-03	7.251E-07	1.547E-05	6.583E-07
Concentration (lb/acf)		6.539E-03	4.958E-07	1.058E-05	4.502E-07
Concentration (%dv)	8.049	11.040	0.0006	0.017	0.0012
Concentration (mg/dscm)		201936.59	15.31	326.79	13.90
Concentration (mg/scm)		153130.52	11.61	247.81	10.54
Concentration (mg/acm)		104716.51	7.94	169.46	7.21
Concentration (mg/Nm3)		216712.44	16.43	350.70	14.92
Concentration @7%O2 (ppm)		119411.05	6.22	184.86	12.92
Concentration @12%CO2 (ppm)		120000.00	6.25	185.77	12.98
Concentration @7%O2 (lb/scf)		1.364E-02	1.034E-06	2.207E-05	9.389E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	1.039E-06	2.218E-05	9.436E-07
Concentration @7%O2 (%v)		11.941	0.001	0.018	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.001
Concentration @7%O2 (mg/scm)		218416.77	16.56	353.46	15.04
Concentration @12%CO2 (mg/scm)		219494.04	16.64	355.20	15.11
Concentration @7%O2 (mg/Nm3)		234398.49	17.77	379.32	16.14
Concentration @12%CO2 (mg/Nm3)		235554.58	17.86	381.20	16.22
Mass Rate (lb/hr)		62091.02	4.71	100.48	4.27

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2011)	Mar 30				
Start Time	9:06				
End Time	9:33				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	7.52	11.55	19.33	178.15	17.15
Concentration (ppmdv)		115490.20	19.33	178.15	17.15
Concentration (lb/dscf)		1.319E-02	3.214E-06	2.127E-05	1.246E-06
Concentration (lb/scf)		9.995E-03	2.435E-06	1.612E-05	9.444E-07
Concentration (lb/acf)		6.904E-03	1.682E-06	1.113E-05	6.524E-07
Concentration (%dv)	7.524	11.549	0.0019	0.018	0.0017
Concentration (mg/dscm)		211245.10	51.47	340.64	19.96
Concentration (mg/scm)		160052.17	39.00	258.09	15.12
Concentration (mg/acm)		110557.85	26.94	178.28	10.45
Concentration (mg/Nm3)		226702.05	55.24	365.57	21.42
Concentration @7%O2 (ppm)		120016.62	20.09	185.14	17.82
Concentration @12%CO2 (ppm)		120000.00	20.09	185.11	17.82
Concentration @7%O2 (lb/scf)		1.371E-02	3.340E-06	2.211E-05	1.295E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	3.340E-06	2.210E-05	1.295E-06
Concentration @7%O2 (%v)		12.002	0.002	0.019	0.002
Concentration @12%CO2 (%v)		12.000	0.002	0.019	0.002
Concentration @7%O2 (mg/scm)		219524.45	53.49	353.99	20.74
Concentration @12%CO2 (mg/scm)		219494.04	53.48	353.94	20.74
Concentration @7%O2 (mg/Nm3)		235587.21	57.40	379.89	22.26
Concentration @12%CO2 (mg/Nm3)		235554.58	57.39	379.84	22.26
Mass Rate (lb/hr)		62877.97	15.32	101.39	5.94

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3**

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2011)	Mar 30				
Start Time	9:44				
End Time	10:11				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	7.67	11.46	12.61	179.74	5.18
Concentration (ppmdv)		114564.45	12.61	179.74	5.18
Concentration (lb/dscf)		1.309E-02	2.097E-06	2.146E-05	3.766E-07
Concentration (lb/scf)		9.915E-03	1.589E-06	1.626E-05	2.853E-07
Concentration (lb/acf)		6.838E-03	1.096E-06	1.121E-05	1.968E-07
Concentration (%dv)	7.670	11.456	0.0013	0.018	0.0005
Concentration (mg/dscm)		209551.78	33.58	343.67	6.03
Concentration (mg/scm)		158769.21	25.44	260.39	4.57
Concentration (mg/acm)		109498.01	17.55	179.58	3.15
Concentration (mg/Nm3)		224884.84	36.03	368.82	6.47
Concentration @7%O2 (ppm)		120362.22	13.25	188.84	5.44
Concentration @12%CO2 (ppm)		120000.00	13.21	188.27	5.43
Concentration @7%O2 (lb/scf)		1.375E-02	2.203E-06	2.255E-05	3.956E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.196E-06	2.248E-05	3.945E-07
Concentration @7%O2 (%v)		12.036	0.001	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.001
Concentration @7%O2 (mg/scm)		220156.58	35.28	361.06	6.34
Concentration @12%CO2 (mg/scm)		219494.04	35.17	359.98	6.32
Concentration @7%O2 (mg/Nm3)		236265.60	37.86	387.48	6.80
Concentration @12%CO2 (mg/Nm3)		235554.58	37.74	386.32	6.78
Mass Rate (lb/hr)		61585.02	9.87	101.00	1.77

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3**

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2011)	Mar 30				
Start Time	10:21				
End Time	10:48				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	7.61	11.43	13.65	183.19	5.74
Concentration (ppmdv)		114293.39	13.65	183.19	5.74
Concentration (lb/dscf)		1.305E-02	2.269E-06	2.187E-05	4.174E-07
Concentration (lb/scf)		9.895E-03	1.720E-06	1.658E-05	3.164E-07
Concentration (lb/acf)		6.830E-03	1.187E-06	1.144E-05	2.184E-07
Concentration (%dv)	7.612	11.429	0.0014	0.018	0.0006
Concentration (mg/dscm)		209055.98	36.34	350.28	6.68
Concentration (mg/scm)		158461.14	27.55	265.50	5.07
Concentration (mg/acm)		109372.12	19.01	183.25	3.50
Concentration (mg/Nm3)		224352.75	39.00	375.91	7.17
Concentration @7%O2 (ppm)		119557.46	14.28	191.63	6.01
Concentration @12%CO2 (ppm)		120000.00	14.33	192.34	6.03
Concentration @7%O2 (lb/scf)		1.366E-02	2.374E-06	2.288E-05	4.366E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.383E-06	2.297E-05	4.382E-07
Concentration @7%O2 (%v)		11.956	0.001	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.001
Concentration @7%O2 (mg/scm)		218684.58	38.02	366.41	6.99
Concentration @12%CO2 (mg/scm)		219494.04	38.16	367.77	7.02
Concentration @7%O2 (mg/Nm3)		234685.89	40.80	393.22	7.50
Concentration @12%CO2 (mg/Nm3)		235554.58	40.95	394.68	7.53
Mass Rate (lb/hr)		56374.58	9.80	94.46	1.80

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2011)	Mar 30				
Start Time	10:58				
End Time	11:25				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	7.60	11.47	14.25	177.85	4.00
Concentration (ppmdv)		114677.38	14.25	177.85	4.00
Concentration (lb/dscf)		1.310E-02	2.369E-06	2.124E-05	2.904E-07
Concentration (lb/scf)		9.929E-03	1.796E-06	1.610E-05	2.202E-07
Concentration (lb/acf)		6.857E-03	1.240E-06	1.112E-05	1.520E-07
Concentration (%dv)	7.603	11.468	0.0014	0.018	0.0004
Concentration (mg/dscm)		209758.35	37.94	340.06	4.65
Concentration (mg/scm)		158993.53	28.76	257.76	3.53
Concentration (mg/acm)		109803.37	19.86	178.02	2.43
Concentration (mg/Nm3)		225106.52	40.71	364.95	4.99
Concentration @7%O2 (ppm)		119880.92	14.89	185.92	4.18
Concentration @12%CO2 (ppm)		120000.00	14.91	186.11	4.18
Concentration @7%O2 (lb/scf)		1.369E-02	2.476E-06	2.220E-05	3.036E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.479E-06	2.222E-05	3.039E-07
Concentration @7%O2 (%v)		11.988	0.001	0.019	0.000
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.000
Concentration @7%O2 (mg/scm)		219276.23	39.66	355.49	4.86
Concentration @12%CO2 (mg/scm)		219494.04	39.70	355.85	4.87
Concentration @7%O2 (mg/Nm3)		235320.83	42.56	381.51	5.22
Concentration @12%CO2 (mg/Nm3)		235554.58	42.60	381.89	5.22
Mass Rate (lb/hr)		59744.78	10.81	96.86	1.32

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2011)	Mar 30				
Start Time	11:38				
End Time	12:05				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	7.98	11.26	8.96	175.48	5.66
Concentration (ppmdv)		112560.81	8.96	175.48	5.66
Concentration (lb/dscf)		1.286E-02	1.490E-06	2.095E-05	4.118E-07
Concentration (lb/scf)		9.784E-03	1.134E-06	1.594E-05	3.134E-07
Concentration (lb/acf)		6.758E-03	7.833E-07	1.101E-05	2.165E-07
Concentration (%dv)	7.981	11.256	0.0009	0.018	0.0006
Concentration (mg/dscm)		205886.90	23.87	335.52	6.59
Concentration (mg/scm)		156681.44	18.16	255.33	5.02
Concentration (mg/acm)		108218.04	12.54	176.36	3.47
Concentration (mg/Nm3)		220951.79	25.61	360.07	7.08
Concentration @7%O2 (ppm)		121109.34	9.64	188.80	6.10
Concentration @12%CO2 (ppm)		120000.00	9.56	187.07	6.04
Concentration @7%O2 (lb/scf)		1.383E-02	1.603E-06	2.254E-05	4.431E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	1.589E-06	2.234E-05	4.391E-07
Concentration @7%O2 (%v)		12.111	0.001	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.001
Concentration @7%O2 (mg/scm)		221523.16	25.68	361.00	7.10
Concentration @12%CO2 (mg/scm)		219494.04	25.44	357.70	7.03
Concentration @7%O2 (mg/Nm3)		237732.17	27.56	387.42	7.61
Concentration @12%CO2 (mg/Nm3)		235554.58	27.30	383.87	7.55
Mass Rate (lb/hr)		60710.74	7.04	98.94	1.94

**Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3**

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2011)	Mar 30				
Start Time	12:16				
End Time	12:43				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	7.95	11.33	12.17	172.35	3.87
Concentration (ppmdv)		113256.97	12.17	172.35	3.87
Concentration (lb/dscf)		1.294E-02	2.023E-06	2.058E-05	2.812E-07
Concentration (lb/scf)		9.845E-03	1.540E-06	1.566E-05	2.140E-07
Concentration (lb/acf)		6.796E-03	1.063E-06	1.081E-05	1.477E-07
Concentration (%dv)	7.948	11.326	0.0012	0.017	0.0004
Concentration (mg/dscm)		207160.25	32.40	329.55	4.50
Concentration (mg/scm)		157650.47	24.66	250.79	3.43
Concentration (mg/acm)		108829.82	17.02	173.13	2.37
Concentration (mg/Nm3)		222318.32	34.77	353.66	4.83
Concentration @7%O2 (ppm)		121549.92	13.06	184.97	4.15
Concentration @12%CO2 (ppm)		120000.00	12.89	182.62	4.10
Concentration @7%O2 (lb/scf)		1.388E-02	2.171E-06	2.209E-05	3.018E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	2.144E-06	2.180E-05	2.980E-07
Concentration @7%O2 (%v)		12.155	0.001	0.018	0.000
Concentration @12%CO2 (%v)		12.000	0.001	0.018	0.000
Concentration @7%O2 (mg/scm)		222329.02	34.77	353.68	4.83
Concentration @12%CO2 (mg/scm)		219494.04	34.33	349.17	4.77
Concentration @7%O2 (mg/Nm3)		238597.00	37.32	379.56	5.19
Concentration @12%CO2 (mg/Nm3)		235554.58	36.84	374.72	5.12
Mass Rate (lb/hr)		60817.67	9.51	96.75	1.32

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2011)	Mar 30				
Start Time	13:04				
End Time	13:31				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	9.12	10.14	3.60	157.21	7.77
Concentration (ppmdv)		101417.75	3.60	157.21	7.77
Concentration (lb/dscf)		1.158E-02	5.993E-07	1.877E-05	5.651E-07
Concentration (lb/scf)		8.871E-03	4.589E-07	1.437E-05	4.328E-07
Concentration (lb/acf)		6.086E-03	3.149E-07	9.862E-06	2.969E-07
Concentration (%dv)	9.122	10.142	0.0004	0.016	0.0008
Concentration (mg/dscm)		185504.92	9.60	300.59	9.05
Concentration (mg/scm)		142058.58	7.35	230.19	6.93
Concentration (mg/acm)		97465.34	5.04	157.93	4.75
Concentration (mg/Nm3)		199078.45	10.30	322.59	9.71
Concentration @7%O2 (ppm)		119688.59	4.25	185.53	9.17
Concentration @12%CO2 (ppm)		120000.00	4.26	186.01	9.20
Concentration @7%O2 (lb/scf)		1.367E-02	7.073E-07	2.215E-05	6.669E-07
Concentration @12%CO2 (lb/scf)		1.371E-02	7.091E-07	2.221E-05	6.687E-07
Concentration @7%O2 (%v)		11.969	0.000	0.019	0.001
Concentration @12%CO2 (%v)		12.000	0.000	0.019	0.001
Concentration @7%O2 (mg/scm)		218924.44	11.33	354.75	10.68
Concentration @12%CO2 (mg/scm)		219494.04	11.36	355.67	10.71
Concentration @7%O2 (mg/Nm3)		234943.30	12.15	380.70	11.46
Concentration @12%CO2 (mg/Nm3)		235554.58	12.19	381.69	11.49
Mass Rate (lb/hr)		62462.53	3.23	101.21	3.05

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2011)	Mar 30				
Start Time	13:41				
End Time	14:08				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	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)	8.91	10.28	6.23	163.05	15.24
Concentration (ppmdv)		102766.00	6.23	163.05	15.24
Concentration (lb/dscf)		1.174E-02	1.036E-06	1.947E-05	1.108E-06
Concentration (lb/scf)		8.989E-03	7.932E-07	1.491E-05	8.487E-07
Concentration (lb/acf)		6.162E-03	5.438E-07	1.022E-05	5.818E-07
Concentration (%dv)	8.910	10.277	0.0006	0.016	0.0015
Concentration (mg/dscm)		187971.04	16.59	311.76	17.75
Concentration (mg/scm)		143947.12	12.70	238.74	13.59
Concentration (mg/acm)		98682.89	8.71	163.67	9.32
Concentration (mg/Nm3)		201725.02	17.80	334.57	19.05
Concentration @7%O2 (ppm)		119133.98	7.22	189.02	17.67
Concentration @12%CO2 (ppm)		120000.00	7.27	190.39	17.80
Concentration @7%O2 (lb/scf)		1.361E-02	1.201E-06	2.257E-05	1.285E-06
Concentration @12%CO2 (lb/scf)		1.371E-02	1.209E-06	2.273E-05	1.294E-06
Concentration @7%O2 (%v)		11.913	0.001	0.019	0.002
Concentration @12%CO2 (%v)		12.000	0.001	0.019	0.002
Concentration @7%O2 (mg/scm)		217909.98	19.23	361.41	20.57
Concentration @12%CO2 (mg/scm)		219494.04	19.37	364.04	20.72
Concentration @7%O2 (mg/Nm3)		233854.61	20.63	387.86	22.08
Concentration @12%CO2 (mg/Nm3)		235554.58	20.78	390.68	22.24
Mass Rate (lb/hr)		63277.08	5.58	104.95	5.97

Wheelabrator
Clean Air Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	11	
Date (2011)	Mar 30	
Start Time	14:19	
End Time	14:46	
Elapsed Time (hh:mm)	00:27	
Channel	1	2
Parameter	O2	CO2
Location	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv
Measured Average (drift-corrected)	8.14	11.07
Concentration (ppmdv)		110712.85
Concentration (lb/dscf)		1.265E-02
Concentration (lb/scf)		9.582E-03
Concentration (lb/acf)		6.576E-03
Concentration (%dv)	8.141	11.071
Concentration (mg/dscm)		202506.75
Concentration (mg/scm)		153444.08
Concentration (mg/acm)		105304.64
Concentration (mg/Nm3)		217324.32
Concentration @7%O2 (ppm)		120615.63
Concentration @12%CO2 (ppm)		120000.00
Concentration @7%O2 (lb/scf)		1.378E-02
Concentration @12%CO2 (lb/scf)		1.371E-02
Concentration @7%O2 (%v)		12.062
Concentration @12%CO2 (%v)		12.000
Concentration @7%O2 (mg/scm)		220620.11
Concentration @12%CO2 (mg/scm)		219494.04
Concentration @7%O2 (mg/Nm3)		236763.04
Concentration @12%CO2 (mg/Nm3)		235554.58
Mass Rate (lb/hr)		62921.69

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 3 FF Outlet

**USEPA Method 2 (Velocity & Flow Rate)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	4
Date (2011)	Mar 30	Mar 30	Mar 30	Mar 30
Start Time (approx.)	07:49	08:23	09:09	09:57
Stop Time (approx.)	07:54	08:28	09:14	10:02
Sampling Conditions				
C _p Pitot tube coefficient	0.8170	0.8170	0.8170	0.8170
P _g Static pressure (in. H ₂ O)	-9.1000	-9.1000	-5.8000	-5.8000
A _s Sample location area (ft ²)	64.0000	64.0000	64.0000	64.0000
P _{bar} Barometric pressure (in. Hg)	30.05	30.05	30.05	30.05
O ₂ Oxygen (dry volume %)	8.3610	8.0488	7.5242	7.6696
CO ₂ Carbon dioxide (dry volume %)	10.7792	11.0401	11.5490	11.4564
N ₂ +CO Nitrogen plus carbon monoxide (dry volume %)	80.8598	80.9111	80.9267	80.8740
T _s Sample temperature (°F)	298.4000	298.2000	296.8000	298.0000
Flow Results				
P _s Sample gas pressure, absolute (in. Hg)	29.3809	29.3809	29.6235	29.6235
P _v Vapor pressure, actual (in. Hg)	29.3809	29.3809	29.6235	29.6235
B _{wo} Moisture measured in sample (% by volume)	24.1690	24.1690	24.2339	24.2339
B _{ws} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w Actual water vapor in gas (% by volume)	24.1690	24.1690	24.2339	24.2339
√ΔP Velocity head (√in. H ₂ O)	0.6239	0.6054	0.5840	0.5770
M _d MW of sample gas, dry (lb/lb-mole)	30.0591	30.0884	30.1488	30.1398
M _s MW of sample gas, wet (lb/lb-mole)	27.1445	27.1667	27.2047	27.1979
V _s Velocity of sample (ft/sec)	42.4915	41.2117	39.5290	39.0909
V _s Velocity of sample (ft/min)	2549.4911	2472.7005	2371.7388	2345.4532
Q _a Volumetric flow rate, actual (acfm)	163,167	158,253	151,791	150,109
Q _s Volumetric flow rate, standard (scfm)	111,551	108,219	104,852	103,525
Q _{std} Volumetric flow rate, dry standard (dscfm)	84,590	82,064	79,442	78,437
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dscfm)	76,308	75,872	76,446	74,659
Q _a Volumetric flow rate, actual (acf/hr)	9,790,046	9,495,170	9,107,477	9,006,540
Q _s Volumetric flow rate, standard (scf/hr)	6,693,042	6,493,160	6,291,093	6,211,521
Q _{std} Volumetric flow rate, dry standard (dscf/hr)	5,075,400	4,923,828	4,766,516	4,706,227
Q _a Volumetric flow rate, actual (m ³ /hr)	277,260	268,909	257,929	255,071
Q _s Volumetric flow rate, standard (m ³ /hr)	189,551	183,890	178,167	175,914
Q _{std} Volumetric flow rate, dry standard (dry m ³ /hr)	143,738	139,446	134,991	133,283
Q _{std7} Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	129,665	128,924	129,899	126,863
Q _s Volumetric flow rate, normal (Nm ³ /hr)	176,627	171,352	166,020	163,920
Q _{std} Volumetric flow rate, dry normal (Nm ³ /hr)	133,938	129,938	125,787	124,196
Q _{std7} Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	120,824	120,134	121,043	118,213

Comments:

Average includes 4 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 3 FF Outlet

USEPA Method 2 (Velocity & Flow Rate) Sampling, Velocity and Moisture Parameters

Run No.		5	6	7	8
Date (2011)		Mar 30	Mar 30	Mar 30	Mar 30
Start Time (approx.)		10:24	10:59	11:44	12:23
Stop Time (approx.)		10:30	11:06	11:54	12:30
Sampling Conditions					
C _p	Pitot tube coefficient	0.8170	0.8170	0.8170	0.8170
P _g	Static pressure (in. H ₂ O)	-5.8000	-5.8000	-5.8000	-5.8000
A _s	Sample location area (ft ²)	64.0000	64.0000	64.0000	64.0000
P _{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05	30.05
O ₂	Oxygen (dry volume %)	7.6120	7.6033	7.9811	7.9484
CO ₂	Carbon dioxide (dry volume %)	11.4293	11.4677	11.2561	11.3257
N ₂ +CO	Nitrogen plus carbon monoxide (dry volume %)	80.9586	80.9289	80.7628	80.7260
T _s	Sample temperature (°F)	297.4000	296.9600	296.8800	297.2800
Flow Results					
P _s	Sample gas pressure, absolute (in. Hg)	29.6235	29.6235	29.6235	29.6235
P _v	Vapor pressure, actual (in. Hg)	29.6235	29.6235	29.6235	29.6235
B _{wo}	Moisture measured in sample (% by volume)	24.2016	24.2016	23.8993	23.8993
B _{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w	Actual water vapor in gas (% by volume)	24.2016	24.2016	23.8993	23.8993
√ΔP	Velocity head (√in. H ₂ O)	0.5290	0.5586	0.5763	0.5739
M _d	MW of sample gas, dry (lb/lb-mole)	30.1332	30.1390	30.1202	30.1300
M _s	MW of sample gas, wet (lb/lb-mole)	27.1968	27.2011	27.2236	27.2311
V _s	Velocity of sample (ft/sec)	35.8248	37.8173	38.9917	38.8408
V _s	Velocity of sample (ft/min)	2149.4859	2269.0405	2339.5040	2330.4497
Q _a	Volumetric flow rate, actual (acfm)	137,567	145,219	149,728	149,149
Q _s	Volumetric flow rate, standard (scfm)	94,951	100,290	103,416	102,961
Q _{std}	Volumetric flow rate, dry standard (dscfm)	71,971	76,018	78,700	78,354
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dscfm)	68,802	72,719	73,145	73,008
Q _a	Volumetric flow rate, actual (acf/hr)	8,254,026	8,713,115	8,983,695	8,948,927
Q _s	Volumetric flow rate, standard (scf/hr)	5,697,045	6,017,411	6,204,933	6,177,654
Q _{std}	Volumetric flow rate, dry standard (dscf/hr)	4,318,271	4,561,103	4,722,000	4,701,240
Q _a	Volumetric flow rate, actual (m ³ /hr)	233,759	246,761	254,424	253,439
Q _s	Volumetric flow rate, standard (m ³ /hr)	161,344	170,417	175,727	174,955
Q _{std}	Volumetric flow rate, dry standard (dry m ³ /hr)	122,296	129,173	133,730	133,142
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	116,911	123,566	124,290	124,058
Q _s	Volumetric flow rate, normal (Nm ³ /hr)	150,343	158,797	163,746	163,026
Q _{std}	Volumetric flow rate, dry normal (Nm ³ /hr)	113,958	120,366	124,612	124,064
Q _{std7}	Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	108,940	115,141	115,816	115,600

Comments:

Average includes 4 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 3 FF Outlet

USEPA Method 2 (Velocity & Flow Rate) Sampling, Velocity and Moisture Parameters

Run No.	9	10	11	
Date (2011)	Mar 30	Mar 30	Mar 30	
Start Time (approx.)	13:00	13:45	14:33	
Stop Time (approx.)	13:13	13:55	14:43	
Sampling Conditions				
C _p	Pitot tube coefficient	0.8170	0.8170	0.8170
P _g	Static pressure (in. H ₂ O)	-8.1000	-8.1000	-8.1000
A _s	Sample location area (ft ²)	64.0000	64.0000	64.0000
P _{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05
O ₂	Oxygen (dry volume %)	9.1219	8.9097	8.1412
CO ₂	Carbon dioxide (dry volume %)	10.1418	10.2766	11.0713
N ₂ +CO	Nitrogen plus carbon monoxide (dry volume %)	80.7363	80.8137	80.7875
T _s	Sample temperature (°F)	297.6000	298.2000	297.4000
Flow Results				
P _s	Sample gas pressure, absolute (in. Hg)	29.4544	29.4544	29.4544
P _v	Vapor pressure, actual (in. Hg)	29.4544	29.4544	29.4544
B _{wo}	Moisture measured in sample (% by volume)	23.4206	23.4206	24.2277
B _{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B _w	Actual water vapor in gas (% by volume)	23.4206	23.4206	24.2277
√ΔP	Velocity head (√in. H ₂ O)	0.6556	0.6558	0.6112
M _d	MW of sample gas, dry (lb/lb-mole)	29.9876	30.0006	30.0971
M _s	MW of sample gas, wet (lb/lb-mole)	27.1800	27.1900	27.1662
V _s	Velocity of sample (ft/sec)	44.5427	44.5668	41.5298
V _s	Velocity of sample (ft/min)	2672.5590	2674.0065	2491.7861
Q _a	Volumetric flow rate, actual (acfm)	171,044	171,136	159,474
Q _s	Volumetric flow rate, standard (scfm)	117,352	117,323	109,443
Q _{std}	Volumetric flow rate, dry standard (dscfm)	89,867	89,845	82,928
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dscfm)	76,149	77,501	76,119
Q _a	Volumetric flow rate, actual (acf/hr)	10,262,627	10,268,185	9,568,459
Q _s	Volumetric flow rate, standard (scf/hr)	7,041,112	7,039,350	6,566,582
Q _{std}	Volumetric flow rate, dry standard (dscf/hr)	5,392,042	5,390,693	4,975,652
Q _a	Volumetric flow rate, actual (m ³ /hr)	290,644	290,801	270,984
Q _s	Volumetric flow rate, standard (m ³ /hr)	199,408	199,359	185,969
Q _{std}	Volumetric flow rate, dry standard (dry m ³ /hr)	152,706	152,668	140,913
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	129,395	131,692	129,344
Q _s	Volumetric flow rate, normal (Nm ³ /hr)	185,812	185,766	173,290
Q _{std}	Volumetric flow rate, dry normal (Nm ³ /hr)	142,294	142,258	131,306
Q _{std7}	Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	120,572	122,713	120,525

Comments:

Average includes 3 runs.

Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 3 FF Outlet

**USEPA Modified Method 26A (HCI)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	Average
Date (2011)	Mar 30	Mar 30	Mar 30	
Start Time (approx.)	07:47	09:06	10:22	
Stop Time (approx.)	08:47	10:06	11:22	
Sampling Conditions				
Y_d Dry gas meter correction factor	0.9936	0.9936	0.9936	
P_g Static pressure (in. H ₂ O)	-9.1000	-5.8000	-5.8000	
A_s Sample location area (ft ²)	64.0000	64.0000	64.0000	
P_{bar} Barometric pressure (in. Hg)	30.05	30.05	30.05	30.0500
O_2 Oxygen (dry volume %)	8.3400	7.5900	7.7300	7.8867
CO_2 Carbon dioxide (dry volume %)	11.0600	11.2200	11.7700	11.3500
N_2+CO Nitrogen plus carbon monoxide (dry volume %)	80.6000	81.1900	80.5000	80.7633
V_{lc} Total Liquid collected (ml)	276.00	275.60	273.90	
V_m Volume metered, meter conditions (ft ³)	41.8700	41.8950	41.9200	
T_m Dry gas meter temperature (°F)	83.1250	86.1667	88.9167	
T_s Sample temperature (°F)	298.6667	299.9167	298.1667	298.9167
ΔH Meter box orifice pressure drop (in. H ₂ O)	1.5000	1.5000	1.5000	
θ Total sampling time (min)	60.0	60.0	60.0	
Flow Results				
V_{wstd} Volume of water collected (ft ³)	12.9886	12.9697	12.8897	12.9493
V_{mstd} Volume metered, standard (dscf)	40.7520	40.5492	40.3702	40.5571
P_s Sample gas pressure, absolute (in. Hg)	29.3809	29.6235	29.6235	29.5426
P_v Vapor pressure, actual (in. Hg)	29.3809	29.6235	29.6235	29.5426
B_{wo} Moisture measured in sample (% by volume)	24.1690	24.2339	24.2016	24.2015
B_{ws} Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B_w Actual water vapor in gas (% by volume)	24.1690	24.2339	24.2016	24.2015
M_d MW of sample gas, dry (lb/lb-mole)	30.1032	30.0988	30.1924	30.1315
M_s MW of sample gas, wet (lb/lb-mole)	27.1780	27.1668	27.2416	27.1955

Comments:

Average includes 3 runs.

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Wheelabrator South Broward, Inc.
 Clean Air Project No: 11182
 Unit 3 FF Outlet

**USEPA Method 13B (Total Fluorides)
 Sampling, Velocity and Moisture Parameters**

Run No.	1	2	3	Average	
Date (2011)	Mar 30	Mar 30	Mar 30		
Start Time (approx.)	11:40	13:04	14:26		
Stop Time (approx.)	12:47	14:12	15:30		
Sampling Conditions					
Y _d	Dry gas meter correction factor	0.9936	0.9936	0.9936	
C _p	Pitot tube coefficient	0.8120	0.8120	0.8120	
P _g	Static pressure (in. H ₂ O)	-5.8000	-8.2000	-6.5000	
A _s	Sample location area (ft ²)	64.0000	64.0000	64.0000	
P _{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05	30.0500
D _n	Nozzle diameter (in.)	0.2740	0.2740	0.2740	
O ₂	Oxygen (dry volume %)	8.0000	9.1800	8.2900	8.4900
CO ₂	Carbon dioxide (dry volume %)	11.4400	10.3800	11.3100	11.0433
N ₂ +CO	Nitrogen plus carbon monoxide (dry volume %)	80.5600	80.4400	80.4000	80.4667
V _{lc}	Total Liquid collected (ml)	221.10	243.20	233.80	
V _m	Volume metered, meter conditions (ft ³)	34.3800	38.8600	35.7760	
T _m	Dry gas meter temperature (°F)	87.7800	88.4800	88.9200	
T _s	Sample temperature (°F)	296.9200	297.3600	297.8000	297.3600
ΔH	Meter box orifice pressure drop (in. H ₂ O)	0.9332	1.1620	0.9968	
θ	Total sampling time (min)	62.5	62.5	62.5	
Flow Results					
V _{wstd}	Volume of water collected (ft ³)	10.4050	11.4450	11.0026	10.9509
V _{mstd}	Volume metered, standard (dscf)	33.1318	37.4222	34.4108	34.9883
P _s	Sample gas pressure, absolute (in. Hg)	29.6235	29.4471	29.5721	29.5475
P _v	Vapor pressure, actual (in. Hg)	29.6235	29.4471	29.5721	29.5475
B _{wo}	Moisture measured in sample (% by volume)	23.8993	23.4206	24.2277	23.8492
B _{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B _w	Actual water vapor in gas (% by volume)	23.8993	23.4206	24.2277	23.8492
√ΔP	Velocity head (√in. H ₂ O)	0.5923	0.6599	0.6111	0.6211
M _d	MW of sample gas, dry (lb/lb-mole)	30.1504	30.0280	30.1412	30.1065
M _s	MW of sample gas, wet (lb/lb-mole)	27.2465	27.2110	27.1997	27.2191
V _s	Velocity of sample (ft/sec)	39.8182	44.5347	41.1772	41.8434
%I	Isokinetic sampling (%)	103.1599	104.2084	104.3577	103.9087
Q _a	Volumetric flow rate, actual (acfm)	152,902	171,013	158,120	160,679
Q _s	Volumetric flow rate, standard (scfm)	105,602	117,339	108,890	110,610
Q _{std}	Volumetric flow rate, dry standard (dscfm)	80,364	89,857	82,508	84,243
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dscfm)	74,582	75,765	74,851	75,066
Q _a	Volumetric flow rate, actual (acf/hr)	9,174,111	10,260,799	9,487,225	9,640,711
Q _s	Volumetric flow rate, standard (scf/hr)	6,336,116	7,040,331	6,533,388	6,636,612
Q _{std}	Volumetric flow rate, dry standard (dscf/hr)	4,821,831	5,391,444	4,950,500	5,054,592
Q _a	Volumetric flow rate, actual (m ³ /hr)	259,816	290,592	268,684	273,031
Q _s	Volumetric flow rate, standard (m ³ /hr)	179,443	199,386	185,029	187,953
Q _{std}	Volumetric flow rate, dry standard (dry m ³ /hr)	136,557	152,689	140,201	143,149
Q _{std7}	Volumetric flow rate, dry std@7%O ₂ (dry m ³ /hr)	126,733	128,742	127,190	127,555
Q _s	Volumetric flow rate, normal (Nm ³ /hr)	167,208	185,792	172,414	175,138
Q _{std}	Volumetric flow rate, dry normal (Nm ³ /hr)	127,246	142,278	130,642	133,389
Q _{std7}	Volumetric flow rate, dry normal @7%O ₂ (Nm ³ /hr)	118,092	119,964	118,518	118,858

Comments:

Average includes 3 runs.

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 M O L @

WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

QA/QC DATA

D

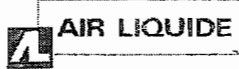
I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: KPO

Date: 5/11/2011



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Air Liquide America
Specialty Gases LLC



Shipped 1290 COMBERMERE STREET
 From: TROY MI 48083
 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
 DON ALLEN
 500 WEST WOOD STREET
 PALATINE IL 60067
 US

DOCUMENT#: 39951363 -001
 PO#: 58610-71-65000
 ITEM #: P813-30AL
 DATE: 07Dec2010

CYLINDER #: ALM013200
 FILL PRESSURE: 02000 PSIG

PURE MATERIAL: NITROGEN

CAS# 7727-37-9

GRADE: ZERO GAS

PURITY: 99.998%

<u>IMPURITY</u>	<u>MAXIMUM CONCENTRATIONS</u>	<u>ACTUAL CONCENTRATIONS</u>
THC	0.5 PPM	< 0.5 PPM

QC BATCH: NITFILL120310

ANALYST: SAJAD HYDER
 SAJAD HYDER



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: 58568-71-65000

Document # : 39624159-002

Customer

CLEAN AIR INSTRUMENT RENTAL
GARY ZAPEL
500 WEST WOOD STREET
PALATINE IL 60067
US

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: **ALM062872** Certification Date: **01Dec2010** Exp. Date: **30Nov2013**
Cylinder Pressure***: **2000 PSIG**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
OXYGEN	14.1 %	+/- 1%	Direct NIST and VSL
CARBON DIOXIDE	5.93 %	+/- 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 2350	01Dec2011	K016398	23.20 %	OXYGEN
NTRM 2300	17Aug2016	10002807	23.04 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
CAI/110P/V03018	15Nov2010	PARAMAGNETIC
PIR/2000/609015	01Dec2010	NDIR

ANALYZER READINGS

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

First Triad Analysis

OXYGEN

Date: 13Nov2010 Response Unit:%
Z1=0.00000 R1=23.20000 T1=14.09000
R2=23.20000 Z2=0.00000 T2=14.09000
Z3=0.00000 T3=14.09000 R3=23.20000
Avg. Concentration: 14.07 %

Second Triad Analysis

CARBON DIOXIDE

Date: 01Dec2010 Response Unit: MV
Z1=0.00000 R1=100.0000 T1=40.83000
R2=100.0000 Z2=0.00000 T2=40.84000
Z3=0.00000 T3=40.84000 R3=100.0000
Avg. Concentration: 5.926 %

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.999998
Constants: A = -0.01919614
B = 1.000175394 C = 0
D = 0 E = 0

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = -0.999993
Constants: A = -0.00428797
B = 0.132701577 C = -0.0001549
D = 0.000011295 E = 0

APPROVED BY:


JEFF CROTEAU



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: 58745-71-65000
Document #: 40716347-002

Customer

CLEAN AIR ENGINEERING

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

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: **ALM017071** Certification Date: **28Feb2011** Exp. Date: **27Feb2014**
Cylinder Pressure***: **2000 PSIG**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
OXYGEN	6.05 %	+/- 1%	Direct NIST and VSL
CARBON DIOXIDE	13.9 %	+/- 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 2350	01Dec2011	K016398	23.20 %	OXYGEN
NTRM 2300	17Aug2016	K026052	23.04 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
CAI/110P/V03018	24Feb2011	PARAMAGNETIC
PIR/2000/609015	04Feb2011	NDIR

ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

OXYGEN

Date: 01Mar2011 Response Unit: %
 Z1 = 0.00000 R1 = 23.20000 T1 = 6.06000
 R2 = 23.20000 Z2 = 0.00000 T2 = 6.06000
 Z3 = 0.00000 T3 = 6.06000 R3 = 23.20000
 Avg. Concentration: 6.047 %

Concentration = A + Bx + Cx2 + Dx3 + Ex4
 r = 0.999998
 Constants: A = -0.01314124
 B = 1.000039653 C = 0
 D = 0 E = 0

CARBON DIOXIDE

Date: 01Mar2011 Response Unit: MV
 Z1 = 0.00000 R1 = 100.0000 T1 = 75.60000
 R2 = 100.0000 Z2 = 0.00000 T2 = 75.60000
 Z3 = 0.00000 T3 = 75.60000 R3 = 100.0000
 Avg. Concentration: 13.87 %

Concentration = A + Bx + Cx2 + Dx3 + Ex4
 r = 0.999994
 Constants: A = -0.0032159
 B = 0.134654642 C = -0.0003116
 D = 1.26756E-05 E = 0

APPROVED BY: _____

JEFF CRÉTEAU



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC



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.: 24859-66-85000

Project No.: 05-84187-002

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: **CC217365** Certification Date: **28Jan2010** Exp. Date: **28Jan2012**
Cylinder Pressure***: **1906 PSIG**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.0 %	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	224 PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	44.3 PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	224 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 = 9.99789
R2 = 13.91811 Z2 = 0.00130 T2 = 10.00238
Z3 = 0.01087 T3 = 10.02283 R3 = 13.91889
Avg. Concentration: 10.02 %

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 = 220.9371
R2 = 490.2213 Z2 = 0.37681 T2 = 223.7306
Z3 = 0.69378 T3 = 224.2127 R3 = 490.9652
Avg. Concentration: 222.7 PPM

Date: 28Jan2010 Response Unit: PPM
Z1 = 0.35355 R1 = 490.4896 T1 = 224.3642
R2 = 491.2955 Z2 = -0.02790 T2 = 226.0987
Z3 = 1.26294 T3 = 226.6155 R3 = 491.3687
Avg. Concentration: 224.8 PPM

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 = 44.71628
R2 = 101.5012 Z2 = 0.03768 T2 = 44.72766
Z3 = 0.15600 T3 = 44.85062 R3 = 101.6885
Avg. Concentration: 44.24 PPM

Date: 28Jan2010 Response Unit: PPM
Z1 = -0.03477 R1 = 101.4266 T1 = 44.78306
R2 = 101.4765 Z2 = -0.02790 T2 = 44.98472
Z3 = 0.10977 T3 = 45.03605 R3 = 101.6130
Avg. Concentration: 44.44 PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99999E-1
Constants: A = 0.00000E+0
B = 1.05169E+0 C = 6.00000E-6
D = 0.00000E+0 E = 0.00000E+0

APPROVED BY: _____

Rob McCrandall



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

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

Assay Laboratory

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

P.O. No.: 25377-66-65000
Document #: 40661163-001

Customer

CLEAN AIR ENGINEERING

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

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: **ALM048873** Certification Date: **21Feb2011** Exp. Date: **20Feb2013**
Cylinder Pressure***: **1935 PSIG**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.0 %	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	225 PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	45.2 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
14% CO2	15Dec2011	K000893	13.94 %	CARBON DIOXIDE
NTRM 1685	17Mar2016	KAL003271	247.1 PPM	NITRIC OXIDE
NTRM 0260 SO	15Jan2012	KAL003926	255.5 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	28Jan2011	FTIR
FTIR//0928621	04Feb2011	FTIR
FTIR//0928621	28Jan2011	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: 14Feb2011 Response Unit: %
Z1=0.00031 R1=13.93708 T1=10.02547
R2=13.95354 Z2=0.00868 T2=10.02747
Z3=0.01253 T3=10.03911 R3=13.95466
Avg. Concentration: 10.02 %

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99997E-1
Constants: A = 0.00000E+0
B = 9.12626E-1 C = 1.19750E-2
D = 0.00000E+0 E = 0.00000E+0

NITRIC OXIDE

Date: 14Feb2011 Response Unit: PPM
Z1=-0.69897 R1=247.0797 T1=226.1795
R2=247.3445 Z2=-0.52028 T2=226.3367
Z3=-0.35322 T3=226.5970 R3=247.4250
Avg. Concentration: 226.2 PPM

Date: 21Feb2011 Response Unit: PPM
Z1=-0.48582 R1=246.5937 T1=221.5001
R2=246.6289 Z2=-0.33641 T2=222.9012
Z3=0.13518 T3=224.0443 R3=247.7465
Avg. Concentration: 223.9 PPM

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99997E-1
Constants: A = 0.00000E+0
B = 9.62517E-1 C = 2.10000E-5
D = 0.00000E+0 E = 0.00000E+0

SULFUR DIOXIDE *

Date: 14Feb2011 Response Unit: PPM
Z1=-0.03584 R1=50.07821 T1=44.93508
R2=50.13437 Z2=-0.01929 T2=45.02175
Z3=0.03353 T3=45.08021 R3=50.15265
Avg. Concentration: 45.08 PPM

Date: 21Feb2011 Response Unit: PPM
Z1=-0.06436 R1=253.4292 T1=44.84587
R2=253.5297 Z2=-0.00245 T2=44.86224
Z3=0.16339 T3=44.96050 R3=253.6678
Avg. Concentration: 45.21 PPM

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99995E-1
Constants: A = 0.00000E+0
B = 1.01199E+0 C = 1.00000E-5
D = 0.00000E+0 E = 0.00000E+0

APPROVED BY:

Rob McCrandall



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC



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

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 %

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=0.69376 T3=455.3191 R3=490.9652
Avg. Concentration: 453.6 PPM

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

Second Triad Analysis

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

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 = 9.99994E-1
Constants: A = 0.00000E+0
B = 9.29116E-1 C = 1.26900E-2
D = 0.00000E+0 E = 0.00000E+0

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

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99999E-1
Constants: A = 0.00000E+0
B = 1.05169E+0 C = 6.00000E-6
D = 0.00000E+0 E = 0.00000E+0

APPROVED BY:


Rob McCrandall



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

P.O. No.: 58157-71-65000
AIR LIQUIDE AMERICA SPECIALTY GASES LLC Project No.: 05-87824-001
1290 COMBERMERE STREET
TROY, MI 48083

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: ALM024011 Certification Date: 19May2010 Exp. Date: 18May2013
Cylinder Pressure***: 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	48.3 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
	02Oct2010	KAL003166	25.21 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928821	13May2010	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:	Response Unit:						
12May2010	PPM	Z1=-0.05622	R1=28.28762	T1=48.40792			
		R2=25.36373	Z2=-0.00283	T2=48.41721			
		Z3=0.08340	T3=48.48810	R3=25.37809			
Avg. Concentration:		48.20	PPM				

Date:	Response Unit:						
19May2010	PPM	Z1=0.01616	R1=25.11081	T1=48.22931			
		R2=25.13564	Z2=0.05940	T2=48.24473			
		Z3=0.11049	T3=48.27846	R3=25.19053			
Avg. Concentration:		48.43	PPM				

Concentration = A + Bx + Cx ² + Dx ³ + Ex ⁴	
r = 9.99992E-1	
Constants:	A = 0.00000E+0
B = 8.77606E-1	C = 6.03000E-4
D = 1.00000E-6	E = 0.00000E+0

APPROVED BY:

Rob McCrandall
Rob McCrandall

Allen



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: 58320-71-65000
Project No.: 05-90126-002

Customer

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

ANALYTICAL INFORMATION

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

Cylinder Number: **ALM016660** Certification Date: **09Aug2010** Exp. Date: **08Aug2013**
Cylinder Pressure***: **2015 PSIG**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	95.7 PPM	+/- 1%	
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 2636	02Oct2011	KAL003744	240.8 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS II/ULTRAMAT 6E/N1-VN-0548	06Aug2010	NDIR

ANALYZER READINGS

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

First Triad Analysis

CARBON MONOXIDE

Date: 02Aug2010 Response Unit: MV
Z1=0.00000 R1=241.0000 T1=95.86000
R2=241.0000 Z2=0.00000 T2=95.86000
Z3=0.00000 T3=95.86000 R3=241.0000
Avg. Concentration: 95.89 PPM

Second Triad Analysis

Date: 09Aug2010 Response Unit: MV
Z1=0.00000 R1=240.8000 T1=95.70000
R2=240.8000 Z2=0.00000 T2=95.70000
Z3=0.00000 T3=95.70000 R3=240.8000
Avg. Concentration: 95.73 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.999999
Constants: A = -0.067017
B = 1.000167 C = 0.000000
D = 0.000000 E = 0.000000

APPROVED BY:

ROBERT MCCRANDALL

CERTIFIED MASTER CLASS



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC



Scott™

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

Document #: 40311499-008
Item No.: MN300621-P-30AL
P.O. No.: 58682-71-65000

Cylinder Number: ALM003276
Cylinder Size: 30AL
Certification Date: 20Jan2011
Expiration Date: 19Jan2013

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 WEST WOOD STREET
PALATINE, IL 60067
US

CERTIFIED CONCENTRATION

Component Name

**Concentration
(Moles)**

**Accuracy
(+/-%)**

NITROGEN DIOXIDE	50.1	PPM	2
OXYGEN	1.00	%	2
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY:


HILARY THATCHER

DATE:

1/20/11

Sample Probe Calibration

Probe Type: S-Type Pitot

I.D. Number: 67-8P-3

Project Number: 11182

Thermocouple Calibration

Reference Type: Thermocouple Reference I.D. No: 15-078-39 Pyrometer I.D. No: 80512890 Units: °F

Point No.	Target Temp.	Reference Temp.	Indicated Temp.	Temp. Difference	% Difference*	Specification
1	Ambient	64	64	0	0.00%	%Difference ≤ 1.5
2	200°F-250°F	223	226	-3	0.44%	

* Based on Absolute Temperature (Rankine)

Does thermocouple assembly meet specifications? → YES

Pitot Tube Calibration (Wind Tunnel Method @ 49 ft/sec)

Reference Pitot I.D. No: Wind Tunnel

Reference Pitot Cp: 0.99

Pitot Side 'A' :

Trial No.	Reference ΔP	Probe ΔP	Probe C _{p(S)} *	Abs. Deviation from Avg. C _{p(A)} **
1	0.549	0.810	0.816	0.004
2	0.559	0.812	0.822	0.003
3	0.556	0.810	0.820	0.001
Side 'A' Average Probe C _{p(A)} =			0.8192	0.0024

Specification
Avg. C_p Deviations ≤ 0.01

Pitot Side 'B' :

Trial No.	Reference ΔP	Probe ΔP	Probe C _{p(S)} *	Abs. Deviation from Avg. C _{p(B)} **
1	0.550	0.811	0.815	0.000
2	0.552	0.816	0.814	0.001
3	0.556	0.816	0.817	0.002
Side 'B' Average Probe C _{p(B)} =			0.8156	0.0012

Specification
Avg. C_p Deviations ≤ 0.01

'A' Average C_p 0.819	—	'B' Average C_p 0.816	=	Difference 0.003
---	---	---	---	----------------------------

Specification
|Difference| ≤ 0.01

Does assembly meet specifications?

YES

If "Yes", C_p = Average of Side 'A' and 'B' Cp values. If "No", Pitot must be replaced.

$$* C_{P(S)} = C_{P(STD)} \sqrt{\frac{\Delta p_{(STD)}}{\Delta p_{(S)}}}$$

$$** Deviation = |C_{P(S)} - \overline{C_{P(A \text{ or } B)}}|$$

All specifications are from EPA-600/9-76-005, Section 3.1

Probe Cp= 0.817

Calibrated by: B. Arnold

Date: 03/15/2011



WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

FIELD DATA

E

I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: KR

Date: 5/11/2011

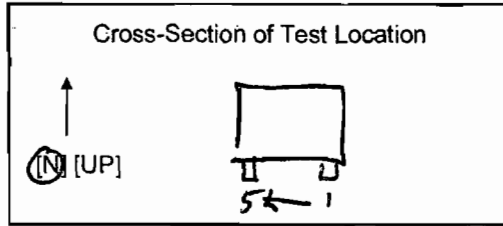


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TEST LOCATION: FE OUTLET
 UNIT: 1

VELOCITY DETERMINATION FIELD DATA SHEET

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Brown</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>CS</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>29.85</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-8P-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>to</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>to</u> [Out] of page	
Duct Dimensions (in.)	<u>96 x 96</u>

Run	Load	Run	Load	Run	Load	Run	Load								
1		1		2		2									
Start Time <u>8:34</u>	Stop Time <u>8:42</u>	Start Time	Stop Time	Start Time <u>9:16</u>	Stop Time <u>9:23</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-11.0</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>NH = -11.0 -123</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1-1	300	0.40		4-1	700	0.37		5-1	298	0.32		2-1	300	0.38	
2	300	0.40		2	300	0.35		2	298	0.31		2	300	0.37	
3	300	0.35		3	300	0.36		3	298	0.43		3	300	0.35	
4	300	0.38		4	300	0.44		4	298	0.52		4	300	0.42	
5	300	0.52		5	300	0.51		5	298	0.51		5	300	0.53	
2-1	299	0.37		5-1	298	0.36		4-1	300	0.37		1-1	300	0.40	
2	299	0.38		2	298	0.37		2	300	0.36		2	300	0.37	
3	299	0.35		3	298	0.40		3	300	0.37		3	300	0.34	
4	299	0.40		4	298	0.46		4	300	0.43		4	300	0.33	
5	299	0.60		5	298	0.47		5	300	0.50		5	300	0.52	
3-1	301	0.43						3-1	301	0.30					
2	301	0.39						2	301	0.33					
3	301	0.44						3	301	0.36					
4	301	0.48						4	301	0.44					
5	301	0.56						5	301	0.51					
Total	<u>7490</u>	<u>16.1841</u>						<u>7495</u>	<u>15.8443</u>						
Average	<u>299</u>	<u>0.6474</u>						<u>299</u>	<u>0.6322</u>						

6006 Sum of square roots.

Circle correct bracketed units on data sheet.

8000



QA/QC NH
Date 3.28.11

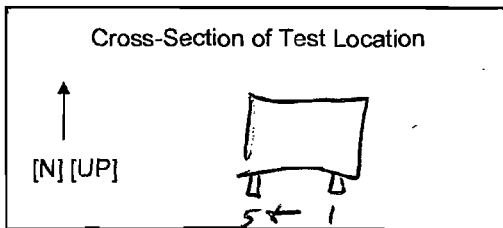
TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 2 OF 5

UNIT: 1

Client <u>Wheeler</u>	Project No. <u>11182</u>
Plant <u>S. BROWARDS</u>	Date <u>7.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>CS</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>29.95</u> [<u>1010</u>] [mbar]
Pitot Cp <u>0.97</u>	Probe I.D. No. <u>62-SP-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>in</u> [Out] [In]	Port Len. (in.) <u>10</u>
Gas Flow <u>in</u> [Out] of page	
Duct Dimensions (in.)	<u>96 x 56</u>

Run	3	Load	Run	3	Load	Run	4	Load	Run	4	Load
Start Time	<u>9:52</u>	Stop Time <u>10:01</u>	Start Time		Stop Time	Start Time <u>10:38</u>	Stop Time <u>10:50</u>	Start Time		Stop Time	
Static Press. (in. H ₂ O)	<u>-12.3</u>		Static Press. (in. H ₂ O)			Static Press. (in. H ₂ O)	<u>-11.2</u>		Static Press. (in. H ₂ O)		
Post-Test Leak Check:	Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check:	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check:	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check:	Pass <input type="checkbox"/> Fail <input type="checkbox"/>	
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1 -1	299	0.45		4 -1	299	0.45		5 -1	299	0.37	
2	299	0.40		2	299	0.40		2	299	0.37	
3	299	0.35		3	299	0.42		3	299	0.41	
4	299	0.33		4	299	0.51		4	299	0.46	
5	299	0.63		5	299	0.56		5	299	0.52	
2 -1	300	0.44		5 -1	300	0.37		4 -1	299	0.39	
2	300	0.42		2	300	0.38		2	299	0.37	
3	300	0.38		3	300	0.42		3	299	0.37	
4	300	0.45		4	300	0.47		4	299	0.45	
5	300	0.64		5	300	0.46		5	299	0.54	
3 -1	300	0.37						3 -1	300	0.36	
2	300	0.35						2	300	0.36	
3	300	0.38						3	300	0.39	
4	300	0.44						4	300	0.45	
5	300	0.48						5	300	0.46	
Total	7490	16.492						7480	16.1968		
Average	299	0.4100						299	0.6479		

Sum of square roots.
6000
0.6594

Circle correct bracketed units on data sheet.

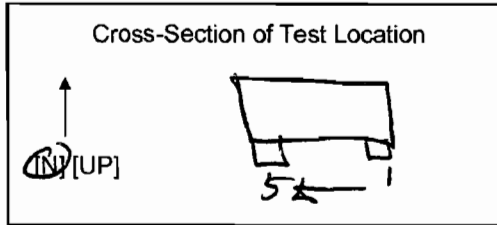
2000



TEST LOCATION: FF OUTLET
 UNIT: 1

VELOCITY DETERMINATION FIELD DATA SHEET

Client <u>WHEELABRATOR</u>	Project No. <u>11182</u>
Plant <u>S. BROWARDS</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>CS</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F) <u>80</u>	Bar. Press. <u>29.95</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-80-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <input checked="" type="checkbox"/> [In] [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>0</u> [In] [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run	Load	Run	Load	Run	Load	Run	Load								
5		5		6		6									
Start Time <u>11:18</u>	Stop Time <u>NH 11:32</u>	Start Time	Stop Time	Start Time <u>12:07</u>	Stop Time <u>NH 12:15</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-11.0</u>	<u>-11.2</u>	Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-11.0</u>	<u>-11.3</u>	Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1-1	298	0.38		4-1	299	0.33		5-1	301	0.40		2-1	302	0.45	
2	298	0.36		2	299	0.33		2	301	0.39		2	302	0.40	
3	298	0.33		3	299	0.35		3	301	0.39		3	302	0.40	
4	298	0.31		4	299	0.47		4	301	0.44		4	302	0.44	
5	298	0.39		5	299	0.57		5	307	0.47		5	302	0.57	
2-1	298	0.41		5-1	299	0.34		4-1	300	0.46		1-1	296	0.47	
2	298	0.37		2	299	0.35		2	300	0.41		2	296	0.49	
3	298	0.35		3	299	0.38		3	300	0.42		3	296	0.34	
4	298	0.39		4	299	0.45		4	300	0.46		4	291	0.36	
5	298	0.49		5	299	0.47		5	300	0.52		5	296	0.55	
3-1	298	0.37						3-1	303	0.47					
2	298	0.36						2	303	0.40					
3	298	0.36						3	303	0.38					
4	298	0.44						4	303	0.45					
5	298	0.48						5	303	0.50					
Total	<u>7460.00</u>	<u>15.581</u>							<u>300.400</u>	<u>0.507</u>				<u>16.5730</u>	
Average	<u>198.400</u>	<u>0.236</u>							<u>300.400</u>	<u>0.507</u>				<u>0.6629</u>	

Sum of square roots.

Circle correct bracketed units on data sheet.



QA/QC _____
Date _____

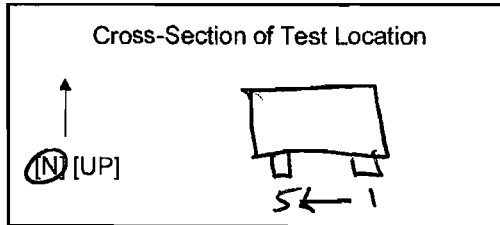
E-5

TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

UNIT: 1

Client <u>WHEELABRATOR</u>	Project No. <u>11182</u>
Plant <u>S. BROWARDS</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>29.95</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-10-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>(In)</u> [In] [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>(In)</u> [In] [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run	Load	Run	Load	Run	Load	Run	Load								
7		7		8		8									
Start Time <u>12:44</u>	Stop Time <u>12:54</u>	Start Time	Stop Time	Start Time <u>13:41</u>	Stop Time <u>13:47</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-11.3</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-11.3</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1	298	0.44		1	297	0.47		1	302	0.47		1	302	0.45	
2	298	0.42		2	297	0.41		2	302	0.46		2	302	0.41	
3	298	0.38		3	297	0.49		3	302	0.41		3	302	0.43	
4	298	0.34		4	297	0.49		4	302	0.38		4	302	0.55	
5	298	0.49		5	297	0.56		5	302	0.52		5	302	0.58	
2	302	0.43		5	302	0.43		2	304	0.43		5	300	0.41	
2	302	0.42		2	302	0.40		2	304	0.38		2	300	0.41	
3	302	0.41		3	302	0.40		3	304	0.37		3	300	0.48	
4	303	0.45		4	302	0.47		4	304	0.45		4	300	0.55	
5	303	0.61		5	302	0.51		5	304	0.59		5	300	0.51	
3	303	0.31						3	302	0.31					
2	303	0.35						2	302	0.35					
3	303	0.39						3	302	0.40					
4	303	0.46						4	302	0.45					
5	303	0.51						5	302	0.50					
Total		<u>16.5007</u>								<u>16.7191</u>					
Average		<u>0.6606</u>								<u>0.6688</u>					

Sum of square roots.
0.6610

Circle correct bracketed units on data sheet.



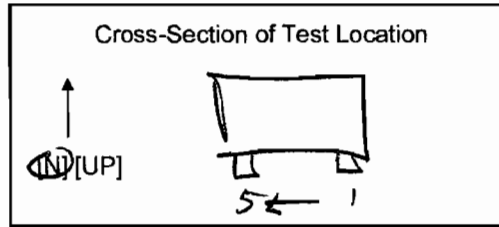
TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 5 OF 5

UNIT: 1

Client: <u>W ACCELERATOR</u>	Project No. <u>1182</u>
Plant: <u>S. BEWARD</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press <u>29.95</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-89-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>(In)</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>(In)</u> [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run	Load	Run	Load	Run	Load	Run	Load								
9		9		10		10									
Start Time <u>14:08</u>	Stop Time <u>14:16</u>	Start Time	Stop Time	Start Time <u>15:08</u>	Stop Time <u>15:13</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-11.3</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-11.0</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1-1	299	0.45		4-1	303	0.32		5-1	306	0.45		2-1	305	0.49	
2	299	0.39		2	304	0.31		2	306	0.46		2	305	0.44	
3	299	0.35		3	305	0.34		3	306	0.48		3	305	0.46	
4	299	0.38		4	305	0.46		4	306	0.53		4	305	0.57	
5	299	0.55		5	305	0.54		5	306	0.56		5	305	0.69	
2-1	304	0.42		5-1	304	0.40		4-1	307	0.51		1-1	299	0.40	
2	304	0.38		2	304	0.42		2	307	0.57		2	299	0.50	
3	304	0.37		3	304	0.44		3	307	0.50		3	296	0.40	
4	304	0.45		4	304	0.50		4	307	0.55		4	299	0.38	
5	304	0.52		5	304	0.53		5	307	0.61		5	301	0.61	
3-1	299	0.52						3-1	307	0.52					
2	302	0.38						2	307	0.44					
3	303	0.43						3	307	0.45					
4	300	0.48						4	307	0.54					
5	300	0.55						5	307	0.61					
Total		<u>16.435</u>								<u>17.335</u>					
Average	<u>302.4400</u>	<u>0.6574</u>						<u>304.7600</u>		<u>0.7092</u>					

Sum of square roots.

Circle correct bracketed units on data sheet.



QA/QC NH
Date 2.28.11

TEST LOCATION: FF OUTLET
 UNIT: 1 RUN: 1

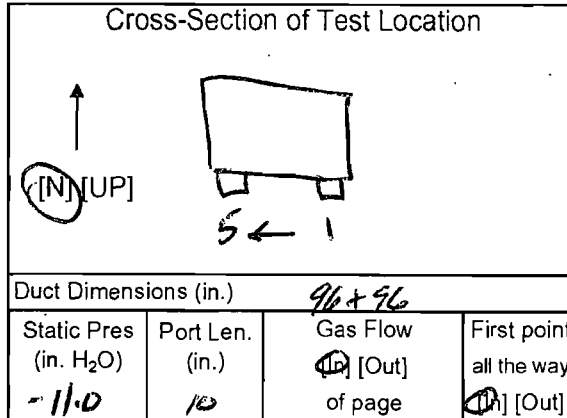
HC TESTING
FIELD DATA SHEET

METHOD: 26A PAGE 1 OF 1

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. BROWARDS</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>46-7</u>	Sample Box No. <u>B16</u>
Meter Y _a <u>0.9961</u>	Meter ΔH _@ <u>1.7699</u>
K Factor <u>-</u>	Pitot C _p <u>-</u>

Leak Rate Before <u>0.003</u> [cfm] [Lpm]	@ <u>15</u> (in. Hg)
Leak Rate After <u>0.002</u> [cfm] [Lpm]	@ <u>5</u> (in. Hg)
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	



Amb. Temp. (°F) <u>74</u>	Bar. Press. <u>29.95</u> (in. Hg) [mbar]
Probe I.D. No. <u>67-4-1</u>	
Liner Material <u>GLASS</u>	

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>-</u>	Nozzle I.D.

Start Time: <u>7:48</u>	Stop Time: <u>8:48</u>
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Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. () [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
	<u>5</u>	<u>N/A</u>	<u>1.5</u>	<u>818.365</u>	<u>302</u>	<u>300</u>	<u>300</u>	<u>63</u>	<u>81</u>	<u>77</u>	<u>3</u>	<u>9.2</u>	
<u>3-1</u>	<u>10</u>	<u>↓</u>	<u>1.5</u>	<u>825.35</u>	<u>301</u>	<u>304</u>	<u>302</u>	<u>51</u>	<u>83</u>	<u>77</u>	<u>3</u>	<u>9.5</u>	
	<u>15</u>	<u>↓</u>	<u>1.5</u>	<u>828.76</u>	<u>300</u>	<u>302</u>	<u>302</u>	<u>46</u>	<u>86</u>	<u>77</u>	<u>3</u>	<u>9.2</u>	
	<u>20</u>	<u>↓</u>	<u>1.5</u>	<u>832.23</u>	<u>301</u>	<u>301</u>	<u>303</u>	<u>47</u>	<u>88</u>	<u>78</u>	<u>3</u>	<u>9.9</u>	
	<u>25</u>	<u>↓</u>	<u>1.5</u>	<u>835.69</u>	<u>300</u>	<u>301</u>	<u>302</u>	<u>50</u>	<u>89</u>	<u>79</u>	<u>3</u>	<u>9.5</u>	
	<u>30</u>		<u>1.5</u>	<u>839.16</u>	<u>302</u>	<u>302</u>	<u>303</u>	<u>54</u>	<u>90</u>	<u>80</u>	<u>3</u>	<u>10.1</u>	
	<u>35</u>		<u>1.5</u>	<u>842.68</u>	<u>301</u>	<u>301</u>	<u>302</u>	<u>59</u>	<u>91</u>	<u>81</u>	<u>3</u>	<u>9.4</u>	
	<u>40</u>		<u>1.5</u>	<u>846.14</u>	<u>302</u>	<u>302</u>	<u>302</u>	<u>62</u>	<u>92</u>	<u>81</u>	<u>3</u>	<u>9.7</u>	
	<u>45</u>		<u>1.5</u>	<u>849.14</u>	<u>301</u>	<u>301</u>	<u>302</u>	<u>62</u>	<u>93</u>	<u>82</u>	<u>3</u>	<u>9.2</u>	
	<u>50</u>		<u>1.5</u>	<u>853.22</u>	<u>301</u>	<u>301</u>	<u>303</u>	<u>63</u>	<u>94</u>	<u>83</u>	<u>3</u>	<u>8.7</u>	
	<u>55</u>		<u>1.5</u>	<u>856.72</u>	<u>301</u>	<u>301</u>	<u>302</u>	<u>63</u>	<u>94</u>	<u>83</u>	<u>3</u>	<u>9.2</u>	
	<u>60</u>		<u>1.5</u>	<u>860.215</u>	<u>301</u>	<u>302</u>	<u>302</u>	<u>63</u>	<u>95</u>	<u>84</u>	<u>3</u>	<u>9.4</u>	
									<u>1076</u>				
	Total *			<u>41.8600</u>	<u>3609</u>			<u>NH</u>	<u>998</u>	<u>962</u>			
	Average			<u>1.5000</u>	<u>300.7500</u>				<u>84.9167</u>				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NH
 Date 3/28/11



TEST LOCATION: FF OUTLET
 UNIT: 1 RUN: 2

HCl TESTING
FIELD DATA SHEET

METHOD: 26A PAGE 1 OF 1

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Brown & SONS</u>	Date <u>3-28-11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>46-7</u>	Sample Box No.
Meter Y_d <u>0.9961</u>	Meter $\Delta H_{@}$ <u>1.7697</u>
K Factor <u>-</u>	Pitot C_p <u>-</u>
Leak Rate Before <u>1.003</u> [in] [Lpm] @ <u>15</u> (in. Hg)	
Leak Rate After <u>1.002</u> [in] [Lpm] @ <u>6</u> (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Cross-Section of Test Location

Duct Dimensions (in.) 96 x 96

Static Pres (in. H ₂ O) <u>NH = 12.3</u>	Port Len. (in.) <u>10</u>	Gas Flow <u>61</u> [Out] of page	First point all the way <u>61</u> [Out]
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Amb. Temp. (°F) <u>82</u>	Bar. Press. <u>29.95</u> [<u>10</u> Hg] [mbar]
Probe I.D. No. <u>67-4-1</u>	
Liner Material <u>GLASS</u>	

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>-</u>	Nozzle I.D. <u>-</u>

Start Time: <u>9:11</u>	Stop Time: <u>10:11</u>
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Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V_m Init. Vol. <u>(10)</u> [L] <u>860.635</u>	Stack Temp. T_s (°F)	Probe T_p (°F)		Filter T_f (°F)	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet $T_{m out}$ (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. T_t (°F)	Notes
						Set Points	Set Points							
3-1	5	N/A	1.5	864.11	303	303	305	64	85	85	3	9.9		
	10		1.5	867.66	304	302	305	64	87	85	3	8.9		
	15		1.5	871.98	304	302	302	59	89	85	3	9.7		
	20		1.5	874.50	304	301	302	62	89	85	3	9.1		
	25		1.5	878.00	304	300	303	53	89	85	3	9.2		
	30		1.5	881.50	305	301	302	55	90	85	3	9.3		
	35		1.5	885.09	305	302	302	56	90	85	3	9.8		
	40		1.5	888.57	304	302	302	56	91	85	3	9.8		
	45		1.5	891.97	303	301	303	56	91	86	3	9.9		
	50		1.5	895.48	303	301	303	57	91	86	3	10.1		
	55		1.5	898.96	304	301	302	63	91	86	3	10.3		
	60		1.5	902.460	303	301	302	64	90	86	3	11.0		
	Total	*		<u>41.8250</u>	3046				1073	1024				
	Average		<u>1.5000</u>	<u>303.8553</u>					<u>87.3750</u>					

Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NH
 Date 3-28-11

TEST LOCATION: FF OUTLET
 UNIT: 1 RUN: 3

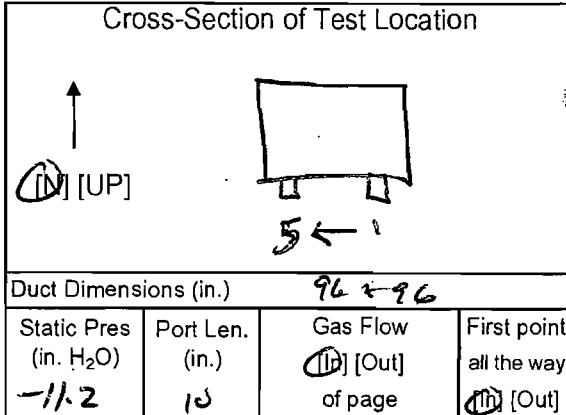
HCl TESTING
FIELD DATA SHEET

METHOD: 26A PAGE 1 OF 1

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. BROWARDS</u>	Date <u>3-28-11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>166-7</u>	Sample Box No. <u>B12</u>
Meter Y _a <u>0.9961</u>	Meter ΔH _@ <u>1.7697</u>
K Factor <u>-</u>	Pitot C _p <u>-</u>

Leak Rate Before <u>0.003</u> [cfm] [Lpm] @ <u>15</u> (in. Hg)
Leak Rate After <u>0.002</u> [cfm] [Lpm] @ <u>6</u> (in. Hg)
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>



Amb. Temp. (°F) <u>82</u>	Bar. Press. <u>29.95</u> [in. Hg] [mbar]
Probe I.D. No. <u>67-4-1</u>	
Liner Material <u>GLASS</u>	

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>-</u>	Nozzle I.D.

Start Time: 10:35 Stop Time: 11:35

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. [ft ³] [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
				<u>903.195</u>		<u>300</u>	<u>300</u>					<u>9.2</u>	
<u>3-1</u>	<u>5</u>	<u>N/A</u>	<u>1.5</u>	<u>906.69</u>	<u>303</u>	<u>299</u>	<u>304</u>	<u>61</u>	<u>85</u>	<u>84</u>	<u>3</u>	<u>9.2</u>	
	<u>10</u>		<u>1.5</u>	<u>908.97</u>	<u>302</u>	<u>301</u>	<u>302</u>	<u>55</u>	<u>85</u>	<u>83</u>	<u>3</u>	<u>9.2</u>	
	<u>15</u>		<u>1.5</u>	<u>913.34</u>	<u>301</u>	<u>301</u>	<u>303</u>	<u>46</u>	<u>86</u>	<u>82</u>	<u>3</u>	<u>9.2</u>	
	<u>20</u>		<u>1.5</u>	<u>916.75</u>	<u>302</u>	<u>300</u>	<u>303</u>	<u>47</u>	<u>87</u>	<u>81</u>	<u>3</u>	<u>9.9</u>	
	<u>25</u>		<u>1.5</u>	<u>920.15</u>	<u>301</u>	<u>300</u>	<u>302</u>	<u>49</u>	<u>86</u>	<u>81</u>	<u>3</u>	<u>9.3</u>	
	<u>30</u>		<u>1.5</u>	<u>923.59</u>	<u>301</u>	<u>301</u>	<u>302</u>	<u>52</u>	<u>86</u>	<u>81</u>	<u>3</u>	<u>9.6</u>	
	<u>35</u>		<u>1.5</u>	<u>927.11</u>	<u>301</u>	<u>302</u>	<u>301</u>	<u>55</u>	<u>86</u>	<u>80</u>	<u>3</u>	<u>9.7</u>	
	<u>40</u>		<u>1.5</u>	<u>930.62</u>	<u>302</u>	<u>299</u>	<u>301</u>	<u>56</u>	<u>85</u>	<u>80</u>	<u>3</u>	<u>8.5</u>	
	<u>45</u>		<u>1.5</u>	<u>934.09</u>	<u>302</u>	<u>301</u>	<u>303</u>	<u>56</u>	<u>83</u>	<u>78</u>	<u>3</u>	<u>9.0</u>	
	<u>50</u>		<u>1.5</u>	<u>937.59</u>	<u>301</u>	<u>303</u>	<u>303</u>	<u>57</u>	<u>83</u>	<u>78</u>	<u>3</u>	<u>9.0</u>	
	<u>55</u>		<u>1.5</u>	<u>941.05</u>	<u>301</u>	<u>303</u>	<u>303</u>	<u>58</u>	<u>83</u>	<u>77</u>	<u>3</u>	<u>8.7</u>	
	<u>60</u>		<u>1.5</u>	<u>944.465</u>	<u>301</u>	<u>303</u>	<u>303</u>	<u>59</u>	<u>83</u>	<u>76</u>	<u>3</u>	<u>9.3</u>	
	Total	*		<u>41.2700</u>					<u>1018</u>	<u>961</u>			
	Average		<u>1.5000</u>		<u>301.5000</u>				<u>82.4583</u>				

Sum of square roots. Circle correct bracketed units on data sheet.

QA/QC NH
 Date 3-28-11



E-10

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location	Unit 1 FF Outlet
Plant South Broward	Job No.	11182	Method Mod. 26A

CAE TL07-2 cert # 514763A 4995

Run No. 1	Filter Type Quartz	Sample Box No. <i>B16</i>
Date <i>3/28/11</i>	Lot No.	pH
Analyst <i>P. Vicore</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	<i>530.4</i>	<i>463.6</i>	<i>66.8</i>	
Impinger 2	100 mL 01.N H2SO4	<i>688.2</i>	<i>566.1</i>	<i>122.1</i>	
Impinger 3	100 mL 01.N H2SO4	<i>585.2</i>	<i>544.1</i>	<i>41.1</i>	
Impinger 4	Empty	<i>444.9</i>	<i>438.6</i>	<i>6.3</i>	
Impinger 5	Silica Gel	<i>748.3</i>	<i>731.1</i>	<i>17.2</i>	Total Weight (gm)
					<i>236.3</i>
					<i>253.5</i>

QA/QC *PV*
Date *3/28/11*

Run No. 2	Filter Type Quartz	Sample Box No. <i>B14</i>
Date <i>3/28/11</i>	Lot No.	pH
Analyst <i>D. Luckyside</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	<i>525.9</i>	<i>455.0</i>	<i>70.9</i>	
Impinger 2	100 mL 01.N H2SO4	<i>640.0</i>	<i>525.0</i>	<i>115.0</i>	
Impinger 3	100 mL 01.N H2SO4	<i>574.1</i>	<i>535.8</i>	<i>38.3</i>	
Impinger 4	Empty	<i>456.3</i>	<i>448.2</i>	<i>8.1</i>	
Impinger 5	Silica Gel	<i>749.0</i>	<i>736.1</i>	<i>12.9</i>	Total Weight (gm)
					<i>232.3</i>
					<i>245.2</i>

QA/QC *PC*
Date *3/28/11*

Run No. 3	Filter Type Quartz	Sample Box No. <i>B12</i>
Date <i>3/28/11</i>	Lot No.	pH
Analyst <i>P. Vicore</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	<i>549.0</i>	<i>454.2</i>	<i>94.8</i>	
Impinger 2	100 mL 01.N H2SO4	<i>662.9</i>	<i>542.1</i>	<i>120.8</i>	
Impinger 3	100 mL 01.N H2SO4	<i>576.2</i>	<i>550.3</i>	<i>25.9</i>	
Impinger 4	Empty	<i>435.7</i>	<i>429.0</i>	<i>6.7</i>	
Impinger 5	Silica Gel	<i>782.3</i>	<i>770.0</i>	<i>12.3</i>	Total Weight (gm)
					<i>248.2</i>
					<i>260.5</i>

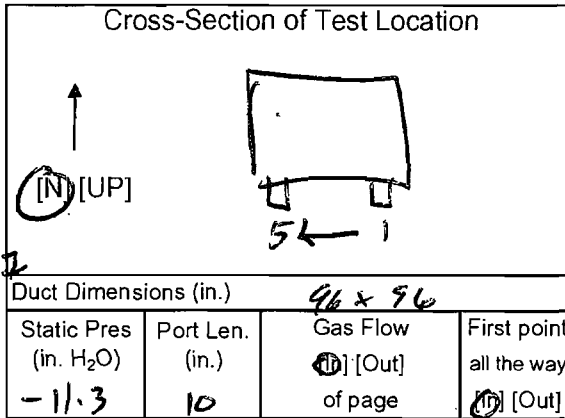
QA/QC *PV*
Date *3/28/11*

TEST LOCATION: FF OUTLET
 UNIT: 1 RUN: 1

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: 13B PAGE 1 OF 2

Client: <u>WHEELABRATOR</u>	Project No. <u>NR2</u>
Plant: <u>S. BROWARD</u>	Date: <u>3.28.11</u>
Meter Operator: <u>NH</u>	
Probe Operator: <u>BA</u>	



Amb. Temp. (°F) <u>80</u>	Bar. Press. <u>29.95</u> [in. Hg] [mbar]
Probe I.D. No. <u>56-96-11 67-8+14</u>	
Liner Material <u>GLASS</u>	

Meter Box <u>66-21</u>	Sample Box No. <u>B1</u>
Meter Y _d <u>0.9837</u>	Meter ΔH _@ <u>1.8252</u>
K Factor <u>2.65</u>	Pitot C _p <u>NH 0.812</u>
Leak Rate Before <u>0.009</u> [cfm] [Lpm] @ <u>15</u> (in. Hg)	
Leak Rate After <u>0.002</u> [cfm] [Lpm] @ <u>6</u> (in. Hg)	
Pitot Leak Check Before: <input checked="" type="checkbox"/> After: Good <input checked="" type="checkbox"/> Bad <input type="checkbox"/>	

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>0.274</u>	Nozzle I.D. <u>274-1</u>

Start Time: 12:03 Stop Time: 13:12

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T ₁ (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
				<u>612.410</u>		<u>250</u>	<u>250</u>						
1-1	2.5	0.47	1.2	613.99	296	260	256	63	75	74	3	9.8	
2	5	0.49	1.3	615.59	294	256	253	61	75	74	3	9.8	
3	7.5	0.34	0.90	616.93	296	249	252	60	76	74	3	9.7	
4	10	0.36	0.95	618.34	291	250	252	59	77	74	3	10.1	
5	12.5	0.55	1.5	620.155	296	252	252	59	78	74	3	10.0	0.290
2-1	15	0.51	1.4	621.87	294	255	250	61	81	75	4	10.7	
2	17.5	0.40	1.1	623.34	297	252	249	62	82	75	4	9.9	
3	20	0.41	1.1	624.81	294	249	257	64	83	76	4	10.1	
4	22.5	0.57	1.4	626.47	298	250	252	64	84	76	4	9.5	
5	25	0.60	1.6	627.905	299	252	250	63	86	77	4	8.8	1.030
3-1	27.5	0.47	1.2	629.95	297	255	257	63	86	77	4	10.0	
2	30	0.38	1.0	631.40	297	249	250	64	87	77	4	9.4	
3	32.5	0.40	1.1	632.90	298	249	249	64	88	78	4	9.3	
	Total	<u>17.0558</u>	<u>21.1500</u>	<u>39.4900</u>					<u>1058</u>	<u>981</u>			
	Average	<u>0.6822</u>	<u>1.2460</u>			<u>297.0400</u>			<u>82.2200</u>				

E-12

Sum of square roots.
0.4594 15.75
 15.4

Circle correct bracketed units on data sheet.
 3651 QA/QC NH
 3575 Date 3-28-11

TEST LOCATION: FF OUTLET

Fluoride TESTING

METHOD: 136 PAGE 2 OF 2

UNIT: 1 RUN: 1

FIELD DATA SHEET

Client <u>WHELAN</u>	Project No. <u>1182</u>
Plant <u>S. BROWN</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	

Meter Box <u>66-21</u>	Sample Box No. <u>B1</u>
Meter Yd <u>0.9837</u>	Meter ΔH@ <u>1.8252</u>
K Factor <u>2.45</u>	Pitot Cp <u>0.812</u>

Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Cross-Section of Test Location

Duct Dimensions (in.) 96 x 96

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow (m) [Out]	First point all the way of page (D) [Out]
	<u>10</u>		

Amb. Temp. (°F)	Bar. Press. <u>29.95</u> <input checked="" type="checkbox"/> [Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.	
Thimble No.	
Nozzle Diameter	Nozzle I.D.

Start Time:	Stop Time:
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Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (m) [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
3-4	35	0.47	1.2	634.45 ^{NH} 632.90	298	250	249	64	89	79	4	10.0	
-5	37.5	0.58	1.5	636.185	298	251	257	64	90	79	4	9.7	0.415
4-1	40	0.47	1.2	638.01	297	254	250	64	88	80	4	9.7	
2	42.5	0.41	1.1	639.57	299	257	249	63	90	80	4	9.9	
3	45	0.49	1.3	641.12	299	248	250	62	90	81	4	9.9	
4	47.5	0.49	1.3	642.74	297	248	250	61	91	81	4	9.2	
5	50	0.50	1.3	644.330	295	257	250	59	92	81	4	9.0	0.465
5-1	52.5	0.40	1.1	645.99	295	255	250	58	91	82	4	10.2	
2	55	0.40	1.1	647.48	299	257	257	^{NH} 57	93	83	4	9.7	
3	57.5	0.50	1.3	649.08	298	249	257	58	93	83	4	9.8	
4	60	0.55	1.5	650.80	300	250	250	60	94	84	4	9.6	
5	62.5	0.55	1.5	652.525	300	250	250	60	94	84	4	9.6	
Total									1095	977			
Average													

* Sum of square roots.

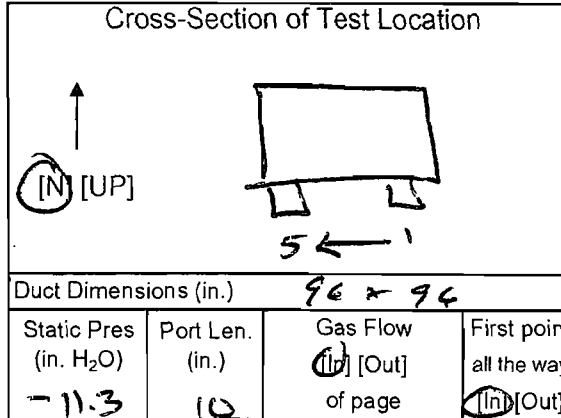
Circle correct bracketed units on data sheet.

QA/QC _____
Date _____

TEST LOCATION: FF OUT FLUORIDE TESTING METHOD: 13B PAGE 1 OF 2
 UNIT: 1 RUN: 2
FIELD DATA SHEET

Client <u>WHEELABRATOR</u>	Project No. <u>11182</u>
Plant <u>F.S. BROWARD</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	

Meter Box <u>66-21</u>	Sample Box No. <u>B22</u>
Meter Y_d <u>0.9837</u>	Meter $\Delta H_{@}$ <u>1.8252</u>
K Factor <u>2.65</u>	Pitot C_p <u>0.812</u>
Leak Rate Before <u>1.004</u> [Lpm] @ <u>15</u> (in. Hg)	
Leak Rate After <u>0.004</u> [Lpm] @ <u>8</u> (in. Hg)	
Pitot Leak Check Before: <input checked="" type="checkbox"/> After: Good <input checked="" type="checkbox"/> Bad <input type="checkbox"/>	



Amb. Temp. (°F) <u>82</u>	Bar. Press. <u>29.95</u> [in. Hg] [mbar]
Probe I.D. No. <u>56-96-11</u>	<u>67-8-14</u>
Liner Material <u>GLASS</u>	

Filter No.	<u>-</u>
Thimble No.	<u>-</u>
Nozzle Diameter <u>0.274</u>	Nozzle I.D. <u>274-1</u>

Start Time: <u>13:33</u>	Stop Time: <u>14:44</u>
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Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V_m Init. Vol. (ft) [L]	Stack Temp. T_s (°F)	Probe T_p (°F)	Filter T_f (°F)	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points						<input checked="" type="checkbox"/>	
				<u>653.040</u>		<u>250</u>	<u>250</u>					<u>9.2</u>	
5-1	2.5	0.41	1.1	654.62	300	258	260	64	89	86	4	9.6	
2	5	0.41	1.1	656.15	299	254	252	59	90	87	4	10.1	
3	7.5	0.48	1.3	657.71	300	252	253	52	90	86	4	9.7	
4	10	0.55	1.5	659.42	299	251	252	45	92	86	4	10.1	
5	12.5	0.57	1.4	661.135	301	251	252	43	93	87	4	9.7	<u>.275</u>
4-1	15	0.49	1.3	662.92	300	252	250	43	93	87	4	10.2	
2	17.5	0.40	1.1	664.46	300	253	250	43	94	87	4	9.8	
3	20	0.42	1.1	665.96	300	250	250	45	94	87	4	9.8	
4	22.5	0.55	1.5	667.67	300	249	251	46	94	87	4	10.0	
5	25	0.60	1.6	669.485	300	249	250	47	95	87	4	9.8	<u>.625</u>
3-1	27.5	0.52	1.4	671.29	299	254	250	52	94	88	4	10.1	
2	30	0.38	1.0	672.78	302	252	250	53	95	87	4	9.6	
3	32.5	0.43	1.1	674.27	303	249	250	57	94	87	4	9.4	
	Total	<u>7.0160</u>	<u>31.2200</u>	<u>39.9750</u>	<u>7491</u>				<u>1207</u>	<u>1129</u>			
	Average	<u>0.6806</u>	<u>1.2488</u>	<u>299.6400</u>	<u>3403</u>				<u>90.4200</u>				

Sum of square roots. 16.5

Circle correct bracketed units on data sheet.

QA/QC NH
Date 3-28-11

E-14

TEST LOCATION: FF OUT
 UNIT: 1 RUN: 2

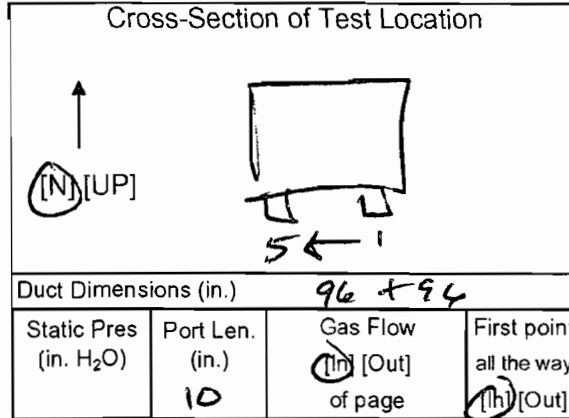
FLUORIDE TESTING
 FIELD DATA SHEET

METHOD: 13B PAGE 2 OF 2

Client WHEELABRATOR Project No. 11182
 Plant S. Browns Date 3-28-11
 Meter Operator NA
 Probe Operator BA

Meter Box 66-21 Sample Box No. B22
 Meter Yd 0.9837 Meter ΔH@ 1.8252
 K Factor 2.65 Pitot Cp 0.817

Leak Rate Before [cfm] [Lpm] @ (in. Hg)
 Leak Rate After [cfm] [Lpm] @ (in. Hg)
 Pitot Leak Check Before: After: Good Bad



Amb. Temp. (°F) Bar. Press. [in. Hg] [mbar]
 Probe I.D. No.
 Liner Material

Filter No.
 Thimble No.
 Nozzle Diameter Nozzle I.D.

Start Time: Stop Time:

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (L)	Stack Temp. T _s (°F)	Probe T _p (°F)		Cond. Temp. T _c (°F)	DGM Inlet T _{m in} (°F)	DGM Outlet T _{m out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points						
	2.5					250	250						
3-4	35	0.48	1.3	675.87	300	250	250	63	95	87	4	9.4	
5	31.5	0.55	1.5	677.590	300	250	250	63	95	87	4	9.5	.72
2-1	40	0.48	1.3	679.50	299	255	250	64	93	87	4	10.7	
2	42.5	0.40	1.1	681.00	300	251	250	64	94	87	4	10.6	
3	45	0.38	1.0	682.46	297	249	250	63	94	88	4	9.7	
4	47.5	0.48	1.3	684.11	301	249	250	62	94	88	4	9.6	
5	50	0.66	1.7	685.945	303	251	249	60	95	88	4	10.6	71.095
1-1	52.5	0.31	0.82	687.90	299	253	250	61	94	88	4	10.6	
2	55	0.42	1.1	688.91	299	251	250	59	94	88	4	10.8	
3	57.5	0.40	1.1	690.42	294	250	250	57	95	88	4	9.7	
4	60	0.38	1.0	691.89	297	249	251	56	95	88	4	9.2	
5	62.5	0.58	1.5	693.575	299	251	250	57	95	88	4	9.8	
Total	*								1133	1052			
Average									90.				

* Sum of square roots.

Circle correct bracketed units on data sheet.

14.72

3588 QA/QC _____
 Date _____



E-15

-13

-15

TEST LOCATION: FF OUTLET

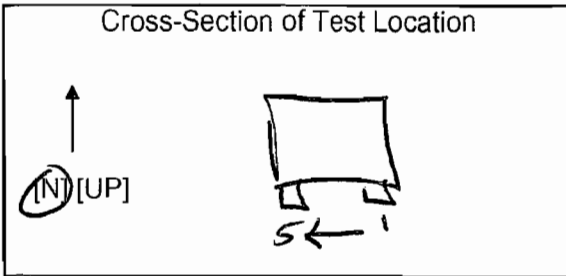
FLUORIDE TESTING

METHOD: 13B PAGE 1 OF 2

UNIT: 1 RUN: 3

FIELD DATA SHEET

Client <u>WHEELABRATOR</u>	Project No. <u>11187</u>
Plant <u>S. BEOWARD</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	



Amb. Temp. (°F) <u>85</u>	Bar. Press. <u>29.95</u> [in. Hg] [mbar]
Probe I.D. No. <u>56-96-11</u>	<u>67-8-14</u>
Liner Material <u>GLASS</u>	

Meter Box <u>66-21</u>	Sample Box No. <u>B1</u>
Meter Y _d <u>0.9837</u>	Meter ΔH _@ <u>1.8252</u>
K Factor <u>2.65</u>	Pitot C _p <u>0.812</u>

Filter No. <u>-</u>		
Thimble No. <u>-</u>		
Nozzle Diameter <u>0.274</u>	Nozzle I.D. <u>274-1</u>	

Leak Rate Before <u>0.005</u> [cfm] [Lpm] @ <u>15</u> (in. Hg)
Leak Rate After <u>0.002</u> [cfm] [Lpm] @ <u>7</u> (in. Hg)
Pitot Leak Check Before: <input checked="" type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>

Duct Dimensions (in.) <u>96 x 96</u>			
Static Pres (in. H ₂ O) <u>-11.3</u>	Port Len. (in.) <u>10</u>	Gas Flow <u>(IN) [Out]</u> of page	First point all the way <u>(IN) [Out]</u>

Start Time: <u>15:02</u>	Stop Time: <u>16:11</u>
--------------------------	-------------------------

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (ft ³) [L]	Stack Temp. Ts (°F)	Probe T _p (°F)		Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in. Hg)	XAD-Trap Temp T ₁ (°F)	Notes
						Set Points	Set Points						
	<u>2.5</u>			<u>094.130</u>		<u>250</u>	<u>250</u>						
1-1	<u>2.5</u>	<u>0.40</u>	<u>1.1</u>	<u>695.77</u>	<u>299</u>	<u>260</u>	<u>257</u>	<u>65</u>	<u>89</u>	<u>87</u>	<u>4</u>	<u>10.3</u>	
2	<u>5</u>	<u>0.50</u>	<u>1.3</u>	<u>697.25</u>	<u>299</u>	<u>254</u>	<u>254</u>	<u>64</u>	<u>90</u>	<u>87</u>	<u>4</u>	<u>10.2</u>	
3	<u>7.5</u>	<u>0.40</u>	<u>1.1</u>	<u>698.88</u>	<u>296</u>	<u>251</u>	<u>256</u>	<u>52</u>	<u>90</u>	<u>87</u>	<u>4</u>	<u>10.6</u>	
4	<u>10</u>	<u>0.38</u>	<u>1.0</u>	<u>700.34</u>	<u>299</u>	<u>252</u>	<u>254</u>	<u>49</u>	<u>91</u>	<u>87</u>	<u>4</u>	<u>11.0</u>	
5	<u>12.5</u>	<u>0.61</u>	<u>1.4</u>	<u>702.116</u>	<u>301</u>	<u>257</u>	<u>253</u>	<u>48</u>	<u>92</u>	<u>87</u>	<u>4</u>	<u>10.8</u>	<u>.255</u>
2-1	<u>15</u>	<u>0.52</u>	<u>1.4</u>	<u>703.95</u>	<u>29301</u>	<u>256</u>	<u>246</u>	<u>49</u>	<u>92</u>	<u>87</u>	<u>4</u>	<u>10.6</u>	
2	<u>17.5</u>	<u>0.38</u>	<u>1.0</u>	<u>705.42</u>	<u>302</u>	<u>257</u>	<u>248</u>	<u>50</u>	<u>93</u>	<u>87</u>	<u>4</u>	<u>9.0</u>	
3	<u>20</u>	<u>0.32</u>	<u>0.85</u>	<u>706.76</u>	<u>299</u>	<u>249</u>	<u>251</u>	<u>52</u>	<u>93</u>	<u>87</u>	<u>4</u>	<u>8.6</u>	
4	<u>22.5</u>	<u>0.42</u>	<u>1.1</u>	<u>708.27</u>	<u>298</u>	<u>250</u>	<u>252</u>	<u>53</u>	<u>93</u>	<u>87</u>	<u>4</u>	<u>8.8</u>	
5	<u>25</u>	<u>0.55</u>	<u>1.5</u>	<u>709.995</u>	<u>300</u>	<u>251</u>	<u>251</u>	<u>53</u>	<u>94</u>	<u>87</u>	<u>4</u>	<u>9.2</u>	<u>1.145</u>
3-1	<u>27.5</u>	<u>0.36</u>	<u>0.95</u>	<u>711.55</u>	<u>300</u>	<u>255</u>	<u>246</u>	<u>58</u>	<u>92</u>	<u>87</u>	<u>4</u>	<u>10.1</u>	
2	<u>30</u>	<u>0.40</u>	<u>1.1</u>	<u>713.04</u>	<u>301</u>	<u>251</u>	<u>248</u>	<u>58</u>	<u>93</u>	<u>87</u>	<u>4</u>	<u>10.3</u>	
3	<u>32.5</u>	<u>0.43</u>	<u>1.1</u>	<u>714.54</u>	<u>302</u>	<u>248</u>	<u>253</u>	<u>59</u>	<u>95</u>	<u>88</u>	<u>4</u>	<u>9.5</u>	
	Total	<u>76.6593</u>	<u>29.6800</u>	<u>39.0600</u>	<u>7509</u>				<u>1197</u>	<u>1132</u>			
	Average	<u>0.6664</u>	<u>1.1972</u>	<u>39.040</u>	<u>300.3600</u>				<u>90.5800</u>				

Sum of square roots. Circle correct bracketed units on data sheet.

E-16

TEST LOCATION: FF OUTLET

FLUORIDE TESTING

METHOD: 13B PAGE 2 OF 2

UNIT: 1 RUN: 3

FIELD DATA SHEET

Client <u>WHEELABATOR</u>	Project No. <u>11182</u>
Plant <u>S BROWN</u>	Date <u>3.28.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	

Cross-Section of Test Location

↑
[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
------------------------------------	-----------------	-----------------------------	------------------------------------

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Meter Box <u>66-21</u>	Sample Box No. <u>B1</u>
Meter Y _d <u>0.9837</u>	Meter ΔH _@ <u>1.8252</u>
K Factor <u>2.65</u>	Pitot C _p <u>0.812</u>
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Filter No.	
Thimble No.	
Nozzle Diameter	Nozzle I.D.

Start Time:	Stop Time:
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Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. <u>110</u> [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points <u>250</u> <u>250</u>						<u>0.2</u>	
3-4	35	0.50	1.3	716.15	301	250	253	61	95	88	4	9.8	
5	37.5	0.52	1.4	717.825	301	257	257	62	96	88	4	8.9	0.975
4-1	40	0.48	1.3	719.61	301	256	245	63	95	88	4	9.9	
2	42.5	0.37	0.98	721.04	302	250	249	63	96	89	4	8.6	
3	45	0.42	1.1	722.55	301	248	252	64	96	89	4	8.8	
4	47.5	0.46	1.2	724.11	301	250	253	63	96	89	4	9.0	
5	50	0.52	1.4	725.790	300	250	250	64	95	88	4	8.9	0.920
5-1	52.5	0.38	1.0	727.40	300	256	246	63	94	88	4	^{NH} 9.8	
2	55	0.38	1.0	728.86	302	252	247	64	94	89	4	9.3	
3	57.5	0.45	1.2	730.41	301	250	250	64	94	89	4	9.8	
4	60	0.52	1.4	732.09	301	250	252	64	94	88	4	9.4	
5	62.5	0.50	1.3	733.745	301	251	252	64	94	88	4	9.3	
Total	*								1139	1061			
Average													

Sum of square roots.

14.58

Circle correct bracketed units on data sheet.

3612

QA/QC _____
Date _____

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 1 FF Outlet	
Plant South Broward	Job No. 11182	Method	13B

CAE TL-07-2 cat #514763A 499.5

Run No. 1	Filter Type Teflon glass mat	Sample Box No. <i>B1</i>
Date <i>3/28/11</i>	Lot No.	pH
Analyst <i>R. Vicer</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	<i>748.5</i>	<i>634.4</i>	<i>114.1</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>QA/QC <i>RV</i></td></tr> <tr><td>Date <i>3/28/11</i></td></tr> </table>	QA/QC <i>RV</i>	Date <i>3/28/11</i>
QA/QC <i>RV</i>							
Date <i>3/28/11</i>							
Impinger 2	100 mL DI H2O	<i>624.2</i>	<i>544.8</i>	<i>79.4</i>			
Impinger 3	Empty	<i>478.3</i>	<i>456.7</i>	<i>21.6</i>			
Impinger 4	Silica Gel	<i>757.9</i>	<i>734.6</i>	<i>23.3</i>			
					Total Weight (gm)		
					<i>215.1</i>		
					<i>238.4</i>		

Run No. 2	Filter Type Teflon glass mat	Sample Box No. <i>B22</i>
Date <i>3/28/11</i>	Lot No.	pH
Analyst <i>R. Vicer</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	<i>674.7</i>	<i>546.5</i>	<i>128.2</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>QA/QC <i>RV</i></td></tr> <tr><td>Date <i>3/28/11</i></td></tr> </table>	QA/QC <i>RV</i>	Date <i>3/28/11</i>
QA/QC <i>RV</i>							
Date <i>3/28/11</i>							
Impinger 2	100 mL DI H2O	<i>635.1</i>	<i>563.7</i>	<i>71.4</i>			
Impinger 3	Empty	<i>466.5</i>	<i>443.2</i>	<i>23.3</i>			
Impinger 4	Silica Gel	<i>806.5</i>	<i>789.8</i>	<i>16.7</i>			
					Total Weight (gm)		
					<i>222.9</i>		
					<i>239.6</i>		

Run No. 3	Filter Type Teflon glass mat	Sample Box No. <i>B1</i>
Date <i>3/29/11</i>	Lot No.	pH
Analyst <i>R. Vicer</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	<i>758.6</i>	<i>635.2</i>	<i>123.4</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>QA/QC <i>RV</i></td></tr> <tr><td>Date <i>3/28/11</i></td></tr> </table>	QA/QC <i>RV</i>	Date <i>3/28/11</i>
QA/QC <i>RV</i>							
Date <i>3/28/11</i>							
Impinger 2	100 mL DI H2O	<i>622.5</i>	<i>544.4</i>	<i>78.1</i>			
Impinger 3	Empty	<i>473.9</i>	<i>456.9</i>	<i>17.0</i>			
Impinger 4	Silica Gel	<i>772.4</i>	<i>757.8</i>	<i>14.6</i>			
					Total Weight (gm)		
					<i>218.5</i>		
					<i>233.1</i>		

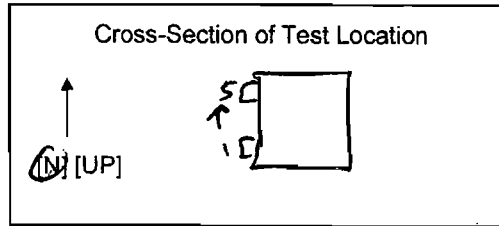
TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 1 OF 5

UNIT: 2

Client <u>WHEELABRATOR</u>	Project No. <u>11182</u>
Plant <u>S. BLANARD</u>	Date <u>3.29.11</u>
Meter Operator <u>NA</u>	
Probe Operator	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>30.00</u> [kPa] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-85-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>(In)</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>(In)</u> [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run <u>1</u> Load				Run <u>1</u> Load				Run <u>2</u> Load				Run <u>2</u> Load			
Start Time <u>9:38</u>		Stop Time <u>9:48</u>		Start Time		Stop Time		Start Time <u>10:18</u>		Stop Time <u>10:21</u>		Start Time		Stop Time	
Static Press. (in. H ₂ O) <u>-10.6</u>				Static Press. (in. H ₂ O)				Static Press. (in. H ₂ O) <u>-10.6</u>				Static Press. (in. H ₂ O)			
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>				Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>				Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>				Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>			
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
5-1	299	0.42		2-1	299	0.46		1-1	299	0.42		3-1	300	0.34	
2	299	0.41		2	299	0.45		2	299	0.40		2	300	0.35	
3	299	0.41		3	299	0.45		3	299	0.39		3	300	0.36	
4	299	0.41		4	299	0.47		4	299	0.42		4	300	0.37	
5	299	0.39		5	299	0.48		5	299	0.46		5	300	0.42	
4-1	299	0.48		1-1	298	0.46		2-1	299	0.39		5-1	298	0.33	
2	299	0.43		2	298	0.37		2	299	0.37		2	298	0.32	
3	299	0.47		3	298	0.44		3	299	0.39		3	299	0.32	
4	299	0.43		4	299	0.47		4	299	0.44		4	298	0.33	
5	299	0.40		5	299	0.51		5	299	0.52		5	298	0.33	
2-1	300	0.35						4-1	298	0.37					
2	300	0.34						2	298	0.36					
3	300	0.35						3	299	0.34					
4	300	0.38						4	299	0.37					
5	300	0.44						5	299	0.37					
Total	7477	16.3097						7474	15.3668						
Average	299	0.6524						298	0.6147						

0800 Sum of square roots.

Circle correct bracketed units on data sheet.

9600



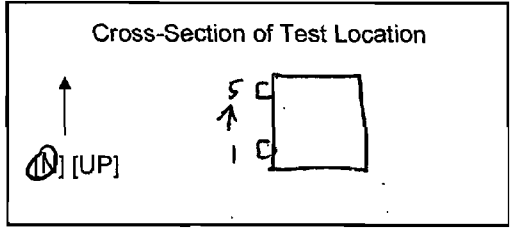
QA/QC NA
Date 3.29.11

E-19

TEST LOCATION: FF OUTLET
 UNIT: 2

VELOCITY DETERMINATION FIELD DATA SHEET

Client <u>WHEELABRATOR</u>	Project No. <u>1182</u>
Plant <u>S. BROWARD</u>	Date <u>3.29.11</u>
Meter Operator <u>NT</u>	
Probe Operator	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>3.00</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-80-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>(in)</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>(in)</u> [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run	Load	Run	Load	Run	Load	Run	Load								
Run <u>3</u>	Load	Run <u>3</u>	Load	Run <u>4</u>	Load	Run <u>4</u>	Load								
Start Time <u>10:58</u>	Stop Time <u>11:04</u>	Start Time	Stop Time	Start Time <u>11:32</u>	Stop Time <u>11:40</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-10.1</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-10.1</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1 -1	298	0.42		1 -1	297	0.38		1 -1	301	0.32		2 -1	298	0.43	
2	298	0.41		2	297	0.37		2	301	0.34		2	298	0.44	
3	298	0.40		3	297	0.37		3	301	0.37		3	298	0.42	
4	298	0.39		4	297	0.39		4	301	0.36		4	298	0.44	
5	298	0.44		5	297	0.36		5	301	0.35		5	298	0.44	
2 -1	299	0.35		5 -1	299	0.30		4 -1	298	0.40		1 -1	298	0.45	
2	299	0.37		2	299	0.31		2	298	0.41		2	298	0.41	
3	299	0.38		3	299	0.31		3	298	0.39		3	298	0.38	
4	299	0.45		4	299	0.31		4	298	0.37		4	298	0.40	
5	299	0.53		5	299	0.29		5	298	0.37		5	298	0.47	
3-1	298	0.29						3-1	300	0.42					
2	298	0.32						2	300	0.43					
3	298	0.35						3	300	0.42					
4	298	0.38						4	300	0.44					
5	298	0.46						5	300	0.44					
Total	745	15.2284						745	15.8804						
Average	298.0	0.6091						299.0	0.6352						

Sum of square roots. 2000

Circle correct bracketed units on data sheet.

0000



E - 20

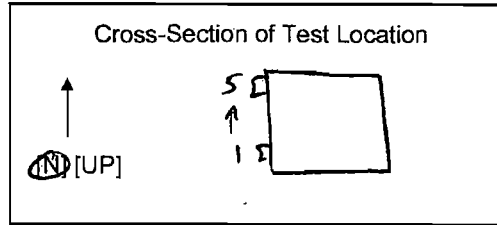
TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 3 OF 5

UNIT: 2

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Browns</u>	Date <u>3.29.11</u>
Meter Operator <u>NR</u>	
Probe Operator	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>30.00</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-80-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <input checked="" type="checkbox"/> [In] <input type="checkbox"/> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>17</u> [m³] [Out] of page	
Duct Dimensions (in.)	<u>96 x 96</u>

Run	Load	Run	Load	Run	Load	Run	Load								
5		5		6		6									
Start Time <u>12:09</u>	Stop Time <u>12:19</u>	Start Time <u>12:50</u>	Stop Time	Start Time <u>12:50</u>	Stop Time <u>12:53</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-10.1</u>		Static Press. (in. H ₂ O) <u>-10.1</u>		Static Press. (in. H ₂ O) <u>-10.1</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1-1	299	0.47		4-1	298	0.40		5-1	300	0.39		2-1	298	0.39	
2	299	0.40		2	298	0.38		2	300	0.38		2	298	0.38	
3	299	0.42		3	298	0.36		3	300	0.41		3	298	0.41	
4	299	0.41		4	298	0.39		4	300	0.43		4	298	0.44	
5	299	0.45		5	299	0.40		5	300	0.43		5	298	0.53	
2-1	298	0.40		5-1	299	0.35		4-1	299	0.39		1-1	299	0.37	
2	298	0.39		2	299	0.34		2	299	0.38		2	299	0.40	
3	298	0.41		3	299	0.35		3	299	0.40		3	299	0.39	
4	298	0.45		4	299	0.35		4	299	0.47		4	299	0.38	
5	298	0.49		5	299	0.35		5	299	0.51		5	299	0.51	
3-1	300	0.41						3-1	301	0.47					
2	300	0.41						2	301	0.47					
3	300	0.43						3	301	0.46					
4	300	0.46						4	301	0.45					
5	300	0.44						5	301	0.41					
Total	7470	15.8786						7485	16.2947						
Average	298	0.6351						299.40	0.6518						

Sum of square roots.

Circle correct bracketed units on data sheet.



QA/QC NR
Date 2.7.11

E-21

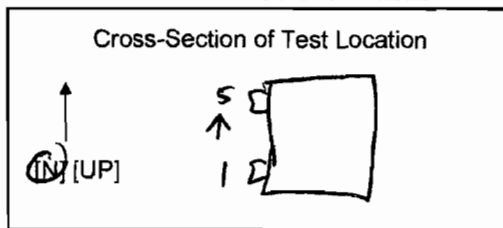
TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 4 OF 5

UNIT: 2

Client: <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant: <u>S. Broward</u>	Date: <u>3.29.11</u>
Meter Operator: <u>NH</u>	
Probe Operator:	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>30.00</u> (in. Hg) [mbar]
Pitot Cp <u>0.87</u>	Probe I.D. No. <u>67-PP-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>DN</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow [In] <u>0A</u> of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run	Load	Run	Load	Run	Load	Run	Load								
Run <u>7</u>	Load	Run <u>7</u>	Load	Run <u>8</u>	Load	Run <u>8</u>	Load								
Start Time <u>13:25</u>	Stop Time <u>13:34</u>	Start Time	Stop Time	Start Time <u>14:00</u>	Stop Time <u>14:10</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-0.3</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-10.3</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
<u>2-1</u>	<u>301</u>	<u>0.43</u>		<u>5-1</u>	<u>300</u>	<u>0.47</u>		<u>1-1</u>	<u>297</u>	<u>0.35</u>		<u>4-1</u>	<u>298</u>	<u>0.30</u>	
<u>2</u>	<u>301</u>	<u>0.42</u>		<u>2</u>	<u>300</u>	<u>0.38</u>		<u>2</u>	<u>298</u>	<u>0.33</u>		<u>2</u>	<u>298</u>	<u>0.30</u>	
<u>3</u>	<u>301</u>	<u>0.41</u>		<u>3</u>	<u>300</u>	<u>0.40</u>		<u>3</u>	<u>298</u>	<u>0.30</u>		<u>3</u>	<u>299</u>	<u>0.29</u>	
<u>4</u>	<u>301</u>	<u>0.48</u>		<u>4</u>	<u>300</u>	<u>0.40</u>		<u>4</u>	<u>298</u>	<u>0.32</u>		<u>4</u>	<u>299</u>	<u>0.30</u>	
<u>5</u>	<u>301</u>	<u>0.52</u>		<u>5</u>	<u>300</u>	<u>0.43</u>		<u>5</u>	<u>299</u>	<u>0.35</u>		<u>5</u>	<u>300</u>	<u>0.36</u>	
<u>3-1</u>	<u>299</u>	<u>0.35</u>		<u>1-1</u>	<u>300</u>	<u>0.49</u>		<u>2-1</u>	<u>298</u>	<u>0.30</u>		<u>5-1</u>	<u>298</u>	<u>0.29</u>	
<u>2</u>	<u>299</u>	<u>0.44</u>		<u>2</u>	<u>300</u>	<u>0.42</u>		<u>2</u>	<u>298</u>	<u>0.28</u>		<u>2</u>	<u>298</u>	<u>0.26</u>	
<u>3</u>	<u>299</u>	<u>0.40</u>		<u>3</u>	<u>300</u>	<u>0.40</u>		<u>3</u>	<u>298</u>	<u>0.30</u>		<u>3</u>	<u>298</u>	<u>0.27</u>	
<u>4</u>	<u>299</u>	<u>0.42</u>		<u>4</u>	<u>299</u>	<u>0.49</u>		<u>4</u>	<u>298</u>	<u>0.36</u>		<u>4</u>	<u>298</u>	<u>0.26</u>	
<u>5</u>	<u>299</u>	<u>0.43</u>		<u>5</u>	<u>301</u>	<u>0.56</u>		<u>5</u>	<u>298</u>	<u>0.46</u>		<u>5</u>	<u>297</u>	<u>0.29</u>	
<u>4-1</u>	<u>299</u>	<u>0.45</u>						<u>2-1</u>	<u>298</u>	<u>0.27</u>					
<u>2</u>	<u>299</u>	<u>0.42</u>						<u>2</u>	<u>298</u>	<u>0.27</u>					
<u>3</u>	<u>299</u>	<u>0.40</u>						<u>3</u>	<u>298</u>	<u>0.29</u>					
<u>4</u>	<u>299</u>	<u>0.43</u>						<u>4</u>	<u>298</u>	<u>0.32</u>					
<u>5</u>	<u>299</u>	<u>0.45</u>						<u>5</u>	<u>298</u>	<u>0.34</u>					
Total	<u>7495</u>	<u>16.4721</u>							<u>7453</u>	<u>13.8601</u>					
Average	<u>299.80</u>	<u>0.6589</u>							<u>298.120</u>	<u>0.5544</u>					

Sum of square roots.

Circle correct bracketed units on data sheet.



E-22

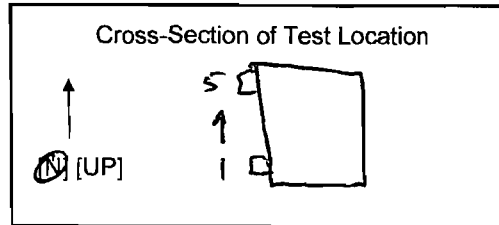
TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 5 OF 5

UNIT: 2

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Broward</u>	Date <u>3.29.11</u>
Meter Operator <u>NH</u>	
Probe Operator	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>30.00</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-80-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way in [Out]	Port Len. (in.) <u>10</u>
Gas Flow in [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run <u>9</u>		Load		Run <u>9</u>		Load		Run <u>10</u>		Load		Run <u>10</u>		Load	
Start Time <u>15:03</u>		Stop Time <u>15:10</u>		Start Time		Stop Time		Start Time <u>15:36</u>		Stop Time <u>15:42</u>		Start Time		Stop Time	
Static Press. (in. H ₂ O) <u>-10.3</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-10.3</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O)	
Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>	
Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
5-1	299	0.35		2-1	298	0.33		5-1	297	0.28		2-1	299	0.32	
2	300	0.34		2	298	0.31		2	297	0.28		2	299	0.32	
3	299	0.35		3	298	0.32		3	297	0.28		3	299	0.34	
4	300	0.39		4	298	0.36		4	297	0.31		4	299	0.37	
5	300	0.34		5	298	0.48		5	297	0.28		5	299	0.41	
4-1	299	0.32		1-1	298	0.39		4-1	297	0.32		1-1	298	0.37	
2	299	0.30		2	298	0.40		2	297	0.30		2	298	0.36	
3	299	0.31		3	297	0.35		3	296	0.29		3	298	0.34	
4	299	0.34		4	298	0.35		4	296	0.30		4	298	0.35	
5	299	0.36		5	298	0.45		5	297	0.31		5	298	0.41	
3-1	299	0.32						2-1	297	0.31		1-3-1	NH		
2	299	0.31						2	297	0.30		2			
3	298	0.33						3	298	0.31		3			
4	298	0.36						4	298	0.34		4			
5	298	0.40						5	298	0.35		5			
Total	7460	13.767													
Average	298.96	0.597						297.64	0.570						

Sum of square roots.
0.5953

Circle correct bracketed units on data sheet.



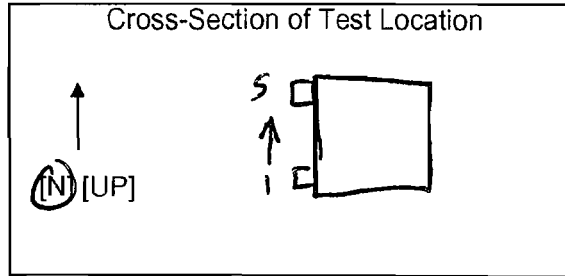
E-23

TEST LOCATION: FF OUTLET
 UNIT: 2 RUN: 1

HCl TESTING
FIELD DATA SHEET

METHOD: 26A PAGE 1 OF 1

Client <u>WHEELABRATOR</u>	Project No. <u>11182</u>
Plant <u>S. BROWARD</u>	Date <u>3-29-11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>-</u>	



Amb. Temp. (°F) <u>75</u>	Bar. Press. <u>30.0</u> (in. Hg) [mbar]
Probe I.D. No. <u>67-4-1</u>	
Liner Material <u>GLASS</u>	

Meter Box <u>61-6</u>	Sample Box No. <u>B16</u>
Meter Yd <u>0.9960</u>	Meter ΔH@ <u>1.7601</u>
K Factor <u>-</u>	Pitot Cp <u>-</u>
Leak Rate Before <u>0.004</u> [in] [Lpm] @ <u>15</u> (in. Hg)	
Leak Rate After <u>0.002</u> [in] [Lpm] @ <u>5</u> (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Duct Dimensions (in.) <u>96 x 96</u>			
Static Pres (in. H ₂ O) <u>-10.4</u>	Port Len. (in.) <u>10</u>	Gas Flow (in) [Out] of page <u>10</u>	First point all the way <u>(N) [Out]</u>

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>-</u>	Nozzle I.D. <u>-</u>

Start Time: 7:50 Stop Time: 8:50

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (in) [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{min} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points						
3-1	5	N/A	1.5	727.335	294	300	302	63	74	73	3	10.6	
	10		1.5	734.28	301	301	304	57	74	73	3	11.0	
	15		1.5	737.68	301	307	302	54	79	74	3	10.5	
	20		1.5	741.11	300	303	302	57	82	74	3	9.6	
	25		1.5	744.68	301	301	303	62	84	75	3	9.8	
	30		1.5	748.29	300	301	303	63	86	76	3	9.4	
	35		1.5	751.85	301	302	302	65	89	77	3	9.6	
	40		1.5	755.43	299	302	302	65	89	78	3	11.0	
	45		1.5	758.99	298	302	302	64	90	79	3	11.4	
	50		1.5	762.50	299	302	302	58	91	80	3	10.6	
	55		1.5	765.94	300	302	302	55	92	81	3	8.2	
	60		1.5	769.465	301	302	302	53	92	82	3	8.2	
Total	*	-	-	42.1300	3600				1022	922			
Average	-	-	1.5000	42.1300	300.0000				81.0000				

*Sum of square roots.

Circle correct bracketed units on data sheet.

E - 24

TEST LOCATION: FF OUTLET

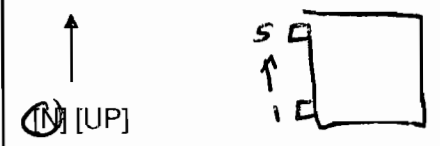
HCl TESTING

METHOD: 26.A PAGE 1 OF 1

UNIT: 2 RUN: 2

FIELD DATA SHEET

Cross-Section of Test Location



Duct Dimensions (in.)				96 x 96	
Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow (Lpm) [Out]	First point all the way		
-10.4	10		[UP] [Out]		

Amb. Temp. (°F)	78	Bar. Press.	30.0 (in. Hg) [mbar]
Probe I.D. No.	67-4-1		
Liner Material	GLASS		

Filter No.	-		
Thimble No.	-		
Nozzle Diameter	-	Nozzle I.D.	

Start Time: 9:23 Stop Time: 10:23

Client	WHEELABATOR	Project No.	11182
Plant	S BROWARD	Date	3.29.11
Meter Operator	NH		
Probe Operator			

Meter Box	61-6	Sample Box No.	B14
Meter Y _d	0.9960	Meter ΔH _@	1.7601
K Factor	-	Pitot C _p	-

Leak Rate Before	0.003 [dA] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.001 [dA] [Lpm]	@	5 (in. Hg)
Pitot Leak Check Before:	<input type="checkbox"/>	After: Good	<input type="checkbox"/> Bad <input type="checkbox"/>

E-25

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
				770.115		300	300						
3-1	5	N/A	1.5	773.78	301	302	302	60	86	84	3	9.9	
	10	↓	1.5	777.14	300	304	302	53	89	85	3	9.8	
	15		780.67	301	302	312	46	92	85	3	9.6		
	20		784.17	300	302	303	47	94	86	3	9.6		
	25		787.71	302	302	302	47	97	86	3	8.8		
	30		791.24	299	301	301	48	98	87	3	10.1		
	35	794.85	300	302	302	50	98	88	3	10.9			
	40	798.38	297	303	302	51	99	89	3	11.1			
	45	801.96	299	302	302	51	99	90	3	11.3			
	50	805.55	298	302	303	52	99	90	3	9.8			
	55	809.02	301	301	301	53	100	91	3	9.0			
	60	812.570	301	301	302	53	100	91	3	9.6			
	Total *			42.4550	3599				1151	1052			
	Average			1.5000	299.9167				91.7917				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NH
Date 3.29.11

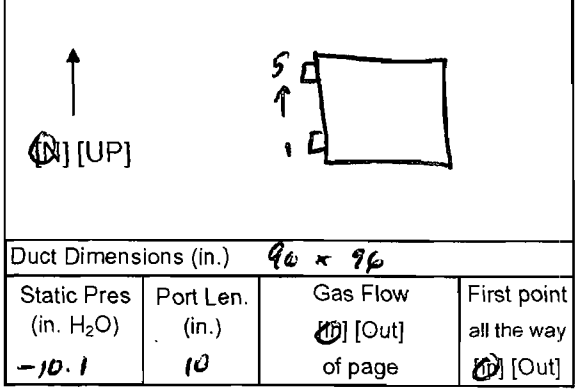


TEST LOCATION: FF OUTLET
 UNIT: 2 RUN: 3

HCl TESTING
FIELD DATA SHEET

METHOD: 26A PAGE 1 OF 1

Cross-Section of Test Location



Client <u>NHELABATOR</u>	Project No. <u>1182</u>
Plant <u>S. BROWARD</u>	Date <u>3.29.11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Amb. Temp. (°F)	Bar. Press. <u>30.0</u> [<u>16</u> Hg] [mbar]
Probe I.D. No. <u>07-4-1</u>	
Liner Material <u>GLASS</u>	

Meter Box <u>61-6</u>	Sample Box No. <u>812</u>
Meter Y _d <u>0.9960</u>	Meter ΔH ₀ <u>1.7601</u>
K Factor <u>-</u>	Pitot C _p <u>-</u>
Leak Rate Before <u>0.003</u> [cfm] [Lpm] @ <u>14</u> (in. Hg)	
Leak Rate After <u>0.003</u> [cfm] [Lpm] @ <u>5</u> (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/>	After: Good <input type="checkbox"/> Bad <input type="checkbox"/>

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>-</u>	Nozzle I.D.

Start Time: 10:39 Stop Time: 11:39

Duct Dimensions (in.) <u>96 x 96</u>			
Static Pres (in. H ₂ O) <u>-10.1</u>	Port Len. (in.) <u>10</u>	Gas Flow <u>0</u> [Out] of page	First point all the way <u>0</u> [Out]

E - 26

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. <u>0</u> [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. <u>02</u> (°F)	Notes
						300	300							
3-1	5	<u>N/A</u>	1.5	816.78	299	300	300	65	96	92	3	9.6		
	10	<u>↓</u>	1.5	820.30	294	305	302	58	97	93	3	9.0		
	15	<u>↓</u>	1.5	823.79	299	303	303	57	100	93	3	10.2		
	20		1.5	827.37	300	302	302	52	100	93	3	10.1		
	25		1.5	830.91	301	301	301	53	101	93	3	10.3		
	30		1.5	834.41	300	301	303	54	101	94	3	10.1		
	35		1.5	837.97	302	302	302	54	102	94	3	9.8		
	40		1.5	841.52	301	302	302	55	101	94	3	10.1		
	45		1.5	<u>NH</u> 844 845.05	301	302	302	57	101	94	3	10.0		
	50		1.5	848.59	301	301	303	57	101	94	3	10.3		
	55		1.5	852.10	300	302	301	61	101	94	3	9.9		
	60		1.5	855.645	302	302	302	61	102	94	3	8.9		
	Total *			<u>42.4950</u>		<u>3005</u>				<u>1203</u>	<u>122</u>			
	Average			<u>1.5000</u>		<u>300.4167</u>				<u>96.8750</u>				

* Sum of square roots.

Circle correct bracketed units on data sheet.



TEST LOCATION: FF OUTLET
 UNIT: 2 RUN: 4

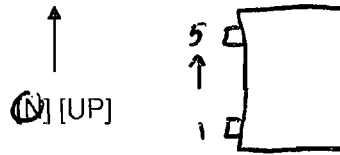
HCl

TESTING

METHOD: 26.4 PAGE 1 OF 1

FIELD DATA SHEET

Cross-Section of Test Location



Duct Dimensions (in.) 96 x 96

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow (in.) [Out]	First point all the way
<u>-10.1</u>	<u>10</u>	<u>(N)</u> [Out]	<u>(N)</u> [Out]

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Browns</u>	Date <u>3.29.11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>61-6</u>	Sample Box No.
Meter Y _d <u>0.9960</u>	Meter ΔH _@ <u>1.7601</u>
K Factor <u>-</u>	Pitot C _p <u>-</u>

Leak Rate Before <u>0.004</u> [CPH] [Lpm] @ <u>15</u> (in. Hg)
Leak Rate After <u>0.002</u> [CPH] [Lpm] @ <u>6</u> (in. Hg)
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>

Amb. Temp. (°F)	Bar. Press. <u>30.00</u> [in. Hg] [mbar]
Probe I.D. No. <u>67-4-1</u>	
Liner Material <u>GLASS</u>	

Filter No.	<u>-</u>
Thimble No.	<u>-</u>
Nozzle Diameter	<u>-</u>
Nozzle I.D.	<u>-</u>

Start Time: 11:54 Stop Time: 12:54

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Inlet Vol. [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points							
3-1	5	N/A	1.5	859.81	302	300	301	63	96	93	3	9.3		
	10		1.5	863.31	301	304	304	63	98	94	3	9.5		
	15		1.5	866.79	301	305	302	60	99	94	3	9.0		
	20		1.5	870.30	301	305	302	61	100	93	3	9.4		
	25		1.5	873.55	300	307	302	64	101	93	3	9.8		
	30		1.5	877.40	300	302	302	64	102	94	3	9.1		
	35		1.5	880.92	300	302	302	65	102	94	3	8.7		
	40		1.5	884.44	307	302	302	64	102	94	3	9.8		
	45		1.5	888.00	301	303	302	65	102	94	3	9.5		
	50		1.5	891.51	302	301	302	65	102	94	3	9.2		
	55		1.5	895.01	301	302	302	65	103	94	3	9.5		
	60		1.5	898.525	301	302	302	64	103	95	3	9.1		
	Total	*		<u>42.4450</u>	3611									
	Average		<u>1.5000</u>		300.9167				<u>97.3333</u>					

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NH
 Date 3.29.11



E-27

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 FF Outlet	
Plant South Broward	Job No. 11182	Method	Mod. 26A

Run No. 1	Filter Type Quartz	Sample Box No. B16
Date 3/29/11	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	513.1	459.2	53.9	
Impinger 2	100 mL 0.1N H2SO4	670.3	569.2	101.1	QA/QC RV
Impinger 3	100 mL 0.1N H2SO4	594.8	543.0	51.8	Date 3/29/11
Impinger 4	Empty	456.4	440.9	15.5	
Impinger 5	Silica Gel	765.6	748.1	17.5	Total Weight (gm)
					222.3
					239.8

Run No. 2	Filter Type Quartz	Sample Box No. B14
Date 3/29/11	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	525.9	453.6	72.3	
Impinger 2	100 mL 0.1N H2SO4	650.5	526.8	123.7	QA/QC RV
Impinger 3	100 mL 0.1N H2SO4	573.0	536.3	36.7	Date 3/29/11
Impinger 4	Empty	455.0	446.3	8.7	
Impinger 5	Silica Gel	758.2	748.8	9.4	Total Weight (gm)
					241.4
					250.8

Run No. 3	Filter Type Quartz	Sample Box No. B12
Date 3/29/11	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	520.7	455.5	65.2	
Impinger 2	100 mL 0.1N H2SO4	664.0	539.9	124.1	QA/QC RV
Impinger 3	100 mL 0.1N H2SO4	587.0	553.0	34.0	Date 3/29/11
Impinger 4	Empty	434.8	429.7	5.1	
Impinger 5	Silica Gel	757.1	742.7	14.4	Total Weight (gm)
					228.4
					242.8

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 FF Outlet	
Plant South Broward	Job No. 11182	Method	Mod. 26A

Run No. 4	Filter Type Quartz	Sample Box No. B16
Date 3/29/11	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	50 mL 0.1N H2SO4	508.3	461.2	47.1	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC RV</td> </tr> <tr> <td>Date 3/29/11</td> </tr> </table>	QA/QC RV	Date 3/29/11
QA/QC RV							
Date 3/29/11							
Impinger 2	100 mL 0.1N H2SO4	681.3	564.6	116.7			
Impinger 3	100 mL 0.1N H2SO4	600.4	543.5	56.9			
Impinger 4	Empty	455.9	440.6	15.3			
Impinger 5	Silica Gel	779.2	760.2	19.0			
					Total Weight (gm)		
					236.0		
					255.0		

Run No. 5	Filter Type Quartz	Sample Box No.
Date	Lot No.	pH
Analyst	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	50 mL 0.1N H2SO4				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC</td> </tr> <tr> <td>Date</td> </tr> </table>	QA/QC	Date
QA/QC							
Date							
Impinger 2	100 mL 0.1N H2SO4						
Impinger 3	100 mL 0.1N H2SO4						
Impinger 4	Empty						
Impinger 5	Silica Gel						
					Total Weight (gm)		

Run No. 6	Filter Type Quartz	Sample Box No.
Date	Lot No.	pH
Analyst	Filter No. NA	Rinse

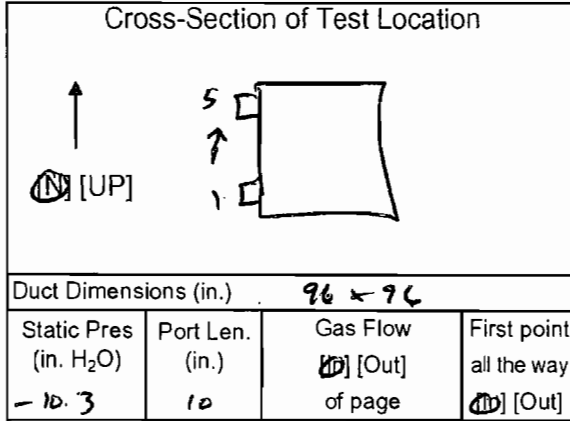
	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	50 mL 0.1N H2SO4				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC</td> </tr> <tr> <td>Date</td> </tr> </table>	QA/QC	Date
QA/QC							
Date							
Impinger 2	100 mL 0.1N H2SO4						
Impinger 3	100 mL 0.1N H2SO4						
Impinger 4	Empty						
Impinger 5	Silica Gel						
					Total Weight (gm)		

TEST LOCATION: FF OUTLET
 UNIT: 2 RUN: 1

FINORSE TESTING
FIELD DATA SHEET

METHOD: 13B PAGE 1 OF 2

Client Wheelabrator Project No. 11182
 Plant S Broward Date 3.29.11
 Meter Operator NH
 Probe Operator BA



Amb. Temp. (°F) 83 Bar. Press. 30.00 [6 Hg] [mbar]
 Probe I.D. No. 56-96-11 67-8-19
 Liner Material GLASS

Meter Box 416 Sample Box No. B22
 Meter Y_d 0.9960 Meter ΔH_@ 1.7601
 K Factor 2.7 Pitot C_p 0.8176
 Leak Rate Before 0.003 [cfm] [Lpm] @ 15 (in. Hg)
 Leak Rate After 0.003 [cfm] [Lpm] @ 5 (in. Hg)
 Pitot Leak Check Before: After: Good Bad

Filter No. -
 Thimble No. -
 Nozzle Diameter 0.274 Nozzle I.D. 274-1

Start Time: 13:21 Stop Time: 14:30

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. T ₁ (°F)	Notes
						Set Points	Set Points							
1-1	2.5	0.49	1.3	899.175	300	258	257	250	62	94	93	3	10.8	
2	5	0.42	1.1	902.46	300	257	252	250	58	95	93	3	10.6	
3	7.5	0.44	1.2	904.04	300	248	253	250	54	96	94	3	10.4	
4	6	0.49	1.3	905.63	299	250	253	250	52	97	93	3	10.3	
5	12.5	0.52	1.5	907.415	301	252	250	250	57	99	94	3	10.4	0.515
2-1	15	0.53	1.4	909.20	298	253	248	250	52	99	93	3	10.5	
2	17.5	0.44	1.2	910.79	302	257	257	250	57	100	93	3	10.0	
3	20	0.50	1.4	912.48	301	249	257	250	52	101	93	3	10.1	
4	22.5	0.60	1.6	914.29	302	249	257	250	53	101	94	3	9.9	
5	25	0.59	1.6	916.080	303	249	248	250	53	102	94	3	8.7	0.165
3-1	27.5	0.41	1.1	917.65	302	253	248	250	57	101	94	3	9.6	
2	30	0.47	1.3	919.29	303	250	250	250	54	101	94	3	9.0	
3	32.5	0.42	1.1	920.85	301	248	257	250	56	102	94	3	9.2	
Total		76.2038	28.5500	38.3800	7575					1258	1216			
Average		0.6452	1.7896	300.6000						100.8750				

Sum of square roots.

Circle correct bracketed units on data sheet.

11.1
 1117.0

3912 QA/QC
 Date

96.8402



E-30

TEST LOCATION: FF OUTLET
 UNIT: 2 RUN: 1

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: 13 B PAGE 2 OF 2

Client <u>Wheelabrator</u>	Project No. <u>1182</u>
Plant <u>S BROWARD</u>	Date <u>3.29.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>SA</u>	

Meter Box <u>61-6</u>	Sample Box No. <u>B2</u>
Meter Y _d <u>0.9962</u>	Meter ΔH @ <u>1.7601</u>
K Factor <u>2.7</u>	Pitot C _p <u>0.812</u>

Leak Rate Before [cfm] [Lpm] @ (in. Hg)
Leak Rate After [cfm] [Lpm] @ (in. Hg)
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>

Cross-Section of Test Location

↑
[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
------------------------------------	-----------------	-----------------------------	------------------------------------

Amb. Temp. (°F)	Bar. Press. (in. Hg) [mbar]
Probe I.D. No.	
Liner Material	

Filter No.	
Thimble No.	
Nozzle Diameter	Nozzle I.D.

Start Time:	Stop Time: <u>14:30</u>
-------------	-------------------------

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (ft ³) [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. T _i (°F)	Notes
						Set	Points						
3-4	35	0.45	1.2	922.42	301	248	252	57	102	94	3	9.2	
5	37.5	0.53	1.4	924.125	302	250	250	57	102	94	3	10.2	.200
4-1	40	0.30	0.81	925.50	298	252	248	62	100	94	3	11.9	
2	42.5	0.30	0.81	926.79	298	252	249	61	100	94	3	11.9	
3	45	0.29	0.78	928.04	299	250	257	60	101	94	3	11.5	
4	47.5	0.30	0.81	929.37	299	247	250	60	100	94	3	11.5	
5	50	0.36	0.97	930.925	300	250	250	60	100	94	3	10.3	.125
5-1	52.5	0.34	0.92	932.33	301	253	249	63	100	94	3	9.8	
2	55	0.33	0.89	933.77	301	250	250	64	100	94	3	8.6	
3	57.5	0.33	0.89	935.04	301	250	250	64	101	95	3	9.6	
4	60	0.38	1.0	936.61	301	248	250	65	100	95	3	9.5	
5	62.5	0.36	0.97	937.940	302	250	250	65	101	95	3	8.2	
Total	*								1207	1131			
Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

11.45

3603 QA/QC _____
 Date _____



E-31

TEST LOCATION: FF OUTLET
 UNIT: 2 RUN: 2

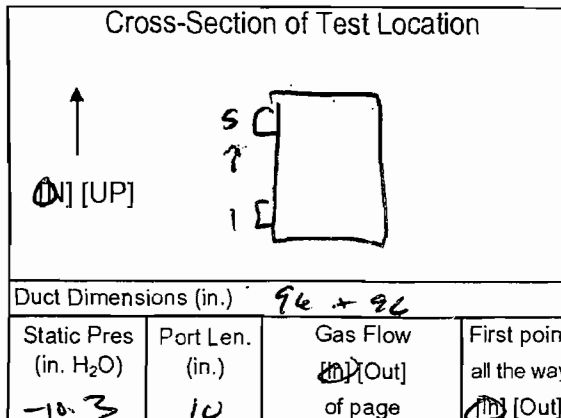
FLUORIDES TESTING
FIELD DATA SHEET

METHOD: 13 B PAGE 1 OF 2

Client Whelabrato Project No. 11182
 Plant Browards Date 3.29.11
 Meter Operator NH
 Probe Operator BA

Meter Box 61-6 Sample Box No. B1
 Meter Y_d 0.9960 Meter ΔH_@ 1.7601
 K Factor 2.7 Pitot C_p 0.812

Leak Rate Before 0.006 [UP] [Lpm] @ 13 (in. Hg)
 Leak Rate After 0.004 [UP] [Lpm] @ 8 (in. Hg)
 Pitot Leak Check Before: After: Good Bad



Amb. Temp. (°F) 82 Bar. Press. 30.00 [in. Hg] [mbar]
 Probe I.D. No. 56-96-11 67-8-14
 Liner Material GLASS

Filter No. -
 Thimble No. -
 Nozzle Diameter .274 Nozzle I.D. 274-1

Start Time: 14:49 Stop Time: 15:57

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (ft ³) [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points						
	<u>2.5</u>			<u>938.505</u>		<u>250</u>	<u>250</u>						
<u>5-1</u>	<u>2.5</u>	<u>0.35</u>	<u>0.95</u>	<u>939.93</u>	<u>299</u>	<u>260</u>	<u>260</u>	<u>63</u>	<u>94</u>	<u>94</u>	<u>3</u>	<u>8.9</u>	
<u>2</u>	<u>5</u>	<u>0.34</u>	<u>0.92</u>	<u>941.32</u>	<u>300</u>	<u>253</u>	<u>246</u>	<u>57</u>	<u>95</u>	<u>93</u>	<u>3</u>	<u>8.9</u>	
<u>3</u>	<u>7.5</u>	<u>0.35</u>	<u>0.95</u>	<u>942.72</u>	<u>299</u>	<u>250</u>	<u>246</u>	<u>53</u>	<u>95</u>	<u>93</u>	<u>3</u>	<u>8.9</u>	
<u>4</u>	<u>10</u>	<u>0.39</u>	<u>1.1</u>	<u>944.21</u>	<u>300</u>	<u>247</u>	<u>247</u>	<u>51</u>	<u>96</u>	<u>93</u>	<u>3</u>	<u>8.2</u>	
<u>5</u>	<u>12.5</u>	<u>0.34</u>	<u>0.92</u>	<u>945.625</u>	<u>300</u>	<u>249</u>	<u>248</u>	<u>50</u>	<u>96</u>	<u>93</u>	<u>3</u>	<u>8.2</u>	<u>7.715 .09</u>
<u>4-1</u>	<u>15</u>	<u>0.34</u>	<u>0.92</u>	<u>947.07</u>	<u>299</u>	<u>253</u>	<u>252</u>	<u>50</u>	<u>96</u>	<u>93</u>	<u>3</u>	<u>8.2</u>	
<u>2</u>	<u>17.5</u>	<u>0.33</u>	<u>0.89</u>	<u>948.425</u>	<u>299</u>	<u>252</u>	<u>250</u>	<u>49</u>	<u>97</u>	<u>93</u>	<u>3</u>	<u>8.4</u>	
<u>3</u>	<u>20</u>	<u>0.34</u>	<u>0.92</u>	<u>949.80</u>	<u>299</u>	<u>249</u>	<u>257</u>	<u>48</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>8.1</u>	
<u>4</u>	<u>22.5</u>	<u>0.31</u>	<u>0.84</u>	<u>951.13</u>	<u>299</u>	<u>248</u>	<u>249</u>	<u>50</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>8.8</u>	
<u>5</u>	<u>25</u>	<u>0.30</u>	<u>0.81</u>	<u>952.405</u>	<u>298</u>	<u>248</u>	<u>250</u>	<u>49</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>8.6</u>	<u>.525 .12</u>
<u>3-1</u>	<u>27.5</u>	<u>0.30</u>	<u>0.81</u>	<u>953.82</u>	<u>298</u>	<u>253</u>	<u>249</u>	<u>51</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>4.3</u>	
<u>2</u>	<u>30</u>	<u>0.31</u>	<u>0.84</u>	<u>955.14</u>	<u>299</u>	<u>252</u>	<u>250</u>	<u>51</u>	<u>98</u>	<u>92</u>	<u>3</u>	<u>8.5</u>	
<u>3</u>	<u>32.5</u>	<u>0.31</u>	<u>0.84</u>	<u>956.45</u>	<u>299</u>	<u>249</u>	<u>250</u>	<u>52</u>	<u>98</u>	<u>92</u>	<u>3</u>	<u>7.8</u>	
	Total	<u>14.6216</u>	<u>23.2200</u>	<u>34.5900</u>	<u>7474</u>				<u>1253</u>	<u>1004</u>			
	Average	<u>0.5849</u>	<u>0.9288</u>	<u>34.5900</u>	<u>7474</u>				<u>94.5200</u>				

Sum of square roots.

Circle correct bracketed units on data sheet.

1171

3888 QA/QC NH
 Date 3.11

E-32

TEST LOCATION: FF OUTLET

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: 13B PAGE 2 OF 2

UNIT: 2 RUN: 2

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Broward</u>	Date <u>3.29.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	

Meter Box <u>61-6</u>	Sample Box No. <u>B1</u>
Meter Yd <u>0.9960</u>	Meter ΔH@ <u>1.7601</u>
K Factor <u>2.7</u>	Pitot Cp <u>0.812</u>

Leak Rate Before [cfm] [Lpm] @ (in. Hg)
Leak Rate After [cfm] [Lpm] @ (in. Hg)

Pitot Leak Check Before: After: Good Bad

Cross-Section of Test Location

↑
[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow [In] [Out]	First point all the way [In] [Out]
------------------------------------	-----------------	---------------------	------------------------------------

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.	
Thimble No.	
Nozzle Diameter	Nozzle I.D.

Start Time: Stop Time: 15:57

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{m in} (°F)	DGM Outlet T _{m out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
				<u>938.505</u>		<u>250</u>	<u>250</u>					<u>0</u>	
<u>3-4</u>	<u>35</u>	<u>0.31</u>	<u>0.84</u>	<u>957.77</u>	<u>300</u>	<u>248</u>	<u>250</u>	<u>54</u>	<u>98</u>	<u>92</u>	<u>3</u>	<u>8.0</u>	
<u>5</u>	<u>37.5</u>	<u>0.32</u>	<u>0.86</u>	<u>959.095</u>	<u>299</u>	<u>250</u>	<u>249</u>	<u>52</u>	<u>98</u>	<u>92</u>	<u>3</u>	<u>8.1</u>	<u>.175</u>
<u>2-1</u>	<u>40</u>	<u>0.32</u>	<u>0.86</u>	<u>960.55</u>	<u>297</u>	<u>253</u>	<u>250</u>	<u>57</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>9.5</u>	
<u>2</u>	<u>42.5</u>	<u>0.32</u>	<u>0.86</u>	<u>961.85</u>	<u>299</u>	<u>251</u>	<u>250</u>	<u>61</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>8.4</u>	
<u>3</u>	<u>45</u>	<u>0.34</u>	<u>0.92</u>	<u>963.24</u>	<u>289</u>	<u>249</u>	<u>250</u>	<u>62</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>8.4</u>	
<u>4</u>	<u>47.5</u>	<u>0.37</u>	<u>1.0</u>	<u>964.68</u>	<u>299</u>	<u>249</u>	<u>249</u>	<u>62</u>	<u>98</u>	<u>92</u>	<u>3</u>	<u>8.9</u>	
<u>5</u>	<u>50</u>	<u>0.41</u>	<u>1.1</u>	<u>966.190</u>	<u>299</u>	<u>249</u>	<u>250</u>	<u>62</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>9.1</u>	<u>.325</u>
<u>1-1</u>	<u>52.5</u>	<u>0.37</u>	<u>1.0</u>	<u>967.79</u>	<u>299</u>	<u>253</u>	<u>250</u>	<u>63</u>	<u>96</u>	<u>92</u>	<u>3</u>	<u>9.2</u>	
<u>2</u>	<u>55</u>	<u>0.34</u>	<u>0.92</u>	<u>969.20</u>	<u>299</u>	<u>250</u>	<u>250</u>	<u>63</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>9.8</u>	
<u>3</u>	<u>57.5</u>	<u>0.35</u>	<u>0.95</u>	<u>970.55</u>	<u>297</u>	<u>249</u>	<u>252</u>	<u>64</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>9.3</u>	
<u>4</u>	<u>60</u>	<u>0.40</u>	<u>1.1</u>	<u>971.48</u>	<u>299</u>	<u>250</u>	<u>248</u>	<u>64</u>	<u>97</u>	<u>92</u>	<u>3</u>	<u>9.5</u>	
<u>5</u>	<u>62.5</u>	<u>0.41</u>	<u>1.1</u>	<u>973.520</u>	<u>300</u>	<u>248</u>	<u>249</u>	<u>63</u>	<u>97</u>	<u>91</u>	<u>3</u>	<u>8.8</u>	
Total	*								<u>1164</u>	<u>1103</u>			
Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

11-51

3586 QA/QC _____
Date _____

E-33

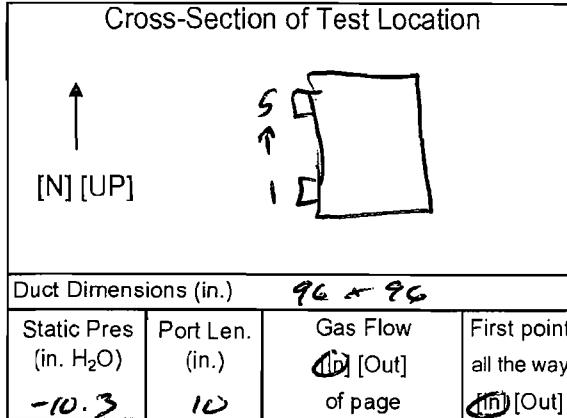
TEST LOCATION: FF OUTLET
 UNIT: 2 RUN: 3

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: 13B PAGE 1 OF 2

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S BROWARD</u>	Date <u>3.29.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>BA</u>	

Meter Box <u>61-6</u>	Sample Box No. <u>B22</u>
Meter Y_d <u>0.9960</u>	Meter $\Delta H_{@}$ <u>1.7601</u>
K Factor <u>2.7</u>	Pitot C_p <u>0.816</u>
Leak Rate Before <u>9.004</u> [cfm] [Lpm] @ <u>13</u> (in. Hg)	
Leak Rate After <u>0.003</u> [cfm] [Lpm] @ <u>7</u> (in. Hg)	
Pitot Leak Check Before: <input checked="" type="checkbox"/> After: Good <input checked="" type="checkbox"/> Bad <input type="checkbox"/>	



Amb. Temp. (°F) <u>80</u>	Bar. Press. <u>30.00</u> [in. Hg] [mbar]
Probe I.D. No. <u>56-96-11</u>	<u>67-8-19</u>
Liner Material <u>GLASS</u>	

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>.274</u>	Nozzle I.D. <u>274-1</u>

Start Time: <u>16:11</u>	Stop Time: <u>17:23</u>
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Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V_m Init. Vol. (ft ³) [L]	Stack Temp. T_s (°F)	Probe T_p (°F)		Filter T_f (°F)	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points							
	<u>2.5</u>			<u>973.920</u>		<u>250</u>	<u>250</u>							
<u>1-1</u>	<u>2.5</u>	<u>0.40</u>	<u>1.1</u>	<u>975.59</u>	<u>298</u>	<u>255</u>	<u>250</u>	<u>64</u>	<u>90</u>	<u>89</u>	<u>3</u>	<u>9.4</u>		
<u>2</u>	<u>5</u>	<u>0.37</u>	<u>1.0</u>	<u>977.97</u>	<u>300</u>	<u>256</u>	<u>250</u>	<u>57</u>	<u>90</u>	<u>90</u>	<u>3</u>	<u>9.4</u>		
<u>3</u>	<u>7.5</u>	<u>0.41</u>	<u>1.1</u>	<u>978.43</u>	<u>298</u>	<u>253</u>	<u>252</u>	<u>47</u>	<u>92</u>	<u>89</u>	<u>3</u>	<u>9.9</u>		
<u>4</u>	<u>10</u>	<u>0.46</u>	<u>1.2</u>	<u>980.07</u>	<u>299</u>	<u>252</u>	<u>249</u>	<u>44</u>	<u>93</u>	<u>89</u>	<u>3</u>	<u>9.8</u>		
<u>5</u>	<u>12.5</u>	<u>0.57</u>	<u>1.4</u>	<u>981.660</u>	<u>300</u>	<u>257</u>	<u>250</u>	<u>44</u>	<u>94</u>	<u>89</u>	<u>3</u>	<u>9.8</u>	<u>1.045</u>	
<u>2-1</u>	<u>15</u>	<u>0.44</u>	<u>1.2</u>	<u>983.65</u>	<u>299</u>	<u>253</u>	<u>256</u>	<u>47</u>	<u>93</u>	<u>89</u>	<u>3</u>	<u>10.2</u>		
<u>2</u>	<u>17.5</u>	<u>0.37</u>	<u>1.0</u>	<u>985.10</u>	<u>300</u>	<u>250</u>	<u>256</u>	<u>46</u>	<u>94</u>	<u>89</u>	<u>3</u>	<u>9.3</u>		
<u>3</u>	<u>20</u>	<u>0.41</u>	<u>1.1</u>	<u>986.62</u>	<u>300</u>	<u>248</u>	<u>250</u>	<u>46</u>	<u>94</u>	<u>89</u>	<u>3</u>	<u>10.2</u>		
<u>4</u>	<u>22.5</u>	<u>0.47</u>	<u>1.3</u>	<u>988.25</u>	<u>300</u>	<u>249</u>	<u>257</u>	<u>46</u>	<u>95</u>	<u>89</u>	<u>3</u>	<u>9.8</u>		
<u>5</u>	<u>25</u>	<u>0.57</u>	<u>1.4</u>	<u>989.930</u>	<u>300</u>	<u>250</u>	<u>250</u>	<u>47</u>	<u>95</u>	<u>89</u>	<u>3</u>	<u>9.4</u>	<u>1.0375</u>	
<u>3-1</u>	<u>27.5</u>	<u>0.40</u>	<u>1.1</u>	<u>991.85</u>	<u>299</u>	<u>252</u>	<u>257</u>	<u>57</u>	<u>94</u>	<u>89</u>	<u>3</u>	<u>9.6</u>		
<u>2</u>	<u>30</u>	<u>0.40</u>	<u>1.1</u>	<u>993.33</u>	<u>300</u>	<u>250</u>	<u>250</u>	<u>57</u>	<u>94</u>	<u>89</u>	<u>3</u>	<u>9.2</u>		
<u>3</u>	<u>32.5</u>	<u>0.41</u>	<u>1.1</u>	<u>994.81</u>	<u>300</u>	<u>248</u>	<u>250</u>	<u>57</u>	<u>95</u>	<u>89</u>	<u>3</u>	<u>9.1</u>		
	Total	<u>15.6967</u>	<u>26.9100</u>	<u>37.0200</u>	<u>7485</u>				<u>1213</u>	<u>1158</u>				
	Average	<u>0.6279</u>	<u>1.0764</u>	<u>37.0200</u>	<u>299.4000</u>				<u>91.2200</u>					

E-34

Sum of square roots.
15.1000

Circle correct bracketed units on data sheet.

3893 QA/QC
 Date _____

TEST LOCATION: FF OUTLET

FLUORIDE TESTING

METHOD: T3B PAGE 2 OF 2

UNIT: 2 RUN: 3

FIELD DATA SHEET

Client <u>Whelanator</u>	Project No. <u>11182</u>
Plant <u>S. BROWARD</u>	Date <u>3.29.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>NH</u>	

Meter Box <u>61-6</u>	Sample Box No. <u>B 22</u>
Meter Yd <u>0.9960</u>	Meter ΔH ₀ <u>1.7601</u>
K Factor <u>2.7</u>	Pitot C _p <u>0.812</u>

Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Cross-Section of Test Location

↑
[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow [In] [Out]	First point all the way of page [In] [Out]
------------------------------------	-----------------	---------------------	--

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.	
Thimble No.	
Nozzle Diameter	Nozzle I.D.

Start Time:	Stop Time: <u>17:23</u>
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E-35

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (L)	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T _X (°F)	Notes
						Set Points							
3-4	35	0.43	1.2	996.36	300	249	250	52	95	89	3	9.0	
5	37.5	0.45	1.2	997.895	300	250	249	53	95	89	3	9.2	8.185
4-1	40	0.39	1.1	999.74	299	252	250	57	93	88	3	10.5	
2	42.5	0.36	0.97	1001.16	301	251	250	54	94	89	3	9.7	
3	45	0.41	1.1	1002.67	300	249	250	54	95	88	3	9.6	
4	47.5	0.36	0.97	1004.09	300	248	250	54	95	88	3	9.4	
5	50	0.36	0.97	1005.510	299	250	250	54	95	89	3	9.7	5.795
5-1	52.5	0.25	0.68	1007.01	297	252	249	58	93	88	3	9.7	
2	55	0.33	0.89	1008.20	298	249	250	60	93	88	3	9.2	
3	57.5	0.34	0.92	1009.62	300	248	250	60	94	88	3	9.2	
4	60	0.33	0.89	1010.96	299	250	250	60	94	89	3	8.9	
5	62.5	0.34	0.92	1012.345	299	250	251	60	93	88	3	9.6	
	Total	*	26.4100						1129	1061			
	Average		1.0764										

*Sum of square roots.

Circle correct bracketed units on data sheet.

11.81

3592 QA/QC _____
Date _____

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 FF Outlet	
Plant South Broward	Job No. 11182	Method	13B

Run No. 1	Filter Type Teflon glass mat	Sample Box No. B22
Date 3/29/11	Lot No.	pH
Analyst D. Luckhard	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	705.8	546.9	158.9	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC DC</td> </tr> <tr> <td>Date 3/29/11</td> </tr> </table>	QA/QC DC	Date 3/29/11
QA/QC DC							
Date 3/29/11							
Impinger 2	100 mL DI H2O	618.7	564.5	54.2			
Impinger 3	Empty	452.8	444.1	8.7			
Impinger 4	Silica Gel	750.0	736.8	132.0			
					Total Weight (gm)		
					221.8		
					235.0		

Run No. 2	Filter Type Teflon glass mat	Sample Box No. B1
Date 3/29/11	Lot No.	pH
Analyst D. Luckhard	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	753.6	635.6	118.0	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC DC</td> </tr> <tr> <td>Date 3/29/11</td> </tr> </table>	QA/QC DC	Date 3/29/11
QA/QC DC							
Date 3/29/11							
Impinger 2	100 mL DI H2O	607.9	544.2	63.7			
Impinger 3	Empty	468.5	453.7	14.8			
Impinger 4	Silica Gel	725.4	711.0	14.4			
					Total Weight (gm)		
					196.5		
					210.9		

Run No. 3	Filter Type Teflon glass mat	Sample Box No. B22
Date 3/29/11	Lot No.	pH
Analyst R. Vicca	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	705.3	546.5	158.8	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC RV</td> </tr> <tr> <td>Date 3/29/11</td> </tr> </table>	QA/QC RV	Date 3/29/11
QA/QC RV							
Date 3/29/11							
Impinger 2	100 mL DI H2O	620.5	562.3	58.2			
Impinger 3	Empty	454.2	443.2	11.0			
Impinger 4	Silica Gel	766.0	749.9	11.1			
					Total Weight (gm)		
					228.0		
					239.1		

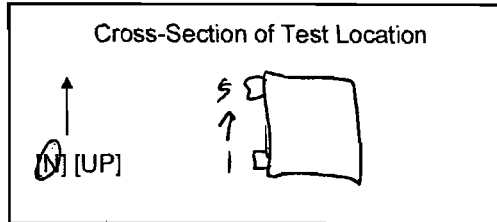
TEST LOCATION: FF OUTLET

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 1 OF 5

UNIT: 3

Client <u>Whelan/Amcor</u>	Project No. <u>11182</u>
Plant <u>S. Broward</u>	Date <u>3-30-11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>CS</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F) <u>75</u>	Bar. Press. <u>30.05</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No <u>67-80-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>IN</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>IN</u> [Out] of page	
Duct Dimensions (in.) <u>96 x 76</u>	

Run	Load	Run	Load	Run	Load	Run	Load								
1		1		2		2									
Start Time <u>7:49</u>	Stop Time <u>7:54</u>	Start Time	Stop Time	Start Time <u>8:23</u>	Stop Time <u>8:28</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>-9.1</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-9.1</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
5-1	298	0.30		2-1	298	0.52		1-1	298	0.42		4-1	298	0.40	
2	298	0.25		2	298	0.50		2	298	0.41		2	298	0.40	
3	298	0.25		3	298	0.48		3	298	0.42		3	298	0.38	
4	298	0.27		4	298	0.46		4	298	0.43		4	298	0.35	
5	298	0.29		5	298	0.41		5	298	0.44		5	298	0.32	
4-1	298	0.39		1-1	299	0.37		2-1	298	0.41		5-1	298	0.37	
2	298	0.37		2	299	0.48		2	298	0.42		2	298	0.30	
3	298	0.38		3	299	0.47		3	298	0.40		3	298	0.27	
4	298	0.37		4	299	0.48		4	298	0.33		4	298	0.30	
5	298	0.37		5	299	0.55		5	298	0.31		5	298	0.32	
3-1	299	0.42						3-1	299	0.42					
2	299	0.41						2	299	0.42					
3	299	0.38						3	299	0.37					
4	299	0.33						4	299	0.31					
5	299	0.31						5	299	0.29					
Total	<u>7460</u>	<u>15.5914</u>							<u>7455</u>	<u>15.1350</u>					
Average	<u>298.</u>	<u>0.6237</u>							<u>298.</u>	<u>0.6054</u>					

Sum of square roots.

Circle correct bracketed units on data sheet.



QA/QC NH
Date 3.30.11

E-37

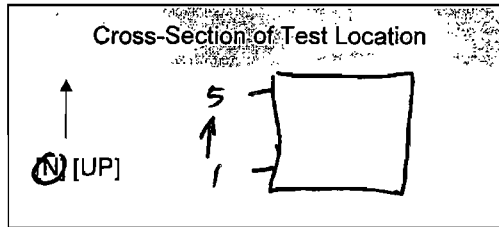
TEST LOCATION: FF OUT

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 2 OF 5

UNIT: 3

Client <u>Whelan tractor</u>	Project No. <u>1482</u>
Plant <u>S. Broward</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>CS</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F) <u>78</u>	Bar. Press. <u>30.05</u> [in. Hg] [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>6780-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>In</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>In</u> [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run	Load	Run	Load	Run	Load	Run	Load								
3		3		4		4									
Start Time <u>9:07</u>	Stop Time <u>9:14</u>	Start Time	Stop Time	Start Time <u>9:57</u>	Stop Time <u>10:02</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O) <u>- 5.8</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>- 5.8</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
5-1	297	0.34		2-1	297	0.41		1-1	298	0.43		4-1	298	0.32	
2	297	0.30		2	297	0.34		2	298	0.39		2	298	0.30	
3	297	0.30		3	297	0.35		3	298	0.37		3	298	0.32	
4	297	0.27		4	297	0.36		4	298	0.33		4	298	0.33	
5	297	0.26		5	297	0.35		5	298	0.36		5	298	0.31	
4-1	297	0.34		1-1	295	0.43		2-1	297	0.41		5-1	298	0.27	
2	297	0.35		2	295	0.39		2	297	0.40		2	298	0.29	
3	297	0.32		3	295	0.40		3	297	0.37		3	298	0.28	
4	297	0.31		4	295	0.38		4	297	0.36		4	298	0.27	
5	297	0.32		5	295	0.39		5	297	0.32		5	298	0.27	
3-1	298	0.36						3-1	299	0.35					
2	298	0.36						2	299	0.34					
3	298	0.34						3	299	0.36					
4	296	0.30						4	299	0.32					
5	298	0.29						5	295	0.29					
Total	7420	14.6005						7450	14.4254						
Average	296.8000	0.5840						298.0000	0.5770						

Sum of square roots.

Circle correct bracketed units on data sheet.

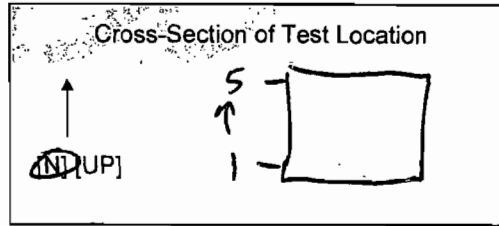


E-38

TEST LOCATION: FF OUT
 UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client <u>Whe Laboratories</u>	Project No. <u>1182</u>
Plant <u>S. Broward</u>	Date <u>2.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>CS</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>30.05</u> (6 Hg) [mbar]
Pitot Cp <u>0.817</u>	Probe I.D. No. <u>67-8P-3</u>
Duct Diameters from Disturbance	
Downstream:	Upstream:
First point all the way <u>in</u> [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>in</u> [Out] of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run <u>5</u>	Load	Run <u>5</u>	Load	Run <u>6</u>	Load	Run <u>6</u>	Load
Start Time <u>10:24</u>	Stop Time <u>10:30</u>	Start Time	Stop Time	Start Time <u>10:59</u>	Stop Time <u>11:06</u>	Start Time	Stop Time
Static Press. (in. H ₂ O) <u>-5.8</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O) <u>-5.8</u>		Static Press. (in. H ₂ O)	
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>	

Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
3-1	299	0.31		2-1	297	0.40		1-1	297	0.23		4-1	297	0.32	
2	299	0.31		2	297	0.37		2	297	0.38		2	297	0.30	
3	299	0.32		3	297	0.33		7	297	0.40		3	297	0.30	
4	299	0.29		4	297	0.28		4	297	0.36		4	297	0.28	
5	299	0.29		5	297	0.27		5	297	0.40		5	296	0.26	
5-1	297	0.25		1-1	296	0.26		2-1	297	0.40		5-1	295	0.24	
2	297	0.25		2	296	0.23		2	297	0.37		2	295	0.25	
3	297	0.28		3	296	0.25		3	297	0.37		3	295	0.28	
4	297	0.24		4	296	0.25		4	297	0.32		4	295	0.29	
5	297	0.23		5	296	0.27		5	297	0.33		5	295	0.27	
4-1	298	0.29						3-1	299	0.30					
2	298	0.27						2	299	0.31					
3	298	0.25						3	299	0.30					
4	298	0.26						4	299	0.29					
5	298	0.28						5	299	0.30					
Total	7435	13.225						7424	13.9159						
Average	297	0.5790						296	0.5586						

4000 Sum of square roots.

Circle correct bracketed units on data sheet.

9600



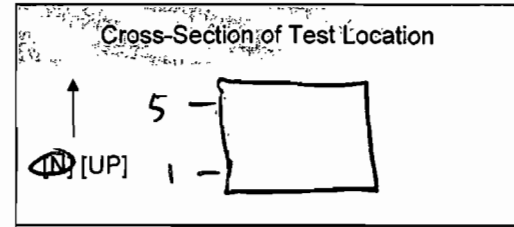
QA/QC NH
Date 7.20.11

E-39

TEST LOCATION: FF OUT
 UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client <u>Wheelabrator</u>	Project No. <u>111P2</u>
Plant <u>S Bedward</u>	Date <u>3.30.11</u>
Meter Operator	
Probe Operator	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F) <u>84</u>	Bar. Press. <u>30.05</u> [in. Hg] [mbar]
Pitot Cp. <u>0.817</u>	Probe I.D. No. <u>67-8P-3</u>
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way <u>On</u> [In] [Out]	Port Len. (in.) <u>10</u>
Gas Flow <u>(In)</u> of page	
Duct Dimensions (in.) <u>96 x 96</u>	

Run <u>7</u> Load				Run <u>7</u> Load				Run <u>8</u> Load				Run <u>5</u> Load			
Start Time <u>11:44</u>		Stop Time <u>11:54</u>		Start Time		Stop Time		Start Time <u>12:23</u>		Stop Time <u>12:30</u>		Start Time		Stop Time	
Static Press. (in. H ₂ O) <u>-5.5</u>				Static Press. (in. H ₂ O)				Static Press. (in. H ₂ O) <u>-5.8</u>				Static Press. (in. H ₂ O)			
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>				Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>				Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>				Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>			
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
<u>4</u> -1	<u>297</u>	<u>0.33</u>	<u>NH</u>	<u>4</u> -1	<u>295</u>	<u>0.42</u>		<u>1</u> -1	<u>297</u>	<u>0.34</u>		<u>5</u> -1	<u>295</u>	<u>0.30</u>	
<u>2</u>	<u>297</u>	<u>0.33</u>		<u>2</u>	<u>295</u>	<u>0.40</u>		<u>2</u>	<u>297</u>	<u>0.38</u>		<u>2</u>	<u>295</u>	<u>0.29</u>	
<u>3</u>	<u>297</u>	<u>0.30</u>		<u>3</u>	<u>295</u>	<u>0.42</u>		<u>3</u>	<u>297</u>	<u>0.36</u>		<u>3</u>	<u>295</u>	<u>0.30</u>	
<u>4</u>	<u>297</u>	<u>0.28</u>		<u>4</u>	<u>295</u>	<u>0.38</u>		<u>4</u>	<u>297</u>	<u>0.34</u>		<u>4</u>	<u>295</u>	<u>0.31</u>	
<u>5</u>	<u>297</u>	<u>0.29</u>		<u>5</u>	<u>295</u>	<u>0.40</u>		<u>5</u>	<u>297</u>	<u>0.38</u>		<u>5</u>	<u>295</u>	<u>0.28</u>	
<u>3</u> -1	<u>297</u>	<u>0.28</u>		<u>5</u> -1	<u>298</u>	<u>0.33</u>		<u>3</u> -1	<u>298</u>	<u>0.34</u>		<u>2</u> -1	<u>297</u>	<u>0.39</u>	
<u>2</u>	<u>297</u>	<u>0.30</u>		<u>2</u>	<u>298</u>	<u>0.26</u>		<u>2</u>	<u>298</u>	<u>0.33</u>		<u>2</u>	<u>298</u>	<u>0.39</u>	
<u>3</u>	<u>297</u>	<u>0.29</u>		<u>3</u>	<u>297</u>	<u>0.26</u>		<u>3</u>	<u>298</u>	<u>0.32</u>		<u>3</u>	<u>299</u>	<u>0.37</u>	
<u>4</u>	<u>297</u>	<u>0.30</u>		<u>4</u>	<u>297</u>	<u>0.30</u>		<u>4</u>	<u>298</u>	<u>0.30</u>		<u>4</u>	<u>296</u>	<u>0.38</u>	
<u>5</u>	<u>297</u>	<u>0.28</u>		<u>5</u>	<u>297</u>	<u>0.28</u>		<u>5</u>	<u>298</u>	<u>0.31</u>		<u>5</u>	<u>296</u>	<u>0.37</u>	
<u>2</u> -1	<u>298</u>	<u>0.41</u>						<u>4</u> -1	<u>298</u>	<u>0.30</u>					
<u>2</u>	<u>298</u>	<u>0.40</u>						<u>2</u>	<u>298</u>	<u>0.30</u>					
<u>3</u>	<u>298</u>	<u>0.38</u>						<u>3</u>	<u>298</u>	<u>0.30</u>					
<u>4</u>	<u>298</u>	<u>0.36</u>						<u>4</u>	<u>298</u>	<u>0.30</u>					
<u>5</u>	<u>298</u>	<u>0.33</u>						<u>5</u>	<u>298</u>	<u>0.28</u>					
Total	<u>7422</u>	<u>143897</u>						Total	<u>11933</u>	<u>143467</u>					
Average	<u>296.88</u>	<u>0.5760</u>						Average	<u>297.00</u>	<u>0.5739</u>					

Sum of square roots.
296.88 0.5763

Circle correct bracketed units on data sheet.



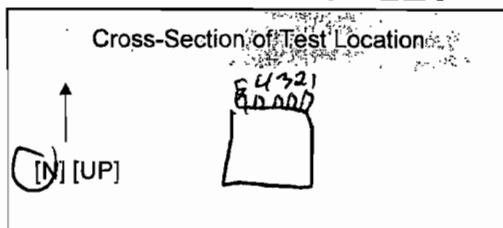
QA/QC NH
 Date 3.11

E - 40

TEST LOCATION: FF Outlet
 UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client: <u>Wheelabrator</u>	Project No.
Plant: <u>S. Broward</u>	Date
Meter Operator: <u>M. Hitchins</u>	
Probe Operator: <u>C. Slomp</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F)	Bar. Press. <u>30.28</u> [in. Hg] [mbar]
Pitot Cp: <u>0.</u>	Probe I.D. No.
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way [In] [Out]	Port Len. (in.)
Gas Flow: [In] [Out] of page	
Duct Dimensions (in.)	

Run	Load	Run	Load	Run	Load	Run	Load								
9		9		10		10									
Start Time: <u>13:00</u>	Stop Time: <u>13:13</u>	Start Time	Stop Time	Start Time: <u>13:45</u>	Stop Time: <u>13:55</u>	Start Time	Stop Time								
Static Press. (in. H ₂ O): <u>NA -5.8 -8.1</u>		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O): <u>-8.1</u>		Static Press. (in. H ₂ O)									
Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>									
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
5-1	297	0.37		2-1	294	0.44		5-1	297	0.34		2-1	301	0.54	
2	297	0.36		2	294	0.45		2	297	0.32		2	301	0.52	
3	297	0.38		3	296	0.42		3	297	0.32		3	301	0.53	
4	297	0.38		4	294	0.43		4	297	0.33		4	301	0.53	
5	297	0.37		5	296	0.41		5	297	0.34		5	301	0.49	
4-1	300	0.44		1-1	297	0.5		4-1	298	0.37		1-2	297	0.51	
2	300	0.44		2	297	0.54		2	298	0.37		2	297	0.53	
3	300	0.43		3	297	0.44		3	298	0.45		3	297	0.52	
4	300	0.43		4	297	0.43		4	298	0.41		4	297	0.48	
5	300	0.41		5	297	0.48		5	298	0.39		5	297	0.50	
3-1	298	0.45						3-1	298	0.32					
2	298	0.48						2	298	0.40					
3	298	0.44						3	298	0.42					
4	298	0.41						4	298	0.46					
5	298	0.40						5	298	0.45					
Total	2440	16.3892						7455	16.3448						
Average	292.6	0.6526						298.200	0.6598						

Sum of square roots.

Circle correct bracketed units on data sheet.



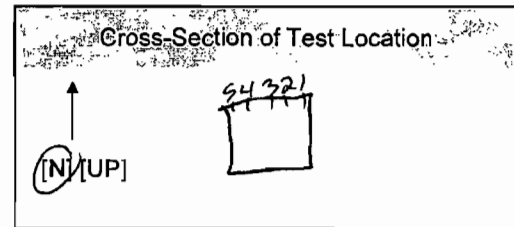
QA/QC: NP
 Date: 12.26.11

E-41

TEST LOCATION: FF Outlet
 UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client: <u>Wheelabrator</u>	Project No: <u>11152</u>
Plant: <u>S. Baywards</u>	Date: <u>3/30/11</u>
Meter Operator: <u>SG SF N. Hitchins</u>	
Probe Operator: <u>C. Gump</u>	
Source of Moisture and Molecular Weight Data	



Amb. Temp. (°F):	Bar. Press. <u>30.05</u> (in Hg) (mbar)
Pitot Cp: <u>0.817</u>	Probe I.D. No: <u>67-8P-3</u>
Duct Diameters from Disturbance:	
Downstream	Upstream
First point all the way (In) (Out)	Port Len. (in.)
Gas Flow (In) (Out) of page	
Duct Dimensions (in.) <u>96x96</u>	

Run	Load	Run	Load	Run	Load	Run	Load
Start Time	Stop Time	Start Time	Stop Time	Start Time	Stop Time	Start Time	Stop Time
Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O)		Static Press. (in. H ₂ O)	
Post-Test Leak Check: Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>		Post-Test Leak Check: Pass <input type="checkbox"/> Fail <input type="checkbox"/>	
Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes	Traverse Point Number	Stack Temp. T _s (°F)	Velocity Head ΔP (in. H ₂ O)	Notes
1-1	296	0.49		1-1	297	0.40	
2	296	0.39		2	297	0.39	
3	296	0.39		3	297	0.33	
4	296	0.37		4	297	0.33	
5	296	0.42		5	297	0.32	
2-1	299	0.46		15-1	297	0.35	
2	299	0.44		2	297	0.35	
3	299	0.42		3	297	0.36	
4	299	0.37		4	297	0.37	
5	299	0.38		5	297	0.33	
7-1	298	0.38					
2	298	0.37					
3	298	0.35					
4	298	0.34					
5	298	0.33					
Total	<u>2974.00</u>	<u>15.274</u>					
Average	<u>7435</u>	<u>0.6112</u>					

Sum of square roots. Circle correct bracketed units on data sheet.



E-42

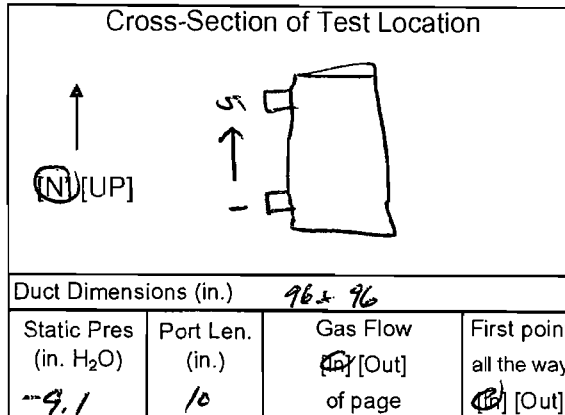
TEST LOCATION: FF OUTLET

ACI TESTING
FIELD DATA SHEET

METHOD: ZCA PAGE 1 OF 1

UNIT: 3 RUN: 31
NH

Client <u>Wheelabrator</u>	Project No. <u>111P2</u>
Plant <u>S BROWN</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator <u>---</u>	



Amb. Temp. (°F) <u>75</u>	Bar. Press. <u>30.05</u> [(in. Hg) (mbar)]
Probe I.D. No. <u>G7-4-1</u>	
Liner Material <u>GLASS</u>	

Meter Box <u>61-5</u>	Sample Box No. <u>B14</u>
Meter Y _d <u>1.9936</u>	Meter ΔH _@ <u>1.7676</u>
K Factor <u>---</u>	Pitot C _p <u>---</u>
Leak Rate Before <u>0.003</u> [(in. Hg) (Lpm)] @ <u>14</u> (in. Hg)	
Leak Rate After <u>0.002</u> [(in. Hg) (Lpm)] @ <u>6</u> (in. Hg)	
Pitot Leak Check Before: <input checked="" type="checkbox"/> After: Good <input checked="" type="checkbox"/> Bad <input type="checkbox"/>	

Filter No. <u>---</u>		
Thimble No. <u>---</u>		
Nozzle Diameter <u>---</u>	Nozzle I.D.	

Start Time: 7:47 Stop Time: 8:47

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (ft ³) [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
				<u>207.110</u> 206.315		<u>300</u>	<u>300</u>						
<u>3-1</u>	<u>5</u>	<u>N/A</u>	<u>1.5</u>	<u>210.73</u>	<u>299</u>	<u>300</u>	<u>303</u>	<u>60</u>	<u>79</u>	<u>77</u>	<u>4</u>	<u>8.0</u>	
	<u>10</u>	↓	<u>1.5</u>	<u>214.16</u>	<u>298</u>	<u>300</u>	<u>303</u>	<u>59</u>	<u>81</u>	<u>77</u>	<u>4</u>	<u>8.0</u>	
	<u>15</u>	↓	<u>1.5</u>	<u>217.64</u>	<u>300</u>	<u>305</u>	<u>302</u>	<u>58</u>	<u>84</u>	<u>78</u>	<u>4</u>	<u>6.7</u>	
	<u>20</u>		<u>1.5</u>	<u>221.13</u>	<u>299</u>	<u>309</u>	<u>302</u>	<u>60</u>	<u>86</u>	<u>78</u>	<u>4</u>	<u>6.8</u>	
	<u>25</u>		<u>1.5</u>	<u>224.59</u>	<u>298</u>	<u>304</u>	<u>304</u>	<u>62</u>	<u>87</u>	<u>79</u>	<u>4</u>	<u>7.2</u>	
	<u>30</u>		<u>1.5</u>	<u>228.05</u>	<u>298</u>	<u>301</u>	<u>303</u>	<u>65</u>	<u>88</u>	<u>80</u>	<u>4</u>	<u>7.4</u>	
	<u>35</u>		<u>1.5</u>	<u>231.54</u>	<u>299</u>	<u>300</u>	<u>302</u>	<u>57</u>	<u>89</u>	<u>80</u>	<u>4</u>	<u>7.5</u>	
	<u>40</u>		<u>1.5</u>	<u>235.02</u>	<u>298</u>	<u>301</u>	<u>302</u>	<u>56</u>	<u>89</u>	<u>82</u>	<u>4</u>	<u>7.5</u>	
	<u>45</u>		<u>1.5</u>	<u>238.49</u>	<u>299</u>	<u>303</u>	<u>302</u>	<u>56</u>	<u>89</u>	<u>81</u>	<u>4</u>	<u>7.2</u>	
	<u>50</u>		<u>1.5</u>	<u>241.95</u>	<u>299</u>	<u>302</u>	<u>302</u>	<u>57</u>	<u>89</u>	<u>81</u>	<u>4</u>	<u>7.0</u>	
	<u>55</u>		<u>1.5</u>	<u>245.51</u>	<u>298</u>	<u>301</u>	<u>301</u>	<u>54</u>	<u>89</u>	<u>81</u>	<u>4</u>	<u>7.9</u>	
	<u>60</u>		<u>1.5</u>	<u>248.980</u>	<u>299</u>	<u>302</u>	<u>303</u>	<u>55</u>	<u>89</u>	<u>82</u>	<u>4</u>	<u>7.5</u>	
	Total *			<u>41.8760</u>	<u>3584</u>				<u>1039</u>	<u>956</u>			
	Average		<u>1.5000</u>		<u>298.6667</u>				<u>83.1250</u>				

Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NH
Date 3.30.11



TEST LOCATION: FF OUTLET
 UNIT: 3 RUN: 2

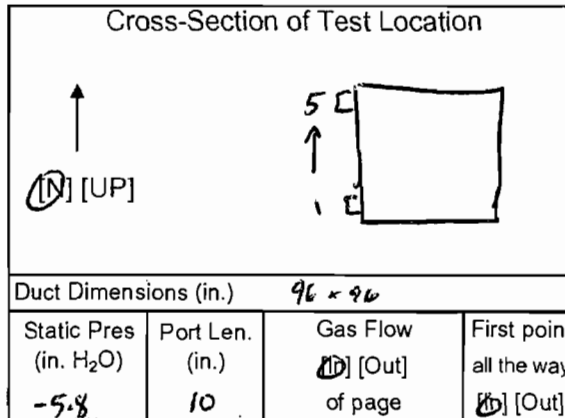
HCl TESTING
FIELD DATA SHEET

METHOD: 26A PAGE 1 OF 1

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Browns</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>61-5</u>	Sample Box No. <u>B12</u>
Meter Y_d <u>0.9936</u>	Meter $\Delta H_{@}$ <u>1.7676</u>
K Factor <u>-</u>	Pitot C_p <u>-</u>

Leak Rate Before <u>0.004</u> [ccm] [Lpm] @ <u>12</u> (in. Hg)
Leak Rate After <u>0.002</u> [ccm] [Lpm] @ <u>6</u> (in. Hg)
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>



Amb. Temp. (°F)	Bar. Press. <u>30.05</u> [in. Hg] [mbar]
Probe I.D. No. <u>67-4-1</u>	
Liner Material <u>GLASS</u>	

Filter No. <u>-</u>	
Thimble No. <u>-</u>	
Nozzle Diameter <u>-</u>	Nozzle I.D.

Start Time: <u>9:06</u>	Stop Time: <u>10:06</u>
-------------------------	-------------------------

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V_m Init. Vol. (L)	Stack Temp. T_s (°F)	Probe T_p (°F)		Filter T_f (°F)	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet $T_{m out}$ (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points							
				<u>249.480</u>		<u>300</u>	<u>300</u>							
3-1	5	<u>N/A</u>	<u>1.5</u>	<u>253.08</u>	<u>300</u>	<u>305</u>	<u>304</u>	<u>63</u>	<u>63</u>	<u>83</u>	<u>81</u>	<u>4</u>	<u>7.0</u>	
	10	<u>↓</u>	<u>1.5</u>	<u>256.62</u>	<u>300</u>	<u>306</u>	<u>303</u>	<u>63</u>	<u>63</u>	<u>86</u>	<u>81</u>	<u>4</u>	<u>6.8</u>	
	15	<u>↓</u>	<u>1.5</u>	<u>260.07</u>	<u>300</u>	<u>304</u>	<u>303</u>	<u>61</u>	<u>63</u>	<u>89</u>	<u>82</u>	<u>4</u>	<u>6.6</u>	
	20	<u>↓</u>	<u>1.5</u>	<u>263.52</u>	<u>297</u>	<u>303</u>	<u>302</u>	<u>63</u>	<u>63</u>	<u>90</u>	<u>83</u>	<u>4</u>	<u>6.8</u>	
	25		<u>1.5</u>	<u>267.11</u>	<u>299</u>	<u>301</u>	<u>302</u>	<u>65</u>	<u>63</u>	<u>90</u>	<u>83</u>	<u>4</u>	<u>6.2</u>	
	30		<u>1.5</u>	<u>270.63</u>	<u>300</u>	<u>301</u>	<u>302</u>	<u>58</u>	<u>63</u>	<u>90</u>	<u>83</u>	<u>4</u>	<u>7.0</u>	
	35		<u>1.5</u>	<u>274.12</u>	<u>299</u>	<u>302</u>	<u>301</u>	<u>58</u>	<u>63</u>	<u>90</u>	<u>84</u>	<u>4</u>	<u>6.9</u>	
	40		<u>1.5</u>	<u>277.59</u>	<u>305</u>	<u>302</u>	<u>302</u>	<u>60</u>	<u>63</u>	<u>91</u>	<u>84</u>	<u>4</u>	<u>6.8</u>	
	45		<u>1.5</u>	<u>281.05</u>	<u>299</u>	<u>302</u>	<u>301</u>	<u>61</u>	<u>63</u>	<u>91</u>	<u>84</u>	<u>4</u>	<u>6.7</u>	
	50		<u>1.5</u>	<u>284.51</u>	<u>300</u>	<u>302</u>	<u>303</u>	<u>62</u>	<u>63</u>	<u>91</u>	<u>84</u>	<u>4</u>	<u>6.8</u>	
	55		<u>1.5</u>	<u>287.99</u>	<u>301</u>	<u>301</u>	<u>302</u>	<u>64</u>	<u>63</u>	<u>90</u>	<u>84</u>	<u>4</u>	<u>6.5</u>	
	60		<u>1.5</u>	<u>291.375</u>	<u>299</u>	<u>303</u>	<u>302</u>	<u>65</u>	<u>63</u>	<u>90</u>	<u>84</u>	<u>4</u>	<u>6.4</u>	
	Total *			<u>41.8950</u>		<u>3599</u>				<u>1071</u>	<u>997</u>			
	Average			<u>1.5000</u>		<u>299.9167</u>				<u>86.1667</u>				

*Sum of square roots.

Circle correct bracketed units on data sheet.

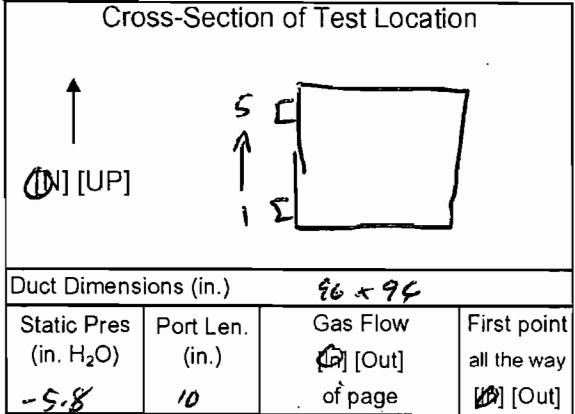
E-44

TEST LOCATION: FF outlet
 UNIT: 3 RUN: 3

HCl TESTING
FIELD DATA SHEET

METHOD: 26A PAGE 1 OF 1

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Brauward</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator	



Amb. Temp. (°F) <u>75</u>	Bar. Press. <u>30.05</u> (in. Hg) [mbar]
Probe I.D. No. <u>67-4-1</u>	
Liner Material <u>GLASS</u>	

Meter Box <u>61-5</u>	Sample Box No. <u>B16</u>
Meter Y _d <u>0.9936</u>	Meter ΔH _@ <u>1.7676</u>
K Factor <u>-</u>	Pitot C _p <u>-</u>
Leak Rate Before <u>0.004</u> (in. Hg) [Lpm] @ <u>12</u> (in. Hg)	
Leak Rate After <u>0.002</u> (in. Hg) [Lpm] @ <u>6</u> (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/>	After: Good <input type="checkbox"/> Bad <input type="checkbox"/>

Filter No.	<u>-</u>
Thimble No.	<u>-</u>
Nozzle Diameter	<u>-</u>
Nozzle I.D.	<u>-</u>

Start Time: 10:22 Stop Time: 11:22

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (ft ³) [L]	Stack Temp. T _s (°F)	Probe T _p	Filter T _f	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. T _i (°F)	Notes
						Set Points							
3-1	5	N/A	1.5	291.975	298	298	306	63	85	85	4	6.4	
	10	↓	1.5	299.15	297	306	304	61	89	85	4	6.4	
	15	↓	1.5	302.62	298	303	302	60	91	87	4	6.8	
	20		1.5	305.13	298	302	302	63	92	87	4	7.2	
	25		1.5	309.61	298	301	302	55	92	86	4	6.9	
	30		1.5	313.07	300	302	301	59	92	86	4	6.7	
	35		1.5	316.55	298	302	302	61	92	86	4	7.2	
	40		1.5	320.02	299	302	301	62	93	87	4	7.1	
	45		1.5	323.54	299	302	302	63	92	87	4	6.4	
	50		1.5	326.89	298	302	302	64	93	87	4	6.8	
	55		1.5	330.43	297	302	302	65	93	87	4	7.2	
	60		1.5	333.895	298	302	301	65	93	87	4	7.4	
	Total *			<u>411.9200</u>	<u>3578</u>				<u>1097</u>	<u>1037</u>			
	Average		<u>1.5000</u>		<u>298.1667</u>				<u>88.9167</u>				

* Sum of square roots. Single correct bracketed units on data sheet.

QA/QC NH
 Date 3.30.11



E-45

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 3 FF Outlet	
Plant South Broward	Job No. 11182	Method	Mod. 26A

Run No. 1	Filter Type Quartz	Sample Box No. <i>B16</i> ^{RV}
Date <i>3/30/11</i>	Lot No.	pH
Analyst <i>R. Viquez</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	549.0	455.0	94.0	
Impinger 2	100 mL 01.N H2SO4	650.9	526.8	124.1	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	573.2	537.4	35.8	Date <i>3/30/11</i>
Impinger 4	Empty	455.0	440.6	447.3 / 7.7	
Impinger 5	Silica Gel	754.6	760.2	740.2 / 14.4	Total Weight (gm)
					261.6
					276.0

Run No. 2	Filter Type Quartz	Sample Box No. <i>B12</i>
Date <i>3/30/11</i>	Lot No.	pH
Analyst <i>R. Viquez</i>	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	532.9	455.7	77.2	
Impinger 2	100 mL 01.N H2SO4	675.4	541.0	134.4	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	595.2	554.1	41.1	Date <i>3/30/11</i>
Impinger 4	Empty	439.5	429.7	9.8	
Impinger 5	Silica Gel	770.0	756.9	13.1	Total Weight (gm)
					262.5
					275.6

Run No. 3	Filter Type Quartz	Sample Box No. <i>B16</i>
Date <i>3/30/11</i>	Lot No.	pH
Analyst <i>R. Viquez</i>	Filter No. NA	Rinse

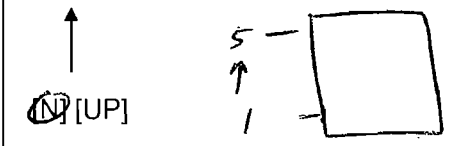
	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	541.7	461.2	80.5	
Impinger 2	100 mL 01.N H2SO4	689.8	565.8	124.0	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	589.1	543.5	45.6	Date <i>3/10/11</i>
Impinger 4	Empty	449.8	440.5	9.3	
Impinger 5	Silica Gel	793.6	779.1	14.5	Total Weight (gm)
					259.4
					273.9

TEST LOCATION: FF OUT FLUORIDE TESTING METHOD: 13B PAGE 1 OF 2

UNIT: 3 RUN: 1

FIELD DATA SHEET

Cross-Section of Test Location



Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S. Ground</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Amb. Temp. (°F) <u>85</u>	Bar. Press. <u>30.05</u> [in. Hg] [mbar]
Probe I.D. No. <u>56-96-11</u>	<u>67-8-18</u>
Liner Material <u>GLASS</u>	

Meter Box <u>61-5</u>	Sample Box No.
Meter Y _d <u>0.9936</u>	Meter ΔH _@ <u>1.7676</u>
K Factor <u>2.67</u>	Pitot C _p <u>0.812</u>
Leak Rate Before <u>0.001</u> [CFM] [Lpm] @ <u>13</u> (in. Hg)	
Leak Rate After <u>0.001</u> [CFM] [Lpm] @ <u>5</u> (in. Hg)	
Pitot Leak Check Before: <input checked="" type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Duct Dimensions (in.) <u>96 x 94</u>			
Static Pres (in. H ₂ O) <u>-5.8</u>	Port Len. (in.) <u>10</u>	Gas Flow (in) [Out] of page <u>in</u> [Out]	First point all the way <u>in</u> [Out]

Filter No. <u>-</u>		
Thimble No. <u>-</u>		
Nozzle Diameter <u>0.274</u>	Nozzle I.D. <u>274-1</u>	

Start Time: 11:40 Stop Time: 12:47

E-47

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (ft ³) [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{out} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points							
	<u>2.5</u>			<u>334.160</u>		<u>250</u>	<u>250</u>							
<u>5-1</u>	<u>2.5</u>	<u>0.37</u>	<u>0.88</u>	<u>335.42</u>	<u>298</u>	<u>259</u>	<u>259</u>	<u>63</u>	<u>87</u>	<u>85</u>	<u>3</u>	<u>7.6</u>		
<u>2</u>	<u>5</u>	<u>0.26</u>	<u>0.69</u>	<u>336.69</u>	<u>298</u>	<u>254</u>	<u>255</u>	<u>61</u>	<u>87</u>	<u>86</u>	<u>3</u>	<u>6.8</u>		
<u>3</u>	<u>7.5</u>	<u>0.26</u>	<u>0.69</u>	<u>337.87</u>	<u>297</u>	<u>251</u>	<u>256</u>	<u>54</u>	<u>88</u>	<u>86</u>	<u>3</u>	<u>7.3</u>		
<u>4</u>	<u>10</u>	<u>0.30</u>	<u>0.80</u>	<u>339.13</u>	<u>297</u>	<u>250</u>	<u>256</u>	<u>52</u>	<u>88</u>	<u>86</u>	<u>3</u>	<u>7.2</u>		
<u>5</u>	<u>12.5</u>	<u>0.28</u>	<u>0.75</u>	<u>340.355</u>	<u>297</u>	<u>250</u>	<u>254</u>	<u>51</u>	<u>89</u>	<u>86</u>	<u>3</u>	<u>6.9</u>	<u>0.435</u>	
<u>4-1</u>	<u>15</u>	<u>0.36</u>	<u>0.96</u>	<u>341.83</u>	<u>297</u>	<u>253</u>	<u>254</u>	<u>51</u>	<u>88</u>	<u>86</u>	<u>3</u>	<u>6.9</u>		
<u>2</u>	<u>17.5</u>	<u>0.36</u>	<u>0.96</u>	<u>343.12</u>	<u>298</u>	<u>253</u>	<u>253</u>	<u>50</u>	<u>89</u>	<u>87</u>	<u>3</u>	<u>6.9</u>		
<u>3</u>	<u>20</u>	<u>0.35</u>	<u>0.93</u>	<u>344.60</u>	<u>298</u>	<u>249</u>	<u>250</u>	<u>49</u>	<u>90</u>	<u>86</u>	<u>3</u>	<u>7.4</u>		
<u>4</u>	<u>22.5</u>	<u>0.34</u>	<u>0.91</u>	<u>345.96</u>	<u>298</u>	<u>249</u>	<u>253</u>	<u>50</u>	<u>90</u>	<u>86</u>	<u>3</u>	<u>7.3</u>		
<u>5</u>	<u>25</u>	<u>0.31</u>	<u>0.83</u>	<u>347.255</u>	<u>296</u>	<u>250</u>	<u>253</u>	<u>51</u>	<u>90</u>	<u>86</u>	<u>3</u>	<u>7.3</u>	<u>0.315</u>	
<u>3-1</u>	<u>27.5</u>	<u>0.37</u>	<u>0.99</u>	<u>348.74</u>	<u>296</u>	<u>255</u>	<u>251</u>	<u>54</u>	<u>89</u>	<u>86</u>	<u>3</u>	<u>7.0</u>		
<u>2</u>	<u>30</u>	<u>0.37</u>	<u>0.99</u>	<u>350.15</u>	<u>298</u>	<u>251</u>	<u>253</u>	<u>54</u>	<u>90</u>	<u>86</u>	<u>3</u>	<u>6.7</u>		
<u>3</u>	<u>32.5</u>	<u>0.34</u>	<u>0.91</u>	<u>351.52</u>	<u>298</u>	<u>249</u>	<u>252</u>	<u>56</u>	<u>91</u>	<u>86</u>	<u>3</u>	<u>7.3</u>		
	Total	<u>14.778</u>	<u>23.320</u>	<u>34.3800</u>	<u>297</u>	<u>2423</u>			<u>1156</u>	<u>1118</u>				
	Average	<u>0.5910</u>	<u>0.9332</u>		<u>296.9200</u>				<u>87.7800</u>					

Sum of square roots. 0.5923 11.29

Circle correct bracketed units on data sheet.

3864 QA/QC NH Date 3.30.11



TEST LOCATION: FF OUT
 UNIT: 3 RUN: 1

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: BB PAGE 2 OF 2

Client <u>Wheelabrator</u>	Project No. <u>11182</u>
Plant <u>S Brown</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>61-5</u>	Sample Box No. <u>B1</u>
Meter Y _d <u>0.9936</u>	Meter ΔH _@ <u>1.7676</u>
K Factor <u>2.67</u>	Pitot C _p <u>0.812</u>
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Cross-Section of Test Location

↑
[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
------------------------------------	-----------------	-----------------------------	------------------------------------

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:
-------------	------------

Traversal Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. [L]	Stack Temp. T _s (°F)	Probe T _p Filter T _f (°F)		Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{min} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points							
3-4	35	0.31	0.83	352.80	297	250	252	59	90	86	3	7.2	
5	37.5	0.31	0.83	354.10	297	250	252	62	90	87	3	6.5	.240
2-1	40	0.39	1.0	355.67	297	253	252	65	89	86	3	8.2	
2	42.5	0.39	1.0	357.10	298	252	253	65	90	86	3	7.2	
3	45	0.37	0.99	358.54	299	249	250	65	90	87	3	7.1	
4	47.5	0.38	1.0	359.95	296	250	251	65	90	86	3	7.2	
5	50	0.37	0.99	361.385	296	250	250	66	90	86	3	7.3	.495
5-1-1	51.5	0.38	1.0	362.82	293	252	253	67	90	87	3	7.5	
2	55	0.40	1.1	364.42	294	252	254	66	90	87	3	8.2	
3	57.5	0.41	1.1	365.93	297	250	250	65	90	86	3	7.7	
4	60	0.38	1.0	367.41	297	250	253	65	90	86	3	7.7	
5	62.5	0.45	1.2	368.920	296	250	252	64	90	86	3	7.1	
Total	*								1079	1036			
Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

12.04

3537 QA/QC
 Date

E-48

NH

.13

.11

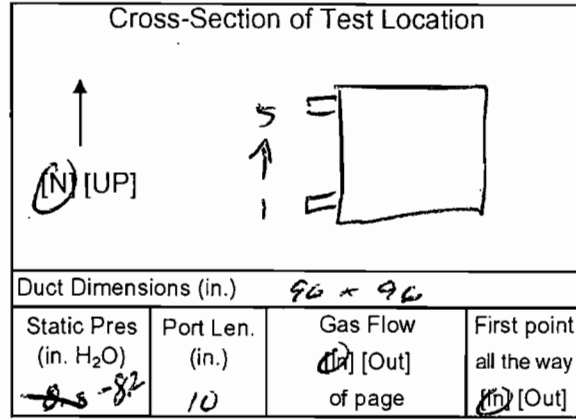
TEST LOCATION: FF OUT
 UNIT: 3 RUN: 2

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: 13B PAGE 1 OF 2

Client Wheelabrator Project No. 11182
 Plant S. Broward Date 3.30.11
 Meter Operator NH
 Probe Operator

Meter Box 61-5 Sample Box No. B22
 Meter Y_d 0.9936 Meter $\Delta H_{@}$ 1.7676
 K Factor 2.67 Pitot C_p 0.812
 Leak Rate Before 0.03 [ppm] [Lpm] @ 12 (in. Hg)
 Leak Rate After 0.001 [ppm] [Lpm] @ 6 (in. Hg)
 Pitot Leak Check Before: After: Good Bad



Amb. Temp. (°F) Bar. Press. 30.05 [in. Hg] [mbar]
 Probe I.D. No. ~~5056-96-11~~ 67-8-14
 Liner Material GLASS

Filter No. -
 Thimble No. -
 Nozzle Diameter 0.274 Nozzle I.D. 274-1

Start Time: 13:04 Stop Time: 14:12

E-49

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V_m Init. Vol. (ft ³) [L]	Stack Temp. T_s (°F)	Probe T_p (°F)		Filter T_f (°F)	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. T_t (°F)	Notes
						Set Points	Set Points							
				<u>369.370</u>		<u>250</u>	<u>250</u>							
1 -1	2.5	0.50	1.3	371.14	297	250	252	65	80	85	4	8.4		
2	5	0.54	1.4	372.84	298	255	252	65	88	86	4	8.3		
3	7.5	0.48	1.3	374.50	297	255	258	61	89	86	4	7.7		
4	10	0.43	1.1	376.13	295	255	255	59	90	86	4	7.7		
5	12.5	0.48	1.3	377.640	295	253	257	58	90	86	4	7.7	.715 .075	
2 -1	15	0.55	1.5	379.43	298	255	255	61	90	86	4	8.8		
2	17.5	0.53	1.4	381.15	299	252	254	62	91	86	4	8.3		
3	20	0.48	1.3	382.79	298	249	252	63	92	86	4	8.1		
4	22.5	0.50	1.3	384.44	298	250	250	65	92	87	4	8.3		
5	25	0.48	1.3	386.080	298	251	249	65	93	87	4	8.7	.150 .07	
3 -1	27.5	0.42	1.1	387.66	297	255	259	61	90	87	4	9.1		
2	30	0.48	1.3	389.29	298	250	254	57	91	87	4	9.0		
3	32.5	0.48	1.3	390.92	299	208	252	53	91	86	4	9.7		
	Total	<u>16.4972</u>	<u>29.0500</u>	<u>38.8600</u>	<u>7434</u>				<u>1073</u>	<u>1121</u>				
	Average	<u>0.6599</u>	<u>1.1620</u>		<u>297.3600</u>				<u>88.4800</u>					

Sum of square roots.

Circle correct bracketed units on data sheet.

16.9

386.7 QA/QC NH
 Date 3.30.11



TEST LOCATION: FF OUT FLUORIDE TESTING METHOD: BB PAGE 2 OF 2
 UNIT: 3 RUN: 2 FIELD DATA SHEET

Client <u>Wheabrator</u>	Project No. <u>1182</u>
Plant <u>S. Broward</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>61-5</u>	Sample Box No. <u>B22</u>
Meter Y _d <u>0.9936</u>	Meter ΔH _@ <u>1.7676</u>
K Factor <u>2.67</u>	Pitot C _p <u>0.817</u>
Leak Rate Before <input checked="" type="checkbox"/> [Lpm] @ (in. Hg)	
Leak Rate After <input checked="" type="checkbox"/> [Lpm] @ (in. Hg)	
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>	

Cross-Section of Test Location

↑
[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
------------------------------------	-----------------	-----------------------------	------------------------------------

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.	
Thimble No.	
Nozzle Diameter	Nozzle I.D.

Start Time:	Stop Time:
-------------	------------

Traverse Point Number	Min/pt 2.5 Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. <u>lit</u> [L]	Stack Temp. T _s (°F)	Probe T _p Filter T _f (°F)		Cond. Temp. T _c (°F)	DGM Inlet T _{m in} (°F)	DGM Outlet T _{m out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. X T ₂ (°F)	Notes
						750	250						
3-4	35	0.35	1.0	392.39	296	250	250	53	91	87	4	9.7	
5	37.5	0.37	0.99	393.805	298	250	251	53	91	87	4	8.8	.895 .09
4-1	40	0.37	0.99	395.32	296	253	253	55	90	87	4	9.4	
2	42.5	0.37	0.99	396.76	298	252	252	53	91	87	4	8.4	
3	45	0.45	1.2	398.33	299	249	252	53	91	87	4	7.4	
4	47.5	0.41	1.1	399.89	298	250	253	51	91	87	4	7.5	
5	50	0.39	1.0	401.520	297	251	252	52	91	87	4	7.5	.600 .08
5-1	52.5	0.36	0.96	402.83	296	254	252	55	90	86	4	8.9	
2	55	0.35	0.93	404.21	296	251	252	53	90	86	4	7.9	
3	57.5	0.37	0.99	405.44	296	250	253	51	90	87	4	8.4	
4	60	0.38	1.0	407.09	299	250	252	51	91	87	4	7.7	
5	62.5	0.38	1.0	408.545	298	250	252	51	91	87	4	8.4	
	Total	*							1088	1042			
	Average												

Sum of square roots.

Circle correct bracketed units on data sheet.

12.15

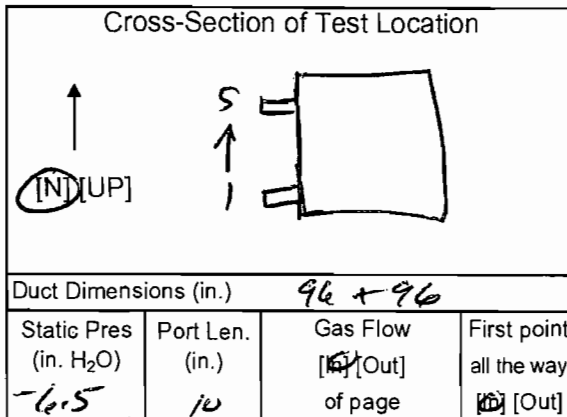
3567 QA/QC
Date

TEST LOCATION: FF OUT
 UNIT: 3 RUN: 3

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: 13B PAGE 1 OF 2

Client <u>Wheelabrator</u>	Project No. <u>1482</u>
Plant <u>S Broward</u>	Date <u>3.30.11</u>
Meter Operator <u>NH</u>	
Probe Operator	



Amb. Temp. (°F) <u>85</u>	Bar. Press. <u>30.05</u> 30 Hg [mbar]
Probe I.D. No. <u>67-8-4</u>	
Liner Material <u>GLASS</u>	

Meter Box <u>61-5</u>	Sample Box No. <u>B21</u>
Meter Y _d <u>0.9936</u>	Meter ΔH _@ <u>1.7676</u>
K Factor <u>2.67</u>	Pitot C _p <u>0.812</u>
Leak Rate Before <u>0.003</u> [Lpm] @ <u>13</u> (in. Hg)	
Leak Rate After <u>0.001</u> [Lpm] @ <u>6</u> (in. Hg)	
Pitot Leak Check Before: <input checked="" type="checkbox"/> After: Good <input checked="" type="checkbox"/> Bad <input type="checkbox"/>	

Filter No. <u>-</u>		
Thimble No. <u>-</u>		
Nozzle Diameter <u>0.274</u>	Nozzle I.D. <u>274-1</u>	

Start Time: 14:26 Stop Time: 15:36

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. (ft ³) [L]	Stack Temp. T _s (°F)	Probe T _p (°F)		Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{min} (°F)	DGM Outlet T _{max} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points	Set Points							
	<u>2.5</u>			<u>408.940</u>		<u>250</u>	<u>250</u>							
<u>5-1</u>	<u>2.5</u>	<u>0.35</u>	<u>0.93</u>	<u>410.33</u>	<u>297</u>	<u>260</u>	<u>260</u>	<u>64</u>	<u>87</u>	<u>86</u>	<u>3</u>	<u>7.5</u>		
<u>2</u>	<u>5</u>	<u>0.35</u>	<u>0.93</u>	<u>411.72</u>	<u>299</u>	<u>260</u>	<u>260</u>	<u>65</u>	<u>87</u>	<u>86</u>	<u>3</u>	<u>7.5</u>		
<u>3</u>	<u>7.5</u>	<u>0.30</u>	<u>0.80</u>	<u>413.00</u>	<u>297</u>	<u>255</u>	<u>260</u>	<u>63</u>	<u>88</u>	<u>86</u>	<u>3</u>	<u>7.2</u>		
<u>4</u>	<u>10</u>	<u>0.37</u>	<u>0.99</u>	<u>414.40</u>	<u>297</u>	<u>257</u>	<u>256</u>	<u>63</u>	<u>89</u>	<u>86</u>	<u>3</u>	<u>7.2</u>		
<u>5</u>	<u>12.5</u>	<u>0.33</u>	<u>0.88</u>	<u>415.750</u>	<u>298</u>	<u>257</u>	<u>254</u>	<u>63</u>	<u>90</u>	<u>86</u>	<u>3</u>	<u>6.7</u>	<u>.815 .065</u>	
<u>4-1</u>	<u>15</u>	<u>0.38</u>	<u>1.0</u>	<u>417.26</u>	<u>297</u>	<u>254</u>	<u>253</u>	<u>63</u>	<u>89</u>	<u>86</u>	<u>3</u>	<u>7.5</u>		
<u>2</u>	<u>17.5</u>	<u>0.38</u>	<u>1.0</u>	<u>418.68</u>	<u>298</u>	<u>257</u>	<u>253</u>	<u>62</u>	<u>90</u>	<u>86</u>	<u>3</u>	<u>7.4</u>		
<u>3</u>	<u>20</u>	<u>0.38</u>	<u>1.0</u>	<u>420.12</u>	<u>298</u>	<u>249</u>	<u>252</u>	<u>62</u>	<u>90</u>	<u>87</u>	<u>3</u>	<u>7.7</u>		
<u>4</u>	<u>22.5</u>	<u>0.35</u>	<u>0.93</u>	<u>421.50</u>	<u>298</u>	<u>250</u>	<u>252</u>	<u>62</u>	<u>91</u>	<u>87</u>	<u>3</u>	<u>7.9</u>		
<u>5</u>	<u>25</u>	<u>0.38</u>	<u>1.0</u>	<u>422.920</u>	<u>299</u>	<u>257</u>	<u>253</u>	<u>57</u>	<u>91</u>	<u>87</u>	<u>3</u>	<u>7.9</u>	<u>1.0950 .179</u>	
<u>3-1</u>	<u>27.5</u>	<u>0.44</u>	<u>1.2</u>	<u>424.70</u>	<u>298</u>	<u>253</u>	<u>252</u>	<u>56</u>	<u>90</u>	<u>87</u>	<u>3</u>	<u>8.3</u>		
<u>2</u>	<u>30</u>	<u>0.46</u>	<u>1.2</u>	<u>426.28</u>	<u>300</u>	<u>257</u>	<u>253</u>	<u>52</u>	<u>92</u>	<u>88</u>	<u>3</u>	<u>7.3</u>		
<u>3</u>	<u>32.5</u>	<u>0.40</u>	<u>1.1</u>	<u>427.80</u>	<u>299</u>	<u>250</u>	<u>253</u>	<u>57</u>	<u>92</u>	<u>88</u>	<u>4</u>	<u>7.7</u>		
	Total	<u>15.2781</u>	<u>24.9200</u>	<u>35.7760</u>	<u>7445</u>									
	Average	<u>0.6111</u>	<u>0.9968</u>	<u>35.7760</u>	<u>297.8000</u>				<u>88.9200</u>					

Sum of square roots.

Circle correct bracketed units on data sheet.

12.96

3875 QA/QC NH
 Date 3.30.11

1166 1126

TEST LOCATION: FF OUTLET
 UNIT: 3 RUN: 3

FLUORIDE TESTING
FIELD DATA SHEET

METHOD: 13B PAGE 2 OF 2

Client <u>Wheelabrator</u>	Project No. <u>1182</u>
Plant <u>G. Broward</u>	Date <u>3-30-11</u>
Meter Operator <u>NH</u>	
Probe Operator	

Meter Box <u>61-5</u>	Sample Box No. <u>B21</u>
Meter Y _d <u>0.9936</u>	Meter ΔH _@ <u>1.7676</u>
K Factor <u>2.47</u>	Pitot C _p <u>0.812</u>

Leak Rate Before [cfm] [Lpm] @ (in. Hg)
Leak Rate After [cfm] [Lpm] @ (in. Hg)
Pitot Leak Check Before: <input type="checkbox"/> After: Good <input type="checkbox"/> Bad <input type="checkbox"/>

Cross-Section of Test Location

↑
[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H ₂ O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F) <u>85</u>	Bar. Press. <u>30.05</u> [<u>6.76</u>] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.	
Thimble No.	
Nozzle Diameter	Nozzle I.D.

Start Time:	Stop Time:
-------------	------------

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H ₂ O)	Orifice Setting ΔH (in. H ₂ O)	Gas Sample Volume V _m Init. Vol. [ft ³] [L]	Stack Temp. T _s (°F)	Probe T _p (°F)	Filter T _f (°F)	Cond. Temp. T _c (°F)	DGM Inlet T _{m in} (°F)	DGM Outlet T _{m out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. (°F)	Notes
						Set Points						X 0 ₂	
3-4	35	0.38	1.0	408.940	298	250	247	50	92	87	4	7.5	
5	37.5	0.32	0.85	430.575	297	250	250	50	92	87	4	7.5	.655 .08
2-1	40	0.38	1.0	432.07	297	252	252	52	90	87	4	8.0	
2	42.5	0.44	1.2	433.70	299	251	251	51	91	87	4	7.2	
3	45	0.40	1.1	435.15	299	250	251	52	92	87	4	7.0	
4	47.5	0.39	1.0	436.60	298	250	252	52	92	87	4	7.0	
5	50	0.38	1.0	438.015	300	251	251	54	93	88	4	7.5	.090 .075
1-2	52.5	0.35	0.93	439.47	297	252	252	56	91	88	4	6.9	
2	55	0.35	0.93	440.86	297	251	249	52	93	88	4	6.7	
3	57.5	0.32	0.85	442.16	295	250	250	56	92	88	4	7.4	
4	60	0.38	1.0	443.65	298	250	250	56	93	88	4	7.2	
5	62.5	0.40	1.1	445.115	295	250	250	57	93	88	4	7.2	
Total	*								1104	1050			
Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

E-52

11.96

3570 QA/QC
 Date _____



Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 3 FF Outlet	
Plant South Broward	Job No. 11182	Method	13B

Run No. 1	Filter Type Teflon glass mat	Sample Box No. B1
Date 3/30/11	Lot No.	pH
Analyst R. Vigne	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	759.4	634.7	124.7	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC RV</td> </tr> <tr> <td>Date 3/30/11</td> </tr> </table>	QA/QC RV	Date 3/30/11
QA/QC RV							
Date 3/30/11							
Impinger 2	100 mL DI H2O	611.7	546.0	65.7			
Impinger 3	Empty	454.0	437.0	17.0			
Impinger 4	Silica Gel	738.9	725.2	13.7			
					Total Weight (gm)		
					207.4		
					221.1		

Run No. 2	Filter Type Teflon glass mat	Sample Box No. B22
Date 3/30/11	Lot No.	pH
Analyst R. Vigne	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	710.0	548.0	162.0	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC RV</td> </tr> <tr> <td>Date 3/30/11</td> </tr> </table>	QA/QC RV	Date 3/30/11
QA/QC RV							
Date 3/30/11							
Impinger 2	100 mL DI H2O	623.5	564.5	59.0			
Impinger 3	Empty	457.2	445.7	11.5			
Impinger 4	Silica Gel	771.3	760.6	10.7			
					Total Weight (gm)		
					232.5		
					243.2		

Run No. 3	Filter Type Teflon glass mat	Sample Box No. B21
Date 3/30/11	Lot No.	pH
Analyst R. Vigne	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)			
Impinger 1	100 mL DI H2O	814.6	633.9	180.7	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>QA/QC RV</td> </tr> <tr> <td>Date 3/30/11</td> </tr> </table>	QA/QC RV	Date 3/30/11
QA/QC RV							
Date 3/30/11							
Impinger 2	100 mL DI H2O	586.3	546.4	39.9			
Impinger 3	Empty	444.6	440.1	4.5			
Impinger 4	Silica Gel	747.5	738.8	8.7			
					Total Weight (gm)		
					225.1		
					233.8		

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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

FIELD DATA PRINTOUTS

F

I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: KRO

Date: 5/11/2011



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Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet

Test Run: 1

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator: N. Hitchins 569

Probe Operator: C. Slimp 558

Test Date: 3/28/11

Start Time: 08:34

Stop Time: 08:42

Leak Rate Before: NA cfm

Leak Rate After: NA cfm

Bar. Press. (in. Hg): 29.95

Static P: -11.0

O₂ (dry volume %): 9.16

CO₂ (dry volume %): 10.13

N₂+CO (dry volume %): 80.71

Nozzle ID No: NA

Nozzle Diameter (D_n): NA

Probe ID No: 67-8P-3

Pitot C_p: 0.817

Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):

H₂O (silica, g):

Actual Moisture (%): 22.72

Meter Box ID. No: NA

Meter ΔH@: NA

Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.40			300			0.63		
1-02		0.40			300			0.63		
1-03		0.35			300			0.59		
1-04		0.38			300			0.62		
1-05		0.52			300			0.72		
2-01		0.37			299			0.61		
2-02		0.38			299			0.62		
2-03		0.35			299			0.59		
2-04		0.40			299			0.63		
2-05		0.60			299			0.77		
3-01		0.43			301			0.66		
3-02		0.39			301			0.62		
3-03		0.44			301			0.66		
3-04		0.48			301			0.69		
3-05		0.56			301			0.75		
4-01		0.37			300			0.61		
4-02		0.35			300			0.59		
4-03		0.36			300			0.60		
4-04		0.44			300			0.66		
4-05		0.51			300			0.71		
5-01		0.36			298			0.60		
5-02		0.37			298			0.61		
5-03		0.40			298			0.63		
5-04		0.46			298			0.68		
5-05		0.47			298			0.69		
Final	0.0				299.60000			0.64736		

25 points sampled
 QC-Check: Field Averages

Sq.RIΔP	299.60000
0.6474	299.60000

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142812
 K

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 2
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/28/11
 Start Time: 09:16
 Stop Time: 09:23
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 29.95
 Static P: -12.3
 O₂ (dry volume %): 8.83
 CO₂ (dry volume %): 10.38
 N₂+CO (dry volume %): 80.79

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.23

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.32			298			0.57		
5-02		0.31			298			0.56		
5-03		0.43			298			0.66		
5-04		0.52			298			0.72		
5-05		0.51			298			0.71		
4-01		0.37			300			0.61		
4-02		0.36			300			0.60		
4-03		0.37			300			0.61		
4-04		0.43			300			0.66		
4-05		0.50			300			0.71		
3-01		0.30			301			0.55		
3-02		0.33			301			0.57		
3-03		0.36			301			0.60		
3-04		0.44			301			0.66		
3-05		0.51			301			0.71		
2-01		0.38			300			0.62		
2-02		0.37			300			0.61		
2-03		0.35			300			0.59		
2-04		0.42			300			0.65		
2-05		0.53			300			0.73		
1-01		0.40			300			0.63		
1-02		0.37			300			0.61		
1-03		0.34			300			0.58		
1-04		0.33			300			0.57		
1-05		0.52			300			0.72		
Final	0.0				299.80000			0.63217		
25 points sampled		Sq.RLΔP								
QC-Check: Field Averages		0.6322			299.8000					

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142612
N

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 3
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchens 569
 Probe Operator: C. Slimp 558
 Test Date: 3/28/11
 Start Time: 09:56
 Stop Time: 10:01
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 29.95
 Static P: -12.3
 O₂ (dry volume %): 10.63
 CO₂ (dry volume %): 8.93
 N₂+CO (dry volume %): 80.44

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.23

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.45			299			0.67		
1-02		0.40			299			0.63		
1-03		0.35			299			0.59		
1-04		0.33			299			0.57		
1-05		0.63			299			0.79		
2-01		0.44			300			0.66		
2-02		0.42			300			0.65		
2-03		0.38			300			0.62		
2-04		0.45			300			0.67		
2-05		0.64			300			0.80		
3-01		0.37			300			0.61		
3-02		0.35			300			0.59		
3-03		0.38			300			0.62		
3-04		0.44			300			0.66		
3-05		0.48			300			0.69		
4-01		0.45			299			0.67		
4-02		0.40			299			0.63		
4-03		0.42			299			0.65		
4-04		0.51			299			0.71		
4-05		0.56			299			0.75		
5-01		0.37			300			0.61		
5-02		0.38			300			0.62		
5-03		0.42			300			0.65		
5-04		0.47			300			0.69		
5-05		0.46			300			0.68		
Final	0.0				299.60000			0.65938		

25 points sampled
 QC-Check: Field Averages
 Sq. RL ΔP: 0.6594
 299.6000

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142812
 M

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 4
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558

Bar. Press. (in. Hg): 29.95
 Static P: -11.2
 O₂ (dry volume %): 8.92
 CO₂ (dry volume %): 10.26
 N₂+CO (dry volume %): 80.83

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/28/11
 Start Time: 10:38
 Stop Time: 10:50
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.38

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.37			299			0.61		
5-02		0.37			299			0.61		
5-03		0.41			299			0.64		
5-04		0.46			299			0.68		
5-05		0.52			299			0.72		
4-01		0.39			299			0.62		
4-02		0.39			299			0.62		
4-03		0.37			299			0.61		
4-04		0.45			299			0.67		
4-05		0.54			299			0.73		
3-01		0.36			300			0.60		
3-02		0.36			300			0.60		
3-03		0.39			300			0.62		
3-04		0.45			300			0.67		
3-05		0.46			300			0.68		
2-01		0.47			299			0.69		
2-02		0.40			299			0.63		
2-03		0.39			299			0.62		
2-04		0.43			299			0.66		
2-05		0.52			299			0.72		
1-01		0.41			299			0.64		
1-02		0.38			299			0.62		
1-03		0.36			299			0.60		
1-04		0.36			299			0.60		
1-05		0.53			299			0.73		
Final	0.0				299.20000			0.64787		
25 points sampled		Sq.RLΔP								
QC-Check: Field Averages		0.6479			299.2000					

Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042011 142812
K

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 5
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/28/11
 Start Time: 11:18
 Stop Time: 11:32
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 29.95
 Static P: -11.2
 O₂ (dry volume %): 8.70
 CO₂ (dry volume %): 10.46
 N₂+CO (dry volume %): 80.84

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.38

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.38			298			0.62		
1-02		0.36			298			0.60		
1-03		0.33			298			0.57		
1-04		0.31			298			0.56		
1-05		0.39			298			0.62		
2-01		0.41			298			0.64		
2-02		0.37			298			0.61		
2-03		0.35			298			0.59		
2-04		0.39			298			0.62		
2-05		0.49			298			0.70		
3-01		0.37			298			0.61		
3-02		0.36			298			0.60		
3-03		0.36			298			0.60		
3-04		0.44			298			0.66		
3-05		0.48			298			0.69		
4-01		0.33			299			0.57		
4-02		0.33			299			0.57		
4-03		0.35			299			0.59		
4-04		0.47			299			0.69		
4-05		0.51			299			0.71		
5-01		0.34			299			0.58		
5-02		0.35			299			0.59		
5-03		0.38			299			0.62		
5-04		0.45			299			0.67		
5-05		0.47			299			0.69		
Final	0.0				298.4000			0.62356		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: 0.6236
 298.4000
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142720
 K

Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
 Test Run: 6
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/28/11
 Start Time: 12:07
 Stop Time: 12:15
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 29.95
 Static P: -11.3
 O₂ (dry volume %): 9.50
 CO₂ (dry volume %): 9.73
 N₂+CO (dry volume %): 80.78

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.81

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.40			301			0.63		
5-02		0.39			301			0.62		
5-03		0.39			301			0.62		
5-04		0.44			301			0.66		
5-05		0.47			301			0.69		
4-01		0.46			300			0.68		
4-02		0.41			300			0.64		
4-03		0.42			300			0.65		
4-04		0.46			300			0.68		
4-05		0.52			300			0.72		
3-01		0.47			303			0.69		
3-02		0.40			303			0.63		
3-03		0.38			303			0.62		
3-04		0.45			303			0.67		
3-05		0.50			303			0.71		
2-01		0.45			302			0.67		
2-02		0.40			302			0.63		
2-03		0.40			302			0.63		
2-04		0.44			302			0.66		
2-05		0.57			302			0.75		
1-01		0.47			296			0.69		
1-02		0.49			296			0.70		
1-03		0.34			296			0.58		
1-04		0.36			296			0.60		
1-05		0.55			296			0.74		
Final	0.0				300.40000			0.66292		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: 0.6629
 300.4000

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142726
 P

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 7
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558

Bar. Press. (in. Hg): 29.95
 Static P: -11.3
 O₂ (dry volume %): 9.47
 CO₂ (dry volume %): 9.87
 N₂+CO (dry volume %): 80.66

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/28/11
 Start Time: 12:44
 Stop Time: 12:54
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.81

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Dry Gas Meter			√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
					T _s (°F)	T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.44			298			0.66		
1-02		0.42			298			0.65		
1-03		0.38			298			0.62		
1-04		0.34			298			0.58		
1-05		0.49			298			0.70		
2-01		0.43			302			0.66		
2-02		0.42			302			0.65		
2-03		0.41			302			0.64		
2-04		0.45			303			0.67		
2-05		0.61			303			0.78		
3-01		0.31			303			0.56		
3-02		0.35			303			0.59		
3-03		0.39			303			0.62		
3-04		0.46			303			0.68		
3-05		0.51			303			0.71		
4-01		0.47			297			0.69		
4-02		0.41			297			0.64		
4-03		0.49			297			0.70		
4-04		0.49			297			0.70		
4-05		0.50			297			0.71		
5-01		0.43			302			0.66		
5-02		0.40			302			0.63		
5-03		0.40			302			0.63		
5-04		0.47			302			0.69		
5-05		0.51			302			0.71		
Final	0.0				300.48000			0.66102		

25 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP	0.6610	300.4800	
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Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042011 142729
M

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 8
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: B. Arnold 770
 Test Date: 3/28/11
 Start Time: 13:41
 Stop Time: 13:47
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 29.95
 Static P: -11.3
 O₂ (dry volume %): 9.58
 CO₂ (dry volume %): 9.78
 N₂+CO (dry volume %): 80.64

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.95

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.47			302			0.69		
1-02		0.46			302			0.68		
1-03		0.41			302			0.64		
1-04		0.38			302			0.62		
1-05		0.52			302			0.72		
2-01		0.43			304			0.66		
2-02		0.38			304			0.62		
2-03		0.37			304			0.61		
2-04		0.45			304			0.67		
2-05		0.59			304			0.77		
3-01		0.31			302			0.56		
3-02		0.35			302			0.59		
3-03		0.40			302			0.63		
3-04		0.45			302			0.67		
3-05		0.50			302			0.71		
4-01		0.45			302			0.67		
4-02		0.41			302			0.64		
4-03		0.43			302			0.66		
4-04		0.55			302			0.74		
4-05		0.58			302			0.76		
5-01		0.41			300			0.64		
5-02		0.41			300			0.64		
5-03		0.48			300			0.69		
5-04		0.55			300			0.74		
5-05		0.51			300			0.71		
Final	0.0				302.00000			0.66876		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: 0.6688
 302.0000
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142803

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 9
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: B. Arnold 770

Bar. Press. (in. Hg): 29.95
 Static P: -11.3
 O₂ (dry volume %): 9.87
 CO₂ (dry volume %): 9.53
 N₂+CO (dry volume %): 80.60

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/28/11
 Start Time: 14:08
 Stop Time: 14:16
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.95

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.45			299			0.67		
1-02		0.39			299			0.62		
1-03		0.35			299			0.59		
1-04		0.38			299			0.62		
1-05		0.55			299			0.74		
2-01		0.42			304			0.65		
2-02		0.38			304			0.62		
2-03		0.37			304			0.61		
2-04		0.45			304			0.67		
2-05		0.52			304			0.72		
3-01		0.52			299			0.72		
3-02		0.38			302			0.62		
3-03		0.43			303			0.66		
3-04		0.48			300			0.69		
3-05		0.55			300			0.74		
4-01		0.32			303			0.57		
4-02		0.31			304			0.56		
4-03		0.34			305			0.58		
4-04		0.46			305			0.68		
4-05		0.54			305			0.73		
5-01		0.40			304			0.63		
5-02		0.42			304			0.65		
5-03		0.44			304			0.66		
5-04		0.50			304			0.71		
5-05		0.53			304			0.73		
Final	0.0				302.44000			0.65740		

25 points sampled
 QC-Check: Field Averages

Sq. Rt. ΔP	302.4400
0.6574	

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142803

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
 Test Run: 10
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000

Bar. Press. (in. Hg): 29.95
 Static P: -11.0
 O₂ (dry volume %): 9.37
 CO₂ (dry volume %): 9.91
 N₂+CO (dry volume %): 80.72

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Meter Operator: N. Hitchins 569
 Probe Operator: B. Arnold 770
 Test Date: 3/28/11
 Start Time: 15:08
 Stop Time: 15:13
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.89

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01	0.0	0.45			306			0.67		
5-02		0.46			306			0.68		
5-03		0.48			306			0.69		
5-04		0.53			306			0.73		
5-05		0.56			306			0.75		
4-01		0.55			307			0.74		
4-02		0.51			307			0.71		
4-03		0.50			307			0.71		
4-04		0.55			307			0.74		
4-05		0.61			307			0.78		
3-01		0.52			307			0.72		
3-02		0.44			307			0.66		
3-03		0.45			307			0.67		
3-04		0.54			307			0.73		
3-05		0.61			307			0.78		
2-01		0.48			305			0.69		
2-02		0.44			305			0.66		
2-03		0.46			305			0.68		
2-04		0.52			305			0.72		
2-05		0.69			305			0.83		
1-01		0.40			299			0.63		
1-02		0.50			299			0.71		
1-03		0.40			296			0.63		
1-04		0.38			299			0.62		
1-05		0.61			301			0.78		
Final	0.0				304.76000			0.70922		

25 points sampled
 QC-Check: Field Averages

Sq. Rt. ΔP	0.7092			304.7600
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 142603
 N

Field Data Printout

Test Method: 3EPA Modified Method 26A
Analyte: HCl

Location: Unit 1 FF Outlet
 Test Run: 1
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/28/11
 Start Time: 07:48
 Stop Time: 08:48
 Leak Rate Before: 0.003 cfm @ 15 "Hg
 Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 29.95
 Static P: -11.0
 O₂ (dry volume %): 9.47
 CO₂ (dry volume %): 10.05
 N₂+CO (dry volume %): 80.48

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 236.3
 H₂O (silica, g): 17.2
 Actual Moisture (%): 22.72

Meter Box ID. No: 66-7
 Meter ΔH@: 1.76970
 Meter Y_d: 0.99610

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			818.355						
3-01	5.0		1.50	821.900	302	81	77		3.54	
3-01	10.0		1.50	825.350	301	83	77		3.45	
3-01	15.0		1.50	828.760	300	86	77		3.41	
3-01	20.0		1.50	832.230	301	88	78		3.47	
3-01	25.0		1.50	835.690	300	89	79		3.46	
3-01	30.0		1.50	839.160	300	90	80		3.47	
3-01	35.0		1.50	842.680	301	91	81		3.52	
3-01	40.0		1.50	846.140	300	92	81		3.46	
3-01	45.0		1.50	849.740	301	93	82		3.60	
3-01	50.0		1.50	853.220	301	94	83		3.48	
3-01	55.0		1.50	856.720	301	94	83		3.50	
3-01	60.0		1.50	860.215	301	95	84		3.50	
Final	60.0		1.50000	41.86000	300.75000	84.91667		0.00000	41.86000	

3 points sampled
 QC-Check: Field Averages
 Sq:Rt.ΔP:

1.5000	41.8600	300.7500	84.9167
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 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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L

Field Data Printout

Test Method: 3EPA Modified Method 26A
Analyte: HCl

Location: Unit 1 FF Outlet
 Test Run: 2
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/28/11
 Start Time: 09:11
 Stop Time: 10:11
 Leak Rate Before: 0.003 cfm @ 15 "Hg
 Leak Rate After: 0.002 cfm @ 6 "Hg

Bar. Press. (in. Hg): 29.95
 Static P: -12.3
 O₂ (dry volume %): 9.77
 CO₂ (dry volume %): 9.76
 N₂+CO (dry volume %): 80.47

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 232.3
 H₂O (silica, g): 12.9
 Actual Moisture (%): 22.23

Meter Box ID. No: 66-7
 Meter ΔH@: 1.76970
 Meter Y_d: 0.99610

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			860.635						
3-01	5.0		1.50	864.110	303	85	85		3.48	
3-01	10.0		1.50	867.660	304	87	85		3.55	
3-01	15.0		1.50	871.980	304	89	85		4.32	
3-01	20.0		1.50	874.500	304	89	85		2.52	
3-01	25.0		1.50	878.000	304	89	85		3.50	
3-01	30.0		1.50	881.500	305	90	85		3.50	
3-01	35.0		1.50	885.090	305	90	85		3.59	
3-01	40.0		1.50	888.510	304	91	85		3.42	
3-01	45.0		1.50	891.970	303	91	86		3.46	
3-01	50.0		1.50	895.480	303	91	86		3.51	
3-01	55.0		1.50	898.960	304	91	86		3.48	
3-01	60.0		1.50	902.460	303	90	86		3.50	
Final	60.0		1.50000	41.82500	303.83333	87.37500		0.00000	41.82500	

3 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP	1.5000	41.8250	303.8333	87.3750
<input type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK

042011 124805
K

Field Data Printout

Test Method: SEPA Modified Method 26A
Analyte: HCl

Location: Unit 1 FF Outlet
 Test Run: 3
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/28/11
 Start Time: 10:35
 Stop Time: 11:35
 Leak Rate Before: 0.003 cfm @ 15 "Hg
 Leak Rate After: 0.002 cfm @ 6 "Hg

Bar. Press. (in. Hg): 29.95
 Static P: -11.2
 O₂ (dry volume %): 8.82
 CO₂ (dry volume %): 10.57
 N₂+CO (dry volume %): 80.61

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 248.2
 H₂O (silica, g): 12.3
 Actual Moisture (%): 23.38

Meter Box ID. No: 66-7
 Meter ΔH@: 1.76970
 Meter Y_d: 0.99610

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			903.195						
3-01	5.0		1.50	906.680	303	85	84		3.48	
3-01	10.0		1.50	909.970	302	85	83		3.29	
3-01	15.0		1.50	913.340	301	86	82		3.37	
3-01	20.0		1.50	916.750	302	87	81		3.41	
3-01	25.0		1.50	920.150	301	86	81		3.40	
3-01	30.0		1.50	923.590	301	86	81		3.44	
3-01	35.0		1.50	927.110	301	86	80		3.52	
3-01	40.0		1.50	930.620	302	85	80		3.51	
3-01	45.0		1.50	934.090	302	83	78		3.47	
3-01	50.0		1.50	937.590	301	83	78		3.50	
3-01	55.0		1.50	941.050	301	83	77		3.46	
3-01	60.0		1.50	944.465	301	83	76		3.42	
Final	60.0		1.50000	41.27000	301.50000	82.45833		0.00000	41.27000	

3 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP				
1.5000	41.2700	301.5000	82.4583	

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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USEPA Method 4 Laboratory Data

Location: Unit 1 FF Outlet
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182

Test Method: SEPA Modified Method 26A

Analyte: HCl

Analyst: R. Vicere

Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	530.4	463.6	66.8
Impinger 2	100 ml 0.1N H2SO4	688.2	566.1	122.1
Impinger 3	100 ml 0.1N H2SO4	585.2	544.1	41.1
Impinger 4	Empty	444.9	438.6	6.3
Impinger 5	Silica Gel	748.3	731.1	17.2
Impinger 6				
Impinger 7				
Impinger 8				

236.3 Liquid (gm)	Field Data Check
0.0 less rinse (gm)	
236.3 Net Liquid (gm)	236.3 <input checked="" type="checkbox"/> QA/QC OK
+ 17.2 Silica Gel (gm)	17.2 <input checked="" type="checkbox"/> QA/QC OK
253.5 Total Vlc (gm)	253.5 <input checked="" type="checkbox"/> QA/QC OK

Rinse: _____ (ml or gm)

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	525.9	455.0	70.9
Impinger 2	100 ml 0.1N H2SO4	640.0	525.0	115.0
Impinger 3	100 ml 0.1N H2SO4	574.1	535.8	38.3
Impinger 4	Empty	456.3	448.2	8.1
Impinger 5	Silica Gel	749.0	736.1	12.9
Impinger 6				
Impinger 7				
Impinger 8				

232.3 Liquid (gm)	Field Data Check
0.0 less rinse (gm)	
232.3 Net Liquid (gm)	232.3 <input checked="" type="checkbox"/> QA/QC OK
+ 12.9 Silica Gel (gm)	12.9 <input checked="" type="checkbox"/> QA/QC OK
245.2 Total Vlc (gm)	245.2 <input checked="" type="checkbox"/> QA/QC OK

Rinse: _____ (ml or gm)

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	549.0	454.2	94.8
Impinger 2	100 ml 0.1N H2SO4	662.9	542.1	120.8
Impinger 3	100 ml 0.1N H2SO4	576.2	550.3	25.9
Impinger 4	Empty	435.7	429.0	6.7
Impinger 5	Silica Gel	782.3	770.0	12.3
Impinger 6				
Impinger 7				
Impinger 8				

248.2 Liquid (gm)	Field Data Check
0.0 less rinse (gm)	
248.2 Net Liquid (gm)	248.2 <input checked="" type="checkbox"/> QA/QC OK
+ 12.3 Silica Gel (gm)	12.3 <input checked="" type="checkbox"/> QA/QC OK
260.5 Total Vlc (gm)	260.5 <input checked="" type="checkbox"/> QA/QC OK

Rinse: _____ (ml or gm)

Test Run: _____

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Liquid (gm)	Field Data Check
less rinse (gm)	
Net Liquid (gm)	<input type="checkbox"/> QA/QC OK
Silica Gel (gm)	<input type="checkbox"/> QA/QC OK
Total Vlc (gm)	<input type="checkbox"/> QA/QC OK

Rinse: _____ (ml or gm)

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Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 1 FF Outlet
 Test Run: 1
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: B. Arnold 770
 Test Date: 3/28/11
 Start Time: 12:03
 Stop Time: 13:12
 Leak Rate Before: 0.003 cfm @ 15 "Hg
 Leak Rate After: 0.002 cfm @ 6 "Hg

Bar. Press. (in. Hg): 29.95
 Static P: -11.3
 O₂ (dry volume %): 9.61
 CO₂ (dry volume %): 10.04
 N₂+CO (dry volume %): 80.35

Nozzle ID No: 274-1
 Nozzle Diameter (D_n): 0.274
 Probe ID No: 5G-96-11
 Pitot C_p: 0.812
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 215.1
 H₂O (silica, g): 23.3
 Actual Moisture (%): 22.81

Meter Box ID. No: 66-21
 Meter ΔH@: 1.82520
 Meter Y_d: 0.98370

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			612.410						
1-01	2.5	0.47	1.20	613.990	296	75	74	0.69	1.58	103.0
1-02	5.0	0.49	1.30	615.590	296	75	74	0.70	1.60	102.2
1-03	7.5	0.34	0.90	616.930	296	76	74	0.58	1.34	102.5
1-04	10.0	0.36	0.95	618.340	291	77	74	0.60	1.41	104.4
1-05	12.5	0.55	1.50	620.155	296	78	74	0.74	1.81	109.1
LEAK CHECK	12.5			620.290						
2-01	15.0	0.51	1.40	621.870	294	81	75	0.71	1.58	98.2
2-02	17.5	0.40	1.10	623.340	297	82	75	0.63	1.47	103.1
2-03	20.0	0.41	1.10	624.810	296	83	76	0.64	1.47	101.6
2-04	22.5	0.51	1.40	626.470	298	84	76	0.71	1.66	103.0
2-05	25.0	0.60	1.60	627.905	299	86	77	0.77	1.43	82.0*
LEAK CHECK	25.0			628.030						
3-01	27.5	0.47	1.20	629.950	297	86	77	0.69	1.92	123.6*
3-02	30.0	0.38	1.00	631.400	297	87	77	0.62	1.45	103.7
3-03	32.5	0.40	1.10	632.900	298	88	78	0.63	1.50	104.4
3-04	35.0	0.47	1.20	634.450	298	89	79	0.69	1.55	99.4
3-05	37.5	0.58	1.50	636.185	298	90	79	0.76	1.73	100.1
LEAK CHECK	37.5			636.415						
4-01	40.0	0.47	1.20	638.010	297	88	80	0.69	1.60	102.2
4-02	42.5	0.41	1.10	639.510	299	90	80	0.64	1.50	102.9
4-03	45.0	0.49	1.30	641.120	299	90	81	0.70	1.61	100.9
4-04	47.5	0.49	1.30	642.740	297	91	81	0.70	1.62	101.3
4-05	50.0	0.50	1.30	644.330	295	92	81	0.71	1.59	98.2
LEAK CHECK	50.0			644.465						
5-01	52.5	0.40	1.10	645.990	295	91	82	0.63	1.52	105.3
5-02	55.0	0.40	1.10	647.480	299	93	83	0.63	1.49	102.9
5-03	57.5	0.50	1.30	649.080	298	93	83	0.71	1.60	98.8
5-04	60.0	0.55	1.50	650.800	300	94	84	0.74	1.72	101.3
5-05	62.5	0.55	1.50	652.525	300	94	84	0.74	1.73	101.5
Final	62.5		1.24600	39.49000	297.04000	82.22000		0.68223	39.49000	

25 points sampled
 QC-Check: Field Averages
 Sq. RL ΔP: 0.6822, 1.2460, 39.4900, 297.0400, 82.2200
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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R

Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 1 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11182
Source Area (ft²): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator: B. Arnold 770

Bar. Press. (in. Hg): 29.95
Static P: -11.3
O₂ (dry volume %): 9.54
CO₂ (dry volume %): 10.08
N₂+CO (dry volume %): 80.38

Nozzle ID No: 274-1
Nozzle Diameter (D_n): 0.274
Probe ID No: 5G-96-11
Pitot C_p: 0.812
Pitot Leak Check: Pass Fail

Test Date: 3/28/11
Start Time: 13:33
Stop Time: 14:44
Leak Rate Before: 0.006 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 8 "Hg

H₂O (condensate, ml or gm): 222.9
H₂O (silica, g): 16.7
Actual Moisture (%): 22.95

Meter Box ID. No: 66-21
Meter ΔH@: 1.82520
Meter Y_d: 0.98370

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			653.040						
5-01	2.5	0.41	1.10	654.620	300	89	86	0.64	1.58	108.1
5-02	5.0	0.41	1.10	656.110	299	90	87	0.64	1.49	101.7
5-03	7.5	0.48	1.30	657.710	300	90	86	0.69	1.60	101.1
5-04	10.0	0.55	1.50	659.420	299	92	86	0.74	1.71	100.8
5-05	12.5	0.51	1.40	661.135	301	93	87	0.71	1.72	104.9
LEAK CHECK	12.5			661.275						
4-01	15.0	0.49	1.30	662.920	300	93	87	0.70	1.64	102.5
4-02	17.5	0.40	1.10	664.460	300	94	87	0.63	1.54	106.1
4-03	20.0	0.42	1.10	665.960	300	94	87	0.65	1.50	100.8
4-04	22.5	0.55	1.50	667.670	300	94	87	0.74	1.71	100.5
4-05	25.0	0.60	1.60	669.485	300	95	87	0.77	1.82	102.1
LEAK CHECK	25.0			669.625						
3-01	27.5	0.52	1.40	671.290	299	94	88	0.72	1.66	100.5
3-02	30.0	0.38	1.00	672.780	302	95	87	0.62	1.49	105.3
3-03	32.5	0.43	1.10	674.270	303	94	87	0.66	1.49	99.2
3-04	35.0	0.48	1.30	675.870	300	95	87	0.69	1.60	100.6
3-05	37.5	0.55	1.50	677.590	300	95	87	0.74	1.72	101.0
LEAK CHECK	37.5			677.720						
2-01	40.0	0.48	1.30	679.500	299	93	87	0.69	1.78	112.0*
2-02	42.5	0.40	1.10	681.000	300	94	87	0.63	1.50	103.3
2-03	45.0	0.38	1.00	682.460	297	94	88	0.62	1.46	102.9
2-04	47.5	0.48	1.30	684.110	301	94	88	0.69	1.65	103.8
2-05	50.0	0.66	1.70	685.945	303	95	88	0.81	1.84	98.6
LEAK CHECK	50.0			686.095						
1-01	52.5	0.31	0.82	687.400	299	94	88	0.56	1.30	101.9
1-02	55.0	0.42	1.10	688.910	299	94	88	0.65	1.51	101.3
1-03	57.5	0.40	1.10	690.420	294	95	88	0.63	1.51	103.4
1-04	60.0	0.38	1.00	691.890	297	95	88	0.62	1.47	103.5
1-05	62.5	0.58	1.50	693.575	299	95	88	0.76	1.69	96.2
Final	62.5			39.97500	299.64000	90.42000		0.68064	39.97500	

25 points sampled
QC-Check: Field Averages

Sq. Rt. ΔP	0.6806	1.2488	39.9750	299.6400	90.4200
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Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042011 124733
N

Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 1 FF Outlet

Test Run: 3

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator: N. Hitchens 569

Probe Operator: B. Arnold 770

Test Date: 3/28/11

Start Time: 15:02

Stop Time: 16:11

Leak Rate Before: 0.005 cfm @ 15 "Hg

Leak Rate After: 0.002 cfm @ 7 "Hg

Bar. Press. (in. Hg): 29.95

Static P: -11.3

O₂ (dry volume %): 9.29

CO₂ (dry volume %): 10.33

N₂+CO (dry volume %): 80.38

Nozzle ID No: 274-1

Nozzle Diameter (D_n): 0.274

Probe ID No: 5G-96-11

Pitot C_p: 0.812

Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 218.5

H₂O (silica, g): 14.6

Actual Moisture (%): 22.89

Meter Box ID. No: 66-21

Meter ΔH@: 1.82520

Meter Y_d: 0.98370

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			694.130						
1-01	2.5	0.40	1.10	695.770	299	89	87	0.63	1.64	113.4*
1-02	5.0	0.50	1.30	697.250	299	90	87	0.71	1.48	91.5
1-03	7.5	0.40	1.10	698.880	296	90	87	0.63	1.63	112.4*
1-04	10.0	0.38	1.00	700.340	299	91	87	0.62	1.46	103.3
1-05	12.5	0.61	1.60	702.110	301	92	87	0.78	1.77	99.1
LEAK CHECK	12.5			702.255						
2-01	15.0	0.52	1.40	703.950	301	92	87	0.72	1.70	102.7
2-02	17.5	0.38	1.00	705.420	302	93	87	0.62	1.47	104.1
2-03	20.0	0.32	0.85	706.760	299	93	87	0.57	1.34	103.1
2-04	22.5	0.42	1.10	708.270	298	93	87	0.65	1.51	101.4
2-05	25.0	0.55	1.50	709.995	300	94	87	0.74	1.73	101.4
LEAK CHECK	25.0			710.145						
3-01	27.5	0.36	0.95	711.550	300	92	87	0.60	1.40	102.1
3-02	30.0	0.40	1.10	713.040	301	93	87	0.63	1.49	102.8
3-03	32.5	0.43	1.10	714.540	302	95	88	0.66	1.50	99.6
3-04	35.0	0.50	1.30	716.150	301	95	88	0.71	1.61	99.1
3-05	37.5	0.52	1.40	717.825	301	96	88	0.72	1.68	101.0
LEAK CHECK	37.5			717.975						
4-01	40.0	0.48	1.30	719.610	301	95	88	0.69	1.63	102.7
4-02	42.5	0.37	0.98	721.040	302	96	89	0.61	1.43	102.1
4-03	45.0	0.42	1.10	722.550	301	96	89	0.65	1.51	101.2
4-04	47.5	0.46	1.20	724.110	301	96	89	0.68	1.56	99.9
4-05	50.0	0.52	1.40	725.790	300	95	88	0.72	1.68	101.4
LEAK CHECK	50.0			725.920						
5-01	52.5	0.38	1.00	727.400	300	94	88	0.62	1.48	104.4
5-02	55.0	0.38	1.00	728.860	302	94	89	0.62	1.46	103.1
5-03	57.5	0.45	1.20	730.410	301	94	89	0.67	1.55	100.5
5-04	60.0	0.52	1.40	732.090	301	94	88	0.72	1.68	101.5
5-05	62.5	0.50	1.30	733.745	301	94	88	0.71	1.65	102.0
Final	62.5		1.18720	39.04000	300.36000	90.58000		0.66637	39.04000	

25 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP	0.6664	1.1872	39.0400	300.3600	90.5800
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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USEPA Method 4 Laboratory Data

Location: Unit 1 FF Outlet
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182

Test Method: USEPA Method 13B
Analyte: Total Fluorides
 Analyst: R. Vicere
 Analyst Emp No: 563

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)		
Impinger 1	DI Water	748.5	634.4	114.1		
Impinger 2	DI Water	624.2	544.8	79.4		
Impinger 3	Empty	478.3	456.7	21.6		
Impinger 4	Silica Gel	757.9	734.6	23.3		
Impinger 5						
Impinger 6						
Impinger 7						
Impinger 8						
					215.1 Liquid (gm)	<i>Field Data Check</i>
					0.0 less rinse (gm)	
					215.1 Net Liquid (gm)	<input type="text" value="215.1"/> <input checked="" type="checkbox"/> QA/QC OK
					+ 23.3 Silica Gel (gm)	<input type="text" value="23.3"/> <input checked="" type="checkbox"/> QA/QC OK
					238.4 Total Vlc (gm)	<input type="text" value="238.4"/> <input checked="" type="checkbox"/> QA/QC OK
					Rinse: <input type="text"/> (ml or gm)	

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)		
Impinger 1	DI Water	674.7	546.5	128.2		
Impinger 2	DI Water	635.1	563.7	71.4		
Impinger 3	Empty	466.5	443.2	23.3		
Impinger 4	Silica Gel	806.5	789.8	16.7		
Impinger 5						
Impinger 6						
Impinger 7						
Impinger 8						
					222.9 Liquid (gm)	<i>Field Data Check</i>
					0.0 less rinse (gm)	
					222.9 Net Liquid (gm)	<input type="text" value="222.9"/> <input checked="" type="checkbox"/> QA/QC OK
					+ 16.7 Silica Gel (gm)	<input type="text" value="16.7"/> <input checked="" type="checkbox"/> QA/QC OK
					239.6 Total Vlc (gm)	<input type="text" value="239.6"/> <input checked="" type="checkbox"/> QA/QC OK
					Rinse: <input type="text"/> (ml or gm)	

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)		
Impinger 1	DI Water	758.6	635.2	123.4		
Impinger 2	DI Water	622.5	544.4	78.1		
Impinger 3	Empty	473.9	456.9	17.0		
Impinger 4	Silica Gel	772.4	757.8	14.6		
Impinger 5						
Impinger 6						
Impinger 7						
Impinger 8						
					218.5 Liquid (gm)	<i>Field Data Check</i>
					0.0 less rinse (gm)	
					218.5 Net Liquid (gm)	<input type="text" value="218.5"/> <input checked="" type="checkbox"/> QA/QC OK
					+ 14.6 Silica Gel (gm)	<input type="text" value="14.6"/> <input checked="" type="checkbox"/> QA/QC OK
					233.1 Total Vlc (gm)	<input type="text" value="233.1"/> <input checked="" type="checkbox"/> QA/QC OK
					Rinse: <input type="text"/> (ml or gm)	

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)		
Impinger 1	DI Water					
Impinger 2	DI Water					
Impinger 3	Empty					
Impinger 4	Silica Gel					
Impinger 5						
Impinger 6						
Impinger 7						
Impinger 8						
					Liquid (gm)	<i>Field Data Check</i>
					less rinse (gm)	
					Net Liquid (gm)	<input type="text"/> <input type="checkbox"/> QA/QC OK
					Silica Gel (gm)	<input type="text"/> <input type="checkbox"/> QA/QC OK
					Total Vlc (gm)	<input type="text"/> <input type="checkbox"/> QA/QC OK
					Rinse: <input type="text"/> (ml or gm)	

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Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
 Test Run: 1
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 09:38
 Stop Time: 09:48
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00
 Static P: -10.6
 O₂ (dry volume %): 9.84
 CO₂ (dry volume %): 9.60
 N₂+CO (dry volume %): 80.56

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-85-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.48

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01	0.0	0.42			299			0.65		
5-02		0.41			299			0.64		
5-03		0.41			299			0.64		
5-04		0.41			299			0.64		
5-05		0.39			299			0.62		
4-01		0.48			299			0.69		
4-02		0.43			299			0.66		
4-03		0.47			299			0.69		
4-04		0.43			299			0.66		
4-05		0.40			299			0.63		
3-01		0.35			300			0.59		
3-02		0.34			300			0.58		
3-03		0.35			300			0.59		
3-04		0.38			300			0.62		
3-05		0.44			300			0.66		
2-01		0.46			299			0.68		
2-02		0.45			299			0.67		
2-03		0.45			299			0.67		
2-04		0.47			299			0.69		
2-05		0.48			299			0.69		
1-01		0.46			298			0.68		
1-02		0.37			298			0.61		
1-03		0.44			298			0.66		
1-04		0.47			299			0.69		
1-05		0.51			299			0.71		
Final	0.0				299.08000			0.65239		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: 0.6524
 299.0800
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
 Test Run: 2
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:

Bar. Press. (in. Hg): 30.00
 Static P: -10.6
 O₂ (dry volume %): 8.85
 CO₂ (dry volume %): 10.38
 N₂+CO (dry volume %): 80.77

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-85-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/29/11
 Start Time: 10:18
 Stop Time: 10:21
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.48

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01		0.42			299			0.65		
1-02		0.40			299			0.63		
1-03		0.39			299			0.62		
1-04		0.42			299			0.65		
1-05		0.46			299			0.68		
2-01		0.39			299			0.62		
2-02		0.37			299			0.61		
2-03		0.39			299			0.62		
2-04		0.44			299			0.66		
2-05		0.52			299			0.72		
3-01		0.37			298			0.61		
3-02		0.36			298			0.60		
3-03		0.34			299			0.58		
3-04		0.37			299			0.61		
3-05		0.37			299			0.61		
4-01		0.34			300			0.58		
4-02		0.35			300			0.59		
4-03		0.36			300			0.60		
4-04		0.37			300			0.61		
4-05		0.42			300			0.65		
5-01		0.33			298			0.57		
5-02		0.32			298			0.57		
5-03		0.32			299			0.57		
5-04		0.33			298			0.57		
5-05		0.33			298			0.57		
Final	0.0				298.96000			0.61467		

25 points sampled
 QC-Check: Field Averages
 Sq:Rt.ΔP
 0.6147 298.9600
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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 K

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
 Test Run: 3
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 10:58
 Stop Time: 11:04
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00
 Static P: -10.1
 O₂ (dry volume %): 9.37
 CO₂ (dry volume %): 9.99
 N₂+CO (dry volume %): 80.64

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-80-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.06

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.42			298			0.65		
1-02		0.41			298			0.64		
1-03		0.40			298			0.63		
1-04		0.39			298			0.62		
1-05		0.44			298			0.66		
2-01		0.35			299			0.59		
2-02		0.37			299			0.61		
2-03		0.38			299			0.62		
2-04		0.45			299			0.67		
2-05		0.53			299			0.73		
3-01		0.29			298			0.54		
3-02		0.32			298			0.57		
3-03		0.35			298			0.59		
3-04		0.38			298			0.62		
3-05		0.46			298			0.68		
4-01		0.38			297			0.62		
4-02		0.37			297			0.61		
4-03		0.37			297			0.61		
4-04		0.39			297			0.62		
4-05		0.36			297			0.60		
5-01		0.30			299			0.55		
5-02		0.31			299			0.56		
5-03		0.31			299			0.56		
5-04		0.31			299			0.56		
5-05		0.29			299			0.54		
Final	0.0				298.20000			0.60913		

25 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP	0.6091		298.2000	
	<input checked="" type="checkbox"/> Avg. OK	<input type="checkbox"/> Avg. OK	<input type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK

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 P

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
 Test Run: 4
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 11:32
 Stop Time: 11:40
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00
 Static P: -10.1
 O₂ (dry volume %): 8.94
 CO₂ (dry volume %): 10.28
 N₂+CO (dry volume %): 80.78

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-80-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.06

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.32			301			0.57		
5-02		0.34			301			0.58		
5-03		0.37			301			0.61		
5-04		0.36			301			0.60		
5-05		0.35			301			0.59		
4-01		0.40			298			0.63		
4-02		0.41			298			0.64		
4-03		0.39			298			0.62		
4-04		0.37			298			0.61		
4-05		0.37			298			0.61		
3-01		0.42			300			0.65		
3-02		0.43			300			0.66		
3-03		0.42			300			0.65		
3-04		0.44			300			0.66		
3-05		0.44			300			0.66		
2-01		0.43			298			0.66		
2-02		0.44			298			0.66		
2-03		0.42			298			0.65		
2-04		0.44			298			0.66		
2-05		0.44			298			0.66		
1-01		0.45			298			0.67		
1-02		0.41			298			0.64		
1-03		0.38			298			0.62		
1-04		0.40			298			0.63		
1-05		0.47			298			0.69		
Final	0.0				299.00000			0.63522		

25 points sampled
 QC-Check: Field Averages

	Sq.Rt.ΔP 0.6352	299.0000	
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Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

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Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
 Test Run: 5
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 12:09
 Stop Time: 12:19
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00
 Static P: -10.1
 O₂ (dry volume %): 8.78
 CO₂ (dry volume %): 10.45
 N₂+CO (dry volume %): 80.77

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 22.95

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter T _{m-in} (°F)	T _{m-out} (°F)	√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
1-01	0.0	0.47			299			0.69		
1-02		0.40			299			0.63		
1-03		0.42			299			0.65		
1-04		0.41			299			0.64		
1-05		0.45			299			0.67		
2-01		0.40			298			0.63		
2-02		0.39			298			0.62		
2-03		0.41			298			0.64		
2-04		0.45			298			0.67		
2-05		0.49			298			0.70		
3-01		0.41			300			0.64		
3-02		0.41			300			0.64		
3-03		0.43			300			0.66		
3-04		0.46			300			0.68		
3-05		0.44			300			0.66		
4-01		0.40			298			0.63		
4-02		0.38			298			0.62		
4-03		0.36			298			0.60		
4-04		0.39			298			0.62		
4-05		0.40			298			0.63		
5-01		0.35			299			0.59		
5-02		0.34			299			0.58		
5-03		0.35			299			0.59		
5-04		0.35			299			0.59		
5-05		0.35			299			0.59		
Final	0.0				298.80000			0.63514		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt. ΔP: 0.6351
 298.8000
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143017
 K

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet

Test Run: 6

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator: N. Hitchins 569

Probe Operator:

Test Date: 3/29/11

Start Time: 12:50

Stop Time: 12:53

Leak Rate Before: NA cfm

Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00

Static P: -10.1

O₂ (dry volume %): 9.03

CO₂ (dry volume %): 10.20

N₂+CO (dry volume %): 80.77

Nozzle ID No: NA

Nozzle Diameter (D_n): NA

Probe ID No: 67-8P-3

Pitot C_p: 0.817

Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):

H₂O (silica, g):

Actual Moisture (%): 22.95

Meter Box ID. No: NA

Meter ΔH@: NA

Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.39			300			0.62		
5-02		0.38			300			0.62		
5-03		0.41			300			0.64		
5-04		0.43			300			0.66		
5-05		0.43			300			0.66		
4-01		0.39			299			0.62		
4-02		0.38			299			0.62		
4-03		0.40			299			0.63		
4-04		0.47			299			0.69		
4-05		0.51			299			0.71		
3-01		0.47			301			0.69		
3-02		0.47			301			0.69		
3-03		0.46			301			0.68		
3-04		0.45			301			0.67		
3-05		0.41			301			0.64		
2-01		0.39			298			0.62		
2-02		0.38			298			0.62		
2-03		0.41			298			0.64		
2-04		0.44			298			0.66		
2-05		0.53			298			0.73		
1-01		0.37			299			0.61		
1-02		0.40			299			0.63		
1-03		0.39			299			0.62		
1-04		0.38			299			0.62		
1-05		0.51			299			0.71		
Final	0.0				299.40000			0.65179		

25 points sampled

QC-Check: Field Averages

Sq. Rt. ΔP	0.6518	299.4000	
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Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042011 143017

N

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
 Test Run: 7
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 13:25
 Stop Time: 13:34
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00
 Static P: -10.3
 O₂ (dry volume %): 9.29
 CO₂ (dry volume %): 10.03
 N₂+CO (dry volume %): 80.67

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.29

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot	Sample	Metered (dcf)	Stack	Dry Gas Meter		√ΔP _s	Volume	Isokinetics
		ΔP _s (in. H ₂ O)	ΔH (in. H ₂ O)		T _s (°F)	T _{m-in} (°F)	T _{m-out} (°F)	(calculated) (in. H ₂ O)	(calculated) (ft ³)	(calculated) (%)
2-01	0.0	0.43			301			0.66		
2-02		0.42			301			0.65		
2-03		0.41			301			0.64		
2-04		0.48			301			0.69		
2-05		0.52			301			0.72		
3-01		0.35			299			0.59		
3-02		0.44			299			0.66		
3-03		0.40			299			0.63		
3-04		0.42			299			0.65		
3-05		0.43			299			0.66		
4-01		0.45			299			0.67		
4-02		0.42			299			0.65		
4-03		0.40			299			0.63		
4-04		0.43			299			0.66		
4-05		0.45			299			0.67		
5-01		0.42			300			0.65		
5-02		0.38			300			0.62		
5-03		0.40			300			0.63		
5-04		0.40			300			0.63		
5-05		0.43			300			0.66		
1-01		0.49			300			0.70		
1-02		0.42			300			0.65		
1-03		0.44			300			0.66		
1-04		0.49			299			0.70		
1-05		0.56			301			0.75		
Final	0.0				299.80000			0.65888		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: 0.6589
 299.8000
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143017

Field Data Printout

Test Method: SEPA Modified Method 26A
Analyte: HCl

Location: Unit 2 FF Outlet
 Test Run: 1
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 07:50
 Stop Time: 08:50
 Leak Rate Before: 0.004 cfm @ 15 "Hg
 Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.00
 Static P: -10.4
 O₂ (dry volume %): 9.56
 CO₂ (dry volume %): 9.88
 N₂+CO (dry volume %): 80.56

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 222.3
 H₂O (silica, g): 17.5
 Actual Moisture (%): 21.50

Meter Box ID, No: 61-6
 Meter ΔH@: 1.76010
 Meter Y_d: 0.99600

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			727.335						
3-01	5.0		1.50	730.850	299	74	73		3.51	
3-01	10.0		1.50	734.280	301	74	73		3.43	
3-01	15.0		1.50	737.680	301	79	74		3.40	
3-01	20.0		1.50	741.110	300	82	74		3.43	
3-01	25.0		1.50	744.680	301	84	75		3.57	
3-01	30.0		1.50	748.290	300	86	76		3.61	
3-01	35.0		1.50	751.850	301	89	77		3.56	
3-01	40.0		1.50	755.430	299	89	78		3.58	
3-01	45.0		1.50	758.990	298	90	79		3.56	
3-01	50.0		1.50	762.500	299	91	80		3.51	
3-01	55.0		1.50	765.940	300	92	81		3.44	
3-01	60.0		1.50	769.465	301	92	82		3.52	
Final	60.0		1.50000	42.13000	300.00000	81.00000		0.00000	42.13000	

3 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP				
	1.5000	42.1300	300.0000	81.0000
	<input type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK

042011 141940
 P

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
 Test Run: 8
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 14:00
 Stop Time: 14:10
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00
 Static P: -10.3
 O₂ (dry volume %): 9.25
 CO₂ (dry volume %): 10.01
 N₂+CO (dry volume %): 80.74

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.29

Meter Box ID No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.35			297			0.59		
1-02		0.33			298			0.57		
1-03		0.30			298			0.55		
1-04		0.32			298			0.57		
1-05		0.35			299			0.59		
2-01		0.30			298			0.55		
2-02		0.28			298			0.53		
2-03		0.30			298			0.55		
2-04		0.36			298			0.60		
2-05		0.46			298			0.68		
3-01		0.27			298			0.52		
3-02		0.27			298			0.52		
3-03		0.29			298			0.54		
3-04		0.32			298			0.57		
3-05		0.34			298			0.58		
4-01		0.30			298			0.55		
4-02		0.30			298			0.55		
4-03		0.29			299			0.54		
4-04		0.30			299			0.55		
4-05		0.36			300			0.60		
5-01		0.25			298			0.50		
5-02		0.26			298			0.51		
5-03		0.27			298			0.52		
5-04		0.26			298			0.51		
5-05		0.29			297			0.54		
Final	0.0				298.12000			0.55440		
25 points sampled		Sq. Rt. ΔP								
QC-Check: Field Averages		0.5544			298.1200					

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042211 141710
M

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
Test Run: 9
Client: Wheelabrator South Broward, Inc.
Project No: 11182
Source Area (ft²): 64.00000

Bar. Press. (in. Hg): 30.00
Static P: -10.3
O₂ (dry volume %): 7.86
CO₂ (dry volume %): 11.26
N₂+CO (dry volume %): 80.88

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-8P-3
Pitot C_p: 0.817
Pitot Leak Check: Pass Fail

Meter Operator: N. Hitchins 569
Probe Operator:
Test Date: 3/29/11
Start Time: 15:03
Stop Time: 15:10
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
H₂O (silica, g):
Actual Moisture (%): 23.15

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.35			299			0.59		
5-02		0.34			300			0.58		
5-03		0.35			299			0.59		
5-04		0.39			300			0.62		
5-05		0.34			300			0.58		
4-01		0.32			299			0.57		
4-02		0.30			299			0.55		
4-03		0.31			299			0.56		
4-04		0.34			299			0.58		
4-05		0.36			299			0.60		
3-01		0.33			299			0.57		
3-02		0.31			299			0.56		
3-03		0.33			298			0.57		
3-04		0.38			298			0.62		
3-05		0.40			298			0.63		
2-01		0.33			298			0.57		
2-02		0.31			298			0.56		
2-03		0.32			298			0.57		
2-04		0.36			298			0.60		
2-05		0.48			298			0.69		
1-01		0.39			298			0.62		
1-02		0.40			298			0.63		
1-03		0.35			297			0.59		
1-04		0.35			298			0.59		
1-05		0.45			298			0.67		
Final	0.0				298.56000			0.59530		

25 points sampled
QC-Check: Field Averages

Sq.Rt.ΔP	0.5953	298.5600
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Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042211 141710

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet

Test Run: 10

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator: N. Hitchins 569
 Probe Operator:

Test Date: 3/29/11

Start Time: 15:36

Stop Time: 15:42

Leak Rate Before: NA cfm

Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.00

Static P: -10.3

O₂ (dry volume %): 8.29

CO₂ (dry volume %): 10.96

N₂+CO (dry volume %): 80.75

Nozzle ID No: NA

Nozzle Diameter (D_n): NA

Probe ID No: 67-8P-3

Pitot C_p: 0.817

Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):

H₂O (silica, g):

Actual Moisture (%): 23.15

Meter Box ID. No: NA

Meter ΔH@: NA

Meter Y_d: NA

Traverse Point	Run Time	Pitot	Sample	Metered	Stack	Dry Gas Meter		√ΔP _s	Volume	Isokinetics
	5.0 min/read	ΔP _s	ΔH	(dcf)	T _s	T _{m-in}	T _{m-out}	(calculated)	(calculated)	(calculated)
	0.0	(in. H ₂ O)	(in. H ₂ O)		(°F)	(°F)	(°F)	(√in. H ₂ O)	(ft ³)	(%)
5-01		0.28			297			0.53		
5-02		0.28			297			0.53		
5-03		0.28			297			0.53		
5-04		0.31			297			0.56		
5-05		0.28			297			0.53		
4-01		0.32			297			0.57		
4-02		0.30			297			0.55		
4-03		0.29			296			0.54		
4-04		0.30			296			0.55		
4-05		0.31			297			0.56		
3-01		0.31			297			0.56		
3-02		0.30			297			0.55		
3-03		0.31			298			0.56		
3-04		0.34			298			0.58		
3-05		0.35			298			0.59		
2-01		0.32			299			0.57		
2-02		0.32			299			0.57		
2-03		0.34			299			0.58		
2-04		0.37			299			0.61		
2-05		0.41			299			0.64		
1-01		0.37			298			0.61		
1-02		0.36			298			0.60		
1-03		0.34			298			0.58		
1-04		0.35			298			0.59		
1-05		0.41			298			0.64		
Final	0.0				297.64000			0.57009		

25 points sampled

QC-Check: Field Averages

Sq.Rt.ΔP	297.6400
0.5701	

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042211 141710
N

Field Data Printout

Test Method: SEPA Modified Method 26A
Analyte: HCl

Location: Unit 2 FF Outlet

Test Run: 2

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator:

N. Hitchins	569
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 Probe Operator:

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Test Date: 3/29/11

Start Time: 09:23

Stop Time: 10:23

Leak Rate Before: 0.003 cfm @ 15 "Hg
 Leak Rate After: 0.001 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.00
 Static P: -10.4
 O₂ (dry volume %): 9.36
 CO₂ (dry volume %): 10.06
 N₂+CO (dry volume %): 80.58

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 241.4
 H₂O (silica, g): 9.4
 Actual Moisture (%): 22.48

Meter Box ID. No: 61-6
 Meter ΔH@: 1.76010
 Meter Y_d: 0.99600

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
3-01	5.0		1.50	770.115	301	86	84		3.66	
3-01	10.0		1.50	777.140	300	89	85		3.36	
3-01	15.0		1.50	780.670	301	92	85		3.53	
3-01	20.0		1.50	784.170	300	94	86		3.50	
3-01	25.0		1.50	787.710	302	97	86		3.54	
3-01	30.0		1.50	791.240	299	98	87		3.53	
3-01	35.0		1.50	794.850	300	98	88		3.61	
3-01	40.0		1.50	798.380	297	99	89		3.53	
3-01	45.0		1.50	801.960	299	99	90		3.58	
3-01	50.0		1.50	805.550	298	99	90		3.59	
3-01	55.0		1.50	809.020	301	100	91		3.47	
3-01	60.0		1.50	812.570	301	100	91		3.55	
Final	60.0		1.50000	42.45500	299.91667	91.79167		0.00000	42.45500	

3 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP	1.5000	42.4550	299.9167	91.7917
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 141340

Field Data Printout

Test Method: SEPA Modified Method 26A
Analyte: HCl

Location: Unit 2 FF Outlet
 Test Run: 3
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/29/11
 Start Time: 10:39
 Stop Time: 11:39
 Leak Rate Before: 0.003 cfm @ 14 "Hg
 Leak Rate After: 0.003 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.00
 Static P: -10.1
 O₂ (dry volume %): 9.08
 CO₂ (dry volume %): 10.39
 N₂+CO (dry volume %): 80.53

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 228.4
 H₂O (silica, g): 14.4
 Actual Moisture (%): 22.06

Meter Box ID. No: 61-6
 Meter ΔH@: 1.76010
 Meter Y_d: 0.99600

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
3-01	5.0		1.50	813.150	299	96	92		3.63	
3-01	10.0		1.50	820.300	299	97	93		3.52	
3-01	15.0		1.50	823.790	299	100	93		3.49	
3-01	20.0		1.50	827.370	300	100	93		3.58	
3-01	25.0		1.50	830.910	301	101	93		3.54	
3-01	30.0		1.50	834.410	300	101	94		3.50	
3-01	35.0		1.50	837.970	302	102	94		3.56	
3-01	40.0		1.50	841.520	301	101	94		3.55	
3-01	45.0		1.50	845.050	301	101	94		3.53	
3-01	50.0		1.50	848.590	301	101	94		3.54	
3-01	55.0		1.50	852.100	300	101	94		3.51	
3-01	60.0		1.50	855.645	302	102	94		3.54	
Final	60.0		1.50000	42.49500	300.41667	96.87500		0.00000	42.49500	
3 points sampled				Sq.Rt.ΔP						
QC-Check: Field Averages				1.5000	42.4950	300.4167	96.8750			

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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Field Data Printout

Test Method: SEPA Modified Method 26A

Analyte: HCl

Location: Unit 2 FF Outlet

Test Run: 4

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator: N. Hitchins 569

Probe Operator:

Test Date: 3/29/11

Start Time: 11:54

Stop Time: 12:54

Leak Rate Before: 0.004 cfm @ 15 "Hg

Leak Rate After: 0.002 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.00

Static P: -10.1

O₂ (dry volume %): 8.69

CO₂ (dry volume %): 10.87

N₂+CO (dry volume %): 80.44

Nozzle ID No: NA

Nozzle Diameter (D_n): NA

Probe ID No: 87-4-1

Pitot C_p: NA

Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 236.0

H₂O (silica, g): 19.0

Actual Moisture (%): 22.95

Meter Box ID. No: 61-6

Meter ΔH@: 1.76010

Meter Y_d: 0.99600

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			856.080						
3-01	5.0		1.50	859.810	302	96	93		3.73	
3-01	10.0		1.50	863.310	301	98	94		3.50	
3-01	15.0		1.50	866.790	301	99	94		3.48	
3-01	20.0		1.50	870.300	301	100	93		3.51	
3-01	25.0		1.50	873.550	300	101	93		3.25	
3-01	30.0		1.50	877.400	300	102	94		3.85	
3-01	35.0		1.50	880.920	300	102	94		3.52	
3-01	40.0		1.50	884.440	301	102	94		3.52	
3-01	45.0		1.50	888.000	301	102	94		3.56	
3-01	50.0		1.50	891.510	302	102	94		3.51	
3-01	55.0		1.50	895.010	301	103	94		3.50	
3-01	60.0		1.50	898.525	301	103	95		3.51	
Final	60.0		1.50000	42.44500	300.91667	97.33333		0.00000	42.44500	

3 points sampled
QC-Check: Field Averages

Sq.Rt.ΔP	1.5000	42.4450	300.9167	97.3333
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Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

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USEPA Method 4 Laboratory Data

Location: Unit 2 FF Outlet
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182

Test Method: SEPA Modified Method 26A

Analyte: HCl

Analyst: R. Vicere

Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)	
Impinger 1	50 ml 0.1N H2SO4	513.1	459.2	53.9	
Impinger 2	100 ml 0.1N H2SO4	670.3	569.2	101.1	
Impinger 3	100 ml 0.1N H2SO4	594.8	543.0	51.8	
Impinger 4	Empty	456.4	440.9	15.5	
Impinger 5	Silica Gel	765.6	748.1	17.5	
Impinger 6					
Impinger 7					
Impinger 8					
					222.3 Liquid (gm)
					0.0 less rinse (gm)
					222.3 Net Liquid (gm)
					+ 17.5 Silica Gel (gm)
					239.8 Total Vlc (gm)

Field Data Check	
222.3	<input checked="" type="checkbox"/> QA/QC OK
17.5	<input checked="" type="checkbox"/> QA/QC OK
239.8	<input checked="" type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)	
Impinger 1	50 ml 0.1N H2SO4	525.9	453.6	72.3	
Impinger 2	100 ml 0.1N H2SO4	650.5	526.8	123.7	
Impinger 3	100 ml 0.1N H2SO4	573.0	536.3	36.7	
Impinger 4	Empty	455.0	446.3	8.7	
Impinger 5	Silica Gel	758.2	748.8	9.4	
Impinger 6					
Impinger 7					
Impinger 8					
					241.4 Liquid (gm)
					0.0 less rinse (gm)
					241.4 Net Liquid (gm)
					+ 9.4 Silica Gel (gm)
					250.8 Total Vlc (gm)

Field Data Check	
241.4	<input checked="" type="checkbox"/> QA/QC OK
9.4	<input checked="" type="checkbox"/> QA/QC OK
250.8	<input checked="" type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)	
Impinger 1	50 ml 0.1N H2SO4	520.7	455.5	65.2	
Impinger 2	100 ml 0.1N H2SO4	664.0	539.9	124.1	
Impinger 3	100 ml 0.1N H2SO4	587.0	553.0	34.0	
Impinger 4	Empty	434.8	429.7	5.1	
Impinger 5	Silica Gel	757.1	742.7	14.4	
Impinger 6					
Impinger 7					
Impinger 8					
					228.4 Liquid (gm)
					0.0 less rinse (gm)
					228.4 Net Liquid (gm)
					+ 14.4 Silica Gel (gm)
					242.8 Total Vlc (gm)

Field Data Check	
228.4	<input checked="" type="checkbox"/> QA/QC OK
14.4	<input checked="" type="checkbox"/> QA/QC OK
242.8	<input checked="" type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Test Run: 4

	Contents	Gross (gm)	Tare (gm)	Net (gm)	
Impinger 1	50 ml 0.1N H2SO4	508.3	461.2	47.1	
Impinger 2	100 ml 0.1N H2SO4	681.3	564.6	116.7	
Impinger 3	100 ml 0.1N H2SO4	600.4	543.5	56.9	
Impinger 4	Empty	455.9	440.6	15.3	
Impinger 5	Silica Gel	779.2	760.2	19.0	
Impinger 6					
Impinger 7					
Impinger 8					
					236.0 Liquid (gm)
					0.0 less rinse (gm)
					236.0 Net Liquid (gm)
					+ 19.0 Silica Gel (gm)
					255.0 Total Vlc (gm)

Field Data Check	
236.0	<input checked="" type="checkbox"/> QA/QC OK
19.0	<input checked="" type="checkbox"/> QA/QC OK
255.0	<input checked="" type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 2 FF Outlet

Test Run: 1

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator:	N. Hitchins	569
Probe Operator:	B. Arnold	770

Bar. Press. (in. Hg):	30.00
Static P.:	-10.3
O ₂ (dry volume %):	8.84
CO ₂ (dry volume %):	10.66
N ₂ +CO (dry volume %):	80.50

Nozzle ID No:	274-1
Nozzle Diameter (D _n):	0.274
Probe ID No:	5G-96-11
Pitot C _p :	0.812
Pitot Leak Check:	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Date:	3/29/11
Start Time:	13:21
Stop Time:	14:30

Leak Rate Before:	0.003	cfm	@ 15 "Hg
Leak Rate After:	0.003	cfm	@ 5 "Hg

H₂O (condensate, ml or gm): 221.8
 H₂O (silica, g): 13.2
 Actual Moisture (%): 23.29

Meter Box ID. No:	61-6
Meter ΔH@:	1.76010
Meter Y _d :	0.99600

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			899.175						
1-01	2.5	0.49	1.30	900.920	300	94	93	0.70	1.75	109.9
1-02	5.0	0.42	1.10	902.460	300	95	93	0.65	1.54	104.6
1-03	7.5	0.44	1.20	904.040	300	96	94	0.66	1.58	104.7
1-04	10.0	0.49	1.30	905.630	299	97	93	0.70	1.59	99.8
1-05	12.5	0.56	1.50	907.415	301	99	94	0.75	1.78	104.7
LEAK CHECK	12.5			907.515						
2-01	15.0	0.53	1.40	909.200	298	99	93	0.73	1.69	101.4
2-02	17.5	0.44	1.20	910.790	302	100	93	0.66	1.59	105.2
2-03	20.0	0.50	1.40	912.480	301	101	93	0.71	1.69	104.8
2-04	22.5	0.60	1.60	914.290	302	101	94	0.77	1.81	102.5
2-05	25.0	0.59	1.60	916.080	303	102	94	0.77	1.79	102.2
LEAK CHECK	25.0			916.165						
3-01	27.5	0.41	1.10	917.650	302	101	94	0.64	1.49	101.6
3-02	30.0	0.47	1.30	919.290	303	101	94	0.69	1.64	104.9
3-03	32.5	0.42	1.10	920.850	301	102	94	0.65	1.56	105.2
3-04	35.0	0.45	1.20	922.420	301	102	94	0.67	1.57	102.4
3-05	37.5	0.53	1.40	924.125	302	102	94	0.73	1.71	102.5
LEAK CHECK	37.5			924.200						
4-01	40.0	0.30	0.81	925.500	298	100	94	0.55	1.30	103.7
4-02	42.5	0.30	0.81	926.790	298	100	94	0.55	1.29	102.9
4-03	45.0	0.29	0.78	928.060	299	101	94	0.54	1.27	103.0
4-04	47.5	0.30	0.81	929.370	299	100	94	0.55	1.31	104.5
4-05	50.0	0.36	0.97	930.925	300	100	94	0.60	1.55	113.4*
LEAK CHECK	50.0			931.050						
5-01	52.5	0.34	0.92	932.330	301	100	94	0.58	1.28	96.1
5-02	55.0	0.33	0.89	933.770	301	100	94	0.57	1.44	109.7
5-03	57.5	0.33	0.89	935.040	301	101	95	0.57	1.27	96.6
5-04	60.0	0.38	1.00	936.610	301	100	95	0.62	1.57	111.4*
5-05	62.5	0.36	0.97	937.940	302	101	95	0.60	1.33	97.0
Final	62.5		1.14200	38.38000	300.60000	96.84000		0.64815	38.38000	

25 points sampled
 QC-Check: Field Averages. Sq. Rt. ΔP

0.6482	1.1420	38.3800	300.6000	96.8400
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 2 FF Outlet
 Test Run: 2
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: B. Arnold 770
 Test Date: 3/29/11
 Start Time: 14:49
 Stop Time: 15:57
 Leak Rate Before: 0.006 cfm @ 13 "Hg
 Leak Rate After: 0.004 cfm @ 8 "Hg

Bar. Press. (in. Hg): 30.00
 Static P: -10.3
 O₂ (dry volume %): 7.91
 CO₂ (dry volume %): 11.65
 N₂+CO (dry volume %): 80.44

Nozzle ID No: 274-1
 Nozzle Diameter (D_n): 0.274
 Probe ID No: 5G-96-11
 Pitot C_p: 0.812
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 196.5
 H₂O (silica, g): 14.4
 Actual Moisture (%): 23.15

Meter Box ID No: 61-6
 Meter ΔH@: 1.76010
 Meter Y_d: 0.99600

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01	2.5	0.35	0.95	938.505	299	94	94	0.59	1.42	105.9
5-02	5.0	0.34	0.92	939.930	300	95	93	0.58	1.39	104.9
5-03	7.5	0.35	0.95	942.720	299	95	93	0.59	1.40	104.1
5-04	10.0	0.39	1.10	944.210	300	96	93	0.62	1.49	104.9
5-05	12.5	0.34	0.92	945.625	300	96	93	0.58	1.41	106.7
LEAK CHECK	12.5			945.715						
4-01	15.0	0.34	0.92	947.070	299	96	93	0.58	1.36	102.1
4-02	17.5	0.33	0.89	948.425	299	97	93	0.57	1.35	103.5
4-03	20.0	0.34	0.92	949.800	299	97	92	0.58	1.38	103.6
4-04	22.5	0.31	0.84	951.130	299	97	92	0.56	1.33	104.9
4-05	25.0	0.30	0.81	952.405	298	97	92	0.55	1.27	102.2
LEAK CHECK	25.0			952.525						
3-01	27.5	0.30	0.81	953.820	298	97	92	0.55	1.30	103.8
3-02	30.0	0.31	0.84	955.140	299	98	92	0.56	1.32	104.0
3-03	32.5	0.31	0.84	956.450	299	98	92	0.56	1.31	103.2
3-04	35.0	0.31	0.84	957.770	300	98	92	0.56	1.32	104.1
3-05	37.5	0.32	0.86	959.095	299	98	92	0.57	1.33	102.8
LEAK CHECK	37.5			959.175						
2-01	40.0	0.32	0.86	960.550	297	97	92	0.57	1.38	106.6
2-02	42.5	0.32	0.86	961.850	299	97	92	0.57	1.30	100.9
2-03	45.0	0.34	0.92	963.247	299	97	92	0.58	1.40	105.2
2-04	47.5	0.37	1.00	964.680	299	98	92	0.61	1.43	103.4
2-05	50.0	0.41	1.10	966.190	299	97	92	0.64	1.51	103.6
LEAK CHECK	50.0			966.325						
1-01	52.5	0.37	1.00	967.790	299	96	92	0.61	1.46	105.9
1-02	55.0	0.34	0.92	969.200	299	97	92	0.58	1.41	106.2
1-03	57.5	0.35	0.95	970.550	297	97	92	0.59	1.35	100.1
1-04	60.0	0.40	1.10	971.480	299	97	92	0.63	0.93	64.6*
1-05	62.5	0.41	1.10	973.520	300	97	91	0.64	2.04	140.2*
Final	62.5		0.92880	34.59000	298.96000	94.52000		0.58486	34.59000	

25 points sampled
 QC-Check: Field Averages

Sq.Rt.ΔP	0.5849	0.9288	34.5900	298.9600	94.5200
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 2 FF Outlet

Test Run: 3

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator:	N. Hitchins	569
Probe Operator:	B. Arnold	770

Bar. Press. (in. Hg):	30.00
Static P:	-10.3
O ₂ (dry volume %):	8.77
CO ₂ (dry volume %):	10.94
N ₂ +CO (dry volume %):	80.29

Nozzle ID No:	274-1
Nozzle Diameter (D _n):	0.274
Probe ID No:	5G-96-11
Pitot C _p :	0.812
Pitot Leak Check:	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Date: 3/29/11

Start Time: 16:11

Stop Time: 17:23

Leak Rate Before:	0.004	cfm	@ 13 "Hg
Leak Rate After:	0.003	cfm	@ 7 "Hg

H₂O (condensate, ml or gm): 228.0

H₂O (silica, g): 11.1

Actual Moisture (%): 24.07

Meter Box ID. No: 61-6

Meter ΔH@: 1.76010

Meter Y_d: 0.99600

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			973.920						
1-01	2.5	0.40	1.10	975.590	298	90	89	0.63	1.67	118.1*
1-02	5.0	0.37	1.00	977.970	300	90	90	0.61	2.38	175.0*
1-03	7.5	0.41	1.10	978.430	298	92	89	0.64	0.46	32.1*
1-04	10.0	0.46	1.20	980.070	299	93	89	0.68	1.64	107.9
1-05	12.5	0.51	1.40	981.660	300	94	89	0.71	1.59	99.4
LEAK CHECK	12.5			982.045						
2-01	15.0	0.44	1.20	983.650	299	93	89	0.66	1.61	108.0
2-02	17.5	0.37	1.00	985.100	300	94	89	0.61	1.45	106.3
2-03	20.0	0.41	1.10	986.620	300	94	89	0.64	1.52	105.9
2-04	22.5	0.47	1.30	988.250	300	95	89	0.69	1.63	106.0
2-05	25.0	0.51	1.40	989.930	300	95	89	0.71	1.68	104.9
LEAK CHECK	25.0			990.375						
3-01	27.5	0.40	1.10	991.850	299	94	89	0.63	1.48	104.0
3-02	30.0	0.40	1.10	993.330	300	94	89	0.63	1.48	104.4
3-03	32.5	0.41	1.10	994.810	300	95	89	0.64	1.48	103.0
3-04	35.0	0.43	1.20	996.360	300	95	89	0.66	1.55	105.4
3-05	37.5	0.45	1.20	997.895	300	95	89	0.67	1.53	102.0
LEAK CHECK	37.5			998.185						
4-01	40.0	0.39	1.10	999.740	299	93	88	0.62	1.56	111.2*
4-02	42.5	0.36	0.97	1001.160	301	94	89	0.60	1.42	105.6
4-03	45.0	0.41	1.10	1002.670	300	95	88	0.64	1.51	105.2
4-04	47.5	0.36	0.97	1004.090	300	95	88	0.60	1.42	105.6
4-05	50.0	0.36	0.97	1005.510	299	95	89	0.60	1.42	105.4
LEAK CHECK	50.0			1005.795						
5-01	52.5	0.25	0.68	1007.010	297	93	88	0.50	1.22	108.3
5-02	55.0	0.33	0.89	1008.200	298	93	88	0.57	1.19	92.4
5-03	57.5	0.34	0.92	1009.620	300	94	88	0.58	1.42	108.7
5-04	60.0	0.33	0.89	1010.960	299	94	89	0.57	1.34	103.9
5-05	62.5	0.34	0.92	1012.345	299	93	88	0.58	1.38	106.0
Final	62.5		1.07640	37.02000	299.40000	91.22000		0.62787	37.02000	

25 points sampled	Sq.Rt.ΔP				
QC-Check: Field Averages	0.6279	1.0764	37.0200	299.4000	91.2200
	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK	<input checked="" type="checkbox"/> Avg. OK

042011 141526
S

USEPA Method 4 Laboratory Data

Location: Unit 2 FF Outlet
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182

Test Method: USEPA Method 13B
Analyte: Total Fluorides
 Analyst: D. Luckhard
 Analyst Emp No: 568

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	705.8	546.9	158.9
Impinger 2	DI Water	618.7	564.5	54.2
Impinger 3	Empty	452.8	444.1	8.7
Impinger 4	Silica Gel	750.0	736.8	13.2
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

221.8 Liquid (gm)	<i>Field Data Check</i>		
0.0 less rinse (gm)			
221.8 Net Liquid (gm)		<input type="text" value="221.8"/>	<input checked="" type="checkbox"/> QA/QC OK
+ 13.2 Silica Gel (gm)		<input type="text" value="13.2"/>	<input checked="" type="checkbox"/> QA/QC OK
235.0 Total Vlc (gm)		<input type="text" value="235.0"/>	<input checked="" type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	753.6	635.6	118.0
Impinger 2	DI Water	607.9	544.2	63.7
Impinger 3	Empty	468.5	453.7	14.8
Impinger 4	Silica Gel	725.4	711.0	14.4
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

196.5 Liquid (gm)	<i>Field Data Check</i>		
0.0 less rinse (gm)			
196.5 Net Liquid (gm)		<input type="text" value="196.5"/>	<input checked="" type="checkbox"/> QA/QC OK
+ 14.4 Silica Gel (gm)		<input type="text" value="14.4"/>	<input checked="" type="checkbox"/> QA/QC OK
210.9 Total Vlc (gm)		<input type="text" value="210.9"/>	<input checked="" type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	705.3	546.5	158.8
Impinger 2	DI Water	620.5	562.3	58.2
Impinger 3	Empty	454.2	443.2	11.0
Impinger 4	Silica Gel	761.0	749.9	11.1
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

228.0 Liquid (gm)	<i>Field Data Check</i>		
0.0 less rinse (gm)			
228.0 Net Liquid (gm)		<input type="text" value="228.0"/>	<input checked="" type="checkbox"/> QA/QC OK
+ 11.1 Silica Gel (gm)		<input type="text" value="11.1"/>	<input checked="" type="checkbox"/> QA/QC OK
239.1 Total Vlc (gm)		<input type="text" value="239.1"/>	<input checked="" type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Liquid (gm)	<i>Field Data Check</i>		
less rinse (gm)			
Net Liquid (gm)		<input type="text"/>	<input type="checkbox"/> QA/QC OK
Silica Gel (gm)		<input type="text"/>	<input type="checkbox"/> QA/QC OK
Total Vlc (gm)		<input type="text"/>	<input type="checkbox"/> QA/QC OK

Rinse: (ml or gm)

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 1
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/30/11
 Start Time: 07:49
 Stop Time: 07:54
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
 Static P: -9.1
 O₂ (dry volume %): 8.36
 CO₂ (dry volume %): 10.78
 N₂+CO (dry volume %): 80.86

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 24.17

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.30			298			0.55		
5-02		0.25			298			0.50		
5-03		0.25			298			0.50		
5-04		0.27			298			0.52		
5-05		0.29			298			0.54		
4-01		0.39			298			0.62		
4-02		0.37			298			0.61		
4-03		0.38			298			0.62		
4-04		0.37			298			0.61		
4-05		0.37			298			0.61		
3-01		0.42			299			0.65		
3-02		0.41			299			0.64		
3-03		0.38			299			0.62		
3-04		0.34			299			0.58		
3-05		0.31			299			0.56		
2-01		0.52			298			0.72		
2-02		0.50			298			0.71		
2-03		0.48			298			0.69		
2-04		0.46			298			0.68		
2-05		0.44			298			0.66		
1-01		0.37			299			0.61		
1-02		0.48			299			0.69		
1-03		0.47			299			0.69		
1-04		0.48			299			0.69		
1-05		0.55			299			0.74		
Final	0.0				298.40000			0.62386		
25 points sampled		Sq.Rt.ΔP _s								
QC-Check: Field Averages		0.6237			298.4000					

Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042011 143134
L

Field Data Printout

Test Method: **USEPA Method 2**
 Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet

Test Run: 2

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator: N. Hitchins 569

Probe Operator: C. Slimp 558

Test Date: 3/30/11

Start Time: 08:23

Stop Time: 08:28

Leak Rate Before: NA cfm

Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05

Static P: -9.1

O₂ (dry volume %): 8.05

CO₂ (dry volume %): 11.04

N₂+CO (dry volume %): 80.91

Nozzle ID No: NA

Nozzle Diameter (D_n): NA

Probe ID No: 67-8P-3

Pitot C_p: 0.817

Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):

H₂O (silica, g):

Actual Moisture (%): 24.17

Meter Box ID No: NA

Meter ΔH@: NA

Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.42			298			0.65		
1-02		0.41			298			0.64		
1-03		0.42			298			0.65		
1-04		0.43			298			0.66		
1-05		0.44			298			0.66		
2-01		0.41			298			0.64		
2-02		0.42			298			0.65		
2-03		0.40			298			0.63		
2-04		0.33			298			0.57		
2-05		0.31			298			0.56		
3-01		0.42			299			0.65		
3-02		0.42			299			0.65		
3-03		0.37			299			0.61		
3-04		0.31			299			0.56		
3-05		0.29			299			0.54		
4-01		0.40			298			0.63		
4-02		0.40			298			0.63		
4-03		0.38			298			0.62		
4-04		0.35			298			0.59		
4-05		0.32			298			0.57		
5-01		0.37			298			0.61		
5-02		0.30			298			0.55		
5-03		0.27			298			0.52		
5-04		0.30			298			0.55		
5-05		0.32			298			0.57		
Final	0.0				298.20000			0.60540		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: **0.6054**
 Avg. OK: Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143134
K

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 3
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/30/11
 Start Time: 09:09
 Stop Time: 09:14
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 7.52
 CO₂ (dry volume %): 11.55
 N₂+CO (dry volume %): 80.93

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 24.23

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01	0.0	0.34			297			0.58		
5-02		0.30			297			0.55		
5-03		0.30			297			0.55		
5-04		0.27			297			0.52		
5-05		0.26			297			0.51		
4-01		0.34			297			0.58		
4-02		0.35			297			0.59		
4-03		0.32			297			0.57		
4-04		0.31			297			0.56		
4-05		0.32			297			0.57		
3-01		0.36			298			0.60		
3-02		0.36			298			0.60		
3-03		0.34			298			0.58		
3-04		0.30			298			0.55		
3-05		0.29			298			0.54		
2-01		0.41			297			0.64		
2-02		0.34			297			0.58		
2-03		0.35			297			0.59		
2-04		0.36			297			0.60		
2-05		0.35			297			0.59		
1-01		0.43			295			0.66		
1-02		0.39			295			0.62		
1-03		0.40			295			0.63		
1-04		0.38			295			0.62		
1-05		0.39			295			0.62		
Final	0.0				296.80000			0.58402		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: 0.5840
 296.8000
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143134
 K

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 4
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/30/11
 Start Time: 09:57
 Stop Time: 10:02
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 7.67
 CO₂ (dry volume %): 11.46
 N₂+CO (dry volume %): 80.87

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 24.23

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.43			298			0.66		
1-02		0.39			298			0.62		
1-03		0.37			298			0.61		
1-04		0.33			298			0.57		
1-05		0.36			298			0.60		
2-01		0.41			297			0.64		
2-02		0.40			297			0.63		
2-03		0.37			297			0.61		
2-04		0.36			297			0.60		
2-05		0.32			297			0.57		
3-01		0.35			299			0.59		
3-02		0.34			299			0.58		
3-03		0.36			299			0.60		
3-04		0.32			299			0.57		
3-05		0.29			299			0.54		
4-01		0.32			298			0.57		
4-02		0.30			298			0.55		
4-03		0.32			298			0.57		
4-04		0.33			298			0.57		
4-05		0.31			298			0.56		
5-01		0.27			298			0.52		
5-02		0.29			298			0.54		
5-03		0.28			298			0.53		
5-04		0.27			298			0.52		
5-05		0.27			298			0.52		
Final	0.0				298.00000			0.57702		

25 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP: 0.5770
 298.0000
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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 N

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet

Test Run: 5

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator:	N. Hitchins	569
Probe Operator:	C. Slimp	558

Test Date: 3/30/11

Start Time: 10:24

Stop Time: 10:30

Leak Rate Before:	NA	cfm	
Leak Rate After:	NA	cfm	

Bar. Press. (in. Hg):	30.05
Static P:	-5.8
O ₂ (dry volume %):	7.61
CO ₂ (dry volume %):	11.43
N ₂ +CO (dry volume %):	80.96

Nozzle ID No:	NA
Nozzle Diameter (D _n):	NA
Probe ID No:	67-8P-3
Pitot C _p :	0.817
Pitot Leak Check:	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

H₂O (condensate, ml or gm):
H₂O (silica, g):
Actual Moisture (%): 24.20

Meter Box ID. No:	NA
Meter ΔH@:	NA
Meter Y _d :	NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
3-01	0.0	0.31			299			0.56		
3-02		0.31			299			0.56		
3-03		0.32			299			0.57		
3-04		0.29			299			0.54		
3-05		0.29			299			0.54		
5-01		0.25			297			0.50		
5-02		0.25			297			0.50		
5-03		0.28			297			0.53		
5-04		0.24			297			0.49		
5-05		0.23			297			0.48		
4-01		0.29			298			0.54		
4-02		0.27			298			0.52		
4-03		0.25			298			0.50		
4-04		0.26			298			0.51		
4-05		0.28			298			0.53		
2-01		0.40			297			0.63		
2-02		0.37			297			0.61		
2-03		0.33			297			0.57		
2-04		0.28			297			0.53		
2-05		0.27			297			0.52		
1-01		0.26			296			0.51		
1-02		0.23			296			0.48		
1-03		0.25			296			0.50		
1-04		0.25			296			0.50		
1-05		0.27			296			0.52		
Final	0.0				297.40000			0.52901		

25 points sampled
QC-Check: Field Averages

Sq.Rt.ΔP	0.5290		297.4000	
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Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

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Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 6
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 7.60
 CO₂ (dry volume %): 11.47
 N₂+CO (dry volume %): 80.93

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-BP-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/30/11
 Start Time: 10:59
 Stop Time: 11:06
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 24.20

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.23			297			0.48		
1-02		0.38			297			0.62		
1-03		0.40			297			0.63		
1-04		0.36			297			0.60		
1-05		0.40			297			0.63		
2-01		0.40			297			0.63		
2-02		0.37			297			0.61		
2-03		0.37			297			0.61		
2-04		0.32			297			0.57		
2-05		0.33			297			0.57		
3-01		0.30			299			0.55		
3-02		0.31			299			0.56		
3-03		0.30			299			0.55		
3-04		0.29			299			0.54		
3-05		0.30			299			0.55		
4-01		0.32			297			0.57		
4-02		0.30			297			0.55		
4-03		0.30			297			0.55		
4-04		0.28			297			0.53		
4-05		0.26			296			0.51		
5-01		0.24			295			0.49		
5-02		0.25			295			0.50		
5-03		0.28			295			0.53		
5-04		0.29			295			0.54		
5-05		0.27			295			0.52		
Final	0.0				296.96000			0.55864		

25 points sampled
 QC-Check: Field Averages
 Sq. Rt. ΔP: 0.5586
 296.9600

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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M

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 7
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 7.98
 CO₂ (dry volume %): 11.26
 N₂+CO (dry volume %): 80.76

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/30/11
 Start Time: 11:44
 Stop Time: 11:54
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.90

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
4-01	0.0	0.33			297			0.57		
4-02		0.33			297			0.57		
4-03		0.30			297			0.55		
4-04		0.28			297			0.53		
4-05		0.29			297			0.54		
3-01		0.29			297			0.54		
3-02		0.30			297			0.55		
3-03		0.29			297			0.54		
3-04		0.30			297			0.55		
3-05		0.28			297			0.53		
2-01		0.41			298			0.64		
2-02		0.40			298			0.63		
2-03		0.38			298			0.62		
2-04		0.36			298			0.60		
2-05		0.33			298			0.57		
1-01		0.42			295			0.65		
1-02		0.44			295			0.66		
1-03		0.42			295			0.65		
1-04		0.38			295			0.62		
1-05		0.40			295			0.63		
5-01		0.33			298			0.57		
5-02		0.26			298			0.51		
5-03		0.26			297			0.51		
5-04		0.30			297			0.55		
5-05		0.28			297			0.53		
Final	0.0				296.88000			0.57625		

25 points sampled
 QC-Check: Field Averages
 Sq. Rt. ΔP: 0.5763
 296.8800
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143448
M

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 8
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 7.95
 CO₂ (dry volume %): 11.33
 N₂+CO (dry volume %): 80.73

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/30/11
 Start Time: 12:23
 Stop Time: 12:30
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.90

Meter Box ID No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.34			297			0.58		
1-02		0.38			297			0.62		
1-03		0.36			297			0.60		
1-04		0.34			297			0.58		
1-05		0.38			297			0.62		
3-01		0.34			298			0.58		
3-02		0.33			298			0.57		
3-03		0.32			298			0.57		
3-04		0.30			298			0.55		
3-05		0.31			298			0.56		
4-01		0.30			298			0.55		
4-02		0.30			298			0.55		
4-03		0.30			298			0.55		
4-04		0.30			298			0.55		
4-05		0.28			298			0.53		
5-01		0.30			295			0.55		
5-02		0.29			295			0.54		
5-03		0.30			295			0.55		
5-04		0.31			295			0.56		
5-05		0.28			298			0.53		
2-01		0.39			297			0.62		
2-02		0.39			298			0.62		
2-03		0.37			299			0.61		
2-04		0.38			299			0.62		
2-05		0.37			296			0.61		
Final	0.0				297.28000			0.57395		

25 points sampled
 QC-Check: Field Averages

Sq. RT. ΔP:	0.5739		297.2800	
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143448

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 9
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/30/11
 Start Time: 13:00
 Stop Time: 13:13
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
 Static P: -8.1
 O₂ (dry volume %): 9.12
 CO₂ (dry volume %): 10.14
 N₂+CO (dry volume %): 80.74

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.42
 Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01		0.37			297			0.61		
5-02		0.36			297			0.60		
5-03		0.38			297			0.62		
5-04		0.38			297			0.62		
5-05		0.37			297			0.61		
4-01		0.44			300			0.66		
4-02		0.44			300			0.66		
4-03		0.43			300			0.66		
4-04		0.43			300			0.66		
4-05		0.41			300			0.64		
3-01		0.45			298			0.67		
3-02		0.48			298			0.69		
3-03		0.44			298			0.66		
3-04		0.41			298			0.64		
3-05		0.40			298			0.63		
2-01		0.44			296			0.66		
2-02		0.45			296			0.67		
2-03		0.42			296			0.65		
2-04		0.43			296			0.66		
2-05		0.41			296			0.64		
1-01		0.50			297			0.71		
1-02		0.54			297			0.73		
1-03		0.48			297			0.69		
1-04		0.43			297			0.66		
1-05		0.48			297			0.69		
Final	0.0				297.60000			0.65557		

25 points sampled
 QC-Check: Field Averages
 Sq. Rt. ΔP: 0.6556
 297.60000
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042011 143613
 N

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 10
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558

Bar. Press. (in. Hg): 30.05
 Static P: -8.1
 O₂ (dry volume %): 8.91
 CO₂ (dry volume %): 10.28
 N₂+CO (dry volume %): 80.81

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-BP-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Test Date: 3/30/11
 Start Time: 13:45
 Stop Time: 13:55
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 23.42

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Dry Gas Meter			√ΔP _s (calculated) (in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
					T _s (°F)	T _{m-in} (°F)	T _{m-out} (°F)			
5-01	0.0	0.34			297			0.58		
5-02		0.32			297			0.57		
5-03		0.32			297			0.57		
5-04		0.33			297			0.57		
5-05		0.34			297			0.58		
4-01		0.37			298			0.61		
4-02		0.37			298			0.61		
4-03		0.45			298			0.67		
4-04		0.41			298			0.64		
4-05		0.39			298			0.62		
3-01		0.32			298			0.57		
3-02		0.40			298			0.63		
3-03		0.42			298			0.65		
3-04		0.46			298			0.68		
3-05		0.45			298			0.67		
2-01		0.54			301			0.73		
2-02		0.52			301			0.72		
2-03		0.53			301			0.73		
2-04		0.53			301			0.73		
2-05		0.49			301			0.70		
1-01		0.51			297			0.71		
1-02		0.53			297			0.73		
1-03		0.52			297			0.72		
1-04		0.48			297			0.69		
1-05		0.50			297			0.71		
Final	0.0				298.20000			0.65579		

25 points sampled
 QC-Check: Field Averages
 Sq. RLΔP: 0.6558
 298.2000
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143813
 L

Field Data Printout

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
 Test Run: 11
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000

Bar. Press. (in. Hg): 30.05
 Static P: -8.1
 O₂ (dry volume %): 8.14
 CO₂ (dry volume %): 11.07
 N₂+CO (dry volume %): 80.79

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-8P-3
 Pitot C_p: 0.817
 Pitot Leak Check: Pass Fail

Meter Operator: N. Hitchins 569
 Probe Operator: C. Slimp 558
 Test Date: 3/30/11
 Start Time: 14:33
 Stop Time: 14:43
 Leak Rate Before: NA cfm
 Leak Rate After: NA cfm

H₂O (condensate, ml or gm):
 H₂O (silica, g):
 Actual Moisture (%): 24.23

Meter Box ID. No: NA
 Meter ΔH@: NA
 Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _a (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
1-01	0.0	0.49			296			0.70		
1-02		0.39			296			0.62		
1-03		0.39			296			0.62		
1-04		0.37			296			0.61		
1-05		0.42			296			0.65		
2-01		0.46			299			0.68		
2-02		0.44			299			0.66		
2-03		0.42			299			0.65		
2-04		0.37			299			0.61		
2-05		0.38			299			0.62		
3-01		0.38			298			0.62		
3-02		0.37			298			0.61		
3-03		0.35			298			0.59		
3-04		0.34			298			0.58		
3-05		0.33			298			0.57		
4-01		0.40			297			0.63		
4-02		0.39			297			0.62		
4-03		0.33			297			0.57		
4-04		0.33			297			0.57		
4-05		0.32			297			0.57		
5-01		0.35			297			0.59		
5-02		0.35			297			0.59		
5-03		0.30			297			0.55		
5-04		0.37			297			0.61		
5-05		0.33			297			0.57		
Final	0.0				297.40000			0.61115		

25 points sampled
 QC-Check: Field Averages
 Sq. Rt. ΔP: 0.6112 297.4000

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 143613
H

Field Data Printout

Test Method: EPA Modified Method 26A

Analyte: HCl

Location: Unit 3 FF Outlet
 Test Run: 1
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/30/11
 Start Time: 07:47
 Stop Time: 08:47
 Leak Rate Before: 0.003 cfm @ 14 "Hg
 Leak Rate After: 0.002 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.05
 Static P: -9.1
 O₂ (dry volume %): 8.34
 CO₂ (dry volume %): 11.06
 N₂+CO (dry volume %): 80.60

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 261.6
 H₂O (silica, g): 14.4
 Actual Moisture (%): 24.17

Meter Box ID. No: 61-5
 Meter ΔH@: 1.76760
 Meter Y_d: 0.99360

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			207.110						
3-01	5.0	1.50	1.50	210.730	299	79	77		3.62	
3-01	10.0	1.50	1.50	214.160	298	81	77		3.43	
3-01	15.0	1.50	1.50	217.640	300	84	78		3.48	
3-01	20.0	1.50	1.50	221.130	299	86	78		3.49	
3-01	25.0	1.50	1.50	224.590	298	87	79		3.46	
3-01	30.0	1.50	1.50	228.050	298	88	80		3.46	
3-01	35.0	1.50	1.50	231.540	299	89	80		3.49	
3-01	40.0	1.50	1.50	235.020	298	89	82		3.48	
3-01	45.0	1.50	1.50	238.490	299	89	81		3.47	
3-01	50.0	1.50	1.50	241.950	299	89	81		3.46	
3-01	55.0	1.50	1.50	245.510	298	89	81		3.56	
3-01	60.0	1.50	1.50	248.980	299	89	82		3.47	
Final	60.0		1.50000	41.87000	298.66667	83.12500		0.00000	41.87000	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.8700	298.6667	83.1250				

Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK
 Avg. OK

042011 141803

Field Data Printout

Test Method: 3EPA Modified Method 26A
Analyte: HCl

Location: Unit 3 FF Outlet
 Test Run: 2
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/30/11
 Start Time: 09:06
 Stop Time: 10:06
 Leak Rate Before: 0.004 cfm @ 12 "Hg
 Leak Rate After: 0.002 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 7.59
 CO₂ (dry volume %): 11.22
 N₂+CO (dry volume %): 81.19

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 262.5
 H₂O (silica, g): 13.1
 Actual Moisture (%): 24.23

Meter Box ID. No: 61-5
 Meter ΔH@: 1.76760
 Meter Y_d: 0.99360

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			249.480						
3-01	5.0		1.50	253.080	300	83	81		3.60	
3-01	10.0		1.50	256.620	300	86	81		3.54	
3-01	15.0		1.50	260.070	300	89	82		3.45	
3-01	20.0		1.50	263.560	297	90	83		3.49	
3-01	25.0		1.50	267.110	299	90	83		3.55	
3-01	30.0		1.50	270.630	300	90	83		3.52	
3-01	35.0		1.50	274.120	299	90	84		3.49	
3-01	40.0		1.50	277.590	305	91	84		3.47	
3-01	45.0		1.50	281.050	299	91	84		3.46	
3-01	50.0		1.50	284.510	300	91	84		3.46	
3-01	55.0		1.50	287.990	301	90	84		3.48	
3-01	60.0		1.50	291.375	299	90	84		3.38	
Final	60.0		1.50000	41.89500	299.91667	86.16667		0.00000	41.89500	

3 points sampled
 QC-Check: Field Averages Sq.Rt.ΔP 1.5000 41.8950 299.9167 86.1667

Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 141603

Field Data Printout

Test Method: 3EPA Modified Method 26A
Analyte: HCl

Location: Unit 3 FF Outlet
 Test Run: 3
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/30/11
 Start Time: 10:22
 Stop Time: 11:22
 Leak Rate Before: 0.004 cfm @ 12 "Hg
 Leak Rate After: 0.002 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 7.73
 CO₂ (dry volume %): 11.77
 N₂+CO (dry volume %): 80.50

Nozzle ID No: NA
 Nozzle Diameter (D_n): NA
 Probe ID No: 67-4-1
 Pitot C_p: NA
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 259.4
 H₂O (silica, g): 14.5
 Actual Moisture (%): 24.20

Meter Box ID. No: 61-5
 Meter ΔH@: 1.76760
 Meter Y_c: 0.99360

Traverse Point	Run Time 5.0 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			291.975						
3-01	5.0		1.50	295.560	298	85	85		3.58	
3-01	10.0		1.50	299.150	297	89	85		3.59	
3-01	15.0		1.50	302.620	298	91	87		3.47	
3-01	20.0		1.50	306.130	298	92	87		3.51	
3-01	25.0		1.50	309.610	298	92	86		3.48	
3-01	30.0		1.50	313.070	300	92	86		3.46	
3-01	35.0		1.50	316.550	298	92	86		3.48	
3-01	40.0		1.50	320.020	299	93	87		3.47	
3-01	45.0		1.50	323.540	299	92	87		3.52	
3-01	50.0		1.50	326.890	298	93	87		3.35	
3-01	55.0		1.50	330.430	297	93	87		3.54	
3-01	60.0		1.50	333.895	298	93	87		3.46	
Final	60.0		1.50000	41.92000	298.16667	88.91667		0.00000	41.92000	

3 points sampled
 QC-Check: Field Averages
 Sq.Rt.ΔP

1.5000	41.9200	298.1667	88.9167
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 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

042011 141803
K

USEPA Method 4 Laboratory Data

Test Method: SEPA Modified Method 26A

Location: Unit 3 FF Outlet

Analyte: HCl

Client: Wheelabrator South Broward, Inc.

Analyst: R. Vicere

Project No: 11182

Analyst Emp No: 563

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	549.0	455.0	94.0
Impinger 2	100 ml 0.1N H2SO4	650.9	526.8	124.1
Impinger 3	100 ml 0.1N H2SO4	573.2	537.4	35.8
Impinger 4	Empty	455.0	447.3	7.7
Impinger 5	Silica Gel	754.6	740.2	14.4
Impinger 6				
Impinger 7				
Impinger 8				

261.6 Liquid (gm) *Field Data Check*

0.0 less rinse (gm)

261.6 Net Liquid (gm)

+ 14.4 Silica Gel (gm)

276.0 Total Vlc (gm)

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: (ml or gm)

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	532.9	455.7	77.2
Impinger 2	100 ml 0.1N H2SO4	675.4	541.0	134.4
Impinger 3	100 ml 0.1N H2SO4	595.2	554.1	41.1
Impinger 4	Empty	439.5	429.7	9.8
Impinger 5	Silica Gel	770.0	756.9	13.1
Impinger 6				
Impinger 7				
Impinger 8				

262.5 Liquid (gm) *Field Data Check*

0.0 less rinse (gm)

262.5 Net Liquid (gm)

+ 13.1 Silica Gel (gm)

275.6 Total Vlc (gm)

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: (ml or gm)

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	541.7	461.2	80.5
Impinger 2	100 ml 0.1N H2SO4	689.8	565.8	124.0
Impinger 3	100 ml 0.1N H2SO4	589.1	543.5	45.6
Impinger 4	Empty	449.8	440.5	9.3
Impinger 5	Silica Gel	793.6	779.1	14.5
Impinger 6				
Impinger 7				
Impinger 8				

259.4 Liquid (gm) *Field Data Check*

0.0 less rinse (gm)

259.4 Net Liquid (gm)

+ 14.5 Silica Gel (gm)

273.9 Total Vlc (gm)

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: (ml or gm)

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Liquid (gm) *Field Data Check*

less rinse (gm)

Net Liquid (gm)

Silica Gel (gm)

Total Vlc (gm)

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: (ml or gm)

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Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 3 FF Outlet
 Test Run: 1
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/30/11
 Start Time: 11:40
 Stop Time: 12:47
 Leak Rate Before: 0.004 cfm @ 13 "Hg
 Leak Rate After: 0.001 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.05
 Static P: -5.8
 O₂ (dry volume %): 8.00
 CO₂ (dry volume %): 11.44
 N₂+CO (dry volume %): 80.56

Nozzle ID No: 274-1
 Nozzle Diameter (D_n): 0.274
 Probe ID No: 5G-96-11
 Pitot C_p: 0.812
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 207.4
 H₂O (silica, g): 13.7
 Actual Moisture (%): 23.90

Meter Box ID. No: 61-5
 Meter ΔH@: 1.76760
 Meter Y₂: 0.99360

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			334.160						
5-01	2.5	0.37	0.88	335.420	298	87	85	0.61	1.26	92.4
5-02	5.0	0.26	0.69	336.690	298	87	86	0.51	1.27	110.9*
5-03	7.5	0.26	0.69	337.870	297	88	86	0.51	1.18	102.9
5-04	10.0	0.30	0.80	339.130	297	88	86	0.55	1.26	102.3
5-05	12.5	0.28	0.75	340.355	297	89	86	0.53	1.23	102.9
LEAK CHECK	12.5			340.435						
4-01	15.0	0.36	0.96	341.830	297	88	86	0.60	1.39	103.5
4-02	17.5	0.36	0.96	343.120	298	89	87	0.60	1.29	95.6
4-03	20.0	0.35	0.93	344.600	298	90	86	0.59	1.48	111.2*
4-04	22.5	0.34	0.91	345.960	298	90	86	0.58	1.36	103.7
4-05	25.0	0.31	0.83	347.255	296	90	86	0.56	1.30	103.2
LEAK CHECK	25.0			347.315						
3-01	27.5	0.37	0.99	348.740	296	89	86	0.61	1.43	104.1
3-02	30.0	0.37	0.99	350.150	298	90	86	0.61	1.41	103.0
3-03	32.5	0.34	0.91	351.520	298	91	86	0.58	1.37	104.3
3-04	35.0	0.31	0.83	352.800	297	90	86	0.56	1.28	102.1
3-05	37.5	0.31	0.83	354.110	297	90	87	0.56	1.31	104.4
LEAK CHECK	37.5			354.240						
2-01	40.0	0.39	1.00	355.670	297	89	86	0.62	1.43	101.8
2-02	42.5	0.39	1.00	357.100	298	90	86	0.62	1.43	101.8
2-03	45.0	0.37	0.99	358.540	299	90	87	0.61	1.44	105.2
2-04	47.5	0.38	1.00	359.950	296	90	86	0.62	1.41	101.5
2-05	50.0	0.37	0.99	361.385	296	90	86	0.61	1.44	104.7
LEAK CHECK	50.0			361.495						
1-01	52.5	0.38	1.00	362.970	293	90	87	0.62	1.48	105.9
1-02	55.0	0.40	1.10	364.420	294	90	87	0.63	1.45	101.6
1-03	57.5	0.41	1.10	365.930	297	90	86	0.64	1.51	104.8
1-04	60.0	0.38	1.00	367.410	297	90	86	0.62	1.48	106.7
1-05	62.5	0.45	1.20	368.920	296	90	86	0.67	1.51	100.0
Final	62.5									

25 points sampled
 QC-Check: Field Averages

Sq: Rt ΔP	0.5923	0.9332	34.3800	296.9200	87.7800
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 3 FF Outlet

Test Run: 2

Client: Wheelabrator South Broward, Inc.

Project No: 11182

Source Area (ft²): 64.00000

Meter Operator: N. Hitchens 569
Probe Operator:

Test Date: 3/30/11

Start Time: 13:04

Stop Time: 14:12

Leak Rate Before: 0.003 cfm @ 12 "Hg

Leak Rate After: 0.001 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.05

Static P: -8.2

O₂ (dry volume %): 9.18

CO₂ (dry volume %): 10.38

N₂+CO (dry volume %): 80.44

Nozzle ID No: 274-1

Nozzle Diameter (D_n): 0.274

Probe ID No: 67-8-14

Pitot C_p: 0.812

Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 232.5

H₂O (silica, g): 10.7

Actual Moisture (%): 23.42

Meter Box ID. No: 61-5

Meter ΔH@: 1.76760

Meter Y_d: 0.99360

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _s (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
	0.0			369.370						
1-01	2.5	0.50	1.30	371.140	297	86	85	0.71	1.77	111.4*
1-02	5.0	0.54	1.40	372.840	298	88	86	0.73	1.70	102.7
1-03	7.5	0.48	1.30	374.500	297	89	86	0.69	1.66	106.2
1-04	10.0	0.43	1.10	376.130	295	90	86	0.66	1.63	109.9
1-05	12.5	0.48	1.30	377.640	295	90	86	0.69	1.51	96.4
LEAK CHECK	12.5			377.715						
2-01	15.0	0.55	1.50	379.430	298	90	86	0.74	1.72	102.5
2-02	17.5	0.53	1.40	381.150	299	91	86	0.73	1.72	104.7
2-03	20.0	0.48	1.30	382.790	298	92	86	0.69	1.64	104.7
2-04	22.5	0.50	1.30	384.440	298	92	87	0.71	1.65	103.1
2-05	25.0	0.48	1.30	386.080	298	93	87	0.69	1.64	104.5
LEAK CHECK	25.0			386.150						
3-01	27.5	0.42	1.10	387.660	297	90	87	0.65	1.51	103.0
3-02	30.0	0.48	1.30	389.290	298	91	87	0.69	1.63	104.1
3-03	32.5	0.48	1.30	390.920	299	91	86	0.69	1.63	104.2
3-04	35.0	0.39	1.00	392.390	296	91	87	0.62	1.47	103.9
3-05	37.5	0.37	0.99	393.805	298	91	87	0.61	1.42	102.8
LEAK CHECK	37.5			393.895						
4-01	40.0	0.37	0.99	395.320	296	90	87	0.61	1.43	103.5
4-02	42.5	0.37	0.99	396.760	298	91	87	0.61	1.44	104.6
4-03	45.0	0.45	1.20	398.330	299	91	87	0.67	1.57	103.6
4-04	47.5	0.41	1.10	399.890	298	91	87	0.64	1.56	107.7
4-05	50.0	0.39	1.00	401.520	297	91	87	0.62	1.63	115.3*
LEAK CHECK	50.0			401.600						
5-01	52.5	0.36	0.96	402.830	296	90	86	0.60	1.23	90.6
5-02	55.0	0.35	0.93	404.210	296	90	86	0.59	1.38	103.1
5-03	57.5	0.37	0.99	405.640	296	90	87	0.61	1.43	103.9
5-04	60.0	0.38	1.00	407.090	299	91	87	0.62	1.45	104.0
5-05	62.5	0.38	1.00	408.545	298	91	87	0.62	1.46	104.3
Final	62.5		1.16200	38.86000	297.36000	88.48000		0.65989	38.86000	

25 points sampled

QC-Check: Field Averages

Sq.RLAP	0.6599	1.1620	38.8600	297.3600	88.4800
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Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 3 FF Outlet
 Test Run: 3
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182
 Source Area (ft²): 64.00000
 Meter Operator: N. Hitchins 569
 Probe Operator:
 Test Date: 3/30/11
 Start Time: 14:26
 Stop Time: 15:30
 Leak Rate Before: 0.003 cfm @ 13 "Hg
 Leak Rate After: 0.001 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.05
 Static P: -6.5
 O₂ (dry volume %): 8.29
 CO₂ (dry volume %): 11.31
 N₂+CO (dry volume %): 80.40

Nozzle ID No: 274-1
 Nozzle Diameter (D_n): 0.274
 Probe ID No: 67-8-4
 Pitot C_p: 0.812
 Pitot Leak Check: Pass Fail

H₂O (condensate, ml or gm): 225.1
 H₂O (silica, g): 8.7
 Actual Moisture (%): 24.23

Meter Box ID. No: 61-5
 Meter ΔH@: 1.76760
 Meter Y_d: 0.99360

Traverse Point	Run Time 2.5 min/read	Pitot ΔP _s (in. H ₂ O)	Sample ΔH (in. H ₂ O)	Metered (dcf)	Stack T _a (°F)	Dry Gas Meter		√ΔP _s (calculated) (√in. H ₂ O)	Volume (calculated) (ft ³)	Isokinetics (calculated) (%)
						T _{m-in} (°F)	T _{m-out} (°F)			
5-01	2.5	0.35	0.93	410.330	297	87	86	0.59	1.39	105.1
5-02	5.0	0.35	0.93	411.720	299	87	86	0.59	1.39	105.2
5-03	7.5	0.30	0.80	413.000	297	88	86	0.55	1.28	104.4
5-04	10.0	0.37	0.99	414.400	297	89	86	0.61	1.40	102.8
5-05	12.5	0.33	0.88	415.750	298	90	86	0.57	1.35	104.9
LEAK CHECK	12.5			415.815						
4-01	15.0	0.38	1.00	417.260	297	89	86	0.62	1.44	104.7
4-02	17.5	0.38	1.00	418.680	298	90	86	0.62	1.42	102.8
4-03	20.0	0.38	1.00	420.120	298	90	87	0.62	1.44	104.2
4-04	22.5	0.35	0.93	421.500	298	91	87	0.59	1.38	103.9
4-05	25.0	0.38	1.00	422.920	299	91	87	0.62	1.42	102.7
LEAK CHECK	25.0			423.099						
3-01	27.5	0.44	1.20	424.700	298	90	87	0.66	1.60	107.7
3-02	30.0	0.46	1.20	426.280	300	92	88	0.68	1.58	103.8
3-03	32.5	0.40	1.10	427.800	299	92	88	0.63	1.52	107.0
3-04	35.0	0.38	1.00	429.250	298	92	87	0.62	1.45	104.7
3-05	37.5	0.32	0.85	430.575	297	92	87	0.57	1.32	104.2
LEAK CHECK	37.5			430.655						
2-01	40.0	0.38	1.00	432.070	297	90	87	0.62	1.42	102.3
2-02	42.5	0.44	1.20	433.700	299	91	87	0.66	1.63	109.6
2-03	45.0	0.40	1.10	435.150	299	92	87	0.63	1.45	102.2
2-04	47.5	0.39	1.00	436.600	298	92	87	0.62	1.45	103.4
2-05	50.0	0.38	1.00	438.015	300	93	88	0.62	1.41	102.2
LEAK CHECK	50.0			438.090						
1-01	52.5	0.35	0.93	439.470	297	91	88	0.59	1.38	103.8
1-02	55.0	0.35	0.93	440.860	297	93	88	0.59	1.39	104.3
1-03	57.5	0.32	0.85	442.160	295	92	88	0.57	1.30	102.0
1-04	60.0	0.38	1.00	443.650	298	93	88	0.62	1.49	107.4
1-05	62.5	0.40	1.10	445.115	295	93	88	0.63	1.47	102.8
Final	62.5		0.99680	35.77600	297.80000	88.92000		0.61113	35.77600	

25 points sampled
QC-Check: Field Averages
 Sq.Rt.ΔP: 0.6111 0.9968 35.7760 297.8000 88.9200
 Avg. OK Avg. OK Avg. OK Avg. OK Avg. OK

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USEPA Method 4 Laboratory Data

Location: Unit 3 FF Outlet
 Client: Wheelabrator South Broward, Inc.
 Project No: 11182

Test Method: USEPA Method 13B
Analyte: Total Fluorides
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: **1**

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	759.4	634.7	124.7
Impinger 2	DI Water	611.7	546.0	65.7
Impinger 3	Empty	454.0	437.0	17.0
Impinger 4	Silica Gel	738.9	725.2	13.7
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

207.4 Liquid (gm) *Field Data Check*

0.0 less rinse (gm)

207.4 Net Liquid (gm)

+ 13.7 Silica Gel (gm)

221.1 Total Vlc (gm)

207.4

13.7

221.1

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: _____ (ml or gm)

Test Run: **2**

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	710.0	548.0	162.0
Impinger 2	DI Water	623.5	564.5	59.0
Impinger 3	Empty	457.2	445.7	11.5
Impinger 4	Silica Gel	771.3	760.6	10.7
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

232.5 Liquid (gm) *Field Data Check*

0.0 less rinse (gm)

232.5 Net Liquid (gm)

+ 10.7 Silica Gel (gm)

243.2 Total Vlc (gm)

232.5

10.7

243.2

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: _____ (ml or gm)

Test Run: **3**

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	814.6	633.9	180.7
Impinger 2	DI Water	586.3	546.4	39.9
Impinger 3	Empty	444.6	440.1	4.5
Impinger 4	Silica Gel	747.5	738.8	8.7
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

225.1 Liquid (gm) *Field Data Check*

0.0 less rinse (gm)

225.1 Net Liquid (gm)

+ 8.7 Silica Gel (gm)

233.8 Total Vlc (gm)

225.1

8.7

233.8

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: _____ (ml or gm)

Test Run: _____

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Liquid (gm) *Field Data Check*

less rinse (gm)

Net Liquid (gm)

Silica Gel (gm)

Total Vlc (gm)

QA/QC OK

QA/QC OK

QA/QC OK

Rinse: _____ (ml or gm)

WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

PLANT CEM DATA

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I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: KCB

Date: 5/11/2011



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RUN1

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Unit Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/28/11 09:55
Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	08:28	72671	2792	4.0	200.8	8.2	9.1	3.4	170.2	7.0
	08:29	72687	2785	3.9	198.3	7.7	9.1	3.4	168.7	6.5
	08:30	71993	2773	3.9	192.7	6.6	9.2	3.3	162.4	5.6
	08:31	72251	2769	4.0	193.8	7.1	9.1	3.4	164.4	6.0
	08:32	73117	2769	4.4	197.2	7.5	8.9	3.8	169.8	6.5
	08:33	74451	2760	4.2	203.9	7.4	8.6	3.7	179.7	6.6
	08:34	73784	2754	4.7	209.4	7.2	8.8	4.1	182.8	6.3
	08:35	71927	2756	5.2	212.1	6.0	9.1	4.4	180.1	5.1
	08:36	72676	2753	5.4	215.7	4.9	9.0	4.7	185.4	4.2
	08:37	72536	2745	4.9	206.8	5.8	8.9	4.3	178.0	5.0
	08:38	71416	2729	4.6	200.8	6.5	9.0	3.9	171.4	5.5
	08:39	69325	2655	4.9	193.1	6.0	9.2	4.2	163.3	5.1
	08:40	66080	2619	5.1	187.5	6.0	9.5	4.2	153.2	4.9
	08:41	64663	2558	5.2	186.1	6.9	9.5	4.3	153.2	5.7
	08:42	66112	2533	5.4	196.4	6.7	9.0	4.6	167.5	5.7
	08:43	64635	2530	5.5	200.3	6.8	9.4	4.5	165.4	5.6
	08:44	62882	2523	5.2	195.7	6.8	9.6	4.2	159.0	5.5
	08:45	63818	2515	5.8	203.0	6.4	9.4	4.8	167.8	5.3
	08:46	63828	2510	6.0	204.6	7.2	9.4	4.9	168.7	5.9
	08:47	63639	2513	5.6	205.2	7.2	9.5	4.6	168.7	5.9
	08:48	63463	2517	6.1	206.1	8.3	9.5	4.9	168.3	6.8
	08:49	68393	2512	6.8	210.1	5.8	8.5	6.1	187.0	5.2
	08:50	68182	2499	6.8	213.3	4.2	8.8	5.9	185.7	3.6
	08:51	64302	2460	6.2	201.3	6.0	9.2	5.2	169.3	5.1
	08:52	62235	2403	6.6	191.3	7.1	9.3	5.5	159.9	5.9
	08:53	61752	2372	7.8	185.9	7.1	9.2	6.6	157.0	6.0
	08:54	59497	2317	8.4	176.9	7.2	9.3	7.0	147.6	6.0

Average =	67863	2608	5.4	199.6	6.7	9.2	4.6	168.7	5.6
Geometric Avg. =	67716	2604	5.3	199.4	6.6	9.2	4.5	168.4	5.6
Maximum =	74451	2792	8.4	215.7	8.3	9.6	7.0	187.0	7.0
Minimum =	59497	2317	3.9	176.9	4.2	8.5	3.3	147.6	3.6
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1832314	70421	146.5	5388.5	180.7	247.3	123.7	4554.3	152.5

- * - 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: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 09:55

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	08:28	185.9	10.8
	08:29	184.9	10.8
	08:30	184.5	10.8
	08:31	184.7	10.9
	08:32	186.8	11.0
	08:33	187.9	11.2
	08:34	186.6	11.2
	08:35	187.5	10.9
	08:36	186.6	11.0
	08:37	186.2	11.0
	08:38	186.5	10.9
	08:39	184.3	10.9
	08:40	183.0	10.5
	08:41	184.8	10.5
	08:42	185.0	10.9
	08:43	182.9	10.7
	08:44	182.8	10.4
	08:45	182.1	10.6
	08:46	182.1	10.6
	08:47	182.6	10.6
	08:48	187.1	10.5
	08:49	187.7	11.4
	08:50	185.2	11.3
	08:51	184.2	10.8
	08:52	184.5	10.8
	08:53	184.4	10.9
	08:54	183.2	10.7

Average =	185.0	10.8
Geometric Avg. =	185.0	10.8
Maximum =	187.9	11.4
Minimum =	182.1	10.4
Possible Values =	27	27
Included Values =	27	27
Total =	4993.9	292.5

* - 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 2

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/28/11 09:56
Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COFPM_1 (FPM)
03/28/11	09:13	66981	2551	3.6	201.7	7.9	9.0	3.1	172.2	6.7
	09:14	69956	2541	3.7	204.9	6.8	8.3	3.3	186.0	6.2
	09:15	69595	2535	4.2	207.6	5.8	8.4	3.8	187.2	5.2
	09:16	67026	2542	3.8	205.4	6.2	8.9	3.3	177.0	5.3
	09:17	68416	2549	3.5	201.1	6.2	8.6	3.1	177.6	5.4
	09:18	68227	2554	3.1	197.2	6.6	8.7	2.7	172.6	5.8
	09:19	67785	2560	2.7	191.3	6.1	8.9	2.3	165.2	5.3
	09:20	69376	2562	2.7	190.8	6.0	8.5	2.4	170.3	5.3
	09:21	70306	2562	3.1	200.3	6.5	8.4	2.8	180.7	5.9
	09:22	68395	2565	3.5	205.9	6.0	8.8	3.0	179.4	5.2
	09:23	67191	2558	3.4	202.2	5.1	9.0	2.9	173.3	4.4
	09:24	70149	2544	3.0	200.0	3.9	8.3	2.7	181.0	3.5
	09:25	71919	2518	2.5	203.1	4.6	8.0	2.3	189.1	4.2
	09:26	69425	2490	3.1	203.0	3.6	8.3	2.8	183.8	3.3
	09:27	64635	2410	3.1	202.9	4.6	8.8	2.7	177.2	4.0
	09:28	64337	2389	3.2	203.9	4.9	8.7	2.8	178.9	4.3
	09:29	63414	2381	3.8	201.4	5.0	8.9	3.3	174.5	4.3
	09:30	61065	2315	4.1	191.2	5.0	9.0	3.5	163.2	4.3
	09:31	61096	2312	4.0	193.1	5.0	9.1	3.4	164.4	4.2
	09:32	60442	2321	4.6	194.6	4.9	9.2	3.9	163.8	4.1
	09:33	59588	2329	4.3	198.2	4.8	9.4	3.6	164.5	4.0
	09:34	58860	2336	3.9	205.8	5.7	9.6	3.2	166.9	4.6
	09:35	60452	2345	4.3	204.9	6.9	9.2	3.6	171.8	5.8
	09:36	61957	2361	5.3	208.2	7.4	9.1	4.5	176.9	6.3
	09:37	61165	2377	5.4	204.5	6.7	9.3	4.5	170.6	5.6
	09:38	60727	2382	4.3	201.2	8.0	9.5	3.5	165.2	6.5
	09:39	62261	2384	3.0	200.0	7.4	9.2	2.6	169.0	6.2

Average =		65361	2455	3.7	200.9	5.8	8.9	3.2	174.2	5.0
Geometric Avg. =		65238	2453	3.6	200.8	5.7	8.8	3.1	174.0	5.0
Maximum =		71919	2565	5.4	208.2	8.0	9.6	4.5	189.1	6.7
Minimum =		58860	2312	2.5	190.8	3.6	8.0	2.3	163.2	3.3
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1764744	66275	99.2	5424.4	157.4	239.0	85.6	4702.2	136.1

- * - 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: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 09:56

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	09:13	185.9	10.9
	09:14	187.8	11.5
	09:15	186.6	11.5
	09:16	188.0	11.0
	09:17	187.9	11.2
	09:18	185.7	11.1
	09:19	186.2	11.0
	09:20	187.1	11.3
	09:21	187.2	11.4
	09:22	185.3	11.1
	09:23	185.4	10.9
	09:24	187.3	11.4
	09:25	187.4	11.9
	09:26	185.6	11.6
	09:27	185.9	11.2
	09:28	185.4	11.2
	09:29	183.5	11.1
	09:30	183.8	11.0
	09:31	184.6	11.0
	09:32	183.5	10.9
	09:33	180.6	10.7
	09:34	180.1	10.5
	09:35	182.0	10.7
	09:36	184.0	11.0
	09:37	183.5	10.7
	09:38	182.7	10.6
	09:39	182.1	10.8

Average =	185.0	11.1
Geometric Avg. =	185.0	11.1
Maximum =	188.0	11.9
Minimum =	180.1	10.5
Possible Values =	27	27
Included Values =	27	27
Total =	4995.1	299.2

* - 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

RUN 3

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Unit Name: UNIT1

Time of Report: 03/28/11 10:20

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	09:53	57130	2394	4.4	195.7	8.5	10.2	3.4	150.1	6.5
	09:54	58481	2409	5.4	197.4	9.2	10.0	4.2	154.1	7.2
	09:55	59812	2471	5.8	195.4	9.6	10.1	4.5	152.1	7.5
	09:56	60917	2481	5.5	194.5	8.8	9.9	4.4	153.9	7.0
	09:57	61161	2476	5.9	190.6	9.9	9.9	4.7	151.5	7.9
	09:58	61051	2475	6.2	190.6	10.5	9.9	4.9	150.9	8.3
	09:59	57320	2483	6.4	191.9	11.6	10.7	4.7	141.2	8.5
	10:00	56233	2492	5.8	191.5	12.9	10.8	4.2	138.5	9.3
	10:01	56042	2500	5.6	202.9	16.3	10.9	4.0	145.7	11.7
	10:02	55828	2535	5.8	219.7	16.1	11.1	4.1	154.7	11.3
	10:03	56573	2599	5.1	238.5	14.6	11.2	3.6	166.9	10.3
	10:04	58517	2608	4.4	240.6	15.2	10.9	3.2	172.9	10.9
	10:05	62089	2604	3.3	220.4	10.2	10.2	2.6	169.3	7.8
	10:06	61238	2605	2.9	193.5	11.3	10.4	2.2	146.2	8.5
	10:07	58682	2609	3.1	167.5	13.1	10.8	2.2	121.8	9.5
	10:08	59641	2619	2.8	150.2	15.4	10.7	2.1	110.5	11.3
	10:09	62733	2674	2.7	154.0	15.5	10.3	2.1	117.1	11.8
	10:10	60381	2728	3.0	166.8	15.2	11.0	2.2	119.1	10.9
	10:11	59739	2790	2.7	201.3	14.9	11.3	1.9	139.0	10.3
	10:12	60511	2817	2.3	232.6	19.4	11.2	1.6	162.2	13.5
	10:13	61837	2834	2.2	236.9	20.1	11.0	1.6	168.4	14.3
	10:14	61524	2894	2.3	222.5	19.3	11.3	1.6	154.4	13.4
	10:15	62857	2937	2.3	184.5	16.3	11.2	1.6	129.0	11.4
	10:16	65023	2945	1.9	154.0	16.7	10.9	1.4	111.0	12.0
	10:17	68080	2952	1.7	151.6	18.2	10.4	1.3	114.0	13.7
	10:18	69452	2954	1.5	156.8	18.1	10.2	1.2	120.4	13.9
	10:19	69121	2951	1.4	180.0	13.7	10.3	1.1	137.2	10.4

Average =	60814	2661	3.8	193.4	14.1	10.6	2.8	142.7	10.3
Geometric Avg. =	60708	2654	3.4	191.5	13.7	10.6	2.5	141.4	10.1
Maximum =	69452	2954	6.4	240.6	20.1	11.3	4.9	172.9	14.3
Minimum =	55828	2394	1.4	150.2	8.5	9.9	1.1	110.5	6.5
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1641971	71837	102.7	5221.8	380.7	286.9	76.3	3852.2	279.3

- * - 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

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 10:20

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	09:53	180.5	9.9
	09:54	180.6	10.1
	09:55	180.9	10.1
	09:56	180.7	10.2
	09:57	180.3	10.3
	09:58	179.0	10.3
	09:59	176.2	9.6
	10:00	173.9	9.4
	10:01	172.6	9.3
	10:02	170.8	9.2
	10:03	170.3	9.1
	10:04	172.0	9.3
	10:05	172.4	9.9
	10:06	170.7	9.8
	10:07	170.2	9.4
	10:08	171.7	9.5
	10:09	171.3	9.8
	10:10	169.4	9.2
	10:11	167.7	8.9
	10:12	168.7	9.0
	10:13	168.9	9.1
	10:14	167.8	8.9
	10:15	166.3	8.9
	10:16	168.3	9.2
	10:17	173.2	9.6
	10:18	173.5	9.8
	10:19	176.7	9.7

Average =	173.1	9.5
Geometric Avg. =	173.1	9.5
Maximum =	180.9	10.3
Minimum =	166.3	8.9
Possible Values =	27	27
Included Values =	27	27
Total =	4674.6	257.6

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

RUNY

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Unit Name: UNIT1

Time of Report: 03/28/11 11:03

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	10:36	73157	2734	1.4	206.2	5.8	8.7	1.2	180.6	5.1
	10:37	73574	2731	1.4	204.7	6.6	8.7	1.3	180.0	5.8
	10:38	73021	2726	1.4	203.7	6.4	8.7	1.2	178.4	5.6
	10:39	71851	2720	1.5	199.9	6.0	8.9	1.3	172.9	5.2
	10:40	71226	2715	1.6	196.6	7.3	9.0	1.4	167.7	6.2
	10:41	73627	2710	1.7	194.2	6.7	8.5	1.5	172.7	6.0
	10:42	75721	2718	1.9	192.6	5.7	8.2	1.7	175.9	5.2
	10:43	73742	2730	2.1	196.3	5.5	8.7	1.8	173.0	4.9
	10:44	72153	2739	2.1	192.6	6.0	9.0	1.8	164.7	5.2
	10:45	73192	2740	1.8	193.9	7.9	8.8	1.6	168.9	6.9
	10:46	72754	2740	1.6	197.0	8.0	8.9	1.4	170.5	6.9
	10:47	71986	2733	1.9	197.1	8.2	9.0	1.6	169.0	7.0
	10:48	73490	2737	2.0	192.7	8.3	8.7	1.8	169.8	7.3
	10:49	73266	2744	2.2	192.7	6.8	8.7	1.9	168.7	6.0
	10:50	70438	2743	2.2	194.9	6.6	9.3	1.8	162.3	5.5
	10:51	70528	2737	1.9	192.3	6.6	9.2	1.6	161.6	5.6
	10:52	72621	2730	1.7	197.8	6.5	8.8	1.5	171.6	5.7
	10:53	72509	2728	1.5	207.8	6.1	8.9	1.3	179.6	5.3
	10:54	71248	2728	1.5	204.8	7.8	9.1	1.3	174.6	6.7
	10:55	71201	2729	1.6	200.0	7.5	9.0	1.4	171.6	6.4
	10:56	70386	2726	2.0	200.9	7.4	9.2	1.7	169.6	6.2
	10:57	70635	2727	2.0	197.4	8.0	9.2	1.7	166.7	6.7
	10:58	71899	2727	1.6	197.0	8.2	9.0	1.4	169.3	7.1
	10:59	70111	2720	1.5	200.8	8.9	9.3	1.2	168.2	7.5
	11:00	68611	2712	1.5	203.0	8.7	9.5	1.2	166.9	7.2
	11:01	68792	2708	1.4	205.1	10.5	9.4	1.2	169.5	8.7
	11:02	69362	2713	1.5	202.8	11.6	9.3	1.2	168.8	9.6

Average =		71893	2728	1.7	198.7	7.4	8.9	1.5	170.8	6.3
Geometric Avg. =		71874	2727	1.7	198.6	7.3	8.9	1.5	170.8	6.3
Maximum =		75721	2744	2.2	207.8	11.6	9.5	1.9	180.6	9.6
Minimum =		68611	2708	1.4	192.3	5.5	8.2	1.2	161.6	4.9
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1941101	73643	46.5	5364.8	199.8	241.6	40.0	4612.8	171.3

- * - 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

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 11:03

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRTPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	10:36	186.8	11.2
	10:37	186.9	11.2
	10:38	185.8	11.1
	10:39	184.5	11.0
	10:40	185.5	10.9
	10:41	187.3	11.3
	10:42	187.8	11.6
	10:43	186.4	11.3
	10:44	185.4	11.0
	10:45	184.7	11.1
	10:46	184.3	11.0
	10:47	185.0	11.0
	10:48	187.6	11.2
	10:49	185.3	11.1
	10:50	183.2	10.7
	10:51	184.0	10.7
	10:52	183.1	11.0
	10:53	182.6	11.0
	10:54	184.7	10.9
	10:55	184.4	10.9
	10:56	182.7	10.8
	10:57	183.5	10.8
	10:58	184.0	11.0
	10:59	182.4	10.7
	11:00	180.1	10.5
	11:01	181.9	10.6
	11:02	182.3	10.7

Average =	184.5	11.0
Geometric Avg. =	184.5	11.0
Maximum =	187.8	11.6
Minimum =	180.1	10.5
Possible Values =	27	27
Included Values =	27	27
Total =	4982.1	296.4

* - 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

AVNS

Plant Name: SBWD
General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Unit Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/28/11 11:42
Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	11:15	73068	2688	0.9	199.9	8.5	8.5	0.8	178.2	7.5
	11:16	74915	2685	0.8	203.7	7.2	8.2	0.7	185.5	6.5
	11:17	74378	2678	0.9	204.1	8.5	8.3	0.8	184.4	7.7
	11:18	74627	2664	0.9	203.1	6.9	8.2	0.8	185.9	6.3
	11:19	73596	2655	0.9	205.0	6.7	8.3	0.8	185.4	6.0
	11:20	72101	2651	0.9	203.1	7.6	8.5	0.8	180.5	6.7
	11:21	72784	2650	0.9	198.3	7.5	8.4	0.8	178.9	6.7
	11:22	72262	2653	0.9	198.9	6.1	8.6	0.8	176.7	5.4
	11:23	72450	2652	0.9	199.7	7.1	8.5	0.8	177.5	6.3
	11:24	74145	2650	0.8	195.4	5.7	8.2	0.8	178.6	5.2
	11:25	72314	2653	0.8	195.3	7.1	8.6	0.8	172.9	6.3
	11:26	72233	2652	0.8	199.2	6.2	8.5	0.7	177.4	5.5
	11:27	72162	2650	0.7	207.7	6.1	8.6	0.6	183.8	5.4
	11:28	70451	2650	0.8	209.7	7.1	8.9	0.7	181.7	6.2
	11:29	69244	2655	1.0	212.2	8.2	9.1	0.8	180.6	7.0
	11:30	68817	2662	1.2	212.9	8.3	9.2	1.0	179.8	7.0
	11:31	69298	2667	1.1	209.2	8.6	9.1	0.9	177.3	7.3
	11:32	69245	2667	1.0	204.1	9.4	9.2	0.8	172.1	7.9
	11:33	68570	2664	1.0	197.8	9.3	9.3	0.8	165.7	7.8
	11:34	68497	2654	1.1	189.6	7.1	9.2	0.9	159.6	6.0
	11:35	68051	2654	1.1	186.8	8.7	9.2	0.9	156.7	7.3
	11:36	68086	2659	1.2	189.1	10.8	9.3	1.0	158.0	9.0
	11:37	69572	2664	1.0	190.9	9.2	9.0	0.8	162.8	7.8
	11:38	72119	2667	0.8	198.9	7.5	8.7	0.7	174.8	6.6
	11:39	73053	2668	0.8	204.6	6.6	8.5	0.7	182.5	5.9
	11:40	71157	2666	0.8	209.3	6.5	8.8	0.7	182.0	5.6
	11:41	69426	2665	0.8	208.5	6.3	9.2	0.7	176.1	5.4

Average =	71356	2661	0.9	201.4	7.6	8.7	0.8	176.1	6.6
Geometric Avg. =	71324	2661	0.9	201.3	7.5	8.7	0.8	175.9	6.5
Maximum =	74915	2688	1.2	212.9	10.8	9.3	1.0	185.9	9.0
Minimum =	68051	2650	0.7	186.8	5.7	8.2	0.6	156.7	5.2
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1926621	71844	24.8	5437.2	204.7	236.1	21.6	4755.4	178.5

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

Plant Name: SBWD
 General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1
 Data Averaging Type: 1m

Time of Report: 03/28/11 11:42
 Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	11:15	186.3	11.3
	11:16	186.7	11.6
	11:17	187.8	11.5
	11:18	187.2	11.6
	11:19	186.0	11.5
	11:20	186.9	11.3
	11:21	185.8	11.5
	11:22	185.0	11.4
	11:23	186.3	11.4
	11:24	185.3	11.6
	11:25	185.3	11.3
	11:26	184.7	11.3
	11:27	183.2	11.3
	11:28	182.9	11.1
	11:29	183.0	10.9
	11:30	182.6	10.8
	11:31	183.1	10.8
	11:32	182.5	10.8
	11:33	182.5	10.7
	11:34	182.6	10.8
	11:35	183.5	10.7
	11:36	183.9	10.7
	11:37	184.4	10.9
	11:38	185.2	11.2
	11:39	186.0	11.4
	11:40	184.0	11.1
	11:41	184.2	10.9

Average =	184.7	11.2
Geometric Avg. =	184.7	11.2
Maximum =	187.8	11.6
Minimum =	182.5	10.7
Possible Values =	27	27
Included Values =	27	27
Total =	4986.8	301.7

- * - 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 6

Plant Name: SEWD

Page: 1

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 12:31

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LEHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	12:04	68159	2680	2.1	186.9	11.3	9.5	1.7	153.9	9.3
	12:05	72226	2679	2.0	191.5	9.6	8.6	1.7	169.7	8.5
	12:06	70040	2672	2.0	194.7	9.7	9.1	1.7	165.4	8.2
	12:07	66730	2669	2.0	191.7	10.2	9.7	1.6	155.1	8.3
	12:08	67544	2670	1.7	196.5	9.7	9.5	1.4	161.8	8.0
	12:09	68894	2679	1.4	204.8	8.8	9.2	1.2	172.1	7.4
	12:10	68250	2688	1.4	209.9	10.2	9.4	1.2	173.2	8.4
	12:11	66501	2686	1.5	210.5	9.4	9.7	1.2	170.2	7.6
	12:12	67692	2688	1.6	211.8	9.7	9.4	1.3	175.5	8.1
	12:13	66607	2695	1.8	206.1	9.0	9.7	1.4	166.0	7.3
	12:14	64261	2700	2.1	192.2	10.0	10.1	1.7	149.9	7.8
	12:15	65291	2708	2.5	182.0	9.5	9.9	2.0	144.5	7.5
	12:16	66123	2720	2.6	181.3	9.7	9.8	2.1	144.9	7.7
	12:17	66113	2735	2.5	183.4	11.1	9.9	2.0	144.6	8.7
	12:18	65874	2737	2.3	193.9	10.5	9.9	1.8	152.9	8.2
	12:19	65047	2738	2.2	193.8	10.2	10.1	1.7	149.9	7.9
	12:20	67812	2749	1.9	198.1	12.2	9.7	1.5	159.8	9.9
	12:21	67969	2758	1.7	205.4	11.7	9.8	1.4	164.4	9.4
	12:22	67247	2809	1.6	212.8	10.6	10.0	1.2	166.3	8.3
	12:23	69537	2833	1.3	217.1	10.2	9.7	1.0	175.2	8.2
	12:24	72508	2836	1.4	220.9	10.3	9.2	1.2	185.7	8.6
	12:25	69796	2837	1.8	215.5	10.8	9.7	1.5	174.2	8.7
	12:26	71452	2836	2.0	205.3	11.1	9.3	1.6	170.9	9.2
	12:27	74457	2835	2.2	201.9	9.1	8.8	1.9	175.1	7.9
	12:28	74890	2834	2.0	199.6	8.5	8.8	1.7	173.0	7.4
	12:29	72684	2827	2.0	196.6	8.8	9.2	1.7	165.3	7.4
	12:30	72546	2814	2.0	191.9	8.1	9.2	1.7	162.2	6.8

Average =	68750	2745	1.9	199.8	10.0	9.5	1.6	163.8	8.2
Geometric Avg. =	68690	2744	1.9	199.6	10.0	9.5	1.5	163.4	8.1
Maximum =	74890	2837	2.6	220.9	12.2	10.1	2.1	185.7	9.9
Minimum =	64261	2669	1.3	181.3	8.1	8.6	1.0	144.5	6.8
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1856252	74112	51.5	5395.8	269.9	256.8	42.2	4421.6	220.8

- * - 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

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 12:31

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	12:04	184.0	10.6
	12:05	185.0	11.2
	12:06	182.4	10.9
	12:07	181.2	10.4
	12:08	181.6	10.5
	12:09	182.4	10.7
	12:10	181.9	10.6
	12:11	182.2	10.3
	12:12	181.2	10.5
	12:13	179.0	10.3
	12:14	179.8	10.0
	12:15	180.6	10.1
	12:16	180.8	10.2
	12:17	182.0	10.1
	12:18	179.8	10.0
	12:19	179.8	9.9
	12:20	181.5	10.2
	12:21	180.6	10.2
	12:22	180.8	10.0
	12:23	183.5	10.2
	12:24	182.4	10.7
	12:25	183.3	10.3
	12:26	185.6	10.6
	12:27	186.0	11.0
	12:28	185.6	11.0
	12:29	184.9	10.7
	12:30	184.8	10.7

Average =	182.3	10.4
Geometric Avg. =	182.3	10.4
Maximum =	186.0	11.2
Minimum =	179.0	9.9
Possible Values =	27	27
Included Values =	27	27
Total =	4922.6	281.8

* - 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

Run 3

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Unit Name: UNIT1

Time of Report: 03/28/11 13:09

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	12:42	69800	2803	1.8	187.3	12.7	9.7	1.4	151.2	10.2
	12:43	70602	2808	1.5	202.4	12.1	9.6	1.2	165.0	9.9
	12:44	69879	2807	1.4	218.1	10.9	9.6	1.1	176.6	8.8
	12:45	71048	2809	1.5	222.6	9.4	9.4	1.3	183.5	7.8
	12:46	72443	2813	1.5	216.9	11.4	9.2	1.3	182.0	9.6
	12:47	70448	2808	1.8	208.4	10.9	9.5	1.5	170.6	8.9
	12:48	68325	2798	2.4	194.5	11.2	9.8	1.9	154.9	8.9
	12:49	68425	2789	3.3	188.2	10.8	9.8	2.6	150.3	8.6
	12:50	68829	2792	3.3	192.8	13.6	9.8	2.6	154.0	10.8
	12:51	72756	2801	2.3	194.4	13.9	9.2	1.9	164.0	11.8
	12:52	75003	2811	1.4	199.9	13.3	8.9	1.2	172.3	11.4
	12:53	73695	2813	0.9	202.9	11.3	9.2	0.8	171.0	9.6
	12:54	70864	2808	0.9	200.6	14.5	9.5	0.7	164.6	11.9
	12:55	70994	2802	1.1	203.0	17.2	9.4	0.9	167.5	14.2
	12:56	73218	2795	1.2	203.9	15.3	9.0	1.0	175.2	13.2
	12:57	74497	2789	1.4	202.5	14.5	8.8	1.3	176.2	12.6
	12:58	74389	2785	1.4	200.6	15.9	8.8	1.2	174.0	13.8
	12:59	70789	2780	1.3	195.1	16.5	9.6	1.0	159.2	13.5
	13:00	70721	2769	1.3	191.2	17.5	9.4	1.1	158.2	14.5
	13:01	71761	2752	1.5	198.3	18.1	9.2	1.3	167.6	15.3
	13:02	69292	2718	1.9	201.8	17.2	9.5	1.5	166.0	14.1
	13:03	66790	2643	1.5	200.2	18.4	9.6	1.3	162.3	14.9
	13:04	66623	2634	1.2	204.6	21.3	9.7	1.0	164.8	17.2
	13:05	64157	2635	1.1	197.8	23.4	10.0	0.9	154.4	18.2
	13:06	63467	2640	1.2	189.3	20.6	10.1	0.9	147.3	16.0
	13:07	66315	2657	1.2	189.3	22.2	9.6	1.0	153.4	18.0
	13:08	66187	2686	1.2	190.6	24.7	9.9	1.0	150.6	19.5

Average =	70049	2761	1.6	199.9	15.5	9.5	1.3	164.3	12.7
Geometric Avg. =	69984	2760	1.5	199.7	15.0	9.5	1.2	164.0	12.3
Maximum =	75003	2813	3.3	222.6	24.7	10.1	2.6	183.5	19.5
Minimum =	63467	2634	0.9	187.3	9.4	8.8	0.7	147.3	7.8
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1891316	74545	42.7	5397.1	418.7	255.9	35.0	4436.7	343.1

- * - excluded values (missing, OOC, invalid, suspect)
- < - missing
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- 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: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 13:09

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	12:42	182.7	10.3
	12:43	184.2	10.4
	12:44	183.6	10.4
	12:45	183.7	10.6
	12:46	183.6	10.7
	12:47	182.3	10.5
	12:48	181.8	10.2
	12:49	180.9	10.3
	12:50	184.0	10.3
	12:51	187.3	10.8
	12:52	185.9	11.0
	12:53	184.4	10.8
	12:54	184.2	10.5
	12:55	185.6	10.6
	12:56	186.7	11.0
	12:57	187.5	11.2
	12:58	185.2	11.1
	12:59	183.6	10.6
	13:00	185.3	10.6
	13:01	184.5	10.9
	13:02	182.3	10.6
	13:03	181.4	10.5
	13:04	181.3	10.5
	13:05	179.6	10.1
	13:06	179.7	10.1
	13:07	179.3	10.5
	13:08	180.6	10.3

Average =	183.4	10.6
Geometric Avg. =	183.4	10.6
Maximum =	187.5	11.2
Minimum =	179.3	10.1
Possible Values =	27	27
Included Values =	27	27
Total =	4951.3	285.3

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

Run 8

Plant Name: SBWD
General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Unit Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/28/11 14:00
Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTID)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	13:33	67572	2641	1.9	198.7	21.7	9.3	1.6	166.3	18.1
	13:34	68052	2675	2.9	192.2	21.0	9.3	2.4	160.0	17.5
	13:35	69489	2720	3.1	195.1	20.5	9.3	2.6	162.3	17.0
	13:36	70421	2726	2.9	197.8	18.2	9.3	2.4	165.4	15.2
	13:37	70744	2727	2.5	200.5	19.0	9.2	2.1	168.5	16.0
	13:38	67262	2723	2.4	200.1	19.6	9.8	1.9	159.8	15.7
	13:39	66437	2717	2.4	198.3	19.6	9.9	1.9	156.8	15.5
	13:40	68027	2715	3.3	200.3	18.8	9.5	2.7	163.7	15.4
	13:41	69641	2711	4.1	209.8	18.3	9.3	3.4	175.1	15.3
	13:42	70163	2715	2.5	210.5	18.6	9.3	2.1	175.8	15.6
	13:43	67778	2722	1.7	207.0	20.4	9.8	1.3	164.9	16.2
	13:44	66950	2726	1.6	200.0	23.2	9.8	1.3	159.5	18.5
	13:45	68229	2737	2.0	194.4	22.9	9.5	1.6	158.9	18.8
	13:46	68093	2752	2.8	191.0	22.9	9.7	2.3	154.1	18.5
	13:47	67380	2769	3.5	182.8	24.8	9.9	2.8	144.0	19.6
	13:48	71660	2822	3.7	186.6	22.3	9.4	3.1	153.8	18.4
	13:49	75220	2856	3.4	195.1	22.0	9.0	2.9	167.2	18.9
	13:50	73362	2861	2.8	199.8	20.9	9.4	2.3	164.9	17.3
	13:51	72027	2854	2.3	209.2	20.7	9.5	1.9	171.2	17.0
	13:52	71788	2842	2.1	216.5	18.2	9.5	1.7	177.1	14.9
	13:53	71369	2829	1.8	221.3	17.8	9.6	1.5	180.5	14.5
	13:54	70488	2825	1.9	216.9	18.9	9.7	1.5	175.5	15.3
	13:55	69757	2829	2.2	203.3	20.1	9.8	1.7	162.8	16.1
	13:56	70205	2835	2.3	194.9	19.3	9.7	1.8	156.4	15.5
	13:57	69186	2836	2.2	185.9	17.0	9.9	1.7	146.8	13.4
	13:58	68451	2840	2.3	179.5	18.5	10.1	1.8	139.7	14.4
	13:59	71579	2847	1.9	192.7	19.1	9.6	1.6	157.0	15.6

Average =	69679	2772	2.5	199.3	20.2	9.6	2.1	162.5	16.4
Geometric Avg. =	69648	2772	2.5	199.0	20.1	9.6	2.0	162.2	16.4
Maximum =	75220	2861	4.1	221.3	24.8	10.1	3.4	180.5	19.6
Minimum =	66437	2641	1.6	179.5	17.0	9.0	1.3	139.7	13.4
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1881328	74852	68.5	5380.1	544.4	258.3	55.9	4388.2	443.9

- * - 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

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 14:00

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	13:33	184.5	10.7
	13:34	184.0	10.7
	13:35	183.1	10.7
	13:36	183.7	10.7
	13:37	182.8	10.7
	13:38	180.8	10.3
	13:39	180.0	10.2
	13:40	180.8	10.5
	13:41	182.6	10.7
	13:42	181.4	10.7
	13:43	180.5	10.3
	13:44	181.1	10.2
	13:45	181.7	10.5
	13:46	180.6	10.4
	13:47	182.2	10.2
	13:48	184.2	10.6
	13:49	183.7	11.0
	13:50	184.2	10.6
	13:51	184.2	10.5
	13:52	182.9	10.5
	13:53	181.7	10.5
	13:54	181.4	10.4
	13:55	181.8	10.3
	13:56	181.5	10.4
	13:57	179.2	10.2
	13:58	180.1	10.0
	13:59	182.3	10.5

Average =	182.1	10.5
Geometric Avg. =	182.1	10.5
Maximum =	184.5	11.0
Minimum =	179.2	10.0
Possible Values =	27	27
Included Values =	27	27
Total =	4916.9	283.0

* - 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 9

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Unit Name: UNIT1

Time of Report: 03/28/11 14:38

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	14:11	75342	2861	3.5	192.2	16.7	9.0	3.0	163.9	14.2
	14:12	73703	2858	4.3	193.3	17.6	9.3	3.5	161.1	14.6
	14:13	72300	2849	4.2	193.6	18.0	9.4	3.5	159.8	14.8
	14:14	72833	2845	5.0	192.8	16.6	9.2	4.2	161.7	13.9
	14:15	72541	2848	6.6	193.1	17.6	9.3	5.5	160.7	14.7
	14:16	69524	2851	6.0	200.7	18.6	9.8	4.8	159.6	14.8
	14:17	67618	2852	5.7	203.4	18.0	10.2	4.4	156.4	13.8
	14:18	68171	2858	6.1	207.9	19.2	10.1	4.8	161.2	14.9
	14:19	67431	2867	5.6	209.5	21.6	10.4	4.2	158.1	16.3
	14:20	67216	2869	3.8	207.3	22.1	10.5	2.8	155.4	16.5
	14:21	69576	2869	2.5	200.5	19.4	10.1	1.9	156.1	15.1
	14:22	73458	2869	1.9	194.4	17.9	9.5	1.5	159.7	14.7
	14:23	73294	2874	1.4	189.4	19.0	9.4	1.2	156.3	15.7
	14:24	73166	2877	1.6	187.1	21.2	9.3	1.3	156.2	17.7
	14:25	72180	2879	2.3	190.3	20.6	9.3	1.9	158.2	17.2
	14:26	70966	2874	3.5	196.7	19.5	9.6	2.8	160.4	15.9
	14:27	69122	2867	6.0	214.4	19.2	9.9	4.7	169.8	15.2
	14:28	65907	2863	9.8	228.2	22.9	10.3	7.4	173.3	17.4
	14:29	65807	2864	12.5	230.9	24.4	10.3	9.5	175.7	18.6
	14:30	68110	2872	12.0	219.3	24.4	10.0	9.4	172.0	19.2
	14:31	67243	2883	7.2	198.1	23.6	10.3	5.5	150.4	17.9
	14:32	64896	2893	4.0	174.3	28.6	10.8	2.9	126.3	20.7
	14:33	66412	2890	2.6	160.5	25.8	10.7	1.9	118.2	19.0
	14:34	68324	2879	1.8	159.8	21.3	10.3	1.4	122.4	16.3
	14:35	68525	2868	1.5	185.7	20.3	10.2	1.2	143.5	15.7
	14:36	71579	2861	1.3	210.6	19.6	9.6	1.1	171.9	16.0
	14:37	72638	2850	1.2	231.8	19.3	9.4	1.0	192.2	16.0

Average =		69921	2866	4.6	198.7	20.5	9.9	3.6	157.8	16.2
Geometric Avg. =		69862	2866	3.7	197.9	20.3	9.9	2.9	157.0	16.1
Maximum =		75342	2893	12.5	231.8	28.6	10.8	9.5	192.2	20.7
Minimum =		64896	2845	1.2	159.8	16.6	9.0	1.0	118.2	13.8
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1887880	77390	123.9	5365.8	552.8	266.4	97.4	4260.5	436.7

- * - 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

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 14:38

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMTRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	14:11	185.5	10.9
	14:12	183.8	10.7
	14:13	183.6	10.6
	14:14	183.5	10.7
	14:15	182.9	10.6
	14:16	181.2	10.2
	14:17	179.7	9.9
	14:18	177.2	9.9
	14:19	175.6	9.8
	14:20	174.8	9.7
	14:21	176.5	10.0
	14:22	177.9	10.5
	14:23	180.5	10.6
	14:24	182.8	10.7
	14:25	182.1	10.6
	14:26	181.0	10.4
	14:27	179.2	10.2
	14:28	177.6	9.8
	14:29	177.9	9.8
	14:30	177.3	10.0
	14:31	174.9	9.7
	14:32	173.0	9.3
	14:33	171.2	9.5
	14:34	171.3	9.8
	14:35	173.2	9.9
	14:36	176.2	10.4
	14:37	180.0	10.6

Average =	178.5	10.2
Geometric Avg. =	178.5	10.2
Maximum =	185.5	10.9
Minimum =	171.2	9.3
Possible Values =	27	27
Included Values =	27	27
Total =	4820.3	274.6

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

RUN 10

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 15:30

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR1 (Lb/Hr)	VELOCITY1 (FPM)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTID)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/28/11	15:03	70761	2749	1.8	211.9	14.9	9.3	1.5	177.1	12.4
	15:04	67526	2749	1.8	203.1	20.1	9.9	1.4	160.7	15.9
	15:05	67797	2758	1.8	192.9	20.6	9.7	1.4	154.7	16.6
	15:06	68496	2770	2.6	189.1	20.4	9.7	2.1	152.1	16.4
	15:07	66931	2787	3.1	182.5	21.5	10.1	2.4	142.1	16.7
	15:08	64957	2804	3.7	178.9	25.0	10.5	2.8	134.3	18.8
	15:09	63977	2822	3.9	185.4	30.4	10.7	2.9	136.7	22.4
	15:10	66729	2835	4.3	196.0	30.3	10.1	3.4	151.6	23.4
	15:11	68090	2853	6.0	219.2	25.1	10.1	4.7	170.2	19.5
	15:12	65580	2887	7.4	236.7	30.1	10.6	5.5	175.2	22.3
	15:13	68900	2945	4.7	242.3	26.1	10.2	3.6	185.6	20.0
	15:14	71686	2948	3.8	227.1	25.4	9.8	3.0	180.7	20.2
	15:15	73723	2948	3.6	203.9	26.0	9.6	3.0	166.1	21.2
	15:16	76106	2939	3.1	190.4	20.4	9.1	2.6	161.9	17.4
	15:17	76348	2929	2.9	184.6	22.3	9.0	2.5	157.5	19.1
	15:18	77720	2919	2.7	174.9	21.3	8.8	2.3	152.1	18.6
	15:19	83043	2917	1.9	181.4	19.8	7.9	1.8	169.1	18.5
	15:20	82492	2915	1.7	188.5	16.5	8.0	1.5	174.7	15.3
	15:21	79105	2905	1.4	189.8	16.5	8.6	1.3	168.0	14.6
	15:22	78964	2884	1.0	196.8	15.3	8.5	0.9	175.3	13.6
	15:23	78031	2863	0.9	205.2	15.9	8.5	0.8	182.4	14.1
	15:24	75588	2849	0.9	208.9	16.0	8.8	0.8	181.6	13.9
	15:25	73223	2796	0.9	210.7	16.1	8.9	0.7	181.2	13.9
	15:26	71931	2751	0.8	210.7	16.2	9.0	0.7	180.9	14.0
	15:27	70685	2742	0.8	210.1	16.8	9.1	0.6	177.7	14.2
	15:28	69390	2739	0.9	205.3	16.2	9.3	0.7	170.9	13.5
	15:29	67857	2744	1.0	198.0	18.9	9.6	0.8	161.0	15.4

Average =	72061	2842	2.6	200.9	20.9	9.4	2.1	166.0	17.1
Geometric Avg. =	71868	2842	2.1	200.2	20.4	9.4	1.7	165.3	16.8
Maximum =	83043	2948	7.4	242.3	30.4	10.7	5.5	185.6	23.4
Minimum =	63977	2739	0.8	174.9	14.9	7.9	0.6	134.3	12.4
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1945634	76747	69.3	5424.1	564.4	253.7	55.7	4481.5	461.8

- * - 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

General Average Report

Reporting Period: 03/28/2011 to 03/28/2011

Site Name: UNIT1

Time of Report: 03/28/11 15:30

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRTPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/28/11	15:03	181.7	10.7
	15:04	181.2	10.2
	15:05	181.3	10.3
	15:06	179.5	10.3
	15:07	177.6	10.0
	15:08	176.0	9.7
	15:09	176.3	9.5
	15:10	178.0	9.9
	15:11	176.7	10.0
	15:12	177.0	9.5
	15:13	178.4	9.8
	15:14	180.6	10.2
	15:15	183.8	10.4
	15:16	184.5	10.8
	15:17	183.3	10.8
	15:18	187.3	11.0
	15:19	190.9	11.8
	15:20	188.4	11.7
	15:21	187.3	11.2
	15:22	187.4	11.3
	15:23	187.0	11.3
	15:24	186.7	11.0
	15:25	185.9	10.9
	15:26	184.4	10.9
	15:27	183.2	10.8
	15:28	182.9	10.6
	15:29	183.7	10.4

Average =	182.6	10.6
Geometric Avg. =	182.6	10.5
Maximum =	190.9	11.8
Minimum =	176.0	9.5
Possible Values =	27	27
Included Values =	27	27
Total =	4931.3	284.9

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

Run 1

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2

Time of Report: 03/29/11 10:20

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	09:37	74663	2889	3.1	190.6	15.5	8.7	2.7	166.9	13.5
	09:38	73875	2880	2.5	189.4	14.0	8.9	2.2	164.1	12.1
	09:39	73624	2861	2.2	189.1	14.0	8.8	2.0	164.8	12.2
	09:40	74839	2842	2.2	185.6	14.0	8.5	1.9	165.6	12.4
	09:41	77833	2825	1.9	173.9	11.5	7.8	1.7	163.5	10.8
	09:42	77315	2810	1.6	177.7	9.6	7.9	1.5	166.4	9.0
	09:43	74113	2801	1.4	184.8	10.3	8.4	1.2	166.0	9.3
	09:44	73154	2794	1.1	180.6	11.7	8.6	1.0	160.2	10.4
	09:45	73242	2787	0.9	174.1	11.5	8.5	0.8	155.3	10.2
	09:46	72485	2783	0.7	173.9	10.8	8.6	0.6	153.4	9.5
	09:47	70381	2777	0.6	173.7	9.6	9.0	0.5	149.0	8.2
	09:48	68389	2771	0.5	173.2	10.0	9.3	0.4	144.6	8.3
	09:49	66306	2769	0.3	172.7	12.7	9.8	0.2	138.5	10.2
	09:50	66639	2774	0.1	167.2	18.4	9.7	0.1	135.1	14.9
	09:51	68543	2781	0.1	163.1	20.4	9.3	0.1	135.8	17.0
	09:52	67192	2792	0.1	166.4	16.9	9.6	0.1	135.7	13.8
	09:53	65224	2803	0.0	174.3	17.9	10.0	0.0	136.7	14.1
	09:54	64633	2815	0.0	179.5	18.3	10.1	0.0	139.8	14.2
	09:55	65146	2827	0.0	177.6	21.0	10.1	0.0	137.9	16.3
	09:56	63640	2830	0.0	175.3	16.0	10.4	0.0	132.5	12.1
	09:57	62286	2820	0.0	178.9	14.1	10.6	0.0	132.3	10.4
	09:58	61304	2803	0.0	176.7	12.9	10.8	0.0	128.8	9.4
	09:59	60357	2786	0.0	177.0	13.9	10.9	0.0	127.7	10.0
	10:00	59896	2771	0.0	175.8	14.5	10.9	0.0	127.0	10.5
	10:01	60329	2761	0.0	173.5	14.7	10.7	0.0	127.5	10.8
	10:02	61329	2752	0.0	168.3	13.8	10.4	0.0	126.9	10.4
	10:03	61256	2745	0.0	167.3	15.1	10.4	0.0	126.2	11.4

Average =	68074	2802	0.7	176.3	14.2	9.5	0.6	144.7	11.5
Geometric Avg. =	67840	2802	0.0	176.2	13.8	9.5	0.5	144.0	11.3
Maximum =	77833	2889	3.1	190.6	21.0	10.9	2.7	166.9	17.0
Minimum =	59896	2745	0.0	163.1	9.6	7.8	0.0	126.2	8.2
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1837991	75651	19.3	4760.1	382.8	256.5	17.2	3908.1	311.4

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

Plant Name: SBWD
General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/29/11 10:20
Rolling Average Interval: 1

Date	Time	STMPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	09:37	185.1	10.8
	09:38	185.0	10.7
	09:39	185.7	10.7
	09:40	188.4	11.0
	09:41	190.2	11.5
	09:42	189.1	11.5
	09:43	188.0	11.0
	09:44	188.2	10.9
	09:45	188.1	10.9
	09:46	186.3	10.8
	09:47	184.7	10.5
	09:48	181.4	10.3
	09:49	179.5	10.0
	09:50	179.8	10.0
	09:51	179.0	10.3
	09:52	177.3	10.0
	09:53	175.4	9.7
	09:54	174.3	9.6
	09:55	172.8	9.6
	09:56	167.7	9.4
	09:57	162.6	9.2
	09:58	158.3	9.0
	09:59	155.0	9.0
	10:00	152.7	9.0
	10:01	151.5	9.1
	10:02	150.9	9.3
	10:03	150.2	9.3

Average =	175.1	10.1
Geometric Avg. =	174.5	10.1
Maximum =	190.2	11.5
Minimum =	150.2	9.0
Possible Values =	27	27
Included Values =	27	27
Total =	4727.1	272.9

- * - 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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2

Time of Report: 03/29/11 10:46

Data Averaging Type: 1m

Rolling Average Interval: 1

RUN 2

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COFPM_2 (PPMD)
03/29/11	10:19	69538	2638	0.0	195.0	8.9	8.4	0.0	175.4	8.0
	10:20	68542	2642	0.0	198.1	8.3	8.6	0.0	175.0	7.3
	10:21	68508	2643	0.1	194.7	8.6	8.6	0.1	172.7	7.6
	10:22	69878	2641	0.2	184.7	9.7	8.3	0.1	167.4	8.8
	10:23	70559	2635	0.4	183.9	9.3	8.2	0.4	168.4	8.5
	10:24	69246	2628	0.7	181.2	10.1	8.4	0.6	162.8	9.1
	10:25	67482	2625	0.7	182.3	9.3	8.7	0.6	159.5	8.1
	10:26	67139	2628	0.7	181.5	11.2	8.8	0.6	158.1	9.8
	10:27	68193	2620	1.2	167.8	21.9	8.5	1.0	149.6	19.6
	10:28	67783	2596	2.6	164.3	13.1	8.5	2.3	146.0	11.6
	10:29	65942	2581	4.4	169.5	14.4	8.8	3.8	147.4	12.5
	10:30	67238	2585	7.5	172.2	15.6	8.6	6.7	152.7	13.8
	10:31	68382	2598	9.1	172.6	13.6	8.4	8.1	154.6	12.2
	10:32	66476	2617	11.9	184.5	12.0	9.0	10.3	158.5	10.3
	10:33	65902	2636	13.8	191.7	14.5	9.2	11.6	160.8	12.2
	10:34	69309	2653	10.4	177.4	24.1	8.6	9.2	156.6	21.3
	10:35	69654	2663	10.6	169.9	20.9	8.6	9.4	149.9	18.5
	10:36	69459	2669	10.8	179.5	15.0	8.7	9.5	157.9	13.2
	10:37	68509	2671	10.4	186.0	14.9	8.9	9.0	160.4	12.8
	10:38	69734	2672	10.5	182.5	13.0	8.7	9.2	160.2	11.4
	10:39	69918	2672	13.7	183.2	11.3	8.7	12.0	161.3	9.9
	10:40	69281	2673	19.0	191.4	10.2	8.8	16.5	166.5	8.8
	10:41	69910	2671	19.1	182.3	10.3	8.7	16.8	160.3	9.0
	10:42	70280	2668	19.6	180.0	10.1	8.6	17.3	159.0	8.9
	10:43	70695	2663	19.9	178.8	8.1	8.5	17.8	160.0	7.2
	10:44	70888	2653	20.2	175.1	9.9	8.4	18.2	157.0	8.9
	10:45	72480	2641	19.8	169.7	9.1	8.1	18.3	156.8	8.4

Average =	68923	2640	8.8	180.7	12.5	8.6	7.8	159.8	11.0
Geometric Avg. =	68906	2640	2.3	180.5	11.9	8.6	3.0	159.6	10.5
Maximum =	72480	2673	20.2	198.1	24.1	9.2	18.3	175.4	21.3
Minimum =	65902	2581	0.0	164.3	8.1	8.1	0.0	146.0	7.2
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1860923	71283	237.1	4879.9	337.1	232.4	209.3	4314.9	297.6

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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2

Time of Report: 03/29/11 10:46

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_2 (KLE/HR)	CO2_2 (PERCENTD)
03/29/11	10:19	191.9	11.0
	10:20	190.6	10.8
	10:21	191.3	10.8
	10:22	191.9	11.0
	10:23	191.8	11.1
	10:24	190.3	11.0
	10:25	188.7	10.7
	10:26	189.8	10.6
	10:27	189.8	10.8
	10:28	189.2	10.9
	10:29	190.1	10.6
	10:30	190.3	10.8
	10:31	188.4	10.9
	10:32	186.2	10.6
	10:33	187.7	10.4
	10:34	187.8	10.9
	10:35	187.3	10.9
	10:36	186.4	10.8
	10:37	186.2	10.7
	10:38	187.2	10.9
	10:39	186.8	10.9
	10:40	186.3	10.8
	10:41	186.3	10.9
	10:42	187.1	10.9
	10:43	187.4	11.0
	10:44	187.3	11.1
	10:45	186.1	11.4

Average =	188.5	10.9
Geometric Avg. =	188.5	10.9
Maximum =	191.9	11.4
Minimum =	186.1	10.4
Possible Values =	27	27
Included Values =	27	27
Total =	5090.0	293.3

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

RUN 3

Plant Name: SBWD
General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/29/11 11:23
Rolling Average Interval: 1

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	10:56	65019	2652	15.3	177.8	13.5	9.5	12.5	145.3	11.1
	10:57	65067	2645	15.5	179.7	15.4	9.5	12.7	147.0	12.6
	10:58	65853	2639	17.2	178.8	14.2	9.3	14.3	148.8	11.8
	10:59	65601	2640	18.9	183.6	14.3	9.4	15.7	152.4	11.9
	11:00	64666	2648	20.2	191.2	14.2	9.6	16.5	155.7	11.6
	11:01	65660	2658	20.1	194.4	14.7	9.4	16.6	160.8	12.2
	11:02	68752	2660	20.3	194.1	13.7	8.7	17.7	170.1	12.0
	11:03	69058	2655	18.0	197.1	11.6	8.8	15.7	171.9	10.1
	11:04	66320	2659	15.1	202.7	11.2	9.3	12.7	169.7	9.4
	11:05	65570	2666	13.7	201.8	11.7	9.4	11.4	167.0	9.7
	11:06	66834	2675	13.1	199.4	13.3	9.1	11.1	168.5	11.3
	11:07	67942	2688	12.9	198.4	14.6	9.1	11.0	169.0	12.4
	11:08	70025	2700	11.4	196.0	15.1	8.7	10.1	172.4	13.3
	11:09	70040	2711	10.0	202.0	14.1	8.9	8.7	175.1	12.2
	11:10	69324	2715	8.3	203.6	16.1	8.9	7.1	175.2	13.9
	11:11	71223	2713	7.2	199.1	15.3	8.6	6.4	176.9	13.6
	11:12	71235	2710	6.3	195.5	15.3	8.6	5.6	173.3	13.5
	11:13	69760	2709	5.4	195.1	17.0	8.9	4.6	168.4	14.7
	11:14	67303	2712	4.6	198.8	18.3	9.3	3.8	165.4	15.3
	11:15	68648	2714	3.9	195.5	18.0	9.0	3.3	167.5	15.4
	11:16	70180	2718	3.7	196.5	18.0	8.8	3.2	171.4	15.7
	11:17	69945	2730	3.3	189.6	17.4	8.9	2.8	164.2	15.1
	11:18	70950	2738	2.9	181.2	19.1	8.7	2.6	159.2	16.8
	11:19	69874	2740	2.6	185.3	17.2	9.0	2.3	159.2	14.8
	11:20	68961	2745	2.2	190.8	16.8	9.2	1.8	161.2	14.2
	11:21	67458	2749	1.9	189.9	18.6	9.5	1.6	156.4	15.3
	11:22	66427	2753	1.7	191.6	19.9	9.6	1.4	155.9	16.2

Average =	68063	2694	10.2	192.9	15.5	9.1	8.6	164.0	13.2
Geometric Avg. =	68031	2694	7.8	192.8	15.3	9.1	6.6	163.8	13.0
Maximum =	71235	2753	20.3	203.6	19.9	9.6	17.7	176.9	16.8
Minimum =	64666	2639	1.7	177.8	11.2	8.6	1.4	145.3	9.4
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1837696	72742	275.8	5209.3	418.9	245.4	233.2	4428.0	356.0

- * - 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: 03/29/2011 to 03/29/2011

Site Name: UNIT2

Time of Report: 03/29/11 11:23

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	10:56	178.3	10.2
	10:57	178.4	10.3
	10:58	178.1	10.4
	10:59	177.2	10.4
	11:00	176.8	10.2
	11:01	179.5	10.3
	11:02	181.2	10.8
	11:03	181.6	10.8
	11:04	180.5	10.4
	11:05	179.8	10.2
	11:06	180.2	10.4
	11:07	181.0	10.5
	11:08	180.4	10.8
	11:09	179.7	10.8
	11:10	180.6	10.7
	11:11	181.4	11.0
	11:12	181.1	11.0
	11:13	180.0	10.7
	11:14	179.6	10.3
	11:15	179.8	10.5
	11:16	180.3	10.8
	11:17	182.1	10.7
	11:18	182.7	10.8
	11:19	182.6	10.6
	11:20	181.3	10.4
	11:21	179.7	10.2
	11:22	180.0	10.0

Average =	180.1	10.5
Geometric Avg. =	180.1	10.5
Maximum =	182.7	11.0
Minimum =	176.8	10.0
Possible Values =	27	27
Included Values =	27	27
Total =	4864.0	284.4

* - 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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2
 Data Averaging Type: 1m

Time of Report: 03/29/11 12:00
 Rolling Average Interval: 1

AWWY

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PFMDC)	NOXRPT_2 (PFMDC)	CORPT_2 (PFMDC)	O2OUT_2 (PERCENTED)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	11:33	76179	2661	0.8	188.4	8.7	7.3	0.8	184.7	8.5
	11:34	72114	2658	0.9	198.4	8.5	8.1	0.8	182.9	7.9
	11:35	69502	2654	0.8	196.8	9.0	8.6	0.7	174.7	8.0
	11:36	70124	2653	0.8	189.4	13.1	8.4	0.7	170.5	11.8
	11:37	69075	2653	0.9	190.8	10.1	8.6	0.8	168.9	8.9
	11:38	66474	2651	0.9	196.6	10.3	9.1	0.8	166.9	8.8
	11:39	66420	2650	0.7	195.8	11.8	9.1	0.6	166.2	10.0
	11:40	66519	2648	0.7	199.3	11.5	9.1	0.6	169.5	9.7
	11:41	65285	2647	0.7	202.9	12.3	9.3	0.6	169.2	10.3
	11:42	64904	2650	0.7	202.0	12.5	9.4	0.6	167.6	10.4
	11:43	63592	2665	0.8	198.7	16.0	9.7	0.7	159.8	12.9
	11:44	62038	2673	0.9	200.6	15.6	10.0	0.7	157.0	12.2
	11:45	59126	2662	0.8	207.6	9.6	10.5	0.6	154.6	7.2
	11:46	57831	2642	0.4	213.0	8.3	10.7	0.3	155.6	6.0
	11:47	60315	2627	0.2	212.4	8.3	10.2	0.2	163.3	6.4
	11:48	63072	2615	0.3	209.3	7.5	9.6	0.2	170.1	6.1
	11:49	67718	2612	0.5	200.4	8.6	8.6	0.5	177.9	7.7
	11:50	71063	2617	1.0	196.1	9.2	8.0	0.9	182.5	8.6
	11:51	72873	2620	1.4	192.4	9.5	7.6	1.3	183.5	9.0
	11:52	76358	2630	1.5	180.2	11.3	7.0	1.5	179.8	11.2
	11:53	80365	2642	1.7	176.6	12.1	6.3	1.8	185.1	12.7
	11:54	79101	2651	1.7	180.1	15.5	6.6	1.8	185.7	16.0
	11:55	74964	2653	1.5	198.7	8.0	7.4	1.5	192.7	7.8
	11:56	72216	2651	1.1	217.4	6.8	7.9	1.0	202.8	6.4
	11:57	70656	2649	0.9	224.1	8.5	8.2	0.8	204.0	7.7
	11:58	69090	2649	0.8	233.3	10.0	8.5	0.7	207.4	8.9
	11:59	68917	2649	0.8	229.9	10.7	8.6	0.7	203.7	9.4

Average =		68737	2646	0.9	201.1	10.5	8.6	0.8	177.3	9.3
Geometric Avg. =		68500	2646	0.8	200.7	10.2	8.5	0.7	176.7	9.0
Maximum =		80365	2673	1.7	233.3	16.0	10.7	1.8	207.4	16.0
Minimum =		57831	2612	0.2	176.6	6.8	6.3	0.2	154.6	6.0
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1855890	71431	24.2	5430.9	283.5	232.5	22.0	4786.3	250.6

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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2

Time of Report: 03/29/11 12:00

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	11:33	191.2	11.9
	11:34	190.4	11.3
	11:35	190.1	10.9
	11:36	189.3	11.0
	11:37	186.8	10.8
	11:38	184.5	10.4
	11:39	182.6	10.4
	11:40	180.5	10.5
	11:41	178.7	10.3
	11:42	175.3	10.2
	11:43	171.2	10.0
	11:44	166.0	9.7
	11:45	161.8	9.2
	11:46	159.0	9.1
	11:47	158.6	9.5
	11:48	160.9	10.0
	11:49	164.6	10.8
	11:50	169.7	11.3
	11:51	176.1	11.6
	11:52	184.4	12.1
	11:53	190.8	12.7
	11:54	192.7	12.5
	11:55	192.0	11.8
	11:56	190.7	11.3
	11:57	189.3	11.1
	11:58	187.6	10.9
	11:59	186.4	10.8

Average =	179.7	10.8
Geometric Avg. =	179.3	10.8
Maximum =	192.7	12.7
Minimum =	158.6	9.1
Possible Values =	27	27
Included Values =	27	27
Total =	4851.4	292.1

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

Plant Name: SBWD
 General Average Report
 Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2
 Data Averaging Type: 1m

Time of Report: 03/29/11 12:38
 Rolling Average Interval: 1

RUN 5

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTID)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	12:11	71620	2654	1.1	155.2	38.4	8.1	1.0	142.5	35.3
	12:12	69705	2648	1.0	156.0	33.3	8.5	0.9	139.6	29.8
	12:13	68375	2643	0.9	165.1	15.8	8.7	0.8	144.9	13.9
	12:14	68137	2645	0.8	174.6	17.2	8.7	0.7	152.7	15.0
	12:15	70696	2645	0.7	172.2	20.5	8.2	0.6	157.2	18.7
	12:16	73005	2643	0.6	180.7	10.4	7.8	0.6	170.8	9.8
	12:17	72293	2642	0.5	193.0	9.9	7.9	0.5	180.2	9.2
	12:18	72559	2641	0.4	197.1	8.3	7.9	0.4	184.9	7.8
	12:19	72890	2640	0.3	204.9	6.7	7.8	0.3	192.9	6.3
	12:20	73032	2636	0.2	209.9	6.7	7.8	0.2	198.3	6.3
	12:21	72212	2630	0.2	212.8	5.8	7.9	0.2	199.5	5.5
	12:22	70907	2627	0.1	211.2	36.9	8.1	0.1	193.8	33.9
	12:23	70766	2621	0.5	210.9	13.2	8.2	0.5	193.1	12.1
	12:24	68350	2613	0.7	213.7	7.4	8.6	0.6	189.1	6.6
	12:25	67786	2607	0.8	202.5	7.8	8.7	0.7	177.6	6.8
	12:26	67224	2604	1.0	189.4	9.1	8.8	0.9	165.1	7.9
	12:27	67025	2602	1.0	183.3	9.8	8.8	0.9	159.7	8.5
	12:28	66638	2604	1.1	180.5	10.7	8.9	0.9	156.0	9.2
	12:29	66349	2603	1.2	178.5	10.6	9.0	1.0	153.2	9.1
	12:30	65462	2588	1.2	187.4	11.3	9.1	1.0	159.5	9.6
	12:31	64651	2569	1.3	192.7	11.1	9.1	1.1	163.3	9.4
	12:32	63766	2568	1.3	194.2	11.6	9.3	1.1	162.0	9.7
	12:33	65670	2583	1.4	191.4	12.5	9.0	1.2	164.2	10.8
	12:34	68517	2607	1.5	192.2	12.2	8.5	1.3	171.2	10.8
	12:35	68527	2631	1.4	199.0	13.5	8.7	1.2	175.0	11.8
	12:36	68805	2652	1.3	201.8	12.3	8.7	1.1	177.4	10.9
	12:37	68763	2667	1.3	199.9	13.2	8.8	1.1	174.5	11.6

Average =	69027	2623	0.9	190.7	13.9	8.5	0.8	170.3	12.5
Geometric Avg. =	68976	2623	0.8	190.0	12.2	8.5	0.7	169.5	10.9
Maximum =	73032	2667	1.5	213.7	38.4	9.3	1.3	199.5	35.3
Minimum =	63766	2568	0.1	155.2	5.8	7.8	0.1	139.6	5.5
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1863733	70814	23.8	5150.2	376.2	229.4	21.0	4598.3	336.3

- * - 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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2

Time of Report: 03/29/11 12:38

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRTPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	12:11	186.5	11.2
	12:12	185.6	10.9
	12:13	184.5	10.8
	12:14	185.8	10.7
	12:15	188.0	11.1
	12:16	188.7	11.5
	12:17	189.4	11.4
	12:18	189.7	11.4
	12:19	190.8	11.5
	12:20	191.4	11.5
	12:21	191.2	11.4
	12:22	190.3	11.2
	12:23	188.6	11.2
	12:24	187.5	10.9
	12:25	186.1	10.8
	12:26	184.8	10.7
	12:27	182.9	10.7
	12:28	182.4	10.7
	12:29	180.8	10.6
	12:30	179.2	10.5
	12:31	177.9	10.5
	12:32	178.8	10.4
	12:33	179.6	10.6
	12:34	179.0	11.0
	12:35	178.5	10.9
	12:36	178.7	10.8
	12:37	179.8	10.8

Average =	184.7	11.0
Geometric Avg. =	184.6	10.9
Maximum =	191.4	11.5
Minimum =	177.9	10.4
Possible Values =	27	27
Included Values =	27	27
Total =	4986.4	295.7

* - 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 6

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2
 Data Averaging Type: 1m

Time of Report: 03/29/11 13:15
 Rolling Average Interval: 1

Date	Time	CO2LEHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	12:48	72499	2715	0.1	195.4	13.2	8.3	0.0	177.8	12.0
	12:49	72062	2716	0.1	202.3	13.8	8.3	0.1	182.8	12.4
	12:50	69481	2719	0.4	203.9	14.9	8.9	0.3	176.5	12.9
	12:51	67039	2727	1.0	201.9	14.2	9.4	0.8	167.3	11.7
	12:52	67068	2735	1.4	201.2	14.7	9.4	1.2	166.6	12.1
	12:53	67145	2742	1.8	201.1	14.4	9.5	1.5	165.5	11.8
	12:54	68560	2749	2.0	198.4	15.6	9.2	1.7	166.7	13.1
	12:55	74635	2754	2.3	197.6	13.7	8.0	2.1	183.1	12.7
	12:56	77626	2755	2.3	202.7	10.7	7.5	2.2	195.9	10.3
	12:57	76685	2751	2.1	200.8	12.5	7.6	2.0	192.0	11.9
	12:58	76489	2742	2.1	192.3	16.3	7.6	2.0	184.2	15.6
	12:59	75397	2734	2.0	192.2	10.0	7.8	1.9	181.7	9.5
	13:00	74071	2731	2.0	196.8	9.8	8.0	1.8	182.3	9.1
	13:01	74471	2734	2.1	191.9	11.5	7.9	2.0	179.3	10.7
	13:02	73716	2735	2.5	188.7	9.8	8.1	2.3	174.0	9.0
	13:03	71354	2737	2.7	189.2	9.4	8.6	2.4	167.9	8.3
	13:04	69526	2738	2.8	188.7	12.1	8.9	2.5	162.8	10.5
	13:05	67691	2743	3.2	188.6	15.9	9.3	2.6	157.2	13.2
	13:06	67155	2753	3.9	192.0	20.4	9.4	3.2	158.9	16.9
	13:07	69426	2764	4.6	190.2	20.9	9.0	4.0	163.1	17.9
	13:08	68164	2773	4.7	199.8	19.6	9.3	3.9	166.0	16.3
	13:09	65253	2784	4.0	204.8	20.7	9.9	3.2	161.5	16.3
	13:10	65827	2793	3.8	200.3	23.6	9.8	3.0	160.2	18.9
	13:11	70110	2796	3.9	207.0	18.7	9.0	3.4	176.9	16.0
	13:12	71130	2793	4.4	211.2	17.7	8.9	3.8	182.8	15.4
	13:13	69735	2781	4.3	217.8	18.0	9.1	3.6	184.3	15.3
	13:14	68427	2764	3.6	215.1	22.1	9.3	3.0	180.2	18.5

Average =	70768	2750	2.6	199.0	15.3	8.7	2.2	174.0	13.3
Geometric Avg. =	70682	2750	1.9	198.8	14.8	8.7	1.7	173.7	12.9
Maximum =	77626	2796	4.7	217.8	23.6	9.9	4.0	195.9	18.9
Minimum =	65253	2715	0.1	188.6	9.4	7.5	0.0	157.2	8.3
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1910742	74256	70.1	5371.9	413.8	235.9	60.6	4697.6	358.3

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

Plant Name: SBWD
 General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2
 Data Averaging Type: 1m

Time of Report: 03/29/11 13:15
 Rolling Average Interval: 1

Date	Time	STMPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	12:48	180.8	11.1
	12:49	179.4	11.1
	12:50	177.3	10.7
	12:51	175.3	10.2
	12:52	173.2	10.2
	12:53	172.8	10.2
	12:54	175.8	10.4
	12:55	179.5	11.3
	12:56	182.8	11.7
	12:57	186.1	11.6
	12:58	187.7	11.6
	12:59	187.3	11.5
	13:00	188.3	11.3
	13:01	188.2	11.3
	13:02	187.2	11.2
	13:03	186.5	10.9
	13:04	184.2	10.6
	13:05	182.9	10.3
	13:06	183.2	10.2
	13:07	182.6	10.5
	13:08	180.1	10.3
	13:09	178.6	9.8
	13:10	179.7	9.8
	13:11	181.3	10.5
	13:12	182.1	10.7
	13:13	181.6	10.5
	13:14	185.1	10.3

Average =	181.8	10.7
Geometric Avg. =	181.8	10.7
Maximum =	188.3	11.7
Minimum =	172.8	9.8
Possible Values =	27	27
Included Values =	27	27
Total =	4909.6	289.5

- * - excluded values (missing, OOC, invalid, suspect)
- < - missing
- T - out-of-control
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- S - suspect
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- 888 - value could not be calculated

RUN 7

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2

Time of Report: 03/29/11 13:53

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	13:26	65194	2660	5.4	171.9	13.9	9.5	4.4	141.3	11.4
	13:27	66374	2662	6.0	177.9	14.2	9.2	5.0	149.7	12.0
	13:28	68787	2664	7.0	183.6	14.0	8.7	6.2	161.3	12.3
	13:29	66270	2673	6.7	194.7	13.8	9.3	5.6	162.6	11.5
	13:30	64834	2681	5.9	219.3	14.6	9.6	4.8	178.9	11.9
	13:31	66025	2685	6.0	218.8	15.4	9.3	5.0	182.3	12.8
	13:32	65851	2695	6.6	221.8	15.2	9.4	5.5	183.6	12.6
	13:33	66347	2708	7.4	222.0	15.7	9.3	6.1	184.8	13.1
	13:34	65250	2718	7.5	218.5	19.7	9.6	6.1	176.9	15.9
	13:35	65428	2728	6.3	214.1	24.0	9.7	5.1	172.7	19.4
	13:36	68878	2734	5.4	205.1	22.6	9.1	4.6	174.7	19.2
	13:37	69712	2736	4.6	195.1	18.1	9.0	4.0	167.7	15.6
	13:38	67824	2733	4.0	187.1	17.5	9.3	3.3	156.2	14.6
	13:39	67184	2731	4.2	187.0	20.0	9.4	3.5	154.4	16.5
	13:40	68271	2735	4.8	182.4	20.5	9.2	4.0	153.1	17.2
	13:41	69380	2744	5.5	182.4	19.8	9.1	4.7	154.8	16.8
	13:42	70386	2757	5.4	185.4	20.9	8.9	4.6	159.8	18.0
	13:43	69648	2771	4.7	189.5	21.6	9.1	4.0	160.6	18.3
	13:44	72791	2778	3.8	190.8	19.1	8.6	3.3	168.7	16.9
	13:45	76530	2779	3.2	195.8	13.2	7.9	3.0	183.7	12.4
	13:46	74851	2771	2.9	204.6	12.0	8.2	2.7	187.5	11.0
	13:47	74845	2763	2.8	206.8	12.7	8.1	2.6	190.1	11.7
	13:48	74146	2756	3.0	211.0	12.6	8.2	2.7	192.2	11.4
	13:49	71633	2748	3.1	208.8	15.3	8.7	2.7	183.0	13.4
	13:50	71384	2745	3.2	205.3	15.7	8.7	2.8	180.3	13.8
	13:51	72497	2739	4.0	204.9	16.7	8.4	3.5	183.7	14.9
	13:52	73747	2719	4.8	202.6	16.7	8.1	4.4	186.7	15.3

Average =	69410	2726	5.0	199.5	16.9	8.9	4.2	171.5	14.5
Geometric Avg. =	69327	2726	4.7	199.0	16.6	8.9	4.1	170.9	14.2
Maximum =	76530	2779	7.5	222.0	24.0	9.7	6.2	192.2	19.4
Minimum =	64834	2660	2.8	171.9	12.0	7.9	2.6	141.3	11.0
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1874068	73610	133.9	5387.3	455.5	241.6	114.1	4631.2	390.2

- * - 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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2

Time of Report: 03/29/11 13:53

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	13:26	182.0	10.2
	13:27	183.4	10.4
	13:28	182.4	10.8
	13:29	180.6	10.3
	13:30	179.7	10.1
	13:31	178.8	10.2
	13:32	178.7	10.2
	13:33	178.4	10.2
	13:34	177.6	10.0
	13:35	178.9	10.0
	13:36	179.3	10.5
	13:37	178.2	10.6
	13:38	177.0	10.3
	13:39	176.7	10.2
	13:40	176.4	10.4
	13:41	177.4	10.5
	13:42	177.8	10.7
	13:43	179.5	10.5
	13:44	182.7	10.9
	13:45	182.8	11.5
	13:46	182.7	11.2
	13:47	182.3	11.3
	13:48	181.3	11.2
	13:49	181.3	10.8
	13:50	181.7	10.8
	13:51	182.7	11.0
	13:52	183.9	11.3

Average =	180.2	10.6
Geometric Avg. =	180.1	10.6
Maximum =	183.9	11.5
Minimum =	176.4	10.0
Possible Values =	27	27
Included Values =	27	27
Total =	4864.1	286.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
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-999 - missing value
-888 - value could not be calculated

R8

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/29/11 14:30
Rolling Average Interval: 1

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	14:03	60156	2748	1.7	141.8	22.3	10.8	1.3	103.0	16.2
	14:04	60557	2720	1.6	146.7	21.2	10.6	1.2	108.8	15.7
	14:05	59006	2695	2.3	156.8	20.0	10.8	1.7	114.2	14.5
	14:06	58254	2643	3.2	172.2	18.3	10.6	2.3	127.8	13.6
	14:07	57542	2590	3.6	189.0	15.6	10.5	2.7	141.7	11.7
	14:08	57278	2579	3.6	196.0	15.3	10.5	2.7	146.6	11.5
	14:09	57212	2574	3.4	194.8	15.1	10.5	2.5	145.9	11.3
	14:10	57421	2568	3.2	194.1	13.1	10.4	2.4	146.1	9.8
	14:11	57983	2563	3.4	198.6	13.2	10.3	2.6	152.0	10.1
	14:12	60586	2560	4.1	204.7	12.0	9.7	3.3	165.3	9.7
	14:13	62739	2560	4.5	204.6	11.7	9.3	3.8	171.0	9.8
	14:14	65555	2562	4.8	202.6	14.4	8.7	4.2	178.5	12.7
	14:15	70317	2570	5.4	199.1	13.1	7.8	5.1	188.2	12.4
	14:16	74027	2586	5.9	195.0	11.3	7.2	5.8	192.6	11.2
	14:17	77241	2609	6.0	183.1	15.2	6.6	6.2	188.4	15.6
	14:18	78059	2631	6.8	179.9	11.2	6.6	7.0	185.3	11.5
	14:19	75811	2642	7.4	190.9	8.9	7.1	7.4	189.8	8.8
	14:20	72347	2649	7.0	214.6	8.3	7.8	6.6	202.2	7.8
	14:21	69346	2649	8.0	217.8	7.9	8.4	7.2	195.6	7.1
	14:22	67307	2646	10.6	215.8	8.6	8.8	9.2	187.7	7.5
	14:23	68576	2643	13.7	212.3	8.8	8.5	12.2	189.2	7.8
	14:24	68372	2639	14.9	206.7	7.9	8.6	13.2	183.1	7.0
	14:25	67996	2636	14.2	203.1	7.6	8.6	12.5	179.1	6.7
	14:26	68334	2637	13.7	199.0	8.1	8.6	12.2	176.3	7.2
	14:27	71353	2638	15.8	196.4	9.7	8.0	14.7	182.2	9.0
	14:28	73463	2638	15.1	193.9	6.4	7.6	14.4	185.8	6.1
	14:29	68166	2643	14.4	189.4	7.0	8.7	12.6	166.2	6.1

Average =	66111	2623	7.3	192.6	12.3	8.9	6.6	166.4	10.3
Geometric Avg. =	65778	2622	5.9	191.5	11.6	8.8	5.0	163.8	9.9
Maximum =	78059	2748	15.8	217.8	22.3	10.8	14.7	202.2	16.2
Minimum =	57212	2560	1.6	141.8	6.4	6.6	1.2	103.0	6.1
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1785005	70819	198.4	5199.1	332.0	241.4	177.1	4492.6	278.4

- * - excluded values (missing, OOC, invalid, suspect)
- < - missing
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- I - invalid
- S - suspect
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- U - missing data substituted
- 999 - missing value
- 888 - value could not be calculated

Plant Name: SBWD
General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/29/11 14:30
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	14:03	156.2	9.0
	14:04	152.2	9.2
	14:05	149.6	9.1
	14:06	146.6	9.1
	14:07	142.2	9.2
	14:08	139.1	9.2
	14:09	137.9	9.2
	14:10	137.8	9.3
	14:11	139.4	9.4
	14:12	141.9	9.8
	14:13	147.3	10.2
	14:14	154.8	10.7
	14:15	162.4	11.5
	14:16	172.8	12.0
	14:17	182.8	12.4
	14:18	187.7	12.4
	14:19	188.5	12.0
	14:20	187.9	11.4
	14:21	186.3	10.9
	14:22	186.3	10.6
	14:23	185.8	10.8
	14:24	185.1	10.8
	14:25	184.4	10.7
	14:26	184.7	10.8
	14:27	186.3	11.3
	14:28	183.7	11.6
	14:29	180.6	10.7

Average =	166.3	10.5
Geometric Avg. =	165.1	10.4
Maximum =	188.5	12.4
Minimum =	137.8	9.0
Possible Values =	27	27
Included Values =	27	27
Total =	4490.7	283.2

- * - excluded values (missing, OOC, invalid, suspect)
- < - missing
- T - out-of-control
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- 999 - missing value
- 888 - value could not be calculated

Run 9

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Unit Name: UNIT2

Time of Report: 03/29/11 15:17

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTID)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	14:50	74524	2700	3.9	207.5	5.0	7.8	3.6	195.1	4.7
	14:51	75614	2701	3.9	200.8	4.4	7.6	3.8	192.8	4.2
	14:52	73657	2703	3.8	204.3	4.7	8.0	3.6	189.0	4.3
	14:53	76103	2705	3.8	202.8	4.3	7.5	3.6	195.7	4.2
	14:54	74736	2701	3.8	207.8	4.2	7.8	3.5	195.7	3.9
	14:55	73206	2691	3.7	212.7	4.9	8.0	3.4	196.7	4.6
	14:56	74370	2682	4.1	209.5	4.5	7.8	3.8	198.1	4.2
	14:57	74923	2683	4.6	206.1	5.4	7.7	4.3	196.1	5.1
	14:58	77779	2690	5.6	201.8	5.1	7.1	5.5	199.9	5.0
	14:59	78197	2690	6.5	202.3	4.4	7.1	6.5	201.3	4.4
	15:00	75667	2687	5.9	212.6	4.1	7.6	5.7	203.2	3.9
	15:01	73902	2683	5.1	219.7	3.7	7.9	4.7	205.8	3.5
	15:02	73715	2677	5.0	222.8	4.2	7.9	4.7	209.1	3.9
	15:03	75536	2675	5.9	220.4	4.1	7.4	5.7	213.5	4.0
	15:04	77071	2670	6.7	215.3	3.4	7.2	6.6	212.9	3.4
	15:05	75785	2664	6.6	219.6	4.0	7.4	6.4	212.7	3.8
	15:06	73471	2664	6.2	219.1	4.3	7.9	5.8	205.1	4.0
	15:07	74670	2663	6.7	208.9	5.0	7.6	6.4	200.5	4.8
	15:08	76610	2656	8.4	196.5	6.6	7.2	8.3	194.1	6.5
	15:09	73935	2633	8.9	194.5	5.6	7.6	8.5	185.7	5.3
	15:10	71219	2614	7.9	204.3	6.2	8.0	7.4	190.1	5.7
	15:11	72491	2553	7.3	206.7	6.1	7.4	7.1	201.2	5.9
	15:12	73112	2520	7.9	206.0	5.2	7.1	7.8	204.2	5.2
	15:13	69460	2460	8.4	208.3	5.4	7.6	8.0	199.8	5.2
	15:14	66678	2375	8.1	211.2	5.1	7.6	7.7	202.5	4.9
	15:15	64737	2292	8.0	212.3	5.3	7.5	7.7	205.1	5.1
	15:16	65386	2218	8.8	206.1	5.8	6.8	8.9	208.8	5.8

Average =	73576	2617	6.1	208.9	4.8	7.6	5.9	200.5	4.7
Geometric Avg. =	73495	2613	5.9	208.8	4.8	7.5	5.6	200.4	4.6
Maximum =	78197	2705	8.9	222.8	6.6	8.0	8.9	213.5	6.5
Minimum =	64737	2218	3.7	194.5	3.4	6.8	3.4	185.7	3.4
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1986553	70650	165.2	5639.8	130.7	203.9	159.2	5414.6	125.6

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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2

Time of Report: 03/29/11 15:17

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	14:50	189.7	11.5
	14:51	188.2	11.7
	14:52	189.9	11.3
	14:53	189.5	11.7
	14:54	188.6	11.5
	14:55	188.3	11.3
	14:56	189.0	11.5
	14:57	190.9	11.6
	14:58	192.4	12.1
	14:59	192.8	12.1
	15:00	191.5	11.7
	15:01	190.2	11.5
	15:02	190.1	11.5
	15:03	191.1	11.8
	15:04	191.6	12.0
	15:05	189.8	11.8
	15:06	188.8	11.5
	15:07	191.0	11.7
	15:08	191.2	12.0
	15:09	188.7	11.7
	15:10	188.8	11.3
	15:11	189.7	11.8
	15:12	189.7	12.1
	15:13	189.4	11.8
	15:14	188.4	11.7
	15:15	189.9	11.8
	15:16	191.2	12.3

Average =	190.0	11.7
Geometric Avg. =	190.0	11.7
Maximum =	192.8	12.3
Minimum =	188.2	11.3
Possible Values =	27	27
Included Values =	27	27
Total =	5130.2	316.1

* - 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: 03/29/2011 to 03/29/2011

Unit Name: UNIT2
 Data Averaging Type: 1m

Time of Report: 03/29/11 15:54
 Rolling Average Interval: 1

RUN 10

Date	Time	CO2LBHR2 (Lb/Hr)	VELOCITY2 (FPM)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/29/11	15:26	64974	2228	8.0	190.9	5.0	7.1	8.0	189.9	5.0
	15:27	64319	2231	8.6	192.4	5.6	7.3	8.5	188.8	5.5
	15:28	64182	2235	8.7	196.9	5.0	7.3	8.5	192.6	4.9
	15:29	65173	2237	8.8	188.0	5.1	7.1	8.7	186.6	5.0
	15:30	65668	2237	9.9	182.5	4.8	7.0	9.9	182.2	4.8
	15:31	64665	2239	10.0	190.6	5.1	7.2	9.8	187.3	5.0
	15:32	64202	2241	9.8	196.0	5.7	7.4	9.6	190.5	5.5
	15:33	63271	2242	9.9	190.9	5.5	7.6	9.5	183.3	5.3
	15:34	61668	2245	10.5	191.5	6.0	8.0	9.8	177.7	5.6
	15:35	63117	2250	11.0	190.6	6.9	7.7	10.4	180.8	6.6
	15:36	63251	2255	11.1	189.7	6.3	7.7	10.5	180.4	6.0
	15:37	61909	2259	10.7	192.0	7.3	8.0	9.9	178.1	6.8
	15:38	62065	2264	10.1	188.7	8.3	8.0	9.4	175.2	7.7
	15:39	61402	2265	9.9	185.3	6.5	8.2	9.1	169.6	6.0
	15:40	60880	2269	9.7	182.3	7.4	8.3	8.7	164.9	6.7
	15:41	61527	2271	9.6	182.0	8.7	8.2	8.8	166.6	7.9
	15:42	61106	2277	9.7	183.2	7.5	8.3	8.8	165.8	6.8
	15:43	58455	2282	9.6	181.0	9.1	8.9	8.2	155.8	7.8
	15:44	58981	2289	9.4	179.2	11.7	8.9	8.1	154.8	10.1
	15:45	63123	2299	10.0	172.5	18.8	7.9	9.3	161.2	17.6
	15:46	62228	2302	11.0	174.1	9.6	8.2	10.0	158.9	8.8
	15:47	58306	2287	10.2	172.3	10.7	8.9	8.8	148.2	9.2
	15:48	58998	2270	9.8	171.6	12.7	8.7	8.6	150.4	11.1
	15:49	61344	2270	10.3	180.3	10.8	8.1	9.4	165.5	10.0
	15:50	61583	2293	10.1	198.4	10.1	8.2	9.2	181.1	9.2
	15:51	60879	2311	9.5	209.7	10.9	8.5	8.4	186.6	9.7
	15:52	62502	2313	9.5	211.7	9.0	8.1	8.8	194.6	8.3

Average =		62214	2265	9.8	187.6	8.1	8.0	9.1	174.7	7.5
Geometric Avg. =		62182	2265	9.8	187.3	7.7	7.9	9.1	174.2	7.1
Maximum =		65668	2313	11.1	211.7	18.8	8.9	10.5	194.6	17.6
Minimum =		58306	2228	8.0	171.6	4.8	7.0	8.0	148.2	4.8
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1679776	61161	265.4	5064.5	220.0	215.0	246.8	4717.3	202.7

- * - 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

General Average Report

Reporting Period: 03/29/2011 to 03/29/2011

Site Name: UNIT2

Time of Report: 03/29/11 15:54

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/29/11	15:26	188.0	12.1
	15:27	187.8	12.0
	15:28	188.2	11.9
	15:29	187.6	12.1
	15:30	187.8	12.2
	15:31	187.4	12.0
	15:32	186.5	11.9
	15:33	184.8	11.7
	15:34	185.3	11.4
	15:35	185.2	11.7
	15:36	184.0	11.7
	15:37	184.4	11.4
	15:38	183.3	11.4
	15:39	181.7	11.3
	15:40	181.2	11.2
	15:41	181.6	11.3
	15:42	179.8	11.2
	15:43	178.8	10.7
	15:44	182.1	10.8
	15:45	182.5	11.5
	15:46	180.7	11.3
	15:47	180.1	10.6
	15:48	180.9	10.8
	15:49	180.7	11.3
	15:50	180.9	11.2
	15:51	182.2	11.0
	15:52	181.6	11.3

Average =	183.5	11.4
Geometric Avg. =	183.5	11.4
Maximum =	188.2	12.2
Minimum =	178.8	10.6
Possible Values =	27	27
Included Values =	27	27
Total =	4955.1	309.0

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

Run 1

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3

Time of Report: 03/30/11 08:12

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXP3M_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	07:45	71663	2765	6.9	169.6	6.5	8.8	6.0	148.1	5.6
	07:46	71454	2753	9.5	169.5	7.6	8.7	8.3	148.9	6.7
	07:47	70957	2743	11.8	174.4	8.3	8.8	10.3	152.3	7.2
	07:48	69012	2741	12.5	179.9	9.8	9.1	10.6	152.5	8.3
	07:49	69022	2743	14.1	190.9	12.0	9.1	11.9	161.6	10.1
	07:50	70970	2748	17.4	197.3	16.4	8.7	15.3	173.2	14.4
	07:51	70241	2756	16.8	208.0	15.9	8.9	14.5	179.1	13.7
	07:52	68763	2771	15.8	214.8	12.1	9.3	13.2	179.5	10.1
	07:53	69553	2786	15.1	216.8	11.5	9.2	12.7	182.8	9.7
	07:54	72873	2799	16.0	216.5	10.2	8.6	14.1	191.2	9.0
	07:55	78451	2806	19.6	209.4	9.6	7.6	18.7	199.9	9.2
	07:56	77913	2801	17.9	209.4	7.1	7.8	16.9	197.2	6.7
	07:57	72374	2784	11.1	209.9	7.0	8.9	9.6	182.0	6.1
	07:58	71925	2765	6.4	205.0	8.3	8.8	5.6	178.6	7.2
	07:59	74206	2748	5.7	198.5	8.3	8.3	5.2	180.1	7.5
	08:00	73809	2734	7.9	194.9	8.0	8.2	7.2	177.6	7.3
	08:01	74315	2720	10.4	188.1	9.0	8.1	9.6	173.8	8.3
	08:02	73692	2705	12.2	188.5	6.9	8.1	11.3	173.8	6.4
	08:03	73236	2695	13.3	188.2	7.5	8.2	12.2	172.3	6.9
	08:04	73724	2687	14.4	194.5	7.6	8.0	13.4	180.1	7.1
	08:05	72475	2685	14.3	197.3	8.2	8.3	13.0	179.1	7.4
	08:06	72708	2683	15.9	201.7	8.1	8.2	14.5	183.8	7.4
	08:07	74010	2679	17.9	200.9	7.6	8.0	16.7	187.1	7.1
	08:08	71934	2640	18.5	201.7	8.1	8.2	17.0	184.9	7.5
	08:09	68444	2594	15.7	206.6	8.1	8.6	13.9	183.0	7.2
	08:10	68535	2591	16.5	213.2	8.8	8.5	14.7	189.6	7.8
	08:11	69048	2588	18.6	209.2	9.5	8.4	16.7	187.9	8.6

Average =	72048	2723	13.8	198.3	9.2	8.5	12.3	177.0	8.2
Geometric Avg. =	72004	2722	13.1	197.9	8.9	8.5	11.7	176.5	8.0
Maximum =	78451	2806	19.6	216.8	16.4	9.3	18.7	199.9	14.4
Minimum =	68444	2588	5.7	169.5	6.5	7.6	5.2	148.1	5.6
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1945309	73510	372.4	5354.6	248.0	229.3	333.1	4779.8	220.4

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

Plant Name: SBWD
 General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3
 Data Averaging Type: 1m

Time of Report: 03/30/11 08:12
 Rolling Average Interval: 1

Date	Time	STMRTPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	07:45	183.0	10.8
	07:46	182.8	10.9
	07:47	181.2	10.8
	07:48	180.9	10.5
	07:49	182.6	10.5
	07:50	182.5	10.8
	07:51	180.3	10.7
	07:52	179.9	10.4
	07:53	182.2	10.5
	07:54	189.0	10.9
	07:55	192.6	11.7
	07:56	188.3	11.7
	07:57	185.4	10.8
	07:58	186.2	10.8
	07:59	187.2	11.2
	08:00	188.9	11.3
	08:01	188.2	11.4
	08:02	187.9	11.4
	08:03	187.5	11.4
	08:04	184.5	11.5
	08:05	183.7	11.3
	08:06	184.9	11.3
	08:07	184.3	11.6
	08:08	182.3	11.4
	08:09	181.4	11.0
	08:10	181.9	11.1
	08:11	181.3	11.2

Average =	184.5	11.1
Geometric Avg. =	184.4	11.1
Maximum =	192.6	11.7
Minimum =	179.9	10.4
Possible Values =	27	27
Included Values =	27	27
Total =	4980.7	298.8

- * - 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

RUN 2

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 08:49

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
.03/30/11	08:22	68497	2594	13.8	186.0	13.1	8.5	12.3	166.2	11.7
	08:23	68242	2589	14.3	194.2	10.8	8.5	12.8	173.4	9.6
	08:24	68472	2600	12.1	202.0	10.0	8.5	10.8	180.0	8.9
	08:25	70479	2616	10.6	202.4	10.7	8.3	9.7	184.2	9.8
	08:26	72065	2625	13.6	206.3	11.0	8.0	12.7	192.0	10.3
	08:27	71107	2622	12.4	205.9	10.0	8.2	11.4	188.3	9.2
	08:28	70523	2622	13.0	201.4	12.2	8.3	11.8	182.7	11.1
	08:29	71628	2623	14.6	200.2	12.7	8.1	13.4	184.4	11.7
	08:30	71715	2623	16.7	191.9	14.4	8.1	15.4	176.8	13.3
	08:31	72204	2621	15.1	184.5	13.1	8.0	14.0	171.4	12.2
	08:32	71448	2612	12.1	183.3	11.8	8.0	11.2	170.0	10.9
	08:33	68267	2602	9.4	190.8	11.9	8.6	8.3	168.9	10.5
	08:34	68738	2602	10.3	203.6	13.3	8.4	9.3	182.4	11.9
	08:35	69696	2601	14.1	206.6	12.1	8.3	12.8	187.6	11.0
	08:36	69155	2600	14.9	209.1	13.5	8.4	13.5	188.5	12.2
	08:37	68812	2597	12.7	211.9	15.3	8.4	11.4	189.9	13.7
	08:38	67211	2593	11.1	215.9	14.9	8.7	9.7	189.8	13.1
	08:39	66799	2585	11.4	220.1	17.0	8.7	9.9	192.6	14.8
	08:40	67777	2574	14.2	214.7	17.2	8.5	12.7	191.9	15.4
	08:41	66779	2572	14.3	208.3	18.1	8.7	12.6	183.1	15.9
	08:42	69827	2579	11.0	194.4	19.0	8.1	10.1	178.6	17.5
	08:43	71011	2593	9.3	192.1	19.6	8.0	8.6	177.9	18.1
	08:44	73745	2605	9.7	189.1	20.0	7.5	9.4	182.3	19.3
	08:45	73270	2605	10.4	188.1	18.6	7.7	9.9	179.0	17.7
	08:46	71414	2602	7.3	187.2	17.5	8.0	6.8	173.8	16.2
	08:47	72159	2595	6.4	190.3	17.5	7.8	6.0	179.1	16.5
	08:48	70664	2585	7.0	191.9	19.2	8.1	6.4	176.7	17.7

Average =	70063	2601	11.9	199.0	14.6	8.2	10.8	181.2	13.3
Geometric Avg. =	70037	2601	11.6	198.7	14.3	8.2	10.6	181.0	13.0
Maximum =	73745	2625	16.7	220.1	20.0	8.7	15.4	192.6	19.3
Minimum =	66779	2572	6.4	183.3	10.0	7.5	6.0	166.2	8.9
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1891701	70237	321.9	5371.7	394.5	222.3	292.9	4891.7	360.2

- * - excluded values (missing, OOC, invalid, suspect)
- < - missing
- T - out-of-control
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- 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: 03/30/2011 to 03/30/2011

Site Name: UNIT3

Time of Report: 03/30/11 08:49

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRTPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	08:22	186.2	11.0
	08:23	185.8	11.0
	08:24	185.7	11.0
	08:25	186.6	11.3
	08:26	185.3	11.5
	08:27	183.7	11.3
	08:28	183.5	11.2
	08:29	184.6	11.4
	08:30	186.0	11.4
	08:31	186.6	11.5
	08:32	182.5	11.4
	08:33	182.2	11.0
	08:34	182.9	11.0
	08:35	182.7	11.2
	08:36	182.3	11.1
	08:37	180.3	11.1
	08:38	179.7	10.8
	08:39	180.7	10.8
	08:40	180.8	11.0
	08:41	184.5	10.9
	08:42	185.7	11.3
	08:43	188.5	11.5
	08:44	188.5	11.8
	08:45	187.3	11.7
	08:46	187.3	11.4
	08:47	186.3	11.6
	08:48	184.9	11.4

Average =	184.5	11.3
Geometric Avg. =	184.5	11.3
Maximum =	188.5	11.8
Minimum =	179.7	10.8
Possible Values =	27	27
Included Values =	27	27
Total =	4981.0	304.1

* - 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 3

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 09:48

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	09:07	71433	2582	27.1	198.2	19.0	7.9	25.3	184.8	17.7
	09:08	70563	2594	23.0	203.8	19.5	8.2	21.0	186.4	17.8
	09:09	69672	2596	18.4	205.0	22.3	8.3	16.7	186.4	20.2
	09:10	70741	2588	15.2	204.5	21.6	8.1	14.0	188.6	19.9
	09:11	71614	2585	14.2	197.4	19.6	7.9	13.3	184.6	18.3
	09:12	71997	2587	15.0	195.9	20.4	7.9	14.1	183.6	19.1
	09:13	72270	2594	18.9	196.2	19.5	7.8	17.8	184.3	18.3
	09:14	71312	2601	24.0	199.0	21.7	8.1	22.1	183.1	20.0
	09:15	71411	2598	33.8	194.5	22.3	8.0	31.3	179.8	20.6
	09:16	73104	2596	41.9	188.4	20.3	7.7	39.8	179.0	19.3
	09:17	73703	2599	38.2	188.0	21.5	7.6	36.7	180.4	20.6
	09:18	74620	2603	28.6	189.9	19.2	7.4	27.8	184.4	18.6
	09:19	75685	2606	19.2	196.1	18.5	7.2	18.9	193.3	18.3
	09:20	74932	2603	9.3	202.3	17.7	7.4	9.0	196.1	17.1
	09:21	73396	2597	5.0	209.0	19.8	7.7	4.7	198.2	18.7
	09:22	73922	2585	4.1	208.7	19.6	7.5	3.9	200.4	18.8
	09:23	74785	2570	7.2	202.2	18.8	7.3	7.0	197.7	18.4
	09:24	73144	2554	19.6	196.4	19.1	7.5	18.9	189.1	18.4
	09:25	73765	2551	41.9	187.4	16.4	7.3	41.0	183.1	16.0
	09:26	74417	2551	56.9	186.5	15.4	7.3	55.9	183.1	15.1
	09:27	72773	2549	51.1	191.6	14.5	7.5	49.2	184.2	14.0
	09:28	70937	2540	33.3	193.3	15.1	7.8	31.4	181.9	14.2
	09:29	70737	2531	20.5	194.9	15.9	7.8	19.3	183.1	14.9
	09:30	71141	2525	16.2	193.1	16.8	7.7	15.4	183.3	15.9
	09:31	70353	2530	16.2	193.7	17.4	7.9	15.2	181.4	16.3
	09:32	70012	2539	12.9	198.5	19.3	8.0	12.0	183.7	17.8
	09:33	71187	2546	10.4	195.3	9.9	7.9	9.8	183.0	9.3

Average =		72356	2574	23.0	196.7	18.5	7.7	21.9	186.2	17.5
Geometric Avg. =		72337	2574	19.1	196.6	18.3	7.7	18.1	186.1	17.3
Maximum =		75685	2606	56.9	209.0	22.3	8.3	55.9	200.4	20.6
Minimum =		69672	2525	4.1	186.5	9.9	7.2	3.9	179.0	9.3
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1953625	69499	622.3	5309.7	500.8	208.9	591.2	5026.9	473.8

- * - 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

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3

Time of Report: 03/30/11 09:48

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRTPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	09:07	184.2	11.6
	09:08	183.8	11.4
	09:09	184.1	11.2
	09:10	184.4	11.4
	09:11	186.0	11.6
	09:12	186.3	11.6
	09:13	184.1	11.6
	09:14	182.7	11.5
	09:15	182.9	11.5
	09:16	183.9	11.8
	09:17	184.3	11.9
	09:18	186.1	12.0
	09:19	186.7	12.2
	09:20	185.2	12.0
	09:21	185.0	11.8
	09:22	185.7	11.9
	09:23	184.8	12.1
	09:24	184.8	12.0
	09:25	185.6	12.1
	09:26	185.4	12.2
	09:27	184.1	11.9
	09:28	182.9	11.7
	09:29	183.2	11.7
	09:30	182.6	11.8
	09:31	181.7	11.6
	09:32	182.1	11.5
	09:33	183.9	11.7

Average =	184.3	11.8
Geometric Avg. =	184.3	11.8
Maximum =	186.7	12.2
Minimum =	181.7	11.2
Possible Values =	27	27
Included Values =	27	27
Total =	4976.6	317.4

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

RUN 4

Plant Name: SBWD
General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/30/11 10:12
Rolling Average Interval: 1

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	09:45	71609	2569	5.6	198.5	6.3	7.9	5.2	185.3	5.9
	09:46	71897	2568	6.9	199.1	6.3	7.9	6.5	186.7	5.9
	09:47	73101	2565	16.4	194.9	6.4	7.6	15.8	186.7	6.2
	09:48	73311	2561	29.7	198.8	5.7	7.6	28.4	190.1	5.5
	09:49	71582	2556	30.6	205.5	6.2	7.8	28.8	193.7	5.9
	09:50	71091	2550	28.8	206.4	7.1	7.9	27.0	193.7	6.6
	09:51	71220	2545	25.4	208.0	5.9	7.9	23.8	195.2	5.6
	09:52	70469	2546	19.9	213.4	6.2	8.0	18.5	198.5	5.8
	09:53	71549	2555	13.0	211.2	7.2	7.8	12.2	199.3	6.8
	09:54	72268	2564	8.9	206.2	5.7	7.8	8.4	194.1	5.4
	09:55	70440	2571	6.6	206.5	6.1	8.2	6.1	188.9	5.6
	09:56	71713	2577	7.8	200.4	6.0	8.0	7.2	186.2	5.5
	09:57	74269	2582	12.1	197.6	6.3	7.5	11.7	190.7	6.1
	09:58	71689	2581	18.6	199.0	6.6	8.0	17.2	184.5	6.2
	09:59	68875	2578	24.4	194.0	7.5	8.5	21.7	172.4	6.6
	10:00	70631	2580	27.8	188.7	7.6	8.2	25.5	172.8	6.9
	10:01	73596	2581	28.9	185.7	6.8	7.6	27.7	178.2	6.5
	10:02	72915	2579	24.3	189.4	7.5	7.7	23.0	179.8	7.1
	10:03	70672	2579	15.2	194.7	6.9	8.0	14.1	180.0	6.4
	10:04	70479	2581	9.0	195.2	5.1	8.2	8.2	178.9	4.7
	10:05	72220	2589	6.2	198.3	6.1	7.9	5.8	185.8	5.7
	10:06	72800	2593	5.7	199.0	6.1	7.8	5.4	188.1	5.8
	10:07	72502	2592	8.3	201.8	5.7	7.8	7.8	189.7	5.3
	10:08	73032	2589	13.0	201.7	5.9	7.8	12.3	190.5	5.5
	10:09	73052	2583	14.3	202.9	5.6	7.7	13.5	192.1	5.3
	10:10	71321	2579	14.8	206.2	5.3	8.0	13.7	191.6	5.0
	10:11	72492	2578	17.0	204.6	5.4	7.8	16.0	193.3	5.1

Average =	71881	2573	16.3	200.3	6.3	7.9	15.2	187.7	5.9
Geometric Avg. =	71872	2573	14.1	200.2	6.2	7.9	13.2	187.5	5.8
Maximum =	74269	2593	30.6	213.4	7.6	8.5	28.8	199.3	7.1
Minimum =	68875	2545	5.6	185.7	5.1	7.5	5.2	172.4	4.7
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1940796	69473	439.2	5407.6	169.5	212.6	411.7	5067.0	158.7

- * - 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

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3

Time of Report: 03/30/11 10:12

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	09:45	183.5	11.6
	09:46	184.7	11.7
	09:47	186.0	11.9
	09:48	184.8	12.0
	09:49	183.7	11.7
	09:50	183.9	11.7
	09:51	183.7	11.7
	09:52	183.9	11.6
	09:53	183.8	11.7
	09:54	181.0	11.8
	09:55	181.8	11.5
	09:56	185.5	11.7
	09:57	185.2	12.0
	09:58	182.4	11.6
	09:59	181.7	11.2
	10:00	185.4	11.5
	10:01	186.6	11.9
	10:02	185.3	11.8
	10:03	183.7	11.5
	10:04	184.6	11.4
	10:05	186.2	11.7
	10:06	185.9	11.8
	10:07	185.2	11.7
	10:08	184.1	11.8
	10:09	182.6	11.8
	10:10	183.9	11.6
	10:11	184.9	11.8

Average =	184.2	11.7
Geometric Avg. =	184.2	11.7
Maximum =	186.6	12.0
Minimum =	181.0	11.2
Possible Values =	27	27
Included Values =	27	27
Total =	4974.0	315.5

* - 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: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 10:49

Data Averaging Type: 1m

Rolling Average Interval: 1

RUN 5

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	10:22	70859	2579	11.1	203.1	8.5	8.0	10.3	188.7	7.9
	10:23	72636	2582	17.8	201.8	8.4	7.7	16.9	192.2	8.0
	10:24	71367	2581	23.5	203.3	7.7	8.0	21.9	189.3	7.1
	10:25	71886	2583	29.3	199.5	8.2	7.9	27.5	187.3	7.7
	10:26	74089	2588	37.1	196.8	6.7	7.5	35.8	190.0	6.5
	10:27	73612	2585	35.0	196.5	7.5	7.5	33.7	188.8	7.2
	10:28	71651	2578	23.2	200.3	8.3	7.9	21.8	187.6	7.7
	10:29	71770	2577	13.3	200.8	7.3	7.8	12.5	189.5	6.9
	10:30	71421	2584	7.2	205.6	9.1	8.0	6.7	191.3	8.5
	10:31	71357	2601	4.2	210.1	8.2	8.0	3.9	194.9	7.6
	10:32	72719	2619	3.3	207.8	8.9	7.9	3.1	195.0	8.3
	10:33	73258	2625	4.7	205.8	8.8	7.8	4.4	193.7	8.3
	10:34	74741	2616	17.4	199.9	5.9	7.5	16.8	193.3	5.7
	10:35	74422	2605	30.1	194.3	5.9	7.5	29.0	186.8	5.7
	10:36	70551	2600	31.6	195.1	5.7	8.2	29.0	178.5	5.2
	10:37	70154	2609	31.1	195.3	6.0	8.2	28.4	178.2	5.5
	10:38	72100	2617	30.0	197.3	6.3	7.9	28.0	184.1	5.8
	10:39	72669	2616	24.3	198.2	5.0	7.8	22.9	186.5	4.7
	10:40	73006	2615	14.8	198.0	4.7	7.7	14.0	187.4	4.5
	10:41	71819	2622	7.4	200.0	6.4	8.1	6.8	184.0	5.9
	10:42	72787	2622	4.2	198.0	7.7	7.8	3.9	186.3	7.2
	10:43	74646	2624	3.4	202.4	5.5	7.5	3.3	194.9	5.3
	10:44	71388	2615	3.2	214.3	6.8	8.2	3.0	196.6	6.2
	10:45	70407	2609	3.9	215.2	7.0	8.2	3.5	196.4	6.4
	10:46	73507	2612	9.8	209.7	6.4	7.6	9.4	201.1	6.1
	10:47	73501	2611	15.7	205.3	6.3	7.7	14.9	195.0	5.9
	10:48	70791	2614	15.1	206.3	6.4	8.2	13.8	188.4	5.9

Average =	72338	2603	16.7	202.3	7.0	7.9	15.7	189.9	6.6
Geometric Avg. =	72326	2603	12.5	202.2	6.9	7.8	11.8	189.8	6.5
Maximum =	74741	2625	37.1	215.2	9.1	8.2	35.8	201.1	8.5
Minimum =	70154	2577	3.2	194.3	4.7	7.5	3.0	178.2	4.5
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1953116	70289	451.8	5460.9	189.6	212.0	425.1	5126.0	177.9

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

Plant Name: SBWD
 General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3
 Data Averaging Type: 1m

Time of Report: 03/30/11 10:49
 Rolling Average Interval: 1

Date	Time	STMRTPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	10:22	184.0	11.5
	10:23	183.8	11.8
	10:24	184.5	11.6
	10:25	185.6	11.6
	10:26	185.5	12.0
	10:27	184.5	11.9
	10:28	184.6	11.6
	10:29	184.3	11.7
	10:30	183.2	11.6
	10:31	183.7	11.5
	10:32	183.8	11.6
	10:33	184.8	11.7
	10:34	185.3	11.9
	10:35	183.8	11.9
	10:36	182.4	11.3
	10:37	182.7	11.3
	10:38	183.4	11.6
	10:39	183.8	11.7
	10:40	181.8	11.7
	10:41	182.2	11.5
	10:42	185.1	11.6
	10:43	183.0	11.9
	10:44	181.1	11.4
	10:45	184.0	11.3
	10:46	186.5	11.8
	10:47	185.7	11.8
	10:48	183.9	11.3

Average =	184.0	11.6
Geometric Avg. =	183.9	11.6
Maximum =	186.5	12.0
Minimum =	181.1	11.3
Possible Values =	27	27
Included Values =	27	27
Total =	4966.7	313.9

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

RUN 6

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 11:26

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	10:59	70881	2584	12.4	211.9	4.8	8.1	11.5	195.3	4.5
	11:00	72764	2593	13.1	206.8	5.9	7.7	12.4	196.0	5.6
	11:01	74739	2596	17.1	203.8	3.9	7.4	16.6	198.1	3.8
	11:02	73884	2597	17.9	201.5	4.4	7.5	17.3	194.1	4.3
	11:03	73022	2595	17.0	194.6	4.5	7.7	16.1	184.2	4.3
	11:04	73168	2587	17.6	191.6	4.4	7.7	16.7	181.4	4.2
	11:05	74490	2585	23.6	188.2	3.7	7.4	22.9	182.4	3.6
	11:06	73939	2584	25.0	182.8	4.3	7.5	24.2	176.7	4.1
	11:07	71244	2586	23.4	181.7	6.1	8.0	21.6	168.1	5.7
	11:08	72184	2585	20.2	185.3	6.2	7.8	19.1	174.4	5.8
	11:09	74055	2582	15.6	188.4	5.0	7.5	15.1	182.2	4.8
	11:10	74098	2580	11.7	187.4	4.6	7.4	11.3	181.4	4.5
	11:11	71982	2573	9.9	193.6	4.9	7.8	9.4	182.3	4.6
	11:12	69815	2567	10.0	197.3	6.2	8.2	9.1	180.4	5.7
	11:13	71235	2561	19.4	197.3	5.8	7.9	18.1	184.6	5.4
	11:14	71722	2559	26.3	200.5	5.1	7.8	24.7	188.3	4.8
	11:15	71532	2560	27.8	203.8	3.7	7.8	26.1	191.5	3.4
	11:16	69967	2558	25.9	205.9	5.2	8.1	23.8	189.8	4.8
	11:17	68676	2562	21.9	207.5	5.7	8.4	19.7	186.7	5.1
	11:18	72058	2563	18.3	198.8	5.3	7.7	17.3	188.5	5.0
	11:19	73859	2556	17.1	192.5	5.1	7.4	16.7	187.5	5.0
	11:20	70493	2551	11.6	200.2	5.2	8.0	10.8	186.0	4.8
	11:21	68353	2542	7.2	199.6	5.0	8.4	6.5	180.0	4.5
	11:22	70190	2534	7.4	194.1	5.0	8.0	6.8	180.1	4.6
	11:23	72567	2531	17.1	185.9	4.8	7.5	16.5	179.2	4.6
	11:24	69847	2533	27.2	194.8	5.7	8.0	25.2	180.6	5.3
	11:25	69201	2531	30.8	200.2	3.9	8.1	28.4	184.2	3.5

Average =	71850	2568	18.2	196.1	5.0	7.8	17.2	184.6	4.7
Geometric Avg. =	71827	2568	17.0	196.0	4.9	7.8	16.0	184.5	4.6
Maximum =	74739	2597	30.8	211.9	6.2	8.4	28.4	198.1	5.8
Minimum =	68353	2531	7.2	181.7	3.7	7.4	6.5	168.1	3.4
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1939963	69335	492.5	5295.8	134.7	210.9	463.8	4984.2	126.6

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

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3

Time of Report: 03/30/11 11:26

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	10:59	184.1	11.5
	11:00	186.2	11.7
	11:01	186.9	12.1
	11:02	185.6	11.9
	11:03	183.7	11.8
	11:04	184.9	11.8
	11:05	186.0	12.1
	11:06	184.0	12.0
	11:07	183.6	11.5
	11:08	184.8	11.7
	11:09	185.7	12.0
	11:10	184.2	12.0
	11:11	181.9	11.7
	11:12	183.4	11.4
	11:13	183.9	11.6
	11:14	184.1	11.7
	11:15	184.3	11.7
	11:16	182.2	11.4
	11:17	185.0	11.2
	11:18	188.0	11.8
	11:19	185.1	12.1
	11:20	182.7	11.5
	11:21	183.5	11.2
	11:22	184.5	11.6
	11:23	183.1	12.0
	11:24	183.7	11.5
	11:25	182.5	11.4

Average =	184.4	11.7
Geometric Avg. =	184.4	11.7
Maximum =	188.0	12.1
Minimum =	181.9	11.2
Possible Values =	27	27
Included Values =	27	27
Total =	4977.8	315.9

* - 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

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 12:07

Data Averaging Type: 1m

Rolling Average Interval: 1

RUN 7

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	11:39	68881	2576	11.3	188.3	7.7	8.6	10.0	167.3	6.8
	11:40	68725	2580	8.6	190.5	6.4	8.6	7.6	168.3	5.7
	11:41	71706	2579	8.3	192.2	6.7	7.9	7.8	179.9	6.2
	11:42	73135	2570	9.1	194.8	7.1	7.7	8.6	185.4	6.7
	11:43	70790	2567	7.7	199.8	7.2	8.1	7.1	183.8	6.6
	11:44	70256	2568	7.2	206.0	6.4	8.2	6.6	187.8	5.8
	11:45	70383	2574	7.7	209.6	6.4	8.3	7.0	190.4	5.8
	11:46	70716	2576	8.1	209.1	7.2	8.1	7.5	191.9	6.7
	11:47	70932	2575	8.7	204.0	6.4	8.1	8.0	187.4	5.9
	11:48	71600	2577	9.1	201.2	5.4	8.0	8.4	186.8	5.0
	11:49	72109	2578	10.6	198.5	5.9	7.9	9.9	185.6	5.5
	11:50	70254	2581	10.7	196.4	5.4	8.3	9.7	177.5	4.9
	11:51	70780	2588	10.6	193.1	6.8	8.2	9.6	176.1	6.2
	11:52	73056	2599	11.4	194.2	7.1	7.9	10.6	181.3	6.6
	11:53	72228	2609	11.4	198.0	6.5	8.1	10.5	181.9	6.0
	11:54	70701	2617	9.4	202.3	6.9	8.4	8.4	181.6	6.2
	11:55	72483	2619	8.2	204.5	6.7	8.0	7.6	189.6	6.2
	11:56	72761	2618	8.6	209.4	5.8	8.0	7.9	193.7	5.4
	11:57	69626	2619	9.0	215.6	6.3	8.6	8.0	191.1	5.6
	11:58	69048	2618	9.1	214.1	6.1	8.7	8.0	188.1	5.3
	11:59	70529	2622	10.6	207.4	9.1	8.4	9.5	186.5	8.1
	12:00	71345	2631	12.2	200.0	9.7	8.3	11.1	181.6	8.9
	12:01	71889	2640	11.6	197.6	9.2	8.3	10.6	179.6	8.3
	12:02	73445	2639	10.8	193.8	7.2	7.9	10.1	181.8	6.7
	12:03	71876	2634	9.5	192.8	6.8	8.2	8.7	176.2	6.2
	12:04	72094	2632	10.2	195.3	9.0	8.2	9.3	179.0	8.2
	12:05	72695	2630	12.9	199.1	8.5	8.1	11.9	183.9	7.8

Average =	71261	2601	9.7	200.3	7.0	8.2	8.9	183.1	6.4
Geometric Avg. =	71249	2600	9.6	200.2	6.9	8.2	8.8	183.0	6.3
Maximum =	73445	2640	12.9	215.6	9.7	8.7	11.9	193.7	8.9
Minimum =	68725	2567	7.2	188.3	5.4	7.7	6.6	167.3	4.9
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1924044	70214	262.6	5407.6	189.7	221.1	240.1	4944.1	173.4

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

Plant Name: SBWD
 General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3
 Data Averaging Type: 1m

Time of Report: 03/30/11 12:07
 Rolling Average Interval: 1

Date	Time	STMRTPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	11:39	181.6	11.2
	11:40	183.4	11.1
	11:41	185.8	11.7
	11:42	185.3	11.9
	11:43	184.1	11.5
	11:44	183.9	11.4
	11:45	184.2	11.4
	11:46	183.7	11.5
	11:47	184.4	11.5
	11:48	185.3	11.6
	11:49	182.7	11.7
	11:50	181.4	11.4
	11:51	183.5	11.4
	11:52	183.9	11.8
	11:53	181.9	11.6
	11:54	182.9	11.3
	11:55	183.6	11.6
	11:56	181.6	11.6
	11:57	180.9	11.1
	11:58	182.2	11.0
	11:59	184.2	11.3
	12:00	185.4	11.4
	12:01	186.9	11.4
	12:02	185.2	11.6
	12:03	185.4	11.4
	12:04	184.8	11.4
	12:05	184.3	11.6

Average =	183.8	11.5
Geometric Avg. =	183.8	11.5
Maximum =	186.9	11.9
Minimum =	180.9	11.0
Possible Values =	27	27
Included Values =	27	27
Total =	4962.5	309.5

- * - 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 8

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 12:44

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMDC)	NOXPPM_3 (PPMDC)	COPPM_3 (PPMDC)
03/30/11	12:17	75000	2599	5.0	192.4	4.5	7.5	4.8	185.8	4.4
	12:18	71305	2594	5.2	196.7	4.3	8.1	4.8	181.5	3.9
	12:19	69123	2588	9.2	204.0	3.9	8.5	8.2	182.2	3.4
	12:20	71688	2589	27.1	205.2	4.9	8.1	25.0	189.5	4.5
	12:21	74482	2591	48.8	193.9	4.2	7.5	47.1	186.9	4.0
	12:22	72437	2588	60.2	192.2	3.6	7.9	56.3	180.0	3.3
	12:23	70090	2593	49.2	198.5	3.2	8.3	44.6	179.8	2.9
	12:24	69478	2599	30.5	204.9	4.7	8.4	27.5	184.7	4.2
	12:25	70921	2607	17.8	200.3	4.6	8.2	16.3	183.3	4.2
	12:26	72282	2611	9.8	191.7	4.4	8.0	9.1	178.0	4.1
	12:27	72855	2611	6.0	189.1	5.3	8.0	5.5	176.1	4.9
	12:28	72139	2611	4.3	194.7	4.7	8.1	4.0	178.8	4.3
	12:29	70517	2612	3.4	200.9	4.2	8.4	3.1	180.7	3.8
	12:30	70651	2615	3.2	196.7	4.2	8.4	2.9	177.2	3.7
	12:31	71999	2618	4.8	187.4	3.8	8.2	4.4	171.7	3.4
	12:32	70682	2621	7.1	191.2	3.7	8.5	6.4	170.8	3.3
	12:33	69855	2623	8.1	198.3	5.1	8.6	7.2	175.1	4.5
	12:34	70813	2628	8.6	199.6	5.2	8.4	7.8	179.1	4.7
	12:35	74625	2629	11.2	193.3	3.8	7.8	10.5	182.1	3.6
	12:36	73565	2632	11.2	194.0	5.5	8.1	10.4	179.0	5.1
	12:37	72066	2633	9.4	198.1	5.1	8.4	8.5	178.8	4.6
	12:38	73006	2634	10.4	198.1	5.9	8.1	9.5	181.9	5.4
	12:39	73173	2632	10.6	200.8	6.1	8.1	9.7	184.9	5.6
	12:40	73170	2630	9.5	201.1	7.1	8.2	8.7	184.2	6.5
	12:41	71416	2629	8.3	200.6	8.1	8.5	7.4	179.0	7.2
	12:42	70121	2638	7.4	202.2	7.9	8.7	6.5	177.3	6.9
	12:43	71955	2651	7.1	199.8	8.6	8.4	6.4	180.0	7.8

Average =	71830	2615	14.6	197.2	5.0	8.2	13.4	180.3	4.6
Geometric Avg. =	71814	2615	10.2	197.2	4.9	8.2	9.4	180.3	4.5
Maximum =	75000	2651	60.2	205.2	8.6	8.7	56.3	189.5	7.8
Minimum =	69123	2588	3.2	187.4	3.2	7.5	2.9	170.8	2.9
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1939414	70604	393.6	5325.7	136.3	221.1	362.7	4868.6	124.4

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

Plant Name: SBWD
 General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3
 Data Averaging Type: 1m

Time of Report: 03/30/11 12:44
 Rolling Average Interval: 1

Date	Time	STMRTPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	12:17	184.5	12.1
	12:18	181.7	11.5
	12:19	183.0	11.1
	12:20	185.4	11.6
	12:21	184.6	12.0
	12:22	182.7	11.7
	12:23	182.1	11.3
	12:24	182.9	11.2
	12:25	183.9	11.4
	12:26	184.6	11.6
	12:27	184.2	11.6
	12:28	183.3	11.5
	12:29	183.0	11.2
	12:30	183.6	11.3
	12:31	182.7	11.5
	12:32	180.9	11.3
	12:33	181.0	11.1
	12:34	183.9	11.3
	12:35	183.7	11.9
	12:36	183.1	11.7
	12:37	183.1	11.4
	12:38	182.9	11.6
	12:39	183.9	11.6
	12:40	182.9	11.6
	12:41	180.8	11.4
	12:42	181.4	11.1
	12:43	184.1	11.4

Average =	183.1	11.5
Geometric Avg. =	183.1	11.5
Maximum =	185.4	12.1
Minimum =	180.8	11.1
Possible Values =	27	27
Included Values =	27	27
Total =	4943.6	310.2

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

RUNG

Plant Name: SBWD

Page: 1

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 13:32

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	13:05	67943	2951	3.7	202.7	14.6	9.9	2.9	160.2	11.5
	13:06	72026	2962	3.3	200.7	13.4	9.3	2.8	166.8	11.1
	13:07	79276	3026	3.8	192.3	12.2	8.5	3.4	171.8	10.9
	13:08	81002	3064	4.2	191.8	9.3	8.3	3.8	173.6	8.4
	13:09	79462	3073	3.5	202.1	8.0	8.6	3.1	178.5	7.1
	13:10	79582	3079	2.6	208.0	7.0	8.8	2.3	181.5	6.1
	13:11	81082	3085	2.2	202.7	7.1	8.6	1.9	179.9	6.3
	13:12	80133	3075	1.9	192.2	6.7	8.7	1.7	168.4	5.9
	13:13	79041	3048	2.2	185.6	8.1	8.8	1.9	161.9	7.1
	13:14	77552	3022	3.6	181.2	7.2	8.8	3.1	157.2	6.2
	13:15	75800	3006	5.4	181.8	8.5	9.0	4.6	155.1	7.3
	13:16	73847	2995	5.6	188.5	9.8	9.3	4.7	157.0	8.2
	13:17	73271	2992	5.8	191.8	10.5	9.4	4.8	158.6	8.7
	13:18	71341	2979	6.3	195.3	12.2	9.7	5.1	157.3	9.8
	13:19	70757	2970	5.5	204.1	13.4	9.8	4.4	163.1	10.7
	13:20	72781	2973	4.7	214.5	11.5	9.5	3.8	175.6	9.4
	13:21	73440	2987	4.7	214.5	11.0	9.4	3.9	177.7	9.1
	13:22	66324	3006	4.5	224.8	12.2	10.4	3.4	169.8	9.3
	13:23	73203	3017	3.1	214.9	7.7	9.6	2.5	175.2	6.3
	13:24	73015	3014	2.8	212.6	6.7	9.6	2.3	172.2	5.5
	13:25	74178	3013	2.8	204.6	7.9	9.4	2.3	169.6	6.5
	13:26	74405	3011	2.9	193.7	9.3	9.3	2.4	161.7	7.8
	13:27	73031	3010	3.3	189.0	9.2	9.6	2.7	154.0	7.5
	13:28	71660	3009	3.2	184.5	12.1	9.8	2.6	147.3	9.6
	13:29	71490	3014	2.8	185.4	14.3	9.8	2.2	147.6	11.4
	13:30	73459	3025	2.7	191.4	17.1	9.5	2.2	156.5	14.0
	13:31	73520	3030	2.8	196.8	18.4	9.6	2.2	160.2	15.0

Average =	74541	3016	3.7	198.1	10.6	9.3	3.1	165.1	8.8
Geometric Avg. =	74444	3016	3.5	197.7	10.1	9.3	2.9	164.8	8.5
Maximum =	81082	3085	6.3	224.8	18.4	10.4	5.1	181.5	15.0
Minimum =	66324	2951	1.9	181.2	6.7	8.3	1.7	147.3	5.5
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	2012620	81437	99.9	5347.5	285.4	251.1	83.1	4458.4	236.5

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

Plant Name: SBWD
 General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3
 Data Averaging Type: 1m

Time of Report: 03/30/11 13:32
 Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	13:05	178.5	9.7
	13:06	187.2	10.2
	13:07	192.7	11.0
	13:08	192.5	11.1
	13:09	191.4	10.8
	13:10	191.9	10.8
	13:11	191.0	10.9
	13:12	189.9	10.8
	13:13	188.3	10.8
	13:14	185.8	10.7
	13:15	183.1	10.5
	13:16	182.8	10.3
	13:17	180.5	10.2
	13:18	178.7	10.0
	13:19	180.2	10.0
	13:20	181.7	10.3
	13:21	183.2	10.3
	13:22	184.1	9.2
	13:23	182.2	10.1
	13:24	182.3	10.1
	13:25	183.4	10.3
	13:26	183.7	10.4
	13:27	182.7	10.2
	13:28	181.6	10.0
	13:29	182.1	9.9
	13:30	182.7	10.2
	13:31	181.1	10.2

Average =	184.7	10.3
Geometric Avg. =	184.6	10.3
Maximum =	192.7	11.1
Minimum =	178.5	9.2
Possible Values =	27	27
Included Values =	27	27
Total =	4985.7	279.0

- * - 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: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 14:09

Data Averaging Type: 1m

Rolling Average Interval: 1

RUN 10

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	13:42	69349	2960	2.3	189.5	25.4	9.8	1.9	151.5	20.3
	13:43	70001	2944	2.6	198.6	24.6	9.6	2.1	160.8	19.9
	13:44	68945	2939	3.1	203.7	26.5	9.8	2.5	162.3	21.1
	13:45	67925	2912	3.7	208.3	30.8	9.9	2.9	164.7	24.4
	13:46	66989	2847	4.2	208.7	30.8	9.8	3.4	166.5	24.6
	13:47	67162	2835	4.9	207.1	27.6	9.7	4.0	166.5	22.2
	13:48	68604	2832	5.6	204.5	24.6	9.4	4.6	168.8	20.3
	13:49	70980	2840	6.4	197.5	22.9	9.1	5.5	168.4	19.5
	13:50	75581	2864	7.9	194.0	21.3	8.3	7.2	175.7	19.3
	13:51	79284	2895	15.3	197.3	15.7	7.9	14.3	185.0	14.7
	13:52	80740	2920	22.0	198.9	13.7	7.7	20.9	188.7	13.0
	13:53	77328	2938	16.7	212.7	13.2	8.6	14.8	188.3	11.7
	13:54	77208	2950	7.5	214.6	14.6	8.5	6.7	192.1	13.0
	13:55	77640	2952	4.1	217.5	11.2	8.5	3.7	193.7	10.0
	13:56	74835	2935	2.9	211.1	13.9	8.9	2.5	181.8	11.9
	13:57	74154	2912	2.5	199.6	13.1	8.9	2.1	172.4	11.3
	13:58	72362	2895	2.4	190.7	15.2	9.1	2.1	162.0	12.9
	13:59	72904	2884	3.0	181.2	14.9	8.9	2.6	155.8	12.8
	14:00	72710	2878	4.6	183.0	15.0	9.0	4.0	156.6	12.8
	14:01	72156	2874	6.5	186.1	13.2	9.1	5.5	158.2	11.2
	14:02	73027	2875	7.6	193.0	13.2	9.0	6.5	164.9	11.3
	14:03	74043	2876	7.4	201.5	13.2	8.8	6.5	174.9	11.5
	14:04	71027	2875	7.2	209.7	13.4	9.3	6.0	175.0	11.2
	14:05	69673	2870	7.3	218.0	13.3	9.5	6.0	179.1	11.0
	14:06	71954	2877	9.3	220.7	15.2	9.1	7.9	187.1	12.9
	14:07	73477	2892	12.4	213.5	16.5	8.9	10.7	184.5	14.2
	14:08	72971	2907	17.7	208.2	15.6	9.0	15.1	178.0	13.3

Average =	72705	2895	7.3	202.6	18.1	9.0	6.4	172.7	15.3
Geometric Avg. =	72618	2895	5.9	202.3	17.2	9.0	5.0	172.3	14.7
Maximum =	80740	2960	22.0	220.7	30.8	9.9	20.9	193.7	24.6
Minimum =	66989	2832	2.3	181.2	11.2	7.7	1.9	151.5	10.0
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	1963029	78177	197.4	5469.1	488.6	244.3	171.9	4663.1	412.4

- * - 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

General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3

Time of Report: 03/30/11 14:09

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/30/11	13:42	159.6	9.8
	13:43	161.3	10.0
	13:44	162.2	9.8
	13:45	162.3	9.8
	13:46	163.2	9.8
	13:47	165.6	9.9
	13:48	169.5	10.1
	13:49	176.1	10.5
	13:50	184.2	11.1
	13:51	191.8	11.6
	13:52	192.2	11.6
	13:53	191.8	11.0
	13:54	191.2	10.9
	13:55	188.7	10.9
	13:56	186.7	10.6
	13:57	184.1	10.6
	13:58	184.4	10.4
	13:59	184.1	10.6
	14:00	184.6	10.6
	14:01	183.7	10.5
	14:02	183.9	10.6
	14:03	181.0	10.8
	14:04	178.9	10.3
	14:05	178.6	10.2
	14:06	182.1	10.5
	14:07	183.9	10.7
	14:08	184.5	10.6

Average =	179.3	10.5
Geometric Avg. =	179.0	10.5
Maximum =	192.2	11.6
Minimum =	159.6	9.8
Possible Values =	27	27
Included Values =	27	27
Total =	4840.1	283.7

* - excluded values (missing, OOC, invalid, suspect)
 < - missing
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 B - invalid (PADER)
 U - missing data substituted
 -999 - missing value
 -888 - value could not be calculated

Plant Name: SBWD
 General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Unit Name: UNIT3

Time of Report: 03/30/11 14:47

Data Averaging Type: 1m

Rolling Average Interval: 1

Run 11

Date	Time	CO2LBHR3 (Lb/Hr)	VELOCITY3 (FPM)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/30/11	14:20	81105	3021	4.9	203.5	11.0	8.3	4.5	184.3	9.9
	14:21	81145	3011	6.3	197.6	11.2	8.2	5.7	180.1	10.2
	14:22	78911	3001	6.0	196.2	12.9	8.6	5.3	173.6	11.5
	14:23	77504	2979	5.0	188.8	12.3	8.8	4.4	164.5	10.7
	14:24	78865	2952	6.1	183.3	14.0	8.4	5.5	165.0	12.6
	14:25	80115	2941	8.2	195.7	12.3	8.1	7.6	179.9	11.3
	14:26	77727	2935	7.8	205.6	13.6	8.6	6.9	182.3	12.0
	14:27	74417	2857	7.6	208.2	12.5	8.7	6.7	182.0	10.9
	14:28	74284	2855	6.8	210.3	12.7	8.8	6.0	183.4	11.1
	14:29	76528	2855	7.3	211.3	14.6	8.4	6.5	189.9	13.1
	14:30	76929	2857	8.6	210.1	16.4	8.4	7.8	189.4	14.8
	14:31	79400	2867	9.3	198.4	15.4	7.9	8.7	185.5	14.4
	14:32	78416	2878	8.5	200.3	12.2	8.2	7.8	182.9	11.1
	14:33	78239	2880	6.7	197.9	11.0	8.2	6.1	180.3	10.0
	14:34	77696	2870	5.7	201.7	9.1	8.3	5.1	182.2	8.2
	14:35	77137	2863	4.7	199.9	10.2	8.3	4.2	181.0	9.3
	14:36	79595	2855	5.2	196.8	11.0	7.8	4.9	186.0	10.4
	14:37	79459	2841	6.9	195.6	8.8	7.8	6.5	184.4	8.3
	14:38	75542	2829	7.8	196.4	10.2	8.4	7.0	176.1	9.1
	14:39	76288	2821	7.9	200.9	9.7	8.3	7.2	182.5	8.8
	14:40	77168	2809	9.4	198.1	8.3	8.0	8.7	184.1	7.8
	14:41	75234	2800	10.4	201.4	8.3	8.4	9.3	180.7	7.5
	14:42	73540	2797	10.9	198.2	8.5	8.6	9.6	174.9	7.5
	14:43	74535	2798	13.1	194.9	9.3	8.4	11.7	174.6	8.4
	14:44	75660	2804	16.1	192.7	10.1	8.2	14.7	175.6	9.2
	14:45	75510	2811	18.1	194.2	10.5	8.4	16.3	175.2	9.4
	14:46	74026	2811	16.3	190.1	9.4	8.6	14.3	167.7	8.3

Average =	77221	2874	8.6	198.8	11.3	8.3	7.7	179.6	10.2
Geometric Avg. =	77192	2873	8.0	198.7	11.1	8.3	7.2	179.4	10.0
Maximum =	81145	3021	18.1	211.3	16.4	8.8	16.3	189.9	14.8
Minimum =	73540	2797	4.7	183.3	8.3	7.8	4.2	164.5	7.5
Possible Values =	27	27	27	27	27	27	27	27	27
Included Values =	27	27	27	27	27	27	27	27	27
Total =	2084975	77596	231.6	5368.0	305.7	225.3	209.0	4848.3	276.0

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- F - stack not operating
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- U - missing data substituted
- 999 - missing value
- 888 - value could not be calculated

Plant Name: SBWD
 General Average Report

Reporting Period: 03/30/2011 to 03/30/2011

Site Name: UNIT3
 Data Averaging Type: 1m

Time of Report: 03/30/11 14:47
 Rolling Average Interval: 1

Date	Time	STMRTPT_3 (KLE/HR)	CO2_3 (PERCENTD)
03/30/11	14:20	188.8	11.2
	14:21	187.5	11.3
	14:22	185.2	11.0
	14:23	185.6	10.8
	14:24	187.6	11.1
	14:25	186.5	11.4
	14:26	183.9	11.1
	14:27	182.6	10.9
	14:28	183.4	10.9
	14:29	184.1	11.2
	14:30	187.0	11.3
	14:31	186.6	11.6
	14:32	185.3	11.4
	14:33	185.2	11.3
	14:34	184.3	11.3
	14:35	186.3	11.3
	14:36	188.2	11.7
	14:37	186.3	11.7
	14:38	185.0	11.2
	14:39	186.2	11.3
	14:40	184.8	11.5
	14:41	182.5	11.2
	14:42	181.7	11.0
	14:43	183.2	11.1
	14:44	184.8	11.3
	14:45	184.1	11.3
	14:46	183.5	11.0

Average =	185.2	11.2
Geometric Avg. =	185.2	11.2
Maximum =	188.8	11.7
Minimum =	181.7	10.8
Possible Values =	27	27
Included Values =	27	27
Total =	5000.2	303.4

- * - excluded values (missing, OOC, invalid, suspect)
- < - missing
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- I - invalid
- S - suspect
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- 999 - missing value
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WHEELABRATOR SOUTH BROWARD, INC.
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11182-4

REFERENCE METHOD DATA

H

I hereby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified accurate.

QA/QC Initials: 1920

Date: 5/11/2011



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Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

Date: **March 28, 2011**

Start Time 7:15

Stop Time 15:43

CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	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 Rsrch	Thermo	Thermo
Model:	1420C	1415C	921H UV	42i-HL	48i
Detection:	Paramagn.	NDIR	Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	207491	207492	204654	205177	204433

Calibration Span Value (CS)	14.100	13.900	89.900	453.000	95.700
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System Response Time (seconds)

Manufacturer Certified Cylinder Value (C_v)

Zero	0.000	0.000	0.000	0.000	0.000
Low	6.050	5.930	44.300	224.000	48.300
Mid					
High	14.100	13.900	89.900	453.000	95.700

Actual gas to be used for bias checks

	14.100	5.930	44.300	224.000	48.300
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Cylinder ID

Zero	ALM013200	ALM013200	ALM013200	ALM013200	ALM013200
Low	ALM017071	ALM062872	CC217365	CC217365	ALM024011
Mid					
High	ALM062872	ALM017071	CC124384	CC124384	ALM016660

Analyzer Calibration Response (C_{Dir})

Zero	-0.048	0.037	-0.048	-0.038	0.033
Low	6.024	6.049	44.720	225.118	47.672
Mid					
High	14.073	13.885	90.967	452.953	95.589

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

Zero	-0.3%	0.3%	-0.1%	0.0%	0.0%
Low	-0.2%	0.9%	0.5%	0.2%	-0.7%
Mid	N/A	N/A	N/A	N/A	N/A
High	-0.2%	-0.1%	1.2%	0.0%	-0.1%

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

042511 085255

07:15:31	-0.048	0.037	1.014	-0.041	0.052
07:15:46	-0.078	0.037	0.998	-0.073	0.049
07:16:01	-0.073	0.037	0.921	-0.179	0.024
07:16:16	-0.050	0.037	0.974	-0.024	0.032

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

Date: **March 28, 2011**

Start Time 7:15

Stop Time 15:43

CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	SO2	NOX	CO
	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
	%dv	%dv	ppmdv	ppmdv	ppmdv
07:16:31	-0.051	0.037	0.969	-0.041	0.052
07:16:46	-0.049	0.037	0.962	-0.033	0.034
07:17:01	-0.050	0.037	0.054	-0.008	0.024
07:17:16	-0.052	0.037	-0.049	-0.049	0.024
07:17:31	-0.052	0.037	-0.049	-0.041	0.024
07:17:46	-0.040	0.037	-0.046	-0.024	0.050
07:18:01	0.847	3.948	8.843	-0.024	0.155
07:18:16	0.025	9.429	33.604	65.527	0.285
07:18:31	-0.049	9.881	57.897	219.666	0.214
07:18:46	-0.052	9.919	68.000	405.381	-0.026
07:19:01	-0.050	9.931	73.004	461.205	-0.186
07:19:16	-0.054	9.939	75.764	468.010	-0.210
07:19:31	-0.052	9.940	77.688	468.319	-0.212
07:19:46	-0.053	9.944	79.215	469.263	-0.210
07:20:01	-0.053	9.945	80.111	464.208	-0.212
07:20:16	-0.053	9.945	80.819	455.743	-0.241
07:20:31	-0.054	9.948	81.386	454.693	-0.243
07:20:46	-0.053	9.951	82.028	456.207	-0.212
07:21:01	-0.055	9.951	82.626	456.548	-0.218
07:21:16	-0.055	9.951	83.292	457.615	-0.208
07:21:31	-0.053	9.951	83.819	458.274	-0.256
07:21:46	-0.055	9.951	84.148	455.800	-0.233
07:22:01	-0.055	9.953	84.640	452.308	-0.215
07:22:16	-0.054	9.954	85.145	454.147	-0.215
07:22:31	-0.055	9.952	85.426	454.058	-0.215
07:22:46	-0.054	9.951	85.768	453.789	-0.215
07:23:01	-0.056	9.951	86.141	453.757	-0.213
07:23:16	-0.057	9.952	86.626	453.610	-0.212
07:23:31	-0.056	9.953	86.873	453.293	-0.223
07:23:46	-0.055	9.951	87.028	453.618	-0.257
07:24:01	-0.056	9.955	89.340	453.008	-0.225
07:24:16	-0.055	9.955	90.789	452.910	-0.225
07:24:31	-0.056	9.953	90.984	453.163	-0.215
07:24:46	-0.058	9.953	91.127	452.788	-0.239
07:25:01	-0.055	9.957	91.188	452.820	-0.238
07:25:16	0.425	9.622	64.933	452.967	-0.215
07:25:31	-0.006	9.864	39.888	409.630	0.008
07:25:46	-0.055	9.954	42.597	265.438	0.026
07:26:01	-0.064	9.971	43.800	228.506	-0.073
07:26:16	-0.065	9.969	44.586	225.153	-0.120
07:26:31	-0.069	9.973	44.773	225.104	-0.122
07:26:46	-0.068	9.975	44.801	225.096	-0.119
07:27:01	-0.069	9.975	44.796	225.137	-0.139
07:27:16	0.087	9.811	43.557	225.104	-0.120
07:27:31	0.147	2.390	16.544	220.448	7.232
07:27:46	-0.045	0.218	2.867	198.608	35.735

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

Date: **March 28, 2011**
 Start Time 7:15
 Stop Time 15:43
CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	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
07:28:01	-0.050	0.085	0.765	66.797	73.708
07:28:16	-0.051	0.069	0.363	6.007	89.649
07:28:31	-0.051	0.061	0.248	1.400	95.092
07:28:46	-0.051	0.056	0.210	1.115	95.417
07:29:01	-0.052	0.055	0.217	0.871	95.448
07:29:16	-0.058	0.050	0.208	0.741	95.575
07:29:31	-0.080	0.049	0.111	0.570	95.590
07:29:46	0.287	0.114	0.207	0.627	95.603
07:30:01	0.090	0.089	0.264	0.537	88.420
07:30:16	-0.055	0.050	0.007	0.562	70.714
07:30:31	-0.081	0.044	-0.073	0.684	52.980
07:30:46	-0.075	0.043	-0.096	0.317	48.540
07:31:01	-0.063	0.044	-0.102	0.277	47.681
07:31:16	-0.065	0.042	-0.083	0.268	47.645
07:31:31	-0.052	0.043	-0.075	0.244	47.681
07:31:46	-0.058	0.044	-0.080	0.155	47.691
07:32:01	8.025	2.428	0.423	0.171	46.121
07:32:16	13.754	5.773	0.256	3.142	35.925
07:32:31	14.051	6.027	-0.028	6.105	15.443
07:32:46	14.071	6.046	-0.081	1.221	5.351
07:33:01	14.074	6.050	-0.121	0.114	0.922
07:33:16	14.076	6.053	-0.094	0.016	0.371
07:33:31	12.010	7.016	-0.052	0.008	0.316
07:33:46	6.578	12.955	-0.072	0.041	0.482
07:34:01	6.068	13.814	-0.083	0.700	0.443
07:34:16	6.031	13.872	-0.072	0.594	0.265
07:34:31	6.027	13.882	-0.086	0.000	0.102
07:34:46	6.022	13.885	-0.137	0.016	0.065
07:35:01	6.022	13.889	-0.189	0.008	0.040
07:35:16	7.765	13.353	-0.191	0.000	0.063
07:35:31	18.916	2.796	-0.632	0.008	0.065

performed after Bias 10

15:41:44	8.829	10.305	2.182	45.967	17.976
15:41:59	8.925	10.221	2.064	46.357	18.854
15:42:14	8.966	10.177	1.967	46.789	19.754
15:42:29	8.710	10.368	1.907	47.245	20.021
15:42:44	8.464	10.615	1.913	47.375	19.842
15:42:59	8.231	10.836	1.937	47.570	19.114
15:43:14	8.223	10.876	1.949	47.692	18.686

Converter Efficiency
NO2=50.1 **94.6%**

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 7:40
 Stop Time 8:25
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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 _{0f} Zero gas	-0.030	0.080	0.765	0.146	0.437
C _{uf} Upscale gas	13.903	5.961	42.282	220.947	47.507
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.3%	0.9%	0.0%	0.4%
Upscale gas	-1.2%	-0.6%	-2.7%	-0.9%	-0.2%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gasses (C_s)					
C _{0i} 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

042011 094552

07:40:37	0.023	9.725	7.948	219.276	0.035
07:40:52	0.013	9.740	9.539	219.731	0.026
07:41:07	0.004	9.752	10.728	219.943	0.024
07:41:22	-0.020	9.760	11.834	220.081	0.006
07:41:37	-0.005	9.768	12.869	220.391	0.027
07:41:52	-0.011	9.774	13.809	220.594	0.053
07:42:07	-0.031	9.778	14.582	220.594	0.018
07:42:22	-3.557	9.763	14.847	219.105	-0.249
07:42:37	-0.016	9.791	16.137	220.830	0.053
07:42:52	-0.019	9.793	16.904	221.017	0.044
07:43:07	-0.085	9.792	17.691	220.806	-0.043
07:43:22	-0.022	9.799	18.593	221.009	0.014
07:43:37	-0.026	9.803	18.961	220.977	0.018
07:43:52	-0.027	9.805	19.482	220.920	0.024
07:44:07	-0.028	9.805	20.065	221.115	0.024
07:44:22	-0.032	9.809	20.695	220.895	0.024
07:44:37	-0.051	9.811	21.127	220.936	0.018
07:44:52	-0.019	6.655	21.263	221.009	0.871
07:45:07	-0.014	0.960	18.385	208.213	10.593
07:45:22	-0.039	0.326	14.815	80.570	30.167

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 7:40
 Stop Time 8:25
 CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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
07:45:37	-0.016	0.229	12.638	17.248	41.703
07:45:52	-0.015	0.181	11.298	2.450	46.733
07:46:07	-0.017	0.153	10.283	1.498	47.256
07:46:22	-0.193	0.126	9.262	0.326	47.214
07:46:37	-1.764	0.110	8.645	0.627	47.241
07:46:52	-0.016	0.106	8.353	0.766	47.468
07:47:07	-0.017	0.098	7.902	0.692	47.455
07:47:22	-0.018	0.089	7.486	0.562	47.486
07:47:37	-0.020	0.085	7.139	0.464	47.503
07:47:52	-0.042	0.081	6.779	0.399	47.515
07:48:07	-0.027	0.073	6.562	0.293	47.503
07:48:22	1.009	0.211	6.252	0.285	47.545
07:48:37	11.066	4.100	5.828	0.301	44.148
07:48:52	13.690	5.715	5.638	0.301	27.688
07:49:07	13.843	5.871	5.420	0.252	12.330
07:49:22	13.869	5.907	5.241	0.146	3.263
07:49:37	13.877	5.924	5.035	0.138	0.978
07:49:52	13.892	5.939	4.848	0.171	0.566
07:50:07	13.897	5.946	4.659	0.041	0.516
07:50:22	13.901	5.954	4.524	0.016	0.488
07:50:37	13.906	5.958	4.355	0.016	0.487
07:50:52	13.893	5.959	4.127	-0.171	0.462
07:51:07	13.911	5.965	4.078	0.024	0.451
07:51:22	11.522	5.408	3.878	0.008	0.440
07:51:37	1.601	1.210	3.481	0.008	0.415
07:51:52	0.132	0.260	3.352	0.008	0.264
07:52:07	0.039	0.158	3.272	0.000	0.165
07:52:22	0.018	0.125	3.168	0.000	0.130
07:52:37	0.008	0.109	3.072	0.016	0.149
07:52:52	0.002	0.094	2.963	0.008	0.165
07:53:07	-0.003	0.085	2.839	0.008	0.168
07:53:22	-0.006	0.079	2.720	0.016	0.163
07:53:37	-0.304	0.056	1.654	-2.003	-0.161
07:53:52	-0.313	0.052	2.139	-1.929	-0.304
07:54:07	-0.013	0.066	2.328	0.000	0.177
07:54:22	-0.017	0.061	2.217	0.016	0.182
07:54:37	-0.018	0.061	2.126	0.008	0.160
07:54:52	-0.073	0.011	1.937	-0.635	0.021
07:55:07	-5.017	0.042	0.995	-1.262	-0.011
07:55:22	-0.284	-0.004	1.511	-1.636	-0.195
07:55:37	-0.021	0.055	1.859	-0.041	0.157
07:55:52	-0.022	0.055	1.806	-0.033	0.192
07:56:07	-0.023	0.053	1.621	-0.041	0.187
07:56:22	-0.023	0.049	1.501	-0.016	0.203
07:56:37	-0.083	0.030	1.343	-0.252	0.143
07:56:52	-0.075	0.033	1.307	-0.228	0.151
07:57:07	-0.025	0.049	1.330	-0.041	0.185
07:57:22	-0.024	0.049	1.252	-0.024	0.187
07:57:37	-0.058	0.024	1.117	-0.260	0.076

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 7:40
 Stop Time 8:25
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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
07:57:52	-0.096	0.009	1.161	-0.554	-0.013
07:58:07	-0.025	0.049	1.148	-0.041	0.185
07:58:22	-0.025	0.043	1.032	0.000	0.185
07:58:37	-0.025	0.045	0.935	-0.033	0.187
07:58:52	-0.024	0.047	0.879	0.000	0.184
07:59:07	-0.025	0.043	0.858	-0.024	0.182
07:59:22	-0.026	0.043	0.852	-0.024	0.182
07:59:37	3.929	3.075	0.780	-0.008	0.239
07:59:52	8.840	8.916	1.195	25.519	1.377
08:00:07	9.265	9.553	1.802	101.489	3.313
08:00:22	9.117	9.762	2.058	145.999	4.695
08:00:37	8.925	9.956	2.154	161.498	5.356
08:00:52	8.614	10.291	2.199	165.519	5.936
08:01:07	8.692	10.286	2.266	170.427	6.095
08:01:22	8.938	10.085	2.339	173.390	6.097
08:01:37	9.180	9.866	2.393	174.392	5.984
08:01:52	9.352	9.713	2.473	173.781	5.742
08:02:07	9.492	9.617	2.515	170.842	5.563
08:02:22	9.497	9.596	2.517	165.861	5.397
08:02:37	9.309	9.736	2.535	161.652	5.584
08:02:52	9.405	9.693	2.515	158.909	6.027
08:03:07	9.646	9.519	2.478	158.754	5.934
08:03:22	9.836	9.353	2.395	154.986	5.270
08:03:37	9.505	9.542	2.354	149.402	4.833
08:03:52	8.900	10.050	2.313	146.585	5.273
08:04:07	8.754	10.249	2.375	152.503	6.149
08:04:22	8.950	10.105	2.437	162.979	6.432
08:04:37	9.046	9.994	2.492	165.682	6.059
08:04:52	8.658	10.250	2.546	162.825	5.888
08:16:14	-0.040	9.845	42.102	223.573	0.021
08:16:29	-0.041	9.846	42.281	223.639	0.013
08:16:44	-0.040	9.847	42.463	223.573	0.045
08:21:19	13.925	6.028	3.805	0.904	0.437
08:21:34	13.927	6.023	3.157	0.774	0.435
08:21:49	13.932	6.020	2.758	0.676	0.433
08:22:04	13.932	6.019	2.380	0.537	0.438
08:22:19	13.934	6.018	2.090	0.480	0.440
08:22:34	13.936	6.015	1.863	0.374	0.442
08:22:49	13.940	6.013	1.677	0.285	0.432
08:23:04	13.940	6.013	1.494	0.293	0.435
08:23:19	13.942	6.013	1.407	0.260	0.437
08:23:34	13.943	6.011	1.325	0.163	0.440
08:23:49	13.944	6.011	1.237	0.163	0.437
08:24:04	13.943	6.012	1.148	0.171	0.435
08:24:19	13.944	6.008	1.044	0.146	0.438
08:24:34	13.945	6.008	0.949	0.179	0.442
08:24:49	13.948	6.011	0.835	0.146	0.438

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Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 7:40
 Stop Time 8:25
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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
08:25:04	13.952	6.007	0.743	0.163	0.435
08:25:19	13.950	6.008	0.718	0.130	0.437

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 8:27
 Stop time 8:54
REFERENCE METHOD RUN 1

	Channel 1 O2	Channel 2 CO2	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	-0.030	0.080	0.765	0.146	0.437
C _{ui} Initial upscale	13.903	5.961	42.282	220.947	47.507
C _{of} Final zero	-0.038	0.134	1.029	0.130	0.441
C _{uf} Final upscale	13.954	6.018	42.711	223.712	47.574
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.039	10.155	5.061	163.897	5.700
C _{Gas} Bias adjusted	9.162	10.130	4.434	165.092	5.395

Clock Time (at end of sample period)

042011 094552						
08:28	8.975	10.151	3.495	161.274	7.012	
08:29	8.936	10.206	3.769	165.755	6.150	
08:30	9.079	10.078	3.824	160.981	6.283	
08:31	9.026	10.135	3.969	157.778	5.690	
08:32	8.885	10.261	4.118	160.733	5.412	
08:33	8.640	10.485	4.386	165.653	6.260	
08:34	8.449	10.669	4.525	177.279	6.460	
08:35	9.041	10.136	4.906	175.887	5.930	
08:36	8.782	10.361	5.301	176.473	5.819	
08:37	8.791	10.368	5.563	178.887	4.751	
08:38	9.207	10.014	5.195	170.051	5.333	
08:39	8.811	10.352	4.587	163.490	5.703	
08:40	9.312	9.894	4.689	154.359	5.035	
08:41	9.527	9.707	4.581	146.970	4.780	
08:42	9.046	10.129	4.849	150.818	5.220	
08:43	8.983	10.234	5.254	164.113	5.814	
08:44	9.557	9.684	5.014	156.795	5.712	
08:45	9.307	9.892	4.972	155.804	5.450	
08:46	9.320	9.895	5.381	164.434	5.437	
08:47	9.307	9.921	5.504	162.410	5.420	
08:48	9.536	9.730	5.332	160.792	6.418	
08:49	9.001	10.165	5.559	163.480	7.116	
08:50	8.159	11.058	6.576	188.079	6.185	
08:51	9.061	10.208	6.228	173.427	4.063	
08:52	9.223	10.058	5.890	162.814	4.416	
08:53	9.072	10.188	6.107	154.565	5.816	
08:54	9.009	10.215	7.059	152.108	6.218	

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 9:00
 Stop Time 9:08
CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	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	-0.038	0.134	1.029	0.130	0.441
C _{uf} Upscale gas	13.954	6.018	42.711	223.712	47.574
Analyzer Calibration Error Responses (C_{dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	1.2%	0.0%	0.4%
Upscale gas	-0.8%	-0.2%	-2.2%	-0.3%	-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 _{oi} Zero gas	-0.030	0.080	0.765	0.146	0.437
C _{ui} Upscale gas	13.903	5.961	42.282	220.947	47.507
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.1%	0.4%	0.3%	0.0%	0.0%
Upscale gas	0.4%	0.4%	0.5%	0.6%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:00:21	-0.037	9.886	42.206	223.761	0.024
09:00:36	-0.038	9.886	42.393	223.761	0.024
09:00:51	-0.038	9.888	42.536	223.663	0.024
09:01:06	-0.039	9.889	42.722	223.818	0.049
09:01:21	-0.039	9.887	42.874	223.655	0.032
09:01:36	-0.023	9.283	42.958	223.826	0.037
09:01:51	-0.013	2.333	37.210	210.444	4.807
09:02:06	-0.019	0.412	24.054	160.969	21.806
09:02:21	-0.021	0.241	15.723	52.495	39.285
09:02:36	-0.021	0.198	11.250	5.372	45.880
09:02:51	-0.021	0.172	8.638	2.011	47.347
09:03:06	-0.023	0.156	6.989	1.473	47.474
09:03:21	-0.032	0.144	5.701	0.912	47.546
09:03:36	-0.037	0.132	4.978	1.050	47.560
09:03:51	-0.046	0.126	4.308	0.888	47.617
09:04:06	3.135	0.917	3.777	0.782	47.543
09:04:21	12.528	5.026	3.253	0.782	40.589
09:04:36	13.808	5.888	2.984	0.692	23.614
09:04:51	13.893	5.968	2.702	0.578	7.775
09:05:06	13.912	5.984	2.461	0.407	2.385

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 9:00
 Stop Time 9:08
CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	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
09:05:21	13.922	5.995	2.216	0.390	0.703
09:05:36	13.929	6.001	2.032	0.301	0.554
09:05:51	13.931	6.004	1.869	0.277	0.483
09:06:06	13.937	6.008	1.814	0.285	0.501
09:06:21	13.941	6.010	1.670	0.285	0.486
09:06:36	13.944	6.013	1.534	0.285	0.486
09:06:51	13.946	6.013	1.423	0.155	0.442
09:07:06	13.948	6.013	1.296	0.130	0.440
09:07:21	13.949	6.016	1.189	0.130	0.474
09:07:36	13.952	6.019	1.104	0.130	0.442
09:07:51	13.954	6.017	1.019	0.138	0.440
09:08:06	13.954	6.020	0.964	0.122	0.440
09:08:21	13.954	6.018	0.897	0.130	0.440

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 9:12
 Stop time 9:39
REFERENCE METHOD RUN 2

	Channel 1 O2	Channel 2 CO2	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	-0.038	0.134	1.029	0.130	0.441
C _{ui} Initial upscale	13.954	6.018	42.711	223.712	47.574
C _{of} Final zero	-0.021	0.152	1.511	0.103	0.334
C _{uf} Final upscale	13.870	6.010	41.696	223.454	47.538
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.704	10.419	4.242	168.352	4.975
C _{Gas} Bias adjusted	8.833	10.379	3.217	168.637	4.698

Clock Time (at end of sample period)

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09:13	9.063	10.053	4.572	160.631	5.691
09:14	8.741	10.315	4.189	163.921	6.400
09:15	8.009	10.988	4.316	180.999	6.604
09:16	8.344	10.697	4.695	183.268	5.712
09:17	8.784	10.271	4.361	169.481	5.230
09:18	8.467	10.571	4.178	171.178	5.505
09:19	8.613	10.446	4.029	167.731	5.234
09:20	8.762	10.315	3.680	161.201	5.163
09:21	8.298	10.742	3.605	163.231	5.343
09:22	8.257	10.810	3.948	173.647	5.202
09:23	8.723	10.400	4.144	173.512	5.400
09:24	8.852	10.268	4.169	167.151	5.063
09:25	8.016	11.002	4.059	173.323	4.344
09:26	7.811	11.203	3.575	181.624	3.643
09:27	8.317	10.794	3.594	181.339	3.623
09:28	8.574	10.522	3.665	169.149	3.324
09:29	8.625	10.518	3.610	173.569	3.777
09:30	8.738	10.441	4.130	169.798	4.240
09:31	8.812	10.358	4.246	157.790	4.051
09:32	8.929	10.271	4.165	159.701	4.272
09:33	9.154	10.090	4.478	159.664	4.421
09:34	9.243	10.002	4.587	159.693	4.524
09:35	9.459	9.790	4.331	161.837	4.398
09:36	8.975	10.227	4.422	165.208	5.144
09:37	8.960	10.263	5.326	171.901	5.922
09:38	9.158	10.061	5.522	165.871	6.055
09:39	9.328	9.902	4.945	159.086	6.051

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 9:40
 Stop Time 9:50
CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	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	-0.021	0.152	1.511	0.103	0.334
C _{uf} Upscale gas	13.870	6.010	41.696	223.454	47.538
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.8%	1.7%	0.0%	0.3%
Upscale gas	-1.4%	-0.3%	-3.4%	-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	-0.038	0.134	1.029	0.130	0.441
C _{ui} Upscale gas	13.954	6.018	42.711	223.712	47.574
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.1%	0.1%	0.5%	0.0%	-0.1%
Upscale gas	-0.6%	-0.1%	-1.1%	-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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09:40:52	9.575	9.739	3.428	127.090	5.709
09:41:07	9.546	9.705	3.484	142.027	5.692
09:41:22	9.328	9.936	3.629	146.007	6.379
09:41:37	9.396	9.891	4.049	148.335	7.031
09:41:52	9.492	9.788	4.275	149.483	7.704
09:42:07	4.611	9.303	5.159	147.237	7.744
09:42:22	0.432	9.692	11.919	143.305	5.496
09:42:37	0.035	9.863	21.890	173.773	2.743
09:42:52	0.001	9.882	28.449	215.059	0.594
09:43:07	-0.009	9.889	32.692	220.700	0.155
09:43:22	-0.016	9.890	35.246	222.279	0.049
09:43:37	-0.051	9.895	37.065	222.532	0.047
09:43:52	-0.022	9.896	38.307	222.662	0.052
09:44:07	-0.045	9.896	39.223	222.906	0.049
09:44:22	-0.028	9.898	39.935	223.077	0.063
09:44:37	-0.031	9.898	40.527	223.223	0.055
09:44:52	-0.031	9.902	40.980	223.573	0.051
09:45:07	-0.033	9.902	41.441	223.443	0.055
09:45:22	-0.035	9.901	41.670	223.354	0.054
09:45:37	-0.036	9.902	41.976	223.565	0.039

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 9:40
 Stop Time 9:50
 CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	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
09:45:52	-0.031	9.830	42.123	223.468	0.055
09:46:07	-0.013	3.953	38.343	218.038	1.760
09:46:22	-0.018	0.542	25.102	166.162	17.715
09:46:37	-0.019	0.268	15.772	81.148	33.838
09:46:52	-0.019	0.210	10.989	6.032	44.771
09:47:07	-0.019	0.182	8.230	2.597	47.192
09:47:22	-0.020	0.165	6.548	1.701	47.468
09:47:37	-0.021	0.149	5.353	1.400	47.554
09:47:52	-0.022	0.141	4.480	1.140	47.591
09:48:07	3.755	1.105	3.849	0.936	47.603
09:48:22	12.718	5.151	3.189	0.847	39.894
09:48:37	13.826	5.911	2.953	0.757	23.763
09:48:52	13.903	5.981	2.748	0.668	7.898
09:49:07	13.921	5.997	2.505	0.472	2.432
09:49:22	13.930	6.007	2.274	0.455	0.702
09:49:37	13.936	6.013	2.055	0.455	0.562
09:49:52	13.942	6.017	1.898	0.382	0.485
09:50:07	13.948	6.020	1.752	0.301	0.488
09:50:22	13.854	6.005	1.433	0.203	0.249
09:50:37	13.807	6.005	1.350	-0.196	0.265
09:50:52	13.955	6.026	1.263	0.301	0.478

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 9:52
 Stop time 10:19
REFERENCE METHOD RUN 3

	Channel 1 O2	Channel 2 CO2	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	-0.021	0.152	1.511	0.103	0.334
C _{ui} Initial upscale	13.870	6.010	41.696	223.454	47.538
C _{of} Final zero	-0.019	0.154	1.511	0.287	0.489
C _{uf} Final upscale	13.965	6.030	41.526	223.571	47.520
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	10.485	8.990	4.144	139.070	10.147
C _{Gas} Bias adjusted	10.628	8.931	2.908	139.299	9.980

Clock Time (at end of sample period)

042011 094552					
09:53	10.102	9.297	5.079	147.591	6.804
09:54	9.899	9.444	5.075	145.928	6.598
09:55	9.956	9.418	5.591	148.464	7.084
09:56	9.741	9.579	5.698	147.255	7.040
09:57	9.764	9.564	5.740	150.525	7.020
09:58	9.594	9.714	6.110	147.499	7.206
09:59	10.341	9.181	6.246	144.372	7.785
10:00	10.740	8.845	5.898	133.071	8.154
10:01	10.703	8.874	5.752	136.915	9.183
10:02	10.857	8.759	5.668	144.391	11.580
10:03	11.088	8.564	5.765	152.184	12.413
10:04	10.902	8.675	5.291	163.885	10.355
10:05	10.120	9.258	4.583	167.432	10.466
10:06	10.144	9.282	3.955	160.753	8.623
10:07	10.575	8.904	3.563	133.805	8.299
10:08	10.647	8.856	3.422	112.464	9.544
10:09	10.136	9.273	3.060	112.102	11.347
10:10	10.707	8.855	3.096	115.578	11.588
10:11	11.149	8.486	2.990	120.446	11.357
10:12	11.164	8.420	2.846	146.262	10.772
10:13	10.855	8.663	2.744	160.790	12.869
10:14	11.116	8.476	2.612	160.965	14.215
10:15	11.133	8.432	2.525	140.702	13.510
10:16	10.928	8.597	2.345	117.347	11.797
10:17	10.364	9.022	2.185	107.969	11.919
10:18	10.096	9.214	2.045	114.754	13.010
10:19	10.280	9.074	2.001	121.433	13.419

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 10:22
 Stop Time 10:29
CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.019	0.154	1.511	0.287	0.489
C _{uf} Upscale gas	13.965	6.030	41.526	223.571	47.520
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.8%	1.7%	0.1%	0.5%
Upscale gas	-0.8%	-0.1%	-3.6%	-0.3%	-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	-0.021	0.152	1.511	0.103	0.334
C _{ui} Upscale gas	13.870	6.010	41.696	223.454	47.538
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.2%
Upscale gas	0.7%	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

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10:22:35	-0.019	9.904	38.976	222.515	0.054
10:22:50	-0.022	9.907	39.735	222.833	0.059
10:23:05	-0.025	9.908	40.410	223.337	0.063
10:23:20	-0.030	9.909	40.803	223.240	0.063
10:23:35	-0.030	9.911	41.078	223.223	0.039
10:23:50	-0.032	9.912	41.464	223.500	0.036
10:24:05	-0.031	9.914	41.796	223.516	0.052
10:24:20	-0.019	7.635	41.319	223.696	0.651
10:24:35	-0.015	1.186	29.913	199.715	8.666
10:24:50	-0.018	0.321	18.051	127.798	28.511
10:25:05	-0.018	0.225	11.819	31.323	41.164
10:25:20	-0.018	0.187	8.567	3.802	46.904
10:25:35	-0.018	0.168	6.658	1.742	47.427
10:25:50	-0.019	0.155	5.444	1.351	47.554
10:26:05	-0.018	0.139	4.500	1.099	47.580
10:26:20	0.684	0.207	3.915	1.001	47.582
10:26:35	10.545	3.911	3.186	0.831	44.790
10:26:50	13.705	5.810	2.916	0.741	28.710
10:27:05	13.903	5.976	2.735	0.635	12.848
10:27:20	13.929	6.001	2.473	0.455	3.570

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 10:22
 Stop Time 10:29
CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	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
10:27:35	13.943	6.011	2.229	0.439	1.042
10:27:50	13.948	6.021	2.020	0.382	0.567
10:28:05	13.954	6.024	1.861	0.301	0.496
10:28:20	13.961	6.027	1.659	0.277	0.483
10:28:35	13.967	6.032	1.493	0.293	0.501
10:28:50	13.966	6.032	1.382	0.293	0.482
10:29:05	13.968	6.032	1.293	0.236	0.482

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 10:35
 Stop time 11:02
REFERENCE METHOD RUN 4

	Channel 1 O2	Channel 2 CO2	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	-0.019	0.154	1.511	0.287	0.489
C _{ui} Initial upscale	13.965	6.030	41.526	223.571	47.520
C _{of} Final zero	-0.029	0.154	1.654	0.293	0.507
C _{uf} Final upscale	13.974	6.035	41.567	223.031	47.612
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.825	10.322	2.634	165.385	6.084
C _{Gas} Bias adjusted	8.917	10.257	1.166	165.828	5.733

Clock Time (at end of sample period)

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10:36	8.698	10.423	2.347	171.754	5.575
10:37	8.572	10.526	2.489	172.379	5.378
10:38	8.599	10.515	2.448	171.726	5.440
10:39	8.631	10.489	2.539	171.783	5.920
10:40	8.875	10.278	2.498	167.509	5.232
10:41	8.849	10.285	2.583	161.290	5.294
10:42	8.221	10.860	2.801	165.364	5.863
10:43	8.163	10.918	3.092	170.187	5.226
10:44	8.740	10.390	3.208	165.881	4.938
10:45	8.850	10.267	2.969	159.127	5.176
10:46	8.706	10.443	2.897	163.354	6.156
10:47	8.798	10.372	2.621	165.700	6.589
10:48	8.768	10.389	2.681	162.827	6.908
10:49	8.511	10.628	2.810	163.588	7.014
10:50	8.792	10.366	2.930	163.398	6.363
10:51	9.393	9.809	2.925	157.251	5.804
10:52	8.951	10.181	2.669	155.385	5.102
10:53	8.670	10.465	2.591	164.984	5.605
10:54	8.913	10.258	2.452	172.629	5.821
10:55	8.853	10.294	2.352	168.842	6.050
10:56	8.910	10.239	2.546	167.491	6.280
10:57	9.123	10.045	2.663	165.765	5.861
10:58	8.887	10.260	2.679	163.378	6.685
10:59	8.915	10.251	2.436	165.881	6.891
11:00	9.214	9.985	2.358	162.059	7.530
11:01	9.455	9.780	2.303	160.893	7.556
11:02	9.224	9.982	2.238	164.982	8.025

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 11:05
 Stop Time 11:12
CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	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	-0.029	0.154	1.654	0.293	0.507
C _{uf} Upscale gas	13.974	6.035	41.567	223.031	47.612
Analyzer Calibration Error Responses (C_{DIR})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.8%	1.9%	0.1%	0.5%
Upscale gas	-0.7%	-0.1%	-3.5%	-0.5%	-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	-0.019	0.154	1.511	0.287	0.489
C _{ui} Upscale gas	13.965	6.030	41.526	223.571	47.520
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.1%	0.0%	0.2%	0.0%	0.0%
Upscale gas	0.1%	0.0%	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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11:05:01	-0.018	9.916	35.818	222.149	0.054
11:05:16	-0.024	9.918	37.312	222.328	0.059
11:05:31	-0.025	9.920	38.361	222.279	0.063
11:05:46	-0.029	9.920	39.178	222.662	0.062
11:06:01	-0.031	9.920	39.836	222.646	0.083
11:06:16	-0.033	9.921	40.464	222.931	0.060
11:06:31	-0.035	9.921	40.860	223.305	0.063
11:06:46	-0.037	9.922	41.240	223.085	0.065
11:07:01	-0.037	9.925	41.587	222.963	0.063
11:07:16	-0.038	9.925	41.874	223.044	0.068
11:07:31	-0.038	9.924	42.180	222.914	0.024
11:07:46	-0.022	6.203	40.580	222.304	0.532
11:08:01	-0.094	0.804	28.568	206.471	13.392
11:08:16	-0.343	0.276	16.900	122.930	30.390
11:08:31	-0.023	0.220	11.616	9.068	43.577
11:08:46	-0.024	0.187	8.589	3.313	46.877
11:09:01	-0.024	0.169	6.681	1.710	47.539
11:09:16	-0.040	0.151	5.397	1.351	47.616
11:09:31	-0.024	0.142	4.611	1.148	47.681
11:09:46	1.596	0.417	3.963	0.953	47.725

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 11:05
 Stop Time 11:12
CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	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
11:10:01	11.677	4.535	3.248	0.855	42.671
11:10:16	13.794	5.877	2.922	0.774	27.357
11:10:31	13.925	5.989	2.670	0.652	9.712
11:10:46	13.945	6.010	2.411	0.505	3.101
11:11:01	13.956	6.023	2.136	0.455	0.775
11:11:16	13.964	6.028	1.947	0.317	0.565
11:11:31	13.970	6.032	1.820	0.301	0.503
11:11:46	13.974	6.035	1.633	0.293	0.505
11:12:01	13.977	6.038	1.508	0.285	0.513

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011

Start Time 11:14

Stop time 11:41

REFERENCE METHOD RUN 5

	Channel 1 O2	Channel 2 CO2	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	-0.029	0.154	1.654	0.293	0.507
C _{ul} Initial upscale	13.974	6.035	41.567	223.031	47.612
C _{of} Final zero	-0.025	0.146	1.554	0.374	0.521
C _{uf} Final upscale	13.961	6.028	41.581	222.968	47.668
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.609	10.520	1.719	170.120	6.750
C _{Gas} Bias adjusted	8.701	10.456	0.127	170.803	6.391

Clock Time (at end of sample period)

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11:15	8.532	10.566	2.479	170.344	8.884
11:16	8.090	10.982	2.134	173.451	7.597
11:17	8.239	10.895	2.028	180.356	6.895
11:18	8.117	10.959	1.867	178.246	7.705
11:19	8.002	11.060	1.868	179.274	6.883
11:20	8.530	10.583	1.755	177.680	6.127
11:21	8.275	10.808	1.762	174.823	6.409
11:22	8.293	10.778	1.813	172.863	6.827
11:23	8.500	10.610	1.733	170.820	5.785
11:24	8.073	10.985	1.683	171.569	6.210
11:25	8.317	10.812	1.545	171.160	5.796
11:26	8.526	10.592	1.563	166.925	5.560
11:27	8.346	10.760	1.519	172.735	5.593
11:28	8.712	10.441	1.497	176.461	5.365
11:29	8.806	10.357	1.518	173.754	5.914
11:30	8.988	10.191	1.537	173.276	7.224
11:31	9.005	10.167	1.769	172.192	7.477
11:32	9.016	10.153	1.654	171.345	7.287
11:33	9.129	10.058	1.597	165.226	7.110
11:34	9.081	10.081	1.560	159.312	7.250
11:35	9.050	10.100	1.559	152.489	6.463
11:36	9.154	10.021	1.671	151.260	6.780
11:37	9.070	10.088	1.659	153.228	8.332
11:38	8.651	10.463	1.733	161.227	8.261
11:39	8.383	10.725	1.611	172.141	6.401
11:40	8.499	10.652	1.623	177.359	6.133
11:41	9.055	10.143	1.665	173.720	5.978

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 11:44
 Stop Time 11:51
CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.025	0.146	1.554	0.374	0.521
C _{uf} Upscale gas	13.961	6.028	41.581	222.968	47.668
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.8%	1.8%	0.1%	0.5%
Upscale gas	-0.8%	-0.2%	-3.5%	-0.5%	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	-0.029	0.154	1.654	0.293	0.507
C _{ui} Upscale gas	13.974	6.035	41.567	223.031	47.612
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	-0.1%	-0.1%	0.0%	0.0%
Upscale gas	-0.1%	-0.1%	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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11:44:31	-0.025	9.914	36.212	222.173	0.065
11:44:46	-0.030	9.914	37.369	222.336	0.067
11:45:01	-0.033	9.915	38.295	222.352	0.085
11:45:16	-0.035	9.915	39.002	222.540	0.057
11:45:31	-0.036	9.915	39.588	222.825	0.060
11:45:46	-0.037	9.917	40.283	222.760	0.060
11:46:01	-0.037	9.921	40.713	222.776	0.065
11:46:16	-0.039	9.919	41.037	222.776	0.062
11:46:31	-0.040	9.921	41.330	222.629	0.039
11:46:46	-0.041	9.921	41.597	223.297	0.059
11:47:01	-0.039	9.877	41.815	222.979	0.086
11:47:16	-0.024	4.265	37.739	222.817	1.551
11:47:31	-0.024	0.566	24.436	184.445	17.387
11:47:46	-0.024	0.273	15.165	55.555	33.681
11:48:01	-0.022	0.216	10.406	11.461	44.822
11:48:16	-0.025	0.189	7.756	2.654	47.232
11:48:31	-0.025	0.169	6.188	1.718	47.585
11:48:46	-0.025	0.157	5.021	1.408	47.653
11:49:01	-0.024	0.146	4.244	1.172	47.656
11:49:16	-0.025	0.135	3.639	1.058	47.696

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 11:44
 Stop Time 11:51
CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	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
11:49:31	3.759	1.113	3.090	0.896	47.477
11:49:46	12.757	5.174	2.689	0.806	41.283
11:50:01	13.847	5.921	2.499	0.725	21.672
11:50:16	13.922	5.991	2.300	0.627	8.799
11:50:31	13.936	6.007	2.103	0.480	2.004
11:50:46	13.947	6.018	1.916	0.464	0.777
11:51:01	13.955	6.024	1.734	0.488	0.536
11:51:16	13.962	6.027	1.532	0.333	0.513
11:51:31	13.966	6.032	1.395	0.301	0.513

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 12:03
 Stop time 12:30
REFERENCE METHOD RUN 6

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.146	1.554	0.374	0.521
C _{ui} Initial upscale	13.961	6.028	41.581	222.968	47.668
C _{of} Final zero	-0.024	0.153	1.527	0.407	0.550
C _{uf} Final upscale	13.940	6.014	41.386	222.263	47.672
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.388	9.779	2.645	158.380	8.444
C _{Gas} Bias adjusted	9.497	9.725	1.225	159.252	8.104

Clock Time (at end of sample period)

042011 094552					
12:04	9.408	9.815	3.010	156.144	10.776
12:05	8.874	10.238	2.841	147.509	9.261
12:06	8.528	10.601	2.961	166.569	9.118
12:07	9.349	9.842	2.972	157.418	8.705
12:08	9.483	9.684	2.757	148.024	8.756
12:09	9.176	9.938	2.671	157.464	7.634
12:10	9.145	9.995	2.565	167.780	7.399
12:11	9.481	9.702	2.459	167.580	8.252
12:12	9.366	9.760	2.341	164.048	7.635
12:13	9.321	9.825	2.259	168.895	7.957
12:14	9.869	9.406	2.377	159.607	7.760
12:15	9.864	9.396	2.476	143.850	8.325
12:16	9.629	9.554	2.860	141.850	7.768
12:17	9.766	9.462	3.091	140.454	7.680
12:18	9.762	9.457	2.943	139.961	8.780
12:19	9.991	9.291	2.862	151.386	8.987
12:20	9.882	9.353	2.642	145.547	7.992
12:21	9.374	9.768	2.682	157.057	9.022
12:22	9.827	9.422	2.378	160.930	9.356
12:23	9.909	9.336	2.193	160.839	8.509
12:24	9.148	9.922	2.093	169.349	8.588
12:25	9.266	9.872	2.142	179.363	9.796
12:26	9.508	9.624	2.425	165.521	8.797
12:27	8.874	10.173	2.674	165.061	8.812
12:28	8.668	10.389	3.002	169.961	7.904
12:29	8.879	10.225	2.990	166.986	7.120
12:30	9.127	9.978	2.740	157.112	7.293

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 12:33
 Stop Time 12:39
CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.153	1.527	0.407	0.550
C _{uf} Upscale gas	13.940	6.014	41.386	222.263	47.672
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.8%	1.8%	0.1%	0.5%
Upscale gas	-0.9%	-0.3%	-3.7%	-0.6%	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	-0.025	0.146	1.554	0.374	0.521
C _{ul} Upscale gas	13.961	6.028	41.581	222.968	47.668
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%	-0.2%	-0.2%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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12:33:20	-0.056	9.895	38.836	221.506	0.091
12:33:35	-0.028	9.896	39.826	221.661	0.098
12:33:50	-0.031	9.896	40.511	221.856	0.085
12:34:05	-0.032	9.896	40.868	222.011	0.052
12:34:20	-0.035	9.898	41.110	222.271	0.054
12:34:35	-0.035	9.901	41.389	222.279	0.049
12:34:50	-0.037	9.902	41.659	222.238	0.096
12:35:05	-0.032	9.630	42.011	222.401	0.070
12:35:20	-0.018	3.011	36.334	222.393	3.776
12:35:35	-0.020	0.467	22.051	161.131	18.689
12:35:50	-0.021	0.256	13.516	33.846	36.788
12:36:05	-0.022	0.208	9.322	9.573	45.106
12:36:20	-0.022	0.181	6.922	2.434	47.334
12:36:35	-0.024	0.164	5.521	1.726	47.681
12:36:50	-0.024	0.153	4.536	1.310	47.655
12:37:05	-0.025	0.142	3.873	1.115	47.681
12:37:20	2.014	0.536	3.298	1.018	47.616
12:37:35	11.902	4.678	2.803	0.904	43.276
12:37:50	13.772	5.867	2.546	0.790	25.975
12:38:05	13.893	5.973	2.326	0.676	11.082

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 12:33
 Stop Time 12:39
CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	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
12:38:20	13.916	5.995	2.128	0.586	2.981
12:38:35	13.927	6.005	1.905	0.447	0.941
12:38:50	13.934	6.011	1.703	0.472	0.578
12:39:05	13.942	6.014	1.508	0.464	0.540
12:39:20	13.945	6.019	1.371	0.285	0.531

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 12:41
 Stop time 13:08

REFERENCE METHOD RUN 7

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.153	1.527	0.407	0.550
C _{ui} Initial upscale	13.940	6.014	41.386	222.263	47.672
C _{of} Final zero	-0.021	0.160	1.352	0.385	0.539
C _{uf} Final upscale	13.933	6.012	41.803	222.168	47.656
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.355	9.901	2.536	158.371	12.315
C _{Gas} Bias adjusted	9.472	9.867	1.209	159.528	12.065

Clock Time (at end of sample period)

042011 09:45:52					
12:42	9.738	9.533	3.502	136.701	10.464
12:43	9.422	9.765	2.992	146.453	9.793
12:44	9.504	9.719	2.514	160.423	10.095
12:45	9.450	9.729	2.583	170.348	9.270
12:46	9.187	9.968	2.662	177.218	8.156
12:47	9.171	10.031	2.634	174.760	9.452
12:48	9.655	9.617	2.721	163.209	8.933
12:49	9.718	9.569	3.150	148.401	8.663
12:50	9.663	9.615	4.005	145.342	8.982
12:51	9.424	9.794	4.050	149.060	10.027
12:52	8.772	10.371	3.226	162.180	11.503
12:53	8.947	10.232	2.479	168.409	11.487
12:54	9.235	9.974	2.048	164.925	10.321
12:55	9.405	9.818	1.848	158.168	10.771
12:56	9.052	10.149	1.925	162.165	13.849
12:57	8.679	10.504	2.093	169.147	13.190
12:58	8.606	10.582	2.381	168.221	12.676
12:59	9.177	10.105	2.321	167.800	13.858
13:00	9.494	9.787	2.122	151.854	13.507
13:01	9.043	10.199	2.114	151.803	14.438
13:02	9.140	10.149	2.334	162.770	15.358
13:03	9.529	9.787	2.581	158.659	14.700
13:04	9.489	9.836	2.507	157.904	14.609
13:05	9.744	9.652	2.057	159.286	16.506
13:06	10.069	9.404	1.873	148.128	18.379
13:07	9.682	9.671	1.854	143.242	17.312
13:08	9.590	9.772	1.887	149.440	16.198

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 13:11
 Stop Time 13:17
CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.021	0.160	1.352	0.385	0.539
C _{uf} Upscale gas	13.933	6.012	41.803	222.168	47.656
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.9%	1.6%	0.1%	0.5%
Upscale gas	-1.0%	-0.3%	-3.2%	-0.7%	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	-0.024	0.153	1.527	0.407	0.550
C _{ui} Upscale gas	13.940	6.014	41.386	222.263	47.672
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.1%	-0.2%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	0.5%	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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13:11:27	-0.022	9.884	39.570	221.343	0.098
13:11:42	-0.026	9.886	40.337	221.880	0.111
13:11:57	-0.027	9.889	40.847	221.823	0.108
13:12:12	-0.044	9.890	41.247	221.823	0.108
13:12:27	-0.032	9.890	41.542	222.173	0.108
13:12:42	-0.048	9.890	41.812	222.124	0.082
13:12:57	-0.037	9.884	42.054	222.206	0.109
13:13:12	-0.046	5.221	39.114	222.019	1.923
13:13:27	-0.016	0.685	25.053	208.197	14.177
13:13:42	-0.020	0.292	14.811	74.864	33.579
13:13:57	-0.018	0.223	9.916	12.967	43.513
13:14:12	-0.020	0.191	7.315	2.580	47.223
13:14:27	-0.021	0.175	5.732	1.864	47.552
13:14:42	-0.021	0.158	4.672	1.457	47.709
13:14:57	-0.020	0.147	3.969	1.237	47.709
13:15:12	0.050	0.141	3.350	1.058	47.732
13:15:27	8.135	2.767	2.808	0.961	46.657
13:15:42	13.470	5.648	2.478	0.847	33.182
13:15:57	13.857	5.945	2.312	0.766	16.407
13:16:12	13.898	5.983	2.092	0.652	4.845

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 13:11
 Stop Time 13:17
CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	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
13:16:27	13.913	5.997	1.887	0.504	1.446
13:16:42	13.920	6.005	1.716	0.488	0.666
13:16:57	13.930	6.007	1.498	0.472	0.548
13:17:12	13.934	6.014	1.350	0.399	0.527
13:17:27	13.935	6.014	1.210	0.285	0.542

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 13:32
 Stop time 13:59
REFERENCE METHOD RUN 8

	Channel 1 O2	Channel 2 CO2	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	-0.021	0.160	1.352	0.385	0.539
C _{ui} Initial upscale	13.933	6.012	41.803	222.168	47.656
C _{of} Final zero	-0.021	0.151	1.550	0.420	0.615
C _{uf} Final upscale	13.874	6.000	41.824	221.818	47.712
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.437	9.807	3.369	157.873	16.500
C _{Gas} Bias adjusted	9.578	9.783	2.105	159.183	16.326

Clock Time (at end of sample period)

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13:33	9.045	10.084	2.505	169.068	17.543
13:34	9.182	10.049	2.932	159.687	17.991
13:35	9.204	10.021	3.888	154.160	18.075
13:36	9.267	9.955	4.127	157.281	17.251
13:37	8.987	10.203	4.080	158.964	15.897
13:38	9.339	9.914	3.559	164.795	15.743
13:39	9.899	9.456	3.390	154.872	16.755
13:40	9.582	9.687	3.388	152.694	15.636
13:41	9.320	9.902	4.335	159.562	15.592
13:42	9.078	10.112	4.891	169.664	15.263
13:43	9.394	9.850	3.452	170.307	15.355
13:44	9.835	9.478	2.695	159.033	15.500
13:45	9.508	9.721	2.417	153.311	16.905
13:46	9.378	9.854	2.794	153.952	18.479
13:47	9.765	9.570	3.385	149.416	18.467
13:48	9.694	9.605	3.965	138.588	19.603
13:49	8.962	10.240	4.314	150.857	18.935
13:50	9.035	10.196	4.262	162.985	18.677
13:51	9.446	9.779	3.649	158.610	17.473
13:52	9.395	9.787	3.178	167.027	16.318
13:53	9.437	9.758	2.860	171.180	14.912
13:54	9.459	9.748	2.727	173.115	14.567
13:55	9.604	9.651	2.703	168.574	15.311
13:56	9.687	9.593	2.912	156.083	15.655
13:57	9.587	9.672	3.015	151.913	15.539
13:58	10.017	9.347	2.848	142.593	14.351
13:59	9.695	9.554	2.695	134.273	13.715

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 14:02
 Stop Time 14:08
CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.021	0.151	1.550	0.420	0.615
C _{uf} Upscale gas	13.874	6.000	41.824	221.818	47.712
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.8%	1.8%	0.1%	0.6%
Upscale gas	-1.4%	-0.4%	-3.2%	-0.7%	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	-0.021	0.160	1.352	0.385	0.539
C _{ui} Upscale gas	13.933	6.012	41.803	222.168	47.656
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	-0.1%	0.2%	0.0%	0.1%
Upscale gas	-0.4%	-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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14:02:20	-0.097	9.870	39.233	220.993	0.098
14:02:35	-0.025	9.872	40.088	221.270	0.098
14:02:50	-0.029	9.872	40.692	221.449	0.124
14:03:05	-0.030	9.873	41.213	221.441	0.109
14:03:20	-0.032	9.874	41.568	221.815	0.116
14:03:35	-0.032	9.875	41.820	221.913	0.098
14:03:50	-0.035	9.875	42.086	221.726	0.098
14:04:05	-0.022	8.006	41.735	221.880	0.215
14:04:20	-0.017	1.379	31.181	219.544	8.993
14:04:35	-0.018	0.351	17.880	151.412	26.375
14:04:50	-0.062	0.234	11.207	15.157	41.231
14:05:05	-0.021	0.198	7.897	5.169	46.419
14:05:20	-0.020	0.179	6.068	1.970	47.528
14:05:35	-0.020	0.161	4.895	1.563	47.669
14:05:50	-0.022	0.151	4.117	1.254	47.730
14:06:05	-0.023	0.141	3.437	1.107	47.738
14:06:20	5.197	1.635	2.919	0.920	46.968
14:06:35	13.037	5.360	2.484	0.814	38.517
14:06:50	13.814	5.914	2.243	0.741	19.427
14:07:05	13.877	5.972	2.014	0.660	7.360

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 14:02
 Stop Time 14:08
CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	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
14:07:20	13.894	5.991	1.854	0.586	1.830
14:07:35	13.904	5.995	1.703	0.464	0.747
14:07:50	13.800	5.997	1.535	0.455	0.537
14:08:05	13.917	6.007	1.412	0.342	0.560

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 14:10
 Stop time 14:37
REFERENCE METHOD RUN 9

	Channel 1 O2	Channel 2 CO2	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	-0.021	0.151	1.550	0.420	0.615
C _{ui} Initial upscale	13.874	6.000	41.824	221.818	47.712
C _{of} Final zero	-0.019	0.151	1.349	0.434	0.621
C _{uf} Final upscale	13.904	5.998	41.680	221.588	47.671
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.715	9.552	5.049	151.355	16.082
C _{Gas} Bias adjusted	9.868	9.533	3.957	152.786	15.866

Clock Time (at end of sample period)

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14:11	8.897	10.199	5.865	156.128	15.209
14:12	8.934	10.183	4.654	158.700	15.066
14:13	9.232	9.916	4.816	154.837	14.418
14:14	9.285	9.856	4.847	154.414	13.784
14:15	9.074	10.061	5.481	157.611	14.199
14:16	9.247	9.915	6.926	155.232	14.127
14:17	9.827	9.463	6.372	154.007	14.753
14:18	10.099	9.255	6.024	150.897	14.874
14:19	9.966	9.364	6.360	155.230	14.344
14:20	10.353	9.092	6.026	151.897	15.049
14:21	10.301	9.113	4.657	150.639	17.215
14:22	9.748	9.507	3.452	152.082	15.626
14:23	9.301	9.898	2.717	155.370	14.686
14:24	9.275	9.924	2.242	151.182	14.957
14:25	9.126	10.046	2.284	151.144	16.409
14:26	9.271	9.912	2.887	153.374	17.567
14:27	9.473	9.730	3.978	153.543	15.743
14:28	9.895	9.422	5.695	164.652	15.413
14:29	10.229	9.140	8.328	166.604	16.041
14:30	10.146	9.206	10.327	169.397	17.978
14:31	9.802	9.483	10.390	167.180	19.154
14:32	10.403	9.027	7.370	151.864	18.294
14:33	10.730	8.745	4.423	124.904	19.113
14:34	10.374	9.003	3.229	114.107	20.878
14:35	10.112	9.219	2.523	117.585	17.245
14:36	9.914	9.357	2.205	132.426	15.843
14:37	9.283	9.866	2.245	161.573	16.219

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 14:40
 Stop Time 14:45
CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.019	0.151	1.349	0.434	0.621
C _{uf} Upscale gas	13.904	5.998	41.680	221.588	47.671
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.8%	1.6%	0.1%	0.6%
Upscale gas	-1.2%	-0.4%	-3.4%	-0.8%	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	-0.021	0.151	1.550	0.420	0.615
C _{ui} Upscale gas	13.874	6.000	41.824	221.818	47.712
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%	0.0%	-0.2%	-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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14:40:07	-0.023	9.866	39.682	221.156	0.098
14:40:22	-0.025	9.866	40.352	221.302	0.108
14:40:37	-0.026	9.867	40.850	221.490	0.120
14:40:52	-0.030	9.870	41.338	221.588	0.100
14:41:07	-0.031	9.868	41.657	221.482	0.098
14:41:22	-0.033	9.870	42.045	221.693	0.101
14:41:37	-0.022	8.124	41.858	221.685	0.347
14:41:52	-0.017	1.414	30.735	198.869	8.258
14:42:07	-0.018	0.350	16.931	126.016	25.858
14:42:22	-0.018	0.239	10.691	37.582	41.110
14:42:37	-0.019	0.199	7.464	4.257	46.383
14:42:52	-0.020	0.177	5.635	1.840	47.484
14:43:07	-0.018	0.163	4.568	1.522	47.622
14:43:22	-0.020	0.149	3.906	1.302	47.668
14:43:37	-0.018	0.142	3.258	1.091	47.725
14:43:52	5.924	1.909	2.755	0.904	46.906
14:44:07	13.167	5.451	2.338	0.725	37.491
14:44:22	13.816	5.921	2.115	0.717	18.457
14:44:37	13.876	5.971	1.921	0.619	6.851
14:44:52	13.890	5.985	1.736	0.464	1.622

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 14:40
 Stop Time 14:45
CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	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
14:45:07	13.896	5.994	1.491	0.488	0.742
14:45:22	13.908	5.997	1.330	0.480	0.575
14:45:37	13.908	6.002	1.224	0.334	0.547

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 15:02
 Stop time 15:29

REFERENCE METHOD RUN 10

	Channel 1 O2	Channel 2 CO2	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	-0.019	0.151	1.349	0.434	0.621
C _{ui} Initial upscale	13.904	5.998	41.680	221.588	47.671
C _{of} Final zero	-0.024	0.155	1.245	0.488	0.724
C _{uf} Final upscale	13.916	6.009	41.770	221.490	47.687
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.235	9.927	3.331	161.328	16.831
C _{Gas} Bias adjusted	9.369	9.907	2.229	162.994	16.603

Clock Time (at end of sample period)

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15:03	8.838	10.259	2.442	176.752	14.127
15:04	9.093	10.073	2.656	176.612	13.869
15:05	9.747	9.537	2.729	163.002	13.192
15:06	9.621	9.607	2.620	148.659	15.459
15:07	9.535	9.687	2.974	150.035	16.622
15:08	9.920	9.400	3.660	140.248	16.092
15:09	10.283	9.133	3.983	132.442	16.992
15:10	10.504	8.971	4.276	129.461	18.683
15:11	10.078	9.267	4.463	138.822	21.882
15:12	9.843	9.463	5.645	161.469	22.248
15:13	10.492	8.954	7.229	166.821	19.933
15:14	10.127	9.229	6.260	174.261	22.386
15:15	9.706	9.526	4.958	179.762	20.278
15:16	9.430	9.737	4.413	164.898	19.838
15:17	8.984	10.098	4.117	154.929	20.046
15:18	8.899	10.167	3.956	156.693	17.274
15:19	8.739	10.276	3.684	145.719	18.122
15:20	7.843	11.054	3.230	154.365	17.323
15:21	7.851	11.095	2.738	170.393	17.917
15:22	8.547	10.434	2.414	162.464	14.882
15:23	8.397	10.597	2.013	167.129	14.338
15:24	8.371	10.648	1.807	175.407	14.433
15:25	8.656	10.388	1.760	177.202	13.803
15:26	8.814	10.229	1.548	172.177	13.508
15:27	8.835	10.202	1.533	174.556	13.464
15:28	8.988	10.098	1.388	173.932	13.709
15:29	9.206	9.900	1.447	167.656	14.006

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 1

March 28, 2011
 Start Time 15:32
 Stop Time 15:43
CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.155	1.245	0.488	0.724
C _{uf} Upscale gas	13.916	6.009	41.770	221.490	47.687
Analyzer Calibration Error Responses (C_{Dlr})					
C _{oce} Zero gas	-0.048	0.037	-0.048	-0.038	0.033
C _{mce} Upscale gas	14.073	6.049	44.720	225.118	47.672
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.8%	1.4%	0.1%	0.7%
Upscale gas	-1.1%	-0.3%	-3.3%	-0.8%	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	-0.019	0.151	1.349	0.434	0.621
C _{uf} Upscale gas	13.904	5.998	41.680	221.588	47.671
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.1%
Upscale gas	0.1%	0.1%	0.1%	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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15:32:14	-0.031	9.868	40.487	221.082	0.098
15:32:29	-0.033	9.872	40.821	221.302	0.098
15:32:44	-0.036	9.871	41.136	221.286	0.098
15:32:59	-0.037	9.868	41.412	221.343	0.070
15:33:14	-0.037	9.872	41.675	221.498	0.098
15:33:29	-0.039	9.872	41.959	221.474	0.098
15:33:44	-0.025	8.098	41.675	221.498	0.236
15:33:59	-0.019	1.410	30.480	217.981	8.584
15:34:14	-0.023	0.351	16.952	155.499	26.621
15:34:29	-0.022	0.242	10.455	20.529	40.935
15:34:44	-0.023	0.203	7.254	5.087	46.419
15:34:59	-0.023	0.181	5.470	2.027	47.525
15:35:14	-0.024	0.167	4.388	1.498	47.671
15:35:29	-0.024	0.153	3.696	1.197	47.697
15:35:44	-0.024	0.145	3.096	1.075	47.694
15:35:59	0.706	0.218	2.678	0.928	47.659
15:36:14	10.542	3.915	2.164	0.839	44.522
15:36:29	13.649	5.787	1.905	0.741	29.008
15:36:44	13.849	5.950	1.773	0.652	12.427
15:36:59	13.877	5.978	1.553	0.603	3.650

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 1

March 28, 2011
 Start Time 15:32
 Stop Time 15:43
CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	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
15:37:14	13.889	5.990	1.363	0.488	1.018
15:37:29	13.897	5.996	1.245	0.480	0.599
15:37:44	13.906	6.000	1.128	0.496	0.555
15:37:59	13.909	6.006	1.013	0.309	0.537
15:38:14	13.915	6.009	0.957	0.285	0.521
15:38:29	13.923	6.013	0.891	0.553	0.501
15:38:44	13.284	6.313	0.845	1.758	0.511
15:38:59	10.041	9.022	1.299	1.595	2.502

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

Date: **March 29, 2011**

Start Time 7:19

Stop Time 16:04

CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	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 Rsrch	Thermo	Thermo
Model:	1420C	1415C	921H UV	42i-HL	48i
Detection:	Paramagn.	NDIR	Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	207491	207492	204654	205177	204433
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Response Time (seconds)					
Manufacturer Certified Cylinder Value (C_v)					
Zero	0.000	0.000	0.000	0.000	0.000
Low	6.050	5.930	44.300	224.000	48.300
Mid					
High	14.100	13.900	89.900	453.000	95.700
Actual gas to be used for bias checks					
	14.100	5.930	44.300	224.000	48.300
Cylinder ID					
Zero	ALM013200	ALM013200	ALM013200	ALM013200	ALM013200
Low	ALM017071	ALM062872	CC217365	CC217365	ALM024011
Mid					
High	ALM062872	ALM017071	CC124384	CC124384	ALM016660
Analyzer Calibration Response (C_{Dir})					
Zero	-0.044	0.037	0.011	-0.114	0.145
Low	6.028	6.031	43.660	226.897	48.023
Mid					
High	14.068	13.878	90.011	454.579	96.449
Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)					
Zero	-0.3%	0.3%	0.0%	0.0%	0.2%
Low	-0.2%	0.7%	-0.7%	0.6%	-0.3%
Mid	N/A	N/A	N/A	N/A	N/A
High	-0.2%	-0.2%	0.1%	0.3%	0.8%
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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07:19:14	-0.030	0.042	2.066	0.057	0.169
07:19:29	-0.037	0.037	2.007	-0.098	0.160
07:19:44	-0.039	0.037	1.999	-0.114	0.165
07:19:59	-0.040	0.039	1.939	-0.122	0.161

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

Date: **March 29, 2011**
 Start Time 7:19
 Stop Time 16:04
CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	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
07:20:14	-0.040	0.037	1.926	-0.122	0.143
07:20:29	-0.041	0.037	1.858	-0.122	0.166
07:20:44	-0.041	0.037	0.467	-0.098	0.166
07:20:59	-0.043	0.037	0.044	-0.122	0.138
07:21:14	-0.044	0.037	0.000	-0.114	0.140
07:21:29	-0.045	0.037	-0.011	-0.106	0.156
07:21:44	0.414	0.365	0.007	-0.122	0.168
07:21:59	0.259	7.680	19.655	-0.114	0.407
07:22:14	-0.036	9.735	64.248	78.706	0.443
07:22:29	-0.054	9.894	81.281	276.899	0.236
07:22:44	-0.057	9.916	86.167	397.200	-0.026
07:22:59	-0.056	9.926	87.977	437.835	-0.116
07:23:14	-0.055	9.934	89.031	443.720	-0.122
07:23:29	-0.056	9.940	89.621	446.545	-0.122
07:23:44	-0.054	9.943	90.020	447.782	-0.122
07:23:59	-0.055	9.946	90.580	448.889	-0.124
07:24:14	-0.055	9.946	90.989	450.444	-0.122
07:24:29	-0.055	9.951	91.211	451.494	-0.122
07:24:44	-0.056	9.951	91.461	454.530	-0.124
07:24:59	-0.055	9.951	91.588	455.173	-0.122
07:25:14	-0.055	9.952	91.543	456.125	-0.127
07:25:29	-0.056	9.955	91.692	457.558	-0.142
07:25:44	-0.055	9.953	91.498	457.566	-0.125
07:25:59	-0.055	9.957	90.318	453.146	-0.122
07:26:14	-0.058	9.957	90.738	453.838	-0.122
07:26:29	-0.056	9.957	91.228	453.976	-0.127
07:26:44	-0.068	9.956	91.435	454.261	-0.155
07:26:59	-0.058	9.957	91.401	454.457	-0.134
07:27:14	-0.058	9.959	89.941	454.522	-0.135
07:27:29	-0.059	9.958	89.975	454.481	-0.139
07:27:44	-0.058	9.958	90.116	454.734	-0.152
07:27:59	0.140	9.648	82.597	454.660	-0.117
07:28:14	0.067	9.525	48.594	439.227	0.046
07:28:29	-0.061	9.939	44.283	382.426	0.166
07:28:44	-0.070	9.970	43.640	264.111	0.101
07:28:59	-0.071	9.974	43.585	228.083	0.007
07:29:14	-0.071	9.976	43.627	227.122	-0.024
07:29:29	-0.070	9.977	43.652	226.732	-0.024
07:29:44	-0.071	9.979	43.700	226.838	-0.029
07:29:59	0.011	8.391	36.462	226.813	0.603
07:30:14	-0.037	1.250	9.685	207.041	14.873
07:30:29	-0.049	0.167	1.903	142.605	50.579
07:30:44	-0.051	0.080	0.640	37.322	81.677
07:30:59	-0.051	0.065	0.311	3.492	93.859
07:31:14	-0.052	0.058	0.225	1.286	96.238
07:31:29	-0.053	0.055	0.168	1.018	96.353

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

Date: **March 29, 2011**
 Start Time 7:19
 Stop Time 16:04
CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	SO2	NOX	CO
	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
	%dv	%dv	ppmdv	ppmdv	ppmdv
07:31:44	-0.053	0.051	0.120	0.831	96.438
07:31:59	-0.050	0.049	0.065	0.790	96.555
07:32:14	0.149	0.164	0.241	0.709	94.908
07:32:29	-0.033	0.059	0.094	0.668	81.140
07:32:44	-0.046	0.049	-0.015	0.936	61.078
07:32:59	-0.049	0.048	-0.104	0.651	50.818
07:33:14	-0.049	0.043	-0.122	0.293	48.339
07:33:29	-0.051	0.043	-0.220	0.277	48.083
07:33:44	-0.051	0.044	-0.259	0.293	48.036
07:33:59	-0.049	0.043	-0.304	0.317	48.026
07:34:14	3.405	0.929	-0.070	0.317	48.007
07:34:29	13.004	5.335	0.138	0.879	40.762
07:34:44	14.026	5.998	-0.015	4.013	21.985
07:34:59	14.086	6.046	-0.083	2.108	7.810
07:35:14	14.094	6.049	-0.112	0.252	1.690
07:35:29	13.273	6.058	-0.099	0.098	0.553
07:35:44	7.213	11.537	-0.070	0.057	0.524
07:35:59	6.113	13.719	-0.205	1.034	0.527
07:36:14	6.040	13.864	-0.230	1.205	0.383
07:36:29	6.033	13.881	-0.293	0.114	0.191
07:36:44	6.012	13.888	-0.334	0.033	0.161

Performed after Bias 10

15:55:40	-0.035	9.884	39.710	220.733	0.071
15:55:55	-0.036	9.884	39.946	220.838	0.073
15:56:10	-0.036	9.886	40.243	221.074	0.058
15:56:25	-0.039	9.885	40.387	221.147	0.024
15:56:40	-0.039	9.888	40.440	221.123	0.034
15:56:55	-0.035	9.532	40.480	221.099	0.071
15:57:10	-0.022	2.452	29.877	214.074	4.119
15:57:25	-0.026	0.366	12.583	185.145	20.527
15:57:40	-0.026	0.216	5.552	64.518	37.055
15:57:55	-0.023	0.174	2.802	5.934	45.675
15:58:10	-0.027	0.155	1.604	1.783	47.398
15:58:25	-0.026	0.142	0.998	1.481	47.491
15:58:40	-0.028	0.127	0.658	1.188	47.547
15:58:55	0.041	0.123	0.402	1.001	47.570
15:59:10	8.814	3.062	0.112	0.871	45.778
15:59:25	13.618	5.742	-0.050	0.790	33.770
15:59:40	13.891	5.959	-0.073	0.733	15.249
15:59:55	13.918	5.986	-0.091	0.652	4.851
16:00:10	13.930	5.995	-0.235	0.488	1.258
16:00:25	13.936	6.003	-0.351	0.488	0.589
16:00:40	13.943	6.006	-0.441	0.423	0.483
16:00:55	13.946	6.007	-0.487	0.277	0.459
16:01:10	13.952	6.011	-0.490	0.301	0.456

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

Date: **March 29, 2011**

Start Time 7:19

Stop Time 16:04

CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	SO2	NOX	CO
	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
	%dv	%dv	ppmdv	ppmdv	ppmdv
16:01:25	13.548	6.157	-0.537	0.293	0.480
16:01:40	9.916	9.110	0.974	9.695	1.011
16:01:55	9.200	9.988	5.604	24.550	3.446
16:02:10	9.169	10.037	7.103	45.071	6.274
16:02:25	9.224	9.995	7.295	46.080	7.468
16:02:40	9.301	9.929	7.103	46.732	7.722
16:02:55	9.378	9.860	6.750	47.033	7.727
16:03:10	9.415	9.835	6.471	47.277	7.723
16:03:25	9.515	9.759	6.341	47.505	7.873
16:03:40	9.519	9.741	6.243	47.676	8.291
16:03:55	9.632	9.697	6.046	47.806	8.868
16:04:10	9.731	9.565	5.752	47.912	9.268
16:04:25	9.490	9.747	5.341	48.107	9.439

Converter Efficiency

NO2=50.1

95.7%

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 9:25
 Stop Time 9:35
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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	-0.210	0.095	-0.042	0.431	0.494
C _{uf} Upscale gas	13.954	5.975	41.268	223.685	47.794
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	-1.2%	0.4%	-0.1%	0.1%	0.4%
Upscale gas	-0.8%	-0.4%	-2.7%	-0.7%	-0.2%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gasses (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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09:25:01	14.033	5.837	0.003	1.237	0.700
09:25:16	13.989	5.923	0.055	1.066	0.659
09:25:31	13.986	5.946	0.050	0.635	0.521
09:25:46	13.983	5.957	-0.010	0.619	0.515
09:26:01	13.979	5.964	-0.028	0.488	0.511
09:26:16	13.979	5.971	-0.049	0.480	0.493
09:26:31	13.976	5.977	-0.049	0.480	0.485
09:26:46	13.909	5.977	-0.028	0.333	0.505
09:27:01	5.508	3.150	-0.033	0.285	2.148
09:27:16	0.369	0.379	-0.049	0.301	13.334
09:27:31	0.073	0.150	-0.044	0.277	33.973
09:27:46	-0.264	0.108	-0.197	-0.391	43.577
09:28:01	-0.322	0.091	-0.544	-0.896	47.236
09:28:16	-0.046	0.086	-0.085	0.057	47.647
09:28:31	0.010	0.081	-0.049	0.285	47.719
09:28:46	0.006	0.073	-0.049	0.293	47.722
09:29:01	0.005	0.072	-0.049	0.293	47.743
09:29:16	0.000	0.066	-0.049	0.277	47.804
09:29:31	0.005	0.074	-0.049	0.301	47.835
09:29:46	0.041	5.107	3.756	2.597	46.642

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 9:25
 Stop Time 9:35
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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
09:30:01	-0.020	9.363	19.219	26.634	31.696
09:30:16	-0.024	9.702	28.591	115.694	15.613
09:30:31	-1.844	9.745	32.277	212.682	3.949
09:30:46	-0.061	9.778	34.628	219.740	0.996
09:31:01	-0.030	9.797	36.096	220.952	0.238
09:31:16	-0.031	9.811	37.053	221.417	0.160
09:31:31	-0.031	9.819	37.831	221.937	0.130
09:31:46	-0.033	9.826	38.473	222.141	0.130
09:32:01	-0.035	9.833	38.945	222.360	0.122
09:32:16	-0.036	9.836	39.346	222.654	0.122
09:32:31	-0.037	9.842	39.707	222.580	0.114
09:32:46	-0.035	9.847	40.037	222.711	0.098
09:33:01	-0.038	9.849	40.344	223.053	0.106
09:33:16	-0.039	9.853	40.495	222.963	0.122
09:33:31	-0.038	9.854	40.676	223.012	0.114
09:33:46	-0.039	9.859	40.866	223.354	0.114
09:34:01	-0.038	9.860	41.058	223.427	0.098
09:34:16	-0.038	9.860	41.221	223.573	0.098
09:34:31	-0.037	9.861	41.268	223.769	0.098
09:34:46	-0.037	9.863	41.314	223.712	0.100
09:35:01	-0.015	9.865	41.394	223.647	0.098

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 9:36
 Stop time 10:03
REFERENCE METHOD RUN 1

	Channel 1 O2	Channel 2 CO2	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	-0.210	0.095	-0.042	0.431	0.494
C _{ui} Initial upscale	13.954	5.975	41.268	223.685	47.794
C _{of} Final zero	-0.030	0.110	0.227	0.290	0.611
C _{uf} Final upscale	13.966	6.010	41.448	223.701	47.699
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.706	9.640	0.906	141.462	11.591
C _{Gas} Bias adjusted	9.839	9.602	0.873	141.523	11.297

Clock Time (at end of sample period)

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09:37	8.856	10.335	2.131	164.668	15.600
09:38	9.031	10.173	1.774	159.764	13.573
09:39	9.057	10.155	1.659	159.121	11.958
09:40	8.886	10.298	1.590	159.858	11.634
09:41	8.361	10.759	1.671	158.378	12.233
09:42	8.011	11.100	1.430	158.079	10.912
09:43	8.650	10.523	1.326	162.405	9.101
09:44	8.849	10.353	1.209	158.525	9.161
09:45	8.807	10.393	1.113	152.757	10.187
09:46	8.797	10.417	1.092	149.827	10.151
09:47	9.136	10.114	0.933	147.743	9.147
09:48	9.456	9.779	0.922	142.989	8.444
09:49	9.877	9.506	0.824	138.600	8.305
09:50	10.003	9.400	0.717	131.986	9.503
09:51	9.547	9.762	0.757	131.359	13.936
09:52	9.784	9.591	0.676	131.345	17.282
09:53	9.972	9.366	0.652	131.805	13.856
09:54	10.264	9.131	0.604	132.800	13.727
09:55	10.321	9.137	0.535	136.758	13.929
09:56	10.441	9.057	0.495	131.530	16.485
09:57	10.765	8.773	0.439	128.637	12.538
09:58	10.907	8.677	0.446	127.352	10.467
09:59	11.077	8.586	0.339	125.108	9.340
10:00	11.089	8.551	0.334	124.223	10.080
10:01	10.903	8.651	0.250	124.339	10.393
10:02	10.665	8.805	0.264	125.088	10.808
10:03	10.538	8.897	0.273	124.420	10.214

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 10:07
 Stop Time 10:15
CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	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	-0.030	0.110	0.227	0.290	0.611
C _{uf} Upscale gas	13.966	6.010	41.448	223.701	47.699
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.5%	0.2%	0.1%	0.5%
Upscale gas	-0.7%	-0.1%	-2.5%	-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 _{oi} Zero gas	-0.210	0.095	-0.042	0.431	0.494
C _{ui} Upscale gas	13.954	5.975	41.268	223.685	47.794
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	1.3%	0.1%	0.3%	0.0%	0.1%
Upscale gas	0.1%	0.3%	0.2%	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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10:07:24	-0.033	9.891	37.475	223.346	0.075
10:07:39	-0.035	9.895	37.929	223.394	0.059
10:07:54	-0.037	9.896	38.308	223.557	0.098
10:08:09	-0.036	9.896	38.602	223.932	0.098
10:08:24	-0.035	9.896	38.909	223.630	0.098
10:08:39	-0.039	9.901	39.209	223.752	0.067
10:08:54	-0.039	9.901	39.529	223.964	0.077
10:09:09	-0.040	9.902	39.818	223.720	0.096
10:09:24	-0.041	9.903	40.179	223.728	0.098
10:09:39	-0.043	9.902	40.488	224.021	0.064
10:09:54	-0.043	9.909	40.749	223.997	0.062
10:10:09	-0.043	9.904	40.978	223.712	0.083
10:10:24	-0.044	9.908	41.149	224.078	0.077
10:10:39	-0.044	9.908	41.301	223.761	0.093
10:10:54	-0.045	9.908	41.481	223.492	0.063
10:11:09	-0.045	9.908	41.563	223.850	0.059
10:11:24	-0.036	7.690	39.886	223.459	0.350
10:11:39	-0.032	1.251	23.474	214.270	7.635
10:11:54	-0.037	0.317	10.727	149.703	24.216
10:12:09	-0.035	0.206	5.888	17.981	37.874

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 10:07
 Stop Time 10:15
CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	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
10:12:24	-0.035	0.173	3.915	4.371	45.361
10:12:39	-0.030	0.150	2.833	1.791	47.215
10:12:54	-0.029	0.134	2.162	1.424	47.582
10:13:09	-0.031	0.124	1.726	1.091	47.640
10:13:24	-0.030	0.114	1.368	0.977	47.661
10:13:39	-0.031	0.110	1.109	0.871	47.715
10:13:54	-0.031	0.105	0.922	0.774	47.722
10:14:09	4.005	1.179	0.716	0.652	47.424
10:14:24	12.957	5.285	0.498	0.652	40.572
10:14:39	13.865	5.925	0.487	0.562	23.147
10:14:54	13.910	5.981	0.467	0.456	8.378
10:15:09	13.950	5.998	0.405	0.431	2.398
10:15:24	13.958	6.005	0.290	0.293	0.741
10:15:39	13.968	6.011	0.229	0.293	0.555
10:15:54	13.973	6.014	0.161	0.285	0.537

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 10:18
 Stop time 10:45
REFERENCE METHOD RUN 2

	Channel 1 O2	Channel 2 CO2	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	-0.030	0.110	0.227	0.290	0.611
C _{ui} Initial upscale	13.966	6.010	41.448	223.701	47.699
C _{of} Final zero	-0.025	0.130	0.094	0.328	0.531
C _{uf} Final upscale	13.975	6.021	40.896	222.602	47.574
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.755	10.444	6.614	156.605	10.495
C _{Gas} Bias adjusted	8.847	10.384	6.971	157.108	10.184

Clock Time (at end of sample period)

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10:19	8.585	10.542	1.389	170.171	7.066
10:20	8.650	10.462	1.150	170.262	7.410
10:21	8.906	10.219	0.985	168.319	6.327
10:22	8.642	10.454	0.950	166.343	6.230
10:23	8.396	10.692	0.996	161.166	7.367
10:24	8.432	10.671	1.172	163.915	7.657
10:25	8.815	10.325	1.220	156.213	8.542
10:26	9.008	10.139	1.139	155.376	7.703
10:27	8.973	10.181	1.153	153.930	8.349
10:28	8.547	10.584	1.523	143.618	17.273
10:29	9.036	10.156	2.897	141.972	12.417
10:30	8.964	10.207	4.115	143.818	11.839
10:31	8.435	10.681	7.095	151.111	13.088
10:32	8.802	10.394	7.666	152.607	11.656
10:33	9.373	9.914	10.337	155.963	10.781
10:34	9.046	10.188	9.644	158.396	10.749
10:35	8.582	10.642	7.429	152.611	18.433
10:36	8.778	10.478	8.190	147.124	20.742
10:37	8.928	10.381	8.036	156.455	14.543
10:38	8.913	10.393	7.595	157.169	12.758
10:39	8.686	10.601	7.993	157.591	11.205
10:40	8.797	10.409	12.131	158.252	10.215
10:41	8.848	10.434	14.614	163.394	9.003
10:42	8.692	10.595	14.346	156.040	8.388
10:43	8.644	10.625	14.626	156.416	8.464
10:44	8.644	10.644	14.916	156.750	7.491
10:45	8.272	10.979	15.263	153.350	7.667

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 10:48
 Stop Time 10:54
 CALIBRATION BIAS 02

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	SO2	NOX	CO
	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
	%dv	%dv	ppmdv	ppmdv	ppmdv
System Response to Calibration Gases (C_s)					
C _{of} Zero gas	-0.025	0.130	0.094	0.328	0.531
C _{uf} Upscale gas	13.975	6.021	40.896	222.602	47.574
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	0.1%	0.1%	0.4%
Upscale gas	-0.7%	-0.1%	-3.1%	-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	-0.030	0.110	0.227	0.290	0.611
C _{uf} Upscale gas	13.966	6.010	41.448	223.701	47.699
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.1%	-0.1%	0.0%	-0.1%
Upscale gas	0.1%	0.1%	-0.6%	-0.2%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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10:48:55	-0.035	9.917	39.803	222.084	0.059
10:49:10	-0.037	9.919	39.946	222.287	0.088
10:49:25	-0.038	9.920	40.236	222.515	0.055
10:49:40	-0.038	9.919	40.441	222.458	0.057
10:49:55	-0.039	9.920	40.664	222.409	0.057
10:50:10	-0.042	9.921	40.912	222.686	0.067
10:50:25	-0.041	9.921	41.112	222.711	0.073
10:50:40	-0.025	5.355	36.889	223.085	1.482
10:50:55	-0.024	0.592	19.020	171.005	12.610
10:51:10	-0.024	0.241	8.568	75.694	32.453
10:51:25	-0.024	0.186	4.614	16.427	43.093
10:51:40	-0.025	0.159	2.880	2.638	46.994
10:51:55	-0.025	0.142	1.972	1.587	47.521
10:52:10	-0.025	0.131	1.429	1.156	47.567
10:52:25	-0.025	0.118	1.096	1.026	47.634
10:52:40	0.322	0.138	0.855	0.839	47.653
10:52:55	10.146	3.683	0.542	0.782	45.857
10:53:10	13.726	5.813	0.394	0.717	30.885
10:53:25	13.924	5.977	0.345	0.652	14.532
10:53:40	13.949	5.999	0.267	0.570	4.199

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 10:48
 Stop Time 10:54
CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	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
10:53:55	13.958	6.010	0.202	0.488	1.148
10:54:10	13.968	6.018	0.155	0.407	0.568
10:54:25	13.975	6.020	0.088	0.285	0.513
10:54:40	13.980	6.025	0.041	0.293	0.513

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 10:55
 Stop time 11:22

REFERENCE METHOD RUN 3

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.130	0.094	0.328	0.531
C _{ui} Initial upscale	13.975	6.021	40.896	222.602	47.574
C _{of} Final zero	-0.025	0.133	0.047	0.390	0.531
C _{uf} Final upscale	13.978	6.025	40.609	222.882	47.641
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.280	10.059	7.299	156.210	12.551
C _{Gas} Bias adjusted	9.371	9.993	7.872	156.984	12.332

Clock Time (at end of sample period)

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10:56	9.730	9.663	10.386	83.307	7.208
10:57	9.729	9.701	11.169	141.231	11.100
10:58	9.648	9.779	10.700	142.599	11.229
10:59	9.506	9.917	12.026	145.045	12.366
11:00	9.560	9.856	13.020	146.429	11.825
11:01	9.769	9.668	13.781	150.847	11.578
11:02	9.544	9.830	13.617	154.491	11.513
11:03	8.777	10.524	14.258	163.307	12.271
11:04	9.147	10.203	12.474	166.174	10.850
11:05	9.437	9.881	9.762	165.057	9.477
11:06	9.507	9.804	8.725	162.588	9.274
11:07	9.217	10.090	8.709	164.042	9.444
11:08	9.200	10.116	8.829	164.786	11.592
11:09	8.765	10.527	8.074	167.068	12.893
11:10	9.132	10.216	6.729	169.023	12.470
11:11	9.118	10.209	5.505	169.123	12.479
11:12	8.754	10.546	4.696	169.752	13.755
11:13	8.836	10.486	4.167	167.242	12.958
11:14	9.220	10.120	3.353	162.550	13.894
11:15	9.608	9.741	2.880	160.336	14.630
11:16	9.095	10.187	2.476	159.450	15.131
11:17	9.042	10.263	2.454	165.668	15.215
11:18	9.048	10.239	2.192	159.235	15.090
11:19	8.897	10.386	2.048	154.959	15.978
11:20	9.209	10.081	1.878	152.778	16.239
11:21	9.335	9.947	1.682	157.528	13.914
11:22	9.737	9.625	1.493	153.048	14.515

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 11:25
 Stop Time 11:30
CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.025	0.133	0.047	0.390	0.531
C _{uf} Upscale gas	13.978	6.025	40.609	222.882	47.641
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	0.0%	0.1%	0.4%
Upscale gas	-0.6%	0.0%	-3.4%	-0.9%	-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	-0.025	0.130	0.094	0.328	0.531
C _{ui} Upscale gas	13.975	6.021	40.896	222.602	47.574
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%	0.1%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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11:25:41	-0.037	9.921	40.104	222.360	0.062
11:25:56	-0.038	9.921	40.414	222.548	0.060
11:26:11	-0.037	9.921	40.580	222.768	0.057
11:26:26	-0.040	9.924	40.755	222.719	0.083
11:26:41	-0.039	9.924	40.959	222.874	0.075
11:26:56	-0.029	8.213	40.112	223.053	0.101
11:27:11	-0.023	1.262	24.597	200.879	7.186
11:27:26	-0.023	0.293	10.854	123.997	24.365
11:27:41	-0.026	0.195	5.433	37.697	40.236
11:27:56	-0.022	0.164	3.274	4.070	46.148
11:28:11	-0.024	0.145	2.209	1.701	47.456
11:28:26	-0.026	0.131	1.592	1.416	47.613
11:28:41	-0.025	0.123	1.166	1.148	47.643
11:28:56	1.089	0.268	0.868	0.953	47.666
11:29:11	11.451	4.394	0.484	0.896	44.497
11:29:26	13.803	5.877	0.352	0.912	29.787
11:29:41	13.935	5.987	0.293	0.725	11.968
11:29:56	13.954	6.005	0.241	0.643	3.759
11:30:11	13.965	6.017	0.171	0.488	0.935
11:30:26	13.974	6.020	0.119	0.480	0.571

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 11:25
 Stop Time 11:30
CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	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
11:30:41	13.978	6.026	0.036	0.399	0.513
11:30:56	13.982	6.028	-0.013	0.293	0.510

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 11:32
 Stop time 11:59
REFERENCE METHOD RUN 4

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.133	0.047	0.390	0.531
C _{ui} Initial upscale	13.978	6.025	40.609	222.882	47.641
C _{of} Final zero	-0.025	0.126	-0.039	0.437	0.628
C _{uf} Final upscale	13.974	6.022	40.913	223.180	47.620
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{AVG} Average conc.	8.850	10.346	1.198	170.303	9.072
C _{Gas} Bias adjusted	8.938	10.279	1.297	170.944	8.718

Clock Time (at end of sample period)

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11:33	7.513	11.509	1.859	175.067	9.607
11:34	8.371	10.787	1.423	177.481	8.188
11:35	8.877	10.310	1.203	169.957	7.740
11:36	8.636	10.521	1.110	164.935	8.400
11:37	8.823	10.385	1.160	163.001	11.121
11:38	9.354	9.891	1.160	162.527	8.419
11:39	9.349	9.891	1.051	159.725	8.560
11:40	9.326	9.938	1.033	162.073	10.121
11:41	9.530	9.747	0.980	163.765	9.356
11:42	9.590	9.702	1.065	162.875	9.972
11:43	9.904	9.485	1.043	157.033	10.185
11:44	10.152	9.301	1.098	153.301	12.842
11:45	10.717	8.848	1.015	151.331	11.415
11:46	11.021	8.594	0.704	148.622	6.653
11:47	10.415	9.024	0.587	153.746	5.762
11:48	9.841	9.459	0.593	160.861	5.815
11:49	8.814	10.307	0.783	167.403	6.009
11:50	8.259	10.848	1.213	173.283	7.212
11:51	7.924	11.143	1.529	177.910	8.153
11:52	7.342	11.606	1.596	173.704	8.926
11:53	6.508	12.322	1.775	173.836	11.315
11:54	6.764	12.088	2.007	182.493	14.106
11:55	7.674	11.338	1.662	178.759	14.987
11:56	8.196	10.883	1.352	192.971	7.171
11:57	8.472	10.654	1.198	195.993	6.358
11:58	8.764	10.409	1.118	196.673	7.790
11:59	8.826	10.348	1.023	198.846	8.766

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 12:03
 Stop Time 12:08
 CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.126	-0.039	0.437	0.628
C _{uf} Upscale gas	13.974	6.022	40.913	223.180	47.620
Analyzer Calibration Error Responses (C_{Dr})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.6%	-0.1%	0.1%	0.5%
Upscale gas	-0.7%	-0.1%	-3.1%	-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 Gasses (C_s)					
C _{oi} Zero gas	-0.025	0.133	0.047	0.390	0.531
C _{ui} Upscale gas	13.978	6.025	40.609	222.882	47.641
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%	0.0%	0.3%	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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12:03:06	-0.036	9.922	39.609	222.817	0.077
12:03:21	-0.037	9.921	39.954	222.654	0.049
12:03:36	-0.039	9.923	40.381	222.703	0.047
12:03:51	-0.040	9.923	40.547	222.849	0.068
12:04:06	-0.040	9.922	40.788	222.922	0.068
12:04:21	-0.041	9.925	40.962	223.215	0.067
12:04:36	-0.037	9.601	40.990	223.402	0.057
12:04:51	-0.023	2.579	30.413	217.615	4.039
12:05:06	-0.024	0.376	13.170	188.799	18.927
12:05:21	-0.024	0.215	6.058	60.407	37.719
12:05:36	-0.024	0.173	3.373	6.374	45.174
12:05:51	-0.024	0.153	2.142	2.003	47.357
12:06:06	-0.024	0.137	1.532	1.555	47.565
12:06:21	-0.025	0.125	1.096	1.302	47.624
12:06:36	-0.024	0.117	0.783	1.099	47.671
12:06:51	2.919	0.812	0.550	0.904	47.528
12:07:06	12.632	5.089	0.247	0.790	42.435
12:07:21	13.866	5.924	0.150	0.782	23.372
12:07:36	13.940	5.993	0.101	0.766	9.710
12:07:51	13.958	6.006	0.034	0.578	2.197

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
Start Time 12:03
Stop Time 12:08
CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	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
12:08:06	13.966	6.018	-0.015	0.488	0.845
12:08:21	13.974	6.022	-0.049	0.488	0.529
12:08:36	13.982	6.026	-0.052	0.334	0.510

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011

Start Time 12:10

Stop time 12:37

REFERENCE METHOD RUN 5

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.126	-0.039	0.437	0.628
C _{ui} Initial upscale	13.974	6.022	40.913	223.180	47.620
C _{of} Final zero	-0.024	0.127	-0.070	0.488	0.615
C _{uf} Final upscale	13.968	6.017	40.816	221.921	47.554
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.688	10.516	1.171	164.121	12.953
C _{Gas} Bias adjusted	8.778	10.454	1.326	165.068	12.682

Clock Time (at end of sample period)

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12:11	8.201	10.912	2.076	146.726	20.234
12:12	8.586	10.544	1.568	137.782	37.415
12:13	8.789	10.362	1.234	135.686	34.361
12:14	9.064	10.143	1.092	142.076	17.002
12:15	8.733	10.427	0.992	149.957	12.393
12:16	8.139	10.944	0.985	153.600	21.596
12:17	8.040	11.070	0.933	167.804	11.087
12:18	8.231	10.879	0.930	174.636	9.094
12:19	7.979	11.081	0.809	179.280	7.997
12:20	8.072	11.028	0.832	186.864	6.604
12:21	7.954	11.127	0.798	191.933	5.999
12:22	8.361	10.788	0.689	190.582	5.599
12:23	8.171	10.961	0.726	186.036	19.517
12:24	8.857	10.391	1.055	186.622	22.730
12:25	8.817	10.429	1.159	182.251	6.931
12:26	8.882	10.348	1.135	167.013	6.297
12:27	8.998	10.252	1.151	157.821	6.920
12:28	9.107	10.184	1.227	155.613	8.426
12:29	9.092	10.215	1.200	150.633	8.580
12:30	9.277	10.056	1.270	148.199	9.037
12:31	9.305	10.024	1.221	154.275	9.177
12:32	9.483	9.872	1.348	157.778	9.360
12:33	9.324	9.978	1.323	157.007	9.360
12:34	8.764	10.490	1.468	159.685	10.686
12:35	8.712	10.558	1.565	167.951	10.925
12:36	8.709	10.536	1.428	170.458	11.440
12:37	8.934	10.325	1.390	173.014	10.977

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 12:40
 Stop Time 12:46
CALIBRATION BIAS 05

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

System Response to Calibration Gases (C_s)

C _{of} Zero gas	-0.024	0.127	-0.070	0.488	0.615
C _{uf} Upscale gas	13.968	6.017	40.816	221.921	47.554

Analyzer Calibration Error Responses (C_{dir})

C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023

Actual Upscale Gas Value (C_{MA})

C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
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Calibration Span Value (CS)

	14.100	13.900	89.900	453.000	95.700
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System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.1%	0.6%	-0.1%	0.1%	0.5%
Upscale gas	-0.7%	-0.1%	-3.2%	-1.1%	-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	-0.025	0.126	-0.039	0.437	0.628
C _{ui} Upscale gas	13.974	6.022	40.913	223.180	47.620

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%	-0.3%	-0.1%

Drift Assessment Status

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

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12:40:38	-0.033	9.916	39.665	221.457	0.065
12:40:53	-0.034	9.917	39.963	221.604	0.047
12:41:08	-0.037	9.917	40.265	221.840	0.058
12:41:23	-0.037	9.919	40.432	221.693	0.065
12:41:38	-0.038	9.920	40.630	221.872	0.040
12:41:53	-0.038	9.920	40.879	221.905	0.045
12:42:08	-0.032	9.555	40.938	221.986	0.094
12:42:23	-0.021	2.488	30.672	221.889	4.093
12:42:38	-0.022	0.372	13.464	131.388	20.351
12:42:53	-0.029	0.211	6.115	44.029	37.636
12:43:08	-0.025	0.173	3.378	7.212	45.244
12:43:23	-0.025	0.151	2.129	2.174	47.294
12:43:38	-0.024	0.135	1.480	1.506	47.510
12:43:53	-0.024	0.127	1.070	1.262	47.582
12:44:08	-0.025	0.118	0.817	1.075	47.570
12:44:23	3.563	1.037	0.541	0.953	47.482
12:44:38	12.842	5.220	0.229	0.782	40.490
12:44:53	13.869	5.928	0.166	0.782	22.771
12:45:08	13.938	5.991	0.122	0.644	8.798
12:45:23	13.952	6.004	0.037	0.554	2.214

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 12:40
 Stop Time 12:46
CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	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
12:45:38	13.962	6.013	-0.057	0.496	0.783
12:45:53	13.968	6.018	-0.071	0.496	0.552
12:46:08	13.975	6.021	-0.083	0.472	0.510

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 12:47
 Stop time 13:14
REFERENCE METHOD RUN 6

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.127	-0.070	0.488	0.615
C _{ui} Initial upscale	13.968	6.017	40.816	221.921	47.554
C _{of} Final zero	-0.028	0.116	-0.249	0.420	0.551
C _{uf} Final upscale	13.963	6.014	40.888	219.292	47.636
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.936	10.259	2.178	165.163	12.916
C _{Gas} Bias adjusted	9.031	10.199	2.525	167.587	12.671

Clock Time (at end of sample period)

042011 095159					
12:48	8.479	10.668	1.479	167.078	12.145
12:49	8.496	10.688	1.005	170.798	11.852
12:50	8.946	10.313	0.808	173.828	12.346
12:51	9.461	9.832	1.164	164.683	12.971
12:52	9.539	9.733	1.417	157.908	12.010
12:53	9.521	9.770	1.780	161.557	12.310
12:54	9.505	9.738	1.849	154.996	12.038
12:55	8.462	10.658	2.118	162.576	12.953
12:56	7.622	11.377	2.464	180.200	12.820
12:57	7.903	11.136	2.076	185.568	10.232
12:58	7.849	11.168	1.891	179.459	11.324
12:59	7.954	11.081	1.845	171.905	15.567
13:00	8.246	10.812	1.619	173.138	9.546
13:01	8.171	10.892	1.711	172.051	8.654
13:02	8.266	10.811	2.011	167.747	10.357
13:03	8.663	10.465	2.157	164.147	8.969
13:04	9.046	10.125	2.083	157.354	8.020
13:05	9.432	9.808	2.289	152.623	10.054
13:06	9.606	9.659	2.602	149.727	12.874
13:07	9.273	9.936	3.261	151.431	16.442
13:08	9.380	9.876	3.540	157.230	17.773
13:09	9.985	9.394	3.034	156.559	16.223
13:10	10.159	9.251	2.579	150.083	16.091
13:11	9.356	9.903	2.711	156.363	18.968
13:12	9.071	10.198	3.232	173.897	15.963
13:13	9.273	10.007	3.287	172.774	14.924
13:14	9.604	9.690	2.789	173.710	15.313

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 13:17
 Stop Time 13:23
 CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	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	-0.028	0.116	-0.249	0.420	0.551
C _{uf} Upscale gas	13.963	6.014	40.888	219.292	47.636
Analyzer Calibration Error Responses (C_{DIR})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.6%	-0.3%	0.1%	0.4%
Upscale gas	-0.7%	-0.1%	-3.1%	-1.7%	-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	-0.024	0.127	-0.070	0.488	0.615
C _{ui} Upscale gas	13.968	6.017	40.816	221.921	47.554
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	-0.1%	-0.2%	0.0%	-0.1%
Upscale gas	0.0%	0.0%	0.1%	-0.6%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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13:17:42	-0.034	9.908	39.657	218.958	0.068
13:17:57	-0.034	9.908	39.910	219.024	0.039
13:18:12	-0.035	9.908	40.138	219.097	0.071
13:18:27	-0.037	9.908	40.402	219.292	0.067
13:18:42	-0.036	9.908	40.506	219.137	0.063
13:18:57	-0.039	9.913	40.712	219.211	0.039
13:19:12	-0.037	9.912	40.894	219.325	0.045
13:19:27	-0.038	9.761	41.060	219.341	0.081
13:19:42	-0.020	3.073	32.933	219.341	3.414
13:19:57	-0.022	0.405	14.535	134.888	18.201
13:20:12	-0.024	0.222	6.455	45.885	36.899
13:20:27	-0.024	0.178	3.432	7.481	44.850
13:20:42	-0.026	0.157	2.024	2.108	47.263
13:20:57	-0.024	0.142	1.302	1.506	47.531
13:21:12	-0.025	0.131	0.869	1.319	47.635
13:21:27	-0.027	0.122	0.588	1.075	47.640
13:21:42	-0.025	0.116	0.375	0.896	47.648
13:21:57	-0.031	0.110	0.239	0.790	47.619
13:22:12	6.942	2.283	0.091	0.774	46.776
13:22:27	13.454	5.627	-0.064	0.660	36.871

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 13:17
 Stop Time 13:23
CALIBRATION BIAS 06

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	SO2	NOX	CO
	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
	%dv	%dv	ppmdv	ppmdv	ppmdv
13:22:42	13.899	5.953	-0.052	0.644	17.387
13:22:57	13.936	5.991	-0.049	0.627	6.245
13:23:12	13.950	6.003	-0.103	0.496	1.390
13:23:27	13.956	6.010	-0.171	0.480	0.628
13:23:42	13.964	6.014	-0.254	0.480	0.513
13:23:57	13.970	6.019	-0.322	0.301	0.513

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 13:25
 Stop time 13:52

REFERENCE METHOD RUN 7

	Channel 1 O2	Channel 2 CO2	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	-0.028	0.116	-0.249	0.420	0.551
C _{ui} Initial upscale	13.963	6.014	40.888	219.292	47.636
C _{of} Final zero	-0.026	0.137	-0.104	0.491	0.511
C _{uf} Final upscale	13.959	6.015	40.884	219.062	47.518
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.191	10.090	3.525	160.506	14.132
C _{Gas} Bias adjusted	9.292	10.034	3.993	163.913	13.963

Clock Time (at end of sample period)

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13:26	9.739	9.611	4.394	133.948	10.275
13:27	9.671	9.652	4.103	132.918	11.444
13:28	9.107	10.130	4.389	143.726	11.262
13:29	9.153	10.149	5.322	154.766	12.339
13:30	9.718	9.612	4.332	152.802	11.811
13:31	9.718	9.589	3.892	169.782	11.502
13:32	9.505	9.782	4.107	170.777	12.352
13:33	9.580	9.696	4.606	172.764	12.549
13:34	9.616	9.704	5.298	173.293	13.010
13:35	10.023	9.400	4.740	165.631	14.699
13:36	9.580	9.721	4.085	161.223	18.541
13:37	9.072	10.205	3.751	165.682	19.547
13:38	9.289	10.000	2.861	157.328	16.712
13:39	9.658	9.670	2.525	147.385	14.774
13:40	9.473	9.837	2.863	145.971	15.727
13:41	9.361	9.973	3.306	144.467	16.951
13:42	9.186	10.129	3.962	146.693	16.787
13:43	9.258	10.063	3.802	151.343	17.855
13:44	9.211	10.060	3.110	151.724	18.234
13:45	8.320	10.855	2.553	159.137	17.643
13:46	8.177	11.016	2.445	175.012	13.762
13:47	8.483	10.698	2.224	177.649	10.841
13:48	8.269	10.910	2.239	179.628	11.312
13:49	8.739	10.516	2.346	182.220	11.162
13:50	9.015	10.253	2.196	172.192	12.664
13:51	8.812	10.434	2.493	171.223	13.440
13:52	8.431	10.763	3.232	174.379	14.372

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 13:55
 Stop Time 14:01
CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	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	-0.026	0.137	-0.104	0.491	0.511
C _{uf} Upscale gas	13.959	6.015	40.884	219.062	47.518
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	-0.1%	0.1%	0.4%
Upscale gas	-0.8%	-0.1%	-3.1%	-1.7%	-0.5%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gasses (C_s)					
C _{oi} Zero gas	-0.028	0.116	-0.249	0.420	0.551
C _{ui} Upscale gas	13.963	6.014	40.888	219.292	47.636
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.2%	0.2%	0.0%	0.0%
Upscale gas	0.0%	0.0%	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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13:55:28	-0.034	9.902	39.746	218.592	0.063
13:55:43	-0.037	9.902	40.060	218.812	0.062
13:55:58	-0.037	9.902	40.388	218.901	0.062
13:56:13	-0.039	9.905	40.506	219.048	0.059
13:56:28	-0.040	9.906	40.684	219.040	0.062
13:56:43	-0.041	9.904	40.878	219.064	0.054
13:56:58	-0.042	9.908	41.091	219.081	0.063
13:57:13	-0.032	8.905	40.814	219.194	0.091
13:57:28	-0.023	1.691	27.616	205.983	5.005
13:57:43	-0.024	0.324	11.319	118.071	23.474
13:57:58	-0.025	0.204	5.421	43.240	38.353
13:58:13	-0.024	0.171	3.101	3.973	45.934
13:58:28	-0.025	0.151	1.970	1.978	47.329
13:58:43	-0.025	0.134	1.310	1.441	47.606
13:58:58	-0.027	0.126	0.876	1.213	47.617
13:59:13	0.464	0.157	0.588	0.993	47.618
13:59:28	10.512	3.867	0.244	0.912	45.564
13:59:43	13.735	5.829	0.118	0.912	30.424
13:59:58	13.908	5.973	0.101	0.766	14.175
14:00:13	13.935	5.995	0.071	0.644	3.891

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 13:55
 Stop Time 14:01
CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	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
14:00:28	13.944	6.005	0.013	0.611	1.125
14:00:43	13.954	6.011	-0.050	0.480	0.554
14:00:58	13.961	6.015	-0.085	0.488	0.491
14:01:13	13.962	6.020	-0.176	0.504	0.488

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 14:02
 Stop time 14:29
REFERENCE METHOD RUN 8

	Channel 1 O2	Channel 2 CO2	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	-0.026	0.137	-0.104	0.491	0.511
C _{ui} Initial upscale	13.959	6.015	40.884	219.062	47.518
C _{of} Final zero	-0.024	0.138	-0.106	0.507	0.656
C _{uf} Final upscale	13.951	6.009	40.555	220.860	47.532
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	9.148	10.053	5.286	157.174	10.603
C _{Gas} Bias adjusted	9.251	10.008	5.850	159.914	10.309

Clock Time (at end of sample period)

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14:03	10.587	8.885	3.047	111.689	14.242
14:04	10.973	8.618	1.637	100.431	14.346
14:05	10.660	8.864	1.235	103.816	15.980
14:06	10.870	8.680	1.377	107.501	15.671
14:07	10.675	8.812	2.129	118.820	14.269
14:08	10.566	8.891	2.538	133.156	12.883
14:09	10.585	8.877	2.487	139.778	11.159
14:10	10.596	8.872	2.333	140.389	11.314
14:11	10.554	8.907	2.176	139.988	10.718
14:12	10.383	9.022	2.140	142.090	9.609
14:13	9.784	9.474	2.783	153.921	9.727
14:14	9.437	9.740	3.320	162.481	9.159
14:15	8.784	10.318	3.631	166.514	10.172
14:16	7.930	11.050	4.203	176.563	12.234
14:17	7.360	11.535	4.882	184.792	11.976
14:18	6.741	12.035	5.146	182.141	11.891
14:19	6.795	12.004	5.668	178.299	15.167
14:20	7.312	11.580	6.281	178.675	10.319
14:21	8.038	10.967	5.536	192.587	8.175
14:22	8.591	10.472	5.751	192.273	7.282
14:23	9.012	10.077	7.367	179.214	6.986
14:24	8.646	10.424	10.260	182.507	7.288
14:25	8.768	10.339	11.363	178.728	7.628
14:26	8.819	10.308	10.846	171.534	6.370
14:27	8.736	10.392	10.097	172.202	6.203
14:28	8.061	10.943	12.351	169.467	7.300
14:29	7.719	11.335	12.136	184.131	8.204

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 14:32
 Stop Time 14:36
CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.138	-0.106	0.507	0.656
C _{uf} Upscale gas	13.951	6.009	40.555	220.860	47.532
Analyzer Calibration Error Responses (C_{DLR})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	-0.1%	0.1%	0.5%
Upscale gas	-0.8%	-0.2%	-3.5%	-1.3%	-0.5%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gasses (C_S)					
C _{of} Zero gas	-0.026	0.137	-0.104	0.491	0.511
C _{uf} Upscale gas	13.959	6.015	40.884	219.062	47.518
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.2%
Upscale gas	-0.1%	0.0%	-0.4%	0.4%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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14:32:11	-0.036	9.896	40.337	220.529	0.039
14:32:26	-0.037	9.896	40.428	220.643	0.059
14:32:41	-0.037	9.896	40.497	220.936	0.026
14:32:56	-0.037	9.899	40.741	221.001	0.047
14:33:11	-0.027	8.017	39.590	220.830	0.350
14:33:26	-0.021	1.192	23.614	214.888	6.672
14:33:41	-0.024	0.292	9.788	96.036	26.092
14:33:56	-0.024	0.201	4.726	27.188	40.016
14:34:11	-0.024	0.167	2.663	2.963	46.572
14:34:26	-0.024	0.153	1.700	1.815	47.403
14:34:41	-0.024	0.136	1.099	1.400	47.570
14:34:56	-0.024	0.126	0.752	1.123	47.624
14:35:11	1.874	0.481	0.487	1.034	47.624
14:35:26	12.105	4.775	0.199	0.814	43.726
14:35:41	13.816	5.892	0.132	0.920	26.429
14:35:56	13.916	5.980	0.073	0.814	11.194
14:36:11	13.932	5.996	-0.028	0.644	2.976
14:36:26	13.943	6.004	-0.070	0.529	0.913
14:36:41	13.952	6.011	-0.078	0.504	0.542
14:36:56	13.957	6.013	-0.169	0.488	0.513

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 14:49
 Stop time 15:16
REFERENCE METHOD RUN 9

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.138	-0.106	0.507	0.656
C _{ui} Initial upscale	13.951	6.009	40.555	220.860	47.532
C _{of} Final zero	-0.027	0.131	-0.281	0.431	0.540
C _{uf} Final upscale	13.945	6.007	40.492	221.433	47.559
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.766	11.284	4.902	192.031	4.272
C _{Gas} Bias adjusted	7.862	11.257	5.543	194.446	3.780

Clock Time (at end of sample period)

042011 095159	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
14:50	7.673	11.308	3.097	185.071	4.506
14:51	8.070	11.010	3.329	188.380	3.619
14:52	7.627	11.396	3.502	185.794	5.048
14:53	8.254	10.845	3.300	182.029	3.465
14:54	7.524	11.470	3.342	186.557	4.433
14:55	8.057	11.050	3.398	190.073	3.938
14:56	8.194	10.900	3.094	187.124	3.937
14:57	7.836	11.215	3.462	191.996	4.397
14:58	7.767	11.275	4.046	188.307	4.075
14:59	7.183	11.769	4.867	191.327	4.640
15:00	7.302	11.707	6.057	194.560	4.504
15:01	7.803	11.291	5.252	194.878	3.999
15:02	8.051	11.067	4.211	197.737	3.472
15:03	7.991	11.100	4.112	197.766	3.149
15:04	7.527	11.475	4.816	205.782	3.548
15:05	7.284	11.685	5.938	205.489	3.401
15:06	7.616	11.420	5.752	204.764	3.221
15:07	8.129	10.998	5.170	201.044	3.404
15:08	7.690	11.333	5.251	192.279	3.777
15:09	7.380	11.626	7.121	192.126	4.874
15:10	7.982	11.129	7.363	179.174	5.886
15:11	8.273	10.849	6.104	177.900	5.192
15:12	7.594	11.414	5.391	190.094	5.465
15:13	7.396	11.612	5.954	196.565	5.451
15:14	7.929	11.165	6.521	191.288	4.736
15:15	7.832	11.244	6.045	192.481	4.944
15:16	7.711	11.310	5.849	194.251	4.269

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 15:19
 Stop Time 15:24
CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	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	-0.027	0.131	-0.281	0.431	0.540
C _{uf} Upscale gas	13.945	6.007	40.492	221.433	47.559
Analyzer Calibration Error Responses (C_{Dir})					
C _{oc} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	-0.3%	0.1%	0.4%
Upscale gas	-0.9%	-0.2%	-3.5%	-1.2%	-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	-0.024	0.138	-0.106	0.507	0.656
C _{ui} Upscale gas	13.951	6.009	40.555	220.860	47.532
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	-0.1%	-0.2%	0.0%	-0.1%
Upscale gas	0.0%	0.0%	-0.1%	0.1%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

042011 095159

15:19:01	-0.035	9.894	39.982	221.237	0.065
15:19:16	-0.036	9.895	40.207	221.319	0.067
15:19:31	-0.037	9.895	40.381	221.425	0.037
15:19:46	-0.040	9.896	40.448	221.457	0.039
15:20:01	-0.040	9.896	40.647	221.417	0.039
15:20:16	-0.028	7.585	38.974	221.490	0.086
15:20:31	-0.024	1.026	20.830	194.310	8.992
15:20:46	-0.024	0.281	8.694	109.654	26.186
15:21:01	-0.024	0.203	4.228	31.665	41.749
15:21:16	-0.025	0.172	2.375	3.590	46.331
15:21:31	-0.025	0.154	1.480	1.677	47.460
15:21:46	-0.027	0.140	0.928	1.392	47.533
15:22:01	-0.026	0.130	0.573	1.164	47.595
15:22:16	-0.027	0.122	0.301	0.953	47.551
15:22:31	6.567	2.151	0.077	0.855	46.763
15:22:46	13.416	5.599	-0.068	0.766	38.071
15:23:01	13.878	5.949	-0.073	0.782	17.768
15:23:16	13.917	5.986	-0.073	0.652	6.707
15:23:31	13.930	5.997	-0.081	0.480	1.408
15:23:46	13.940	6.004	-0.148	0.472	0.643

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
Start Time 15:19
Stop Time 15:24
CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	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
15:24:01	13.947	6.007	-0.300	0.488	0.501
15:24:16	13.949	6.009	-0.394	0.333	0.477

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 15:25
 Stop time 15:52

REFERENCE METHOD RUN 10

	Channel 1 O2	Channel 2 CO2	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	-0.027	0.131	-0.281	0.431	0.540
C _{ui} Initial upscale	13.945	6.007	40.492	221.433	47.559
C _{of} Final zero	-0.027	0.141	-0.473	0.333	0.466
C _{uf} Final upscale	13.947	6.008	40.436	221.123	47.479
C _{ma} Actual gas value	14.100	5.930	44.300	224.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.186	10.989	7.250	168.128	7.201
C _{Gas} Bias adjusted	8.287	10.961	8.273	170.103	6.880

Clock Time (at end of sample period)

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15:26	7.259	11.677	6.713	182.163	4.873
15:27	7.545	11.505	6.871	180.629	4.562
15:28	7.539	11.509	6.682	183.708	5.125
15:29	7.371	11.628	6.405	181.400	4.412
15:30	7.253	11.783	7.651	176.774	4.789
15:31	7.505	11.542	7.698	174.050	4.430
15:32	7.669	11.429	7.636	184.660	4.609
15:33	7.736	11.394	7.488	179.473	5.426
15:34	8.290	10.902	7.507	170.490	5.006
15:35	7.962	11.213	8.195	171.726	5.629
15:36	7.900	11.276	8.632	174.705	6.526
15:37	8.266	10.957	8.175	173.022	5.933
15:38	8.193	11.031	7.324	169.212	6.724
15:39	8.415	10.831	7.232	165.808	7.107
15:40	8.561	10.689	6.924	160.383	5.806
15:41	8.410	10.833	6.778	158.982	6.647
15:42	8.534	10.751	6.921	162.328	7.639
15:43	9.148	10.192	6.594	155.474	6.812
15:44	9.107	10.183	6.425	148.232	7.802
15:45	7.997	11.179	7.205	154.738	11.726
15:46	8.408	10.827	8.340	157.892	15.428
15:47	9.163	10.110	7.273	148.618	8.229
15:48	8.867	10.360	6.477	140.881	9.532
15:49	8.283	10.903	7.447	154.052	11.121
15:50	8.425	10.786	7.683	169.249	9.716
15:51	8.817	10.413	6.726	177.644	9.473
15:52	8.391	10.790	6.754	183.158	9.331

Wheelabrator South Broward
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 2

March 29, 2011
 Start Time 15:55
 Stop Time 16:04
CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.027	0.141	-0.473	0.333	0.466
C _{uf} Upscale gas	13.947	6.008	40.436	221.123	47.479
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.037	0.011	-0.114	0.145
C _{mce} Upscale gas	14.068	6.031	43.660	226.897	48.023
Actual Upscale Gas Value (C_{MA})					
C _{mb} Upscale gas	14.100	5.930	44.300	224.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.8%	-0.5%	0.1%	0.3%
Upscale gas	-0.9%	-0.2%	-3.6%	-1.3%	-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	-0.027	0.131	-0.281	0.431	0.540
C _{ui} Upscale gas	13.945	6.007	40.492	221.433	47.559
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.1%	-0.2%	0.0%	-0.1%
Upscale gas	0.0%	0.0%	-0.1%	-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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15:55:40	-0.035	9.884	39.710	220.733	0.071
15:55:55	-0.036	9.884	39.946	220.838	0.073
15:56:10	-0.036	9.886	40.243	221.074	0.058
15:56:25	-0.039	9.885	40.387	221.147	0.024
15:56:40	-0.039	9.888	40.440	221.123	0.034
15:56:55	-0.035	9.532	40.480	221.099	0.071
15:57:10	-0.022	2.452	29.877	214.074	4.119
15:57:25	-0.026	0.366	12.583	185.145	20.527
15:57:40	-0.026	0.216	5.552	64.518	37.055
15:57:55	-0.023	0.174	2.802	5.934	45.675
15:58:10	-0.027	0.155	1.604	1.783	47.398
15:58:25	-0.026	0.142	0.998	1.481	47.491
15:58:40	-0.028	0.127	0.658	1.188	47.547
15:58:55	0.041	0.123	0.402	1.001	47.570
15:59:10	8.814	3.062	0.112	0.871	45.778
15:59:25	13.618	5.742	-0.050	0.790	33.770
15:59:40	13.891	5.959	-0.073	0.733	15.249
15:59:55	13.918	5.986	-0.091	0.652	4.851
16:00:10	13.930	5.995	-0.235	0.488	1.258
16:00:25	13.936	6.003	-0.351	0.488	0.589

Wheelabrator South Broward
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 2

March 29, 2011
 Start Time 15:55
 Stop Time 16:04
CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	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
16:00:40	13.943	6.006	-0.441	0.423	0.483
16:00:55	13.946	6.007	-0.487	0.277	0.459
16:01:10	13.952	6.011	-0.490	0.301	0.456
16:01:25	13.548	6.157	-0.537	0.293	0.480
16:01:40	9.916	9.110	0.974	9.695	1.011
16:01:55	9.200	9.988	5.604	24.550	3.446
16:02:10	9.169	10.037	7.103	45.071	6.274
16:02:25	9.224	9.995	7.295	46.080	7.468
16:02:40	9.301	9.929	7.103	46.732	7.722
16:02:55	9.378	9.860	6.750	47.033	7.727
16:03:10	9.415	9.835	6.471	47.277	7.723
16:03:25	9.515	9.759	6.341	47.505	7.873
16:03:40	9.519	9.741	6.243	47.676	8.291
16:03:55	9.632	9.697	6.046	47.806	8.868
16:04:10	9.731	9.565	5.752	47.912	9.268
16:04:25	9.490	9.747	5.341	48.107	9.439

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

Date: **March 30, 2011**

Start Time 7:14

Stop Time 14:59

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	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
Instrument Information					
Manufacturer:	Servomex	Servomex	Wstrn Rsrch	Thermo	Thermo
Model:	1420C	1415C	921H UV	42i-HL	48i
Detection:	Paramagn.	NDIR	Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	207491	207492	204654	205177	204433

Calibration Span Value (CS)	14.100	13.900	89.900	453.000	95.700
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System Response Time (seconds)

Manufacturer Certified Cylinder Value (C_v)

Zero	0.000	0.000	0.000	0.000	0.000
Low	6.050	5.930	45.200	225.000	48.300
Mid					
High	14.100	13.900	89.900	453.000	95.700

Actual gas to be used for bias checks

	14.100	5.930	45.200	225.000	48.300
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Cylinder ID

Zero	ALM013200	ALM013200	ALM013200	ALM013200	ALM013200
Low	ALM017071	ALM062872	ALM048873	CC217365	ALM024011
Mid					
High	ALM062872	ALM017071	CC124384	CC124384	ALM016660

Analyzer Calibration Response (C_{Dir})

Zero	-0.044	0.054	-0.080	0.149	0.090
Low	6.039	6.052	44.501	225.798	47.918
Mid					
High	14.074	13.847	90.884	456.410	95.770

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

Zero	-0.3%	0.4%	-0.1%	0.0%	0.1%
Low	-0.1%	0.9%	-0.8%	0.2%	-0.4%
Mid	N/A	N/A	N/A	N/A	N/A
High	-0.2%	-0.4%	1.1%	0.8%	0.1%

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

042511 085424

07:14:27	-0.044	0.059	-0.625	0.309	0.069
07:14:42	-0.043	0.058	-0.630	0.285	0.098
07:14:57	-0.044	0.055	-0.611	0.293	0.098
07:15:12	-0.045	0.057	-0.542	0.220	0.098

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

Date: **March 30, 2011**
 Start Time 7:14
 Stop Time 14:59
CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	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
07:15:27	-0.044	0.055	-0.185	0.163	0.100
07:15:42	-0.043	0.052	-0.031	0.146	0.070
07:15:57	-0.044	0.055	-0.024	0.138	0.100
07:16:12	0.371	0.485	0.140	0.155	0.108
07:16:27	0.174	8.177	22.702	18.136	0.203
07:16:42	-0.044	9.823	71.450	138.461	0.212
07:16:57	-0.052	9.931	83.017	314.742	0.065
07:17:12	-0.053	9.947	85.337	436.809	-0.121
07:17:27	-0.053	9.954	86.423	444.632	-0.171
07:17:42	-0.054	9.956	86.930	446.130	-0.171
07:17:57	-0.055	9.960	87.246	448.759	-0.173
07:18:12	-0.056	9.963	87.453	453.602	-0.171
07:18:27	-0.055	9.963	87.749	454.098	-0.171
07:18:42	-0.055	9.965	88.073	454.579	-0.176
07:18:57	-0.055	9.965	88.332	454.831	-0.174
07:19:12	-0.055	9.967	88.628	455.263	-0.173
07:19:27	-0.055	9.968	90.623	456.703	-0.171
07:19:42	-0.055	9.968	91.129	456.313	-0.171
07:19:57	-0.054	9.968	91.396	456.256	-0.179
07:20:12	-0.058	9.969	91.271	456.549	-0.177
07:20:27	-0.055	9.969	90.738	456.223	-0.176
07:20:42	-0.053	9.969	90.898	456.426	-0.173
07:20:57	-0.057	9.969	91.017	456.581	-0.173
07:21:12	0.013	9.838	87.233	456.321	-0.179
07:21:27	-0.017	9.782	57.265	441.058	-0.041
07:21:42	-0.069	9.976	45.807	339.398	0.161
07:21:57	-0.072	9.988	44.640	261.522	0.142
07:22:12	-0.072	9.990	44.534	225.275	-0.008
07:22:27	-0.072	9.992	44.480	226.015	-0.024
07:22:42	-0.073	9.994	44.490	226.105	-0.024
07:22:57	0.239	8.520	38.230	226.244	-0.024
07:23:12	0.045	1.178	10.009	207.318	12.954
07:23:27	-0.045	0.167	1.877	144.607	44.927
07:23:42	-0.046	0.087	0.656	40.660	79.172
07:23:57	-0.048	0.073	0.347	3.622	91.658
07:24:12	-0.051	0.069	0.277	1.432	95.425
07:24:27	-0.049	0.064	0.271	1.115	95.801
07:24:42	-0.048	0.061	0.314	0.961	95.761
07:24:57	0.089	0.131	0.379	0.871	95.749
07:25:12	-0.005	0.087	0.290	1.571	88.316
07:25:27	-0.048	0.057	-0.015	3.248	68.713
07:25:42	-0.051	0.055	-0.055	1.335	51.583
07:25:57	-0.049	0.053	-0.094	0.611	48.389

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

Date: **March 30, 2011**
 Start Time 7:14
 Stop Time 14:59
CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
	%dv	%dv	ppmdv	ppmdv	ppmdv
07:26:12	-0.049	0.053	-0.116	0.480	47.940
07:26:27	-0.050	0.053	-0.122	0.488	47.939
07:26:42	-0.052	0.049	-0.127	0.464	47.901
07:26:57	-0.039	0.055	-0.106	0.325	47.915
07:27:12	9.115	3.176	0.340	0.285	45.771
07:27:27	13.765	5.836	0.195	0.399	32.781
07:27:42	14.045	6.031	-0.021	1.018	12.334
07:27:57	14.071	6.048	-0.049	0.757	3.827
07:28:12	14.073	6.053	-0.090	0.211	0.655
07:28:27	14.078	6.056	-0.158	0.163	0.397
07:28:42	11.253	7.031	-0.080	0.155	0.368
07:28:57	6.492	12.842	-0.150	1.579	0.536
07:29:12	6.063	13.797	-0.156	2.149	0.461
07:29:27	6.030	13.867	-0.077	0.578	0.262
07:29:42	6.024	13.879	-0.054	0.220	0.139
07:29:57	6.021	13.883	-0.108	0.146	0.122

Performed after Bias 11

14:57:42	20.703	0.140	0.019	0.293	0.311
14:57:57	20.671	0.139	-0.028	1.775	0.260
14:58:12	20.707	0.134	0.016	14.693	0.298
14:58:27	20.638	0.134	-0.251	41.880	0.231
14:58:42	20.710	0.132	-0.083	46.341	0.296
14:58:57	20.711	0.128	-0.098	47.066	0.293
14:59:12	20.713	0.128	-0.098	47.302	0.287
14:59:27	20.713	0.128	-0.098	47.521	0.291
14:59:42	20.714	0.128	-0.103	47.530	0.295
14:59:57	20.717	0.128	-0.100	47.700	0.312

Converter Efficiency

NO2=50.1 95.0%

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 7:34
 Stop Time 7:41
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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 Gases (C_S)					
C _{of} Zero gas	-0.025	0.138	1.277	1.861	0.573
C _{uf} Upscale gas	13.933	6.010	42.709	223.668	47.630
Analyzer Calibration Error Responses (C_{DII})					
C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.6%	1.5%	0.4%	0.5%
Upscale gas	-1.0%	-0.3%	-2.0%	-0.5%	-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 _{oi} Zero gas	N/A	N/A	N/A	N/A	N/A
C _{ul} 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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07:34:04	-0.031	9.867	42.151	223.459	0.109
07:34:19	-0.039	9.870	42.354	223.476	0.090
07:34:34	-0.039	9.870	42.566	223.704	0.095
07:34:49	-0.035	9.870	42.725	223.638	0.114
07:35:04	-0.035	9.872	42.836	223.663	0.098
07:35:19	-0.030	9.112	42.720	223.981	0.275
07:35:34	-0.019	2.055	30.634	218.632	5.820
07:35:49	-0.019	0.375	14.100	176.166	24.474
07:36:04	-0.021	0.225	7.232	44.933	39.847
07:36:19	-0.020	0.186	4.485	5.641	46.535
07:36:34	-0.021	0.166	3.061	2.125	47.458
07:36:49	-0.022	0.148	2.304	1.628	47.595
07:37:04	-0.022	0.138	1.843	1.294	47.656
07:37:19	-0.031	0.130	1.398	0.953	47.638
07:37:34	0.101	0.127	1.152	0.936	47.689
07:37:49	8.887	3.120	0.842	0.904	45.519
07:38:04	13.558	5.703	0.664	0.904	31.985
07:38:19	13.868	5.937	0.702	0.766	13.732
07:38:34	13.901	5.972	0.713	0.700	4.039
07:38:49	13.912	5.982	0.621	0.644	1.047

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 7:34
 Stop Time 7:41
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	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
07:39:04	13.920	5.990	0.611	0.545	0.586
07:39:19	13.913	5.995	0.557	0.488	0.518
07:39:34	10.702	8.211	0.619	0.496	0.710
07:39:49	12.456	7.690	3.655	20.236	2.600
07:40:04	13.792	6.134	4.498	99.170	3.127
07:40:19	13.893	6.018	2.896	43.687	1.778
07:40:34	13.917	6.013	1.833	4.510	0.715
07:40:49	13.939	6.010	1.162	0.586	0.518
07:41:04	13.944	6.007	0.835	0.488	0.486

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 7:44
 Stop time 8:11

REFERENCE METHOD RUN 1

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.138	1.277	1.861	0.573
C _{ui} Initial upscale	13.933	6.010	42.709	223.668	47.630
C _{of} Final zero	-0.024	0.142	0.459	0.553	0.552
C _{uf} Final upscale	13.927	6.002	42.633	223.622	47.660
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.250	10.803	9.892	164.872	7.158
C _{Gas} Bias adjusted	8.361	10.779	9.758	165.550	6.766

Clock Time (at end of sample period)

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07:45	8.394	10.632	5.502	142.796	4.956
07:46	8.546	10.515	5.607	139.194	4.674
07:47	8.417	10.626	7.409	135.836	5.213
07:48	8.484	10.611	9.049	140.393	5.865
07:49	8.881	10.225	9.670	140.397	6.160
07:50	8.936	10.174	9.928	144.906	7.419
07:51	8.387	10.668	11.964	158.696	10.535
07:52	8.687	10.416	12.083	166.797	13.335
07:53	9.097	10.050	11.181	169.636	12.406
07:54	8.966	10.175	11.047	170.419	9.514
07:55	8.366	10.708	11.148	178.630	8.895
07:56	7.263	11.619	13.685	186.968	8.149
07:57	7.508	11.456	12.453	192.943	7.820
07:58	8.722	10.369	8.183	176.978	5.341
07:59	8.545	10.511	5.740	167.896	5.067
08:00	8.013	11.008	5.133	170.301	6.136
08:01	7.989	11.067	6.418	170.216	6.679
08:02	7.737	11.244	8.216	164.135	7.002
08:03	7.836	11.154	9.883	163.706	6.815
08:04	7.943	11.052	10.225	162.027	5.809
08:05	7.754	11.243	11.248	168.871	6.235
08:06	8.071	10.999	11.114	170.694	6.279
08:07	7.959	11.082	11.634	169.731	6.812
08:08	7.650	11.362	13.044	175.936	6.617
08:09	7.920	11.154	13.185	175.902	6.350
08:10	8.382	10.745	11.022	171.115	6.577
08:11	8.305	10.805	11.322	176.426	6.616

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 8:14
 Stop Time 8:19
CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	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 Gases (C_S)					
C _{of} Zero gas	-0.024	0.142	0.459	0.553	0.552
C _{uf} Upscale gas	13.927	6.002	42.633	223.622	47.660
Analyzer Calibration Error Responses (C_{Dir})					
C _{ocb} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{mb} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.6%	0.6%	0.1%	0.5%
Upscale gas	-1.0%	-0.4%	-2.1%	-0.5%	-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 _{oi} Zero gas	-0.025	0.138	1.277	1.861	0.573
C _{ui} Upscale gas	13.933	6.010	42.709	223.668	47.630
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.9%	-0.3%	0.0%
Upscale gas	0.0%	-0.1%	-0.1%	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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08:14:06	-0.031	9.878	42.089	222.963	0.119
08:14:21	-0.031	9.880	42.294	223.419	0.104
08:14:36	-0.036	9.882	42.474	223.639	0.111
08:14:51	-0.036	9.882	42.646	223.435	0.100
08:15:06	-0.037	9.884	42.779	223.793	0.100
08:15:21	-0.020	6.132	39.167	223.907	1.250
08:15:36	-0.020	0.778	20.216	180.252	11.905
08:15:51	-0.023	0.283	9.218	101.783	32.404
08:16:06	-0.022	0.213	5.097	18.510	43.365
08:16:21	-0.025	0.182	3.364	3.232	47.113
08:16:36	-0.025	0.165	2.388	1.848	47.559
08:16:51	-0.026	0.153	1.859	1.457	47.684
08:17:06	-0.024	0.140	1.477	1.237	47.622
08:17:21	-0.022	0.134	1.175	1.058	47.673
08:17:36	6.573	2.166	0.904	0.936	47.272
08:17:51	13.335	5.547	0.671	0.985	35.471
08:18:06	13.853	5.935	0.654	1.172	17.918
08:18:21	13.897	5.977	0.601	0.831	5.218
08:18:36	13.910	5.991	0.552	0.684	1.360
08:18:51	13.920	5.998	0.519	0.644	0.625
08:19:06	13.929	6.001	0.441	0.529	0.523
08:19:21	13.933	6.007	0.415	0.488	0.510

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 8:21
 Stop time 8:48
REFERENCE METHOD RUN 2

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.142	0.459	0.553	0.552
C _{ui} Initial upscale	13.927	6.002	42.633	223.622	47.660
C _{of} Final zero	-0.030	0.150	0.410	0.803	0.517
C _{uf} Final upscale	13.923	6.002	41.715	224.765	47.643
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.938	11.048	5.745	170.462	12.183
C _{Gas} Bias adjusted	8.049	11.040	5.751	170.912	11.941

Clock Time (at end of sample period)

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08:22	8.162	10.819	3.653	151.085	9.920
08:23	8.254	10.779	4.494	154.866	10.133
08:24	8.249	10.785	4.624	161.498	10.221
08:25	8.094	10.894	4.257	170.753	8.578
08:26	7.812	11.148	4.018	175.262	8.011
08:27	7.629	11.329	4.542	182.411	9.119
08:28	7.997	11.022	4.237	180.594	9.093
08:29	7.946	11.071	4.589	172.200	9.429
08:30	7.730	11.262	5.044	173.895	10.588
08:31	7.835	11.178	5.943	167.896	11.812
08:32	7.567	11.362	5.915	162.658	11.799
08:33	7.878	11.110	5.519	161.636	10.870
08:34	8.387	10.652	4.729	156.540	9.990
08:35	8.041	10.966	5.528	169.033	10.479
08:36	7.963	11.029	7.452	177.377	11.388
08:37	8.179	10.884	8.197	178.777	11.111
08:38	8.157	10.879	7.337	179.925	11.619
08:39	8.540	10.535	6.941	180.047	12.262
08:40	8.320	10.709	7.161	181.225	13.397
08:41	8.257	10.799	8.513	184.111	14.244
08:42	8.388	10.635	7.337	172.749	14.910
08:43	7.596	11.326	6.566	169.768	16.687
08:44	7.743	11.182	5.782	167.224	17.679
08:45	6.949	11.847	6.462	172.344	18.105
08:46	7.492	11.416	6.713	168.635	17.131
08:47	7.669	11.254	4.947	161.671	15.237
08:48	7.483	11.437	4.606	168.294	15.125

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 8:51
 Stop Time 8:59
CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	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	-0.030	0.150	0.410	0.803	0.517
C _{uf} Upscale gas	13.923	6.002	41.715	224.765	47.643
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	0.5%	0.1%	0.4%
Upscale gas	-1.1%	-0.4%	-3.1%	-0.2%	-0.3%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Calibration Gasses (C_s)					
C _{oi} Zero gas	-0.024	0.142	0.459	0.553	0.552
C _{ui} Upscale gas	13.927	6.002	42.633	223.622	47.660
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.1%	-0.1%	0.1%	0.0%
Upscale gas	0.0%	0.0%	-1.0%	0.3%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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08:51:01	-0.030	9.873	35.280	222.760	0.104
08:51:16	-0.031	9.877	36.104	222.898	0.109
08:51:31	-0.034	9.876	37.252	223.419	0.088
08:51:46	-0.046	9.876	38.214	223.337	0.059
08:52:01	-0.037	9.877	38.961	223.810	0.098
08:52:16	-0.039	9.878	39.495	224.054	0.100
08:52:31	-0.040	9.878	39.740	224.518	0.111
08:52:46	-0.053	9.877	40.023	224.314	0.078
08:53:01	-0.514	9.870	39.834	223.207	-0.075
08:53:16	-0.043	9.879	40.598	224.681	0.098
08:53:31	-0.043	9.878	40.829	224.347	0.098
08:53:46	-0.043	9.878	41.019	224.632	0.106
08:54:01	-0.043	9.879	41.218	224.754	0.098
08:54:16	-0.043	9.880	41.470	224.754	0.098
08:54:31	-0.043	9.880	41.714	224.778	0.114
08:54:46	-0.043	9.882	41.962	224.762	0.098
08:55:01	-0.027	5.593	39.119	224.884	1.588
08:55:16	-0.027	0.685	21.716	177.322	13.405
08:55:31	-0.027	0.273	10.076	86.423	33.783
08:55:46	-0.028	0.207	5.504	18.657	43.974

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 8:51
 Stop Time 8:59
CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	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
08:56:01	-0.028	0.178	3.521	3.044	47.162
08:56:16	-0.028	0.165	2.463	1.921	47.635
08:56:31	-0.031	0.148	1.877	1.620	47.626
08:56:46	-0.031	0.139	1.524	1.424	47.668
08:57:01	0.216	0.147	1.244	1.254	47.655
08:57:16	9.546	3.401	0.928	1.245	45.862
08:57:31	13.615	5.751	0.786	1.091	30.333
08:57:46	13.867	5.953	0.749	1.091	13.405
08:58:01	13.896	5.981	0.669	1.034	3.490
08:58:16	13.908	5.993	0.562	0.936	0.977
08:58:31	13.918	5.999	0.493	0.855	0.542
08:58:46	13.924	6.002	0.396	0.782	0.513
08:59:01	13.929	6.007	0.340	0.774	0.495

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 9:06
 Stop time 9:33
REFERENCE METHOD RUN 3

	Channel 1 O2	Channel 2 CO2	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	-0.030	0.150	0.410	0.803	0.517
C _{ui} Initial upscale	13.923	6.002	41.715	224.765	47.643
C _{of} Final zero	-0.025	0.151	0.440	0.624	0.527
C _{uf} Final upscale	13.926	6.007	42.881	222.049	47.596
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.418	11.552	18.334	177.041	17.241
C _{Gas} Bias adjusted	7.524	11.549	19.332	178.154	17.146

Clock Time (at end of sample period)

042011 100048					
09:07	7.701	11.279	17.582	169.125	16.257
09:08	7.580	11.435	19.272	178.706	17.028
09:09	8.015	11.054	15.324	179.198	16.556
09:10	7.888	11.125	13.597	176.064	19.875
09:11	7.696	11.284	11.877	177.613	19.703
09:12	7.516	11.445	12.207	175.067	18.873
09:13	7.426	11.527	12.969	174.815	18.609
09:14	7.649	11.358	15.750	177.383	17.948
09:15	7.856	11.185	18.068	173.506	18.118
09:16	7.613	11.385	27.593	170.313	20.263
09:17	7.216	11.730	33.710	168.791	18.968
09:18	7.139	11.782	27.026	171.752	18.689
09:19	6.891	11.974	20.758	177.997	18.728
09:20	6.912	11.967	12.966	185.576	18.381
09:21	7.252	11.682	6.939	186.402	17.274
09:22	7.472	11.484	4.444	189.222	17.427
09:23	7.088	11.819	4.318	192.633	17.247
09:24	7.014	11.893	8.369	189.986	18.054
09:25	7.074	11.818	19.436	179.859	17.286
09:26	6.934	11.951	39.115	173.808	16.497
09:27	7.042	11.882	47.457	174.184	14.355
09:28	7.474	11.524	35.116	173.348	14.103
09:29	7.502	11.496	20.728	172.265	13.388
09:30	7.479	11.522	13.107	173.085	14.710
09:31	7.441	11.587	13.164	173.563	14.981
09:32	7.732	11.340	13.048	171.522	15.662
09:33	7.685	11.365	11.066	174.333	16.527

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 9:37
 Stop Time 9:42
CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.151	0.440	0.624	0.527
C _{uf} Upscale gas	13.926	6.007	42.881	222.049	47.596
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	0.6%	0.1%	0.5%
Upscale gas	-1.0%	-0.3%	-1.8%	-0.8%	-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 _{oi} Zero gas	-0.030	0.150	0.410	0.803	0.517
C _{ui} Upscale gas	13.923	6.002	41.715	224.765	47.643
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%	1.3%	-0.6%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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09:37:21	-0.037	9.890	42.589	221.726	0.098
09:37:36	-0.037	9.892	42.776	221.840	0.098
09:37:51	-0.037	9.892	42.878	222.076	0.114
09:38:06	-0.037	9.895	42.988	222.230	0.098
09:38:21	-0.035	9.818	43.069	222.360	0.098
09:38:36	-0.019	3.683	34.094	222.417	2.265
09:38:51	-0.020	0.483	15.594	177.119	20.267
09:39:06	-0.023	0.254	7.352	46.317	36.570
09:39:21	-0.023	0.203	4.205	10.045	45.879
09:39:36	-0.024	0.177	2.766	2.385	47.331
09:39:51	-0.024	0.164	2.097	1.758	47.570
09:40:06	-0.024	0.150	1.677	1.441	47.597
09:40:21	-0.025	0.140	1.340	1.327	47.621
09:40:36	5.649	1.818	1.021	1.140	47.424
09:40:51	13.217	5.473	0.764	1.099	35.834
09:41:06	13.845	5.937	0.682	1.197	18.554
09:41:21	13.897	5.984	0.572	0.953	4.957
09:41:36	13.910	5.995	0.508	0.766	1.361
09:41:51	13.919	6.003	0.493	0.652	0.573
09:42:06	13.928	6.007	0.431	0.652	0.524
09:42:21	13.932	6.011	0.396	0.570	0.485

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 9:44
 Stop time 10:11
REFERENCE METHOD RUN 4

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.151	0.440	0.624	0.527
C _{ui} Initial upscale	13.926	6.007	42.881	222.049	47.596
C _{of} Final zero	-0.023	0.145	0.342	0.548	0.516
C _{uf} Final upscale	13.929	6.008	42.035	221.558	47.562
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.565	11.468	12.128	177.303	5.568
C _{Gas} Bias adjusted	7.670	11.456	12.611	179.739	5.180

Clock Time (at end of sample period)

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09:45	7.643	11.372	7.361	172.436	6.027
09:46	7.568	11.434	5.606	172.786	5.258
09:47	7.593	11.441	6.249	177.249	5.117
09:48	7.151	11.804	13.534	176.168	5.520
09:49	7.384	11.641	22.595	181.160	5.957
09:50	7.473	11.536	22.591	183.189	5.343
09:51	7.509	11.494	21.014	183.592	4.817
09:52	7.544	11.498	18.457	184.522	5.374
09:53	7.665	11.390	14.496	189.257	5.795
09:54	7.422	11.611	10.405	190.358	5.530
09:55	7.513	11.566	7.611	186.962	5.591
09:56	7.953	11.193	5.662	180.199	5.381
09:57	7.568	11.483	6.002	173.726	5.603
09:58	7.134	11.888	9.321	181.764	6.161
09:59	7.808	11.312	12.055	175.889	5.972
10:00	8.312	10.852	15.005	162.188	5.557
10:01	7.728	11.321	18.674	159.894	5.625
10:02	7.098	11.846	20.878	167.005	6.497
10:03	7.516	11.518	17.546	168.997	6.248
10:04	7.793	11.258	11.570	171.144	6.003
10:05	7.818	11.216	7.701	168.577	5.153
10:06	7.470	11.509	5.903	174.050	5.153
10:07	7.489	11.511	5.588	178.740	5.776
10:08	7.514	11.484	7.264	179.892	5.216
10:09	7.405	11.586	11.138	181.195	5.209
10:10	7.434	11.568	11.626	183.834	5.310
10:11	7.747	11.314	11.600	182.415	5.155

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 10:14
 Stop Time 10:19
CALIBRATION BIAS 04

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
	O2	CO2	SO2	NOX	CO
	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
	%dv	%dv	ppmdv	ppmdv	ppmdv
System Response to Calibration Gasses (C_S)					
C _{of} Zero gas	-0.023	0.145	0.342	0.548	0.516
C _{uf} Upscale gas	13.929	6.008	42.035	221.558	47.562
Analyzer Calibration Error Responses (C_{DIR})					
C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	0.5%	0.1%	0.4%
Upscale gas	-1.0%	-0.3%	-2.7%	-0.9%	-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	-0.025	0.151	0.440	0.624	0.527
C _{ui} Upscale gas	13.926	6.007	42.881	222.049	47.596
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%	-0.9%	-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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10:14:06	-0.032	9.891	41.301	221.131	0.083
10:14:21	-0.033	9.892	41.521	221.156	0.095
10:14:36	-0.034	9.892	41.788	221.335	0.098
10:14:51	-0.035	9.894	42.045	221.604	0.098
10:15:06	-0.036	9.896	42.273	221.734	0.096
10:15:21	-0.021	6.197	39.263	221.937	1.140
10:15:36	-0.020	0.779	21.164	181.498	11.614
10:15:51	-0.021	0.286	9.648	105.096	32.463
10:16:06	-0.022	0.214	5.327	18.779	43.533
10:16:21	-0.024	0.186	3.429	3.134	47.051
10:16:36	-0.023	0.168	2.422	1.791	47.456
10:16:51	-0.023	0.155	1.838	1.457	47.529
10:17:06	-0.023	0.145	1.411	1.254	47.562
10:17:21	-0.024	0.136	1.133	1.172	47.593
10:17:36	6.090	1.980	0.900	0.961	47.259
10:17:51	13.283	5.518	0.695	0.928	36.153
10:18:06	13.850	5.938	0.675	1.034	18.271
10:18:21	13.897	5.982	0.616	0.847	5.247

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 10:14
 Stop Time 10:19
CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	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
10:18:36	13.913	5.997	0.526	0.684	1.328
10:18:51	13.922	6.003	0.438	0.644	0.584
10:19:06	13.931	6.009	0.335	0.521	0.490
10:19:21	13.934	6.013	0.254	0.480	0.474

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 10:21
 Stop time 10:48
REFERENCE METHOD RUN 5

	Channel 1 O2	Channel 2 CO2	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	-0.023	0.145	0.342	0.548	0.516
C _{ui} Initial upscale	13.929	6.008	42.035	221.558	47.562
C _{of} Final zero	-0.022	0.148	0.393	0.600	0.551
C _{uf} Final upscale	13.928	6.008	41.633	221.178	47.542
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.509	11.444	12.889	180.343	6.123
C _{Gaa} Bias adjusted	7.612	11.429	13.649	183.194	5.742

Clock Time (at end of sample period)

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10:22	7.743	11.238	9.473	176.363	6.385
10:23	7.299	11.627	11.085	180.877	7.552
10:24	7.580	11.416	15.477	182.916	7.597
10:25	7.571	11.381	18.569	179.269	6.671
10:26	7.152	11.723	25.278	178.502	6.575
10:27	7.117	11.784	29.433	181.052	6.849
10:28	7.566	11.420	20.556	177.536	6.830
10:29	7.446	11.484	12.908	177.192	6.882
10:30	7.580	11.383	8.220	179.524	6.874
10:31	7.607	11.357	5.061	184.096	7.720
10:32	7.420	11.499	3.516	186.542	7.806
10:33	7.537	11.438	3.164	186.187	7.329
10:34	7.179	11.732	8.441	183.954	6.840
10:35	7.089	11.801	20.767	181.581	5.307
10:36	7.764	11.241	23.265	173.736	4.594
10:37	7.924	11.083	22.732	166.451	4.092
10:38	7.618	11.359	22.659	170.596	4.802
10:39	7.541	11.423	19.886	176.235	5.295
10:40	7.404	11.521	14.050	177.794	4.585
10:41	7.680	11.310	8.252	178.649	4.248
10:42	7.686	11.298	4.740	173.417	5.188
10:43	6.998	11.893	3.530	183.614	6.312
10:44	7.751	11.248	3.283	187.267	5.735
10:45	8.055	10.980	2.976	185.344	5.770
10:46	7.283	11.597	6.141	188.297	6.476
10:47	7.282	11.619	12.215	189.809	5.697
10:48	7.869	11.138	12.340	182.471	5.300

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 10:51
 Stop Time 10:56
CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.022	0.148	0.393	0.600	0.551
C _{uf} Upscale gas	13.928	6.008	41.633	221.178	47.542
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.2%	0.7%	0.5%	0.1%	0.5%
Upscale gas	-1.0%	-0.3%	-3.2%	-1.0%	-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	-0.023	0.145	0.342	0.548	0.516
C _{ui} Upscale gas	13.929	6.008	42.035	221.558	47.562
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%	-0.4%	-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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10:51:36	-0.031	9.889	41.221	220.863	0.098
10:51:51	-0.032	9.890	41.411	220.912	0.098
10:52:06	-0.034	9.891	41.595	221.237	0.098
10:52:21	-0.034	9.892	41.892	221.384	0.091
10:52:36	-0.033	9.726	42.048	221.506	0.073
10:52:51	-0.021	3.175	33.945	217.615	3.648
10:53:06	-0.020	0.446	15.642	193.114	19.437
10:53:21	-0.022	0.246	7.560	62.621	38.079
10:53:36	-0.023	0.198	4.487	7.033	45.693
10:53:51	-0.022	0.174	2.969	2.157	47.347
10:54:06	-0.023	0.160	2.164	1.677	47.541
10:54:21	-0.021	0.146	1.651	1.392	47.534
10:54:36	-0.022	0.137	1.260	1.229	47.551
10:54:51	6.811	2.260	0.897	1.091	46.460
10:55:06	13.378	5.586	0.638	0.977	36.129
10:55:21	13.856	5.946	0.619	0.920	15.948
10:55:36	13.899	5.985	0.554	0.806	5.118
10:55:51	13.912	5.996	0.508	0.717	1.128
10:56:06	13.920	6.005	0.474	0.652	0.640
10:56:21	13.930	6.008	0.392	0.627	0.518
10:56:36	13.932	6.011	0.312	0.521	0.495

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 10:58
 Stop time 11:25

REFERENCE METHOD RUN 6

	Channel 1 O2	Channel 2 CO2	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	-0.022	0.148	0.393	0.600	0.551
C _{ui} Initial upscale	13.928	6.008	41.633	221.178	47.542
C _{of} Final zero	-0.018	0.152	0.315	0.630	0.507
C _{uf} Final upscale	13.919	6.005	42.290	220.990	47.513
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.499	11.476	13.470	174.886	4.417
C _{Gas} Bias adjusted	7.603	11.468	14.248	177.853	3.995

Clock Time (at end of sample period)

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10:59	7.604	11.366	11.723	193.089	4.274
11:00	7.747	11.220	10.232	183.907	3.808
11:01	7.079	11.789	11.295	185.210	4.931
11:02	7.073	11.793	13.425	188.335	4.021
11:03	7.399	11.526	13.391	185.564	3.471
11:04	7.424	11.549	12.572	175.499	3.934
11:05	7.229	11.682	13.409	168.765	3.713
11:06	7.087	11.830	18.265	171.907	3.552
11:07	7.391	11.590	17.998	165.804	3.880
11:08	7.771	11.237	15.670	153.771	4.580
11:09	7.339	11.597	13.686	164.886	4.737
11:10	7.031	11.850	11.731	173.051	4.584
11:11	7.214	11.693	9.458	170.669	4.248
11:12	7.887	11.158	8.364	170.779	4.360
11:13	7.752	11.252	9.020	168.455	4.629
11:14	7.408	11.570	15.901	174.141	5.055
11:15	7.527	11.457	19.635	176.779	4.567
11:16	7.685	11.341	20.332	181.779	4.484
11:17	8.032	11.061	18.155	181.046	4.310
11:18	7.911	11.122	14.363	175.774	4.273
11:19	6.972	11.934	13.573	178.983	5.364
11:20	7.243	11.749	12.836	177.249	5.385
11:21	8.144	10.957	8.604	175.024	4.641
11:22	7.959	11.081	6.208	170.319	4.397
11:23	7.356	11.600	7.326	169.791	4.922
11:24	7.310	11.685	15.758	171.447	4.901
11:25	7.893	11.163	20.752	169.908	4.230

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 11:28
 Stop Time 11:33
CALIBRATION BIAS 06

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

System Response to Calibration Gases (C_s)

C _{of} Zero gas	-0.018	0.152	0.315	0.630	0.507
C _{uf} Upscale gas	13.919	6.005	42.290	220.990	47.513

Analyzer Reponses (C_{Dir})

C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918

Actual Upscale Gas Value (C_{MA})

C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
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Calibration Span Value (CS)

	14.100	13.900	89.900	453.000	95.700
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System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.2%	0.7%	0.4%	0.1%	0.4%
Upscale gas	-1.1%	-0.3%	-2.5%	-1.1%	-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	-0.022	0.148	0.393	0.600	0.551
C _{ui} Upscale gas	13.928	6.008	41.633	221.178	47.542

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%	0.7%	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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11:28:22	-0.032	9.886	41.534	220.757	0.098
11:28:37	-0.035	9.888	41.851	221.017	0.096
11:28:52	-0.037	9.886	42.094	221.009	0.083
11:29:07	-0.037	9.885	42.328	220.871	0.081
11:29:22	-0.036	9.859	42.449	221.090	0.098
11:29:37	-0.020	4.278	36.094	221.147	2.159
11:29:52	-0.022	0.526	17.280	172.031	18.691
11:30:07	-0.023	0.256	8.160	46.902	35.878
11:30:22	-0.023	0.202	4.661	11.478	45.452
11:30:37	-0.023	0.180	3.075	2.637	47.243
11:30:52	-0.022	0.163	2.214	1.668	47.466
11:31:07	-0.024	0.149	1.693	1.392	47.529
11:31:22	-0.008	0.143	1.346	1.245	47.544
11:31:37	7.544	2.551	1.016	1.083	46.484
11:31:52	13.450	5.643	0.785	1.001	33.018
11:32:07	13.847	5.948	0.686	0.985	15.459
11:32:22	13.889	5.983	0.607	0.847	4.008
11:32:37	13.903	5.996	0.513	0.749	1.092
11:32:52	13.913	6.001	0.407	0.652	0.571
11:33:07	13.919	6.005	0.283	0.668	0.491
11:33:22	13.924	6.009	0.256	0.570	0.459

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 11:38
 Stop time 12:05

REFERENCE METHOD RUN 7

	Channel 1 O2	Channel 2 CO2	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	-0.018	0.152	0.315	0.630	0.507
C _{ui} Initial upscale	13.919	6.005	42.290	220.990	47.513
C _{of} Final zero	-0.025	0.142	0.230	0.556	0.520
C _{uf} Final upscale	13.906	5.998	41.797	221.512	47.582
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.866	11.260	8.556	172.683	6.030
C _{Gas} Bias adjusted	7.981	11.256	8.963	175.477	5.665

Clock Time (at end of sample period)

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11:39	8.231	10.934	10.221	157.351	5.648
11:40	8.313	10.801	7.590	155.486	6.303
11:41	7.554	11.503	7.263	163.178	6.077
11:42	7.273	11.789	8.334	176.424	6.245
11:43	7.802	11.348	7.443	173.840	6.438
11:44	7.922	11.232	6.615	174.756	6.633
11:45	7.957	11.214	6.888	180.684	5.405
11:46	7.861	11.276	7.308	181.345	5.224
11:47	7.791	11.343	7.673	180.330	5.982
11:48	7.697	11.390	7.968	176.174	5.104
11:49	7.518	11.551	9.162	178.665	5.366
11:50	8.067	11.124	9.765	173.020	5.102
11:51	7.916	11.234	9.078	164.638	5.042
11:52	7.565	11.543	9.501	167.999	6.079
11:53	7.733	11.427	10.154	171.996	6.089
11:54	8.180	11.028	8.710	170.151	5.796
11:55	7.693	11.404	7.735	174.412	5.721
11:56	7.651	11.480	7.947	184.084	5.954
11:57	8.293	10.929	7.920	182.737	5.017
11:58	8.439	10.766	7.786	179.913	5.364
11:59	8.059	11.062	8.213	175.484	6.104
12:00	7.954	11.194	10.033	173.913	8.100
12:01	7.985	11.133	9.988	169.176	7.947
12:02	7.460	11.540	9.724	170.413	7.450
12:03	7.880	11.204	9.011	169.906	5.514
12:04	7.890	11.184	8.415	162.277	5.622
12:05	7.685	11.397	10.569	174.096	7.485

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 12:08
 Stop Time 12:14
CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	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 Gases (C_S)					
C _{of} Zero gas	-0.025	0.142	0.230	0.556	0.520
C _{uf} Upscale gas	13.906	5.998	41.797	221.512	47.582
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.6%	0.3%	0.1%	0.4%
Upscale gas	-1.2%	-0.4%	-3.0%	-0.9%	-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	-0.018	0.152	0.315	0.630	0.507
C _{ui} Upscale gas	13.919	6.005	42.290	220.990	47.513
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	-0.1%	-0.1%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	-0.5%	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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12:08:40	-0.026	9.876	40.866	220.944	0.095
12:08:55	-0.032	9.876	41.144	221.278	0.098
12:09:10	-0.032	9.874	41.384	221.482	0.098
12:09:25	-0.033	9.877	41.618	221.555	0.083
12:09:40	-0.035	9.878	41.885	221.498	0.071
12:09:55	-0.030	9.356	41.888	221.482	0.085
12:10:10	-0.021	2.351	30.162	210.631	4.747
12:10:25	-0.021	0.398	14.143	168.930	22.217
12:10:40	-0.022	0.237	7.119	55.417	39.077
12:10:55	-0.023	0.201	4.174	5.486	45.971
12:11:10	-0.024	0.176	2.769	1.889	47.347
12:11:25	-0.024	0.163	2.024	1.587	47.512
12:11:40	-0.024	0.152	1.569	1.327	47.554
12:11:55	-0.025	0.138	1.247	1.254	47.606
12:12:10	-0.026	0.135	1.008	1.018	47.587
12:12:25	5.655	1.812	0.744	0.912	47.219
12:12:40	13.199	5.464	0.536	0.944	37.034
12:12:55	13.829	5.925	0.484	0.822	18.654
12:13:10	13.879	5.972	0.425	0.782	5.285

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
Start Time 12:08
Stop Time 12:14
CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	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
12:13:25	13.895	5.987	0.355	0.676	1.291
12:13:40	13.901	5.995	0.282	0.660	0.583
12:13:55	13.907	5.997	0.228	0.513	0.500
12:14:10	13.911	6.003	0.181	0.496	0.477

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 12:16
 Stop time 12:43
REFERENCE METHOD RUN 8

	Channel 1 O2	Channel 2 CO2	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	-0.025	0.142	0.230	0.556	0.520
C _{ui} Initial upscale	13.906	5.998	41.797	221.512	47.582
C _{of} Final zero	-0.026	0.159	0.388	0.652	0.643
C _{uf} Final upscale	13.890	5.990	41.756	220.518	47.456
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.823	11.311	11.473	169.443	4.341
C _{Gas} Bias adjusted	7.948	11.326	12.169	172.355	3.868

Clock Time (at end of sample period)

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12:17	6.769	11.889	4.997	170.043	4.991
12:18	7.222	11.769	4.991	176.839	4.611
12:19	7.783	11.226	4.656	170.004	3.910
12:20	8.188	10.959	6.056	169.304	3.932
12:21	7.566	11.459	16.968	177.210	4.011
12:22	7.118	11.861	37.683	179.365	3.900
12:23	7.663	11.420	46.204	171.724	3.474
12:24	8.074	11.073	36.876	168.541	3.346
12:25	8.047	11.079	21.644	171.730	3.427
12:26	7.796	11.269	12.404	173.799	3.586
12:27	7.640	11.403	7.790	167.566	3.952
12:28	7.622	11.431	5.254	165.912	4.261
12:29	7.854	11.260	3.878	165.029	4.106
12:30	8.144	11.034	2.971	169.534	3.924
12:31	8.039	11.111	2.752	167.837	3.987
12:32	7.800	11.361	3.946	163.144	3.933
12:33	8.218	11.028	6.428	160.879	3.769
12:34	8.319	10.923	7.230	163.118	4.130
12:35	8.089	11.124	7.680	167.625	4.384
12:36	7.371	11.762	9.503	169.398	4.340
12:37	7.826	11.417	10.144	168.250	4.545
12:38	8.061	11.223	8.530	166.809	4.856
12:39	7.756	11.451	8.834	169.581	5.289
12:40	7.744	11.477	9.374	172.308	5.080
12:41	7.847	11.411	8.658	174.137	5.150
12:42	8.248	11.086	7.468	169.637	6.050
12:43	8.424	10.899	6.839	165.651	6.250

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 12:46
 Stop Time 12:51
CALIBRATION BIAS 08

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

System Response to Calibration Gases (C_S)

C _{of} Zero gas	-0.026	0.159	0.388	0.652	0.643
C _{uf} Upscale gas	13.890	5.990	41.756	220.518	47.456

Analyzer Calibration Error Responses (C_{DR})

C _{ocb} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918

Actual Upscale Gas Value (C_{MA})

C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
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Calibration Span Value (CS)

	14.100	13.900	89.900	453.000	95.700
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System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.1%	0.8%	0.5%	0.1%	0.6%
Upscale gas	-1.3%	-0.4%	-3.1%	-1.2%	-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	-0.025	0.142	0.230	0.556	0.520
C _{ui} Upscale gas	13.906	5.998	41.797	221.512	47.582

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

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

Drift Assessment Status

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

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12:46:06	-0.031	9.861	41.185	219.951	0.073
12:46:21	-0.031	9.864	41.420	220.318	0.073
12:46:36	-0.033	9.862	41.600	220.399	0.073
12:46:51	-0.035	9.866	41.757	220.480	0.073
12:47:06	-0.035	9.866	41.910	220.676	0.071
12:47:21	-0.023	8.237	41.345	220.871	0.379
12:47:36	-0.021	1.396	27.520	212.226	7.067
12:47:51	-0.020	0.333	12.586	157.884	27.375
12:48:06	-0.022	0.227	6.505	29.679	41.058
12:48:21	-0.025	0.194	3.985	4.754	46.815
12:48:36	-0.030	0.171	2.724	1.880	47.398
12:48:51	-0.023	0.158	1.991	1.595	47.470
12:49:06	-0.024	0.148	1.530	1.286	47.502
12:49:21	0.454	0.178	1.200	1.180	47.528
12:49:36	10.257	3.761	0.850	1.066	45.258
12:49:51	13.641	5.784	0.723	0.936	29.017
12:50:06	13.844	5.948	0.651	0.798	12.391
12:50:21	13.868	5.974	0.575	0.790	3.100
12:50:36	13.883	5.984	0.474	0.668	0.889
12:50:51	13.889	5.991	0.396	0.660	0.549
12:51:06	13.897	5.995	0.293	0.627	0.492

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 13:04
 Stop time 13:31
REFERENCE METHOD RUN 9

	Channel 1 O2	Channel 2 CO2	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	-0.026	0.159	0.388	0.652	0.643
C _{ui} Initial upscale	13.890	5.990	41.756	220.518	47.456
C _{of} Final zero	-0.023	0.143	0.107	0.529	0.504
C _{uf} Final upscale	13.879	5.983	41.567	220.803	47.499
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.974	10.131	3.550	154.355	8.123
C _{Gas} Bias adjusted	9.122	10.142	3.604	157.209	7.773

Clock Time (at end of sample period)

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13:05	10.020	9.134	3.296	146.608	9.739
13:06	9.530	9.531	3.100	147.706	10.948
13:07	8.647	10.273	3.028	154.318	10.453
13:08	7.966	10.940	3.807	161.140	10.389
13:09	8.105	10.849	4.266	162.444	9.018
13:10	8.377	10.558	3.506	168.451	7.332
13:11	8.372	10.571	2.529	169.859	6.491
13:12	8.230	10.740	2.063	170.781	5.749
13:13	8.474	10.534	1.835	158.529	5.802
13:14	8.434	10.575	2.096	150.682	5.710
13:15	8.574	10.457	3.805	144.819	6.008
13:16	8.878	10.209	5.429	141.543	6.879
13:17	9.101	10.030	5.402	143.852	7.184
13:18	9.186	9.993	5.479	145.922	8.690
13:19	9.572	9.665	5.864	144.621	8.936
13:20	9.431	9.807	4.922	151.608	10.429
13:21	9.162	10.064	4.453	163.581	9.922
13:22	9.129	10.099	4.511	174.400	8.483
13:23	8.850	10.283	3.750	172.163	7.495
13:24	9.207	10.002	3.073	171.538	7.355
13:25	9.249	9.918	2.693	159.823	6.183
13:26	8.999	10.161	2.723	156.943	5.890
13:27	9.105	10.067	2.886	150.175	6.738
13:28	9.390	9.791	3.090	141.520	7.645
13:29	9.680	9.554	2.980	135.798	7.772
13:30	9.422	9.749	2.651	135.389	9.978
13:31	9.199	9.973	2.609	143.374	12.090

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 13:34
 Stop Time 13:39
CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	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	-0.023	0.143	0.107	0.529	0.504
C _{uf} Upscale gas	13.879	5.983	41.567	220.803	47.499
Analyzer Calibration Error Responses (C_{Dir})					
C _{oee} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{moe} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.6%	0.2%	0.1%	0.4%
Upscale gas	-1.4%	-0.5%	-3.3%	-1.1%	-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	-0.026	0.159	0.388	0.652	0.643
C _{ui} Upscale gas	13.890	5.990	41.756	220.518	47.456
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	-0.1%	-0.3%	0.0%	-0.1%
Upscale gas	-0.1%	-0.1%	-0.2%	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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13:34:06	-0.025	9.841	41.132	220.375	0.045
13:34:21	-0.030	9.843	41.495	220.684	0.071
13:34:36	-0.031	9.842	41.687	220.846	0.073
13:34:51	-0.032	9.844	41.565	220.846	0.073
13:35:06	-0.034	9.845	41.451	220.716	0.073
13:35:21	-0.021	6.362	38.919	220.757	1.286
13:35:36	-0.020	0.816	21.166	185.364	11.960
13:35:51	-0.019	0.284	9.449	112.348	31.886
13:36:06	-0.021	0.213	5.073	20.106	43.080
13:36:21	-0.023	0.184	3.121	3.077	46.904
13:36:36	-0.023	0.164	2.157	1.668	47.383
13:36:51	-0.024	0.153	1.613	1.457	47.479
13:37:06	-0.022	0.143	1.253	1.229	47.497
13:37:21	-0.022	0.134	0.957	1.010	47.521
13:37:36	6.461	2.117	0.676	0.936	47.110
13:37:51	13.289	5.525	0.466	0.855	34.890
13:38:06	13.804	5.914	0.391	0.766	17.778
13:38:21	13.850	5.957	0.304	0.725	5.101

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 13:34
 Stop Time 13:39
CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	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
13:38:36	13.863	5.969	0.236	0.644	1.283
13:38:51	13.873	5.979	0.157	0.594	0.544
13:39:06	13.879	5.983	0.117	0.496	0.485
13:39:21	13.885	5.986	0.047	0.496	0.485

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 13:41
 Stop time 14:08

REFERENCE METHOD RUN 10

	Channel 1 O2	Channel 2 CO2	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 _{ci} Initial zero	-0.023	0.143	0.107	0.529	0.504
C _{ui} Initial upscale	13.879	5.983	41.567	220.803	47.499
C _{of} Final zero	-0.024	0.155	0.265	0.616	0.540
C _{uf} Final upscale	13.867	5.978	42.098	221.129	47.472
C _{ma} Actual gas value	14.100	5.930	45.200	225.000	48.300
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	8.758	10.255	5.926	160.283	15.345
C _{Gas} Bias adjusted	8.910	10.277	6.229	163.049	15.245

Clock Time (at end of sample period)

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13:42	9.971	9.200	2.343	126.353	19.339
13:43	9.429	9.631	2.405	136.148	18.905
13:44	9.372	9.707	2.689	147.525	20.230
13:45	9.616	9.528	3.215	151.437	19.389
13:46	9.614	9.521	3.604	151.829	21.869
13:47	9.542	9.590	4.275	155.547	24.720
13:48	9.419	9.664	4.838	156.701	23.793
13:49	9.046	9.979	5.581	159.866	20.521
13:50	8.596	10.382	6.233	155.684	19.750
13:51	7.741	11.119	7.274	162.393	18.656
13:52	7.469	11.363	12.368	173.921	17.403
13:53	7.296	11.489	16.431	180.615	14.144
13:54	8.514	10.450	11.715	180.002	11.546
13:55	7.893	10.959	6.660	180.100	13.642
13:56	8.323	10.612	3.958	188.199	9.996
13:57	8.599	10.348	2.668	173.376	10.049
13:58	8.665	10.331	2.176	165.043	11.457
13:59	8.692	10.284	2.105	148.964	11.803
14:00	8.546	10.446	2.805	143.584	12.133
14:01	8.769	10.286	4.431	145.586	12.889
14:02	8.733	10.320	6.241	147.346	12.371
14:03	8.654	10.383	7.100	150.480	12.068
14:04	8.478	10.554	7.091	163.974	11.881
14:05	9.213	9.875	6.744	166.086	10.428
14:06	9.084	9.972	6.908	166.972	10.327
14:07	8.703	10.348	8.102	174.471	11.800
14:08	8.485	10.531	10.033	175.444	13.214

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 14:11
 Stop Time 14:16
CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	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 Gases (C_s)					
C _{of} Zero gas	-0.024	0.155	0.265	0.616	0.540
C _{uf} Upscale gas	13.867	5.978	42.098	221.129	47.472
Analyzer Calibration Error Responses (C_{Dir})					
C _{oce} Zero gas	-0.044	0.054	-0.080	0.149	0.090
C _{mce} Upscale gas	14.074	6.052	44.501	225.798	47.918
Actual Upscale Gas Value (C_{MA})					
C _{ma} Upscale gas	14.100	5.930	45.200	225.000	48.300
Calibration Span Value (CS)					
	14.100	13.900	89.900	453.000	95.700
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.1%	0.7%	0.4%	0.1%	0.5%
Upscale gas	-1.5%	-0.5%	-2.7%	-1.0%	-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	-0.023	0.143	0.107	0.529	0.504
C _{ui} Upscale gas	13.879	5.983	41.567	220.803	47.499
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.1%	0.2%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	0.6%	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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14:11:13	-0.031	9.833	41.057	220.838	0.073
14:11:28	-0.033	9.834	41.301	220.724	0.071
14:11:43	-0.035	9.835	41.552	220.944	0.075
14:11:58	-0.036	9.836	41.731	221.009	0.075
14:12:13	-0.058	9.837	41.950	221.099	0.065
14:12:28	-0.056	9.836	42.071	221.001	0.006
14:12:43	-0.038	9.834	42.274	221.286	0.073
14:12:58	-0.021	5.271	37.957	221.408	1.690
14:13:13	-0.023	0.648	19.311	173.977	15.570
14:13:28	-0.022	0.272	8.974	60.895	33.981
14:13:43	-0.021	0.212	5.060	16.077	44.733
14:13:58	-0.022	0.184	3.271	2.906	47.161
14:14:13	-0.023	0.165	2.287	1.774	47.432
14:14:28	-0.024	0.156	1.731	1.481	47.487
14:14:43	-0.024	0.143	1.312	1.310	47.497
14:14:58	2.460	0.685	1.027	1.083	47.238
14:15:13	12.233	4.879	0.746	1.001	41.035
14:15:28	13.737	5.860	0.638	0.855	23.214
14:15:43	13.831	5.945	0.557	0.782	7.914

Wheelabrator
CleanAir Project No. 11182
Ft. Lauderdale, FL
FF Outlet 3

March 30, 2011
 Start Time 14:11
 Stop Time 14:16
CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	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
14:15:58	13.850	5.964	0.470	0.749	2.056
14:16:13	13.860	5.973	0.363	0.644	0.633
14:16:28	13.868	5.979	0.262	0.652	0.514
14:16:43	13.873	5.983	0.169	0.553	0.472

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 14:19
 Stop time 14:46
REFERENCE METHOD RUN 11

	Channel 1 O2	Channel 2 CO2	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	-0.024	0.155			
C _{ui} Initial upscale	13.867	5.978			
C _{of} Final zero	-0.023	0.157			
C _{uf} Final upscale	13.868	5.976			
C _{ma} Actual gas value	14.100	5.930			
Analyzer Averages (concentrations)					
C _{Avg} Average conc.	7.997	11.024			
C _{Gas} Bias adjusted	8.141	11.071			

Clock Time (at end of sample period)

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14:20	8.117	10.838
14:21	7.841	11.138
14:22	7.866	11.133
14:23	8.431	10.654
14:24	8.445	10.604
14:25	7.873	11.084
14:26	7.868	11.149
14:27	8.264	10.789
14:28	8.488	10.591
14:29	8.432	10.642
14:30	7.973	11.071
14:31	7.999	11.062
14:32	7.361	11.607
14:33	7.992	11.048
14:34	7.853	11.142
14:35	8.098	10.986
14:36	7.870	11.132
14:37	7.201	11.685
14:38	7.688	11.310
14:39	8.103	10.917
14:40	7.931	11.072
14:41	7.615	11.358
14:42	8.284	10.778
14:43	8.363	10.697
14:44	7.988	11.033
14:45	7.853	11.176
14:46	8.132	10.959

Wheelabrator
 CleanAir Project No. 11182
 Ft. Lauderdale, FL
 FF Outlet 3

March 30, 2011
 Start Time 14:49
 Stop Time 14:54
 CALIBRATION BIAS 11

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

System Response to Calibration Gases (C_S)

C _{of} Zero gas	-0.023	0.157		
C _{uf} Upscale gas	13.868	5.976		

Analyzer Calibration Error Responses (C_{Dr})

C _{oce} Zero gas	-0.044	0.054
C _{mce} Upscale gas	14.074	6.052

Actual Upscale Gas Value (C_{MA})

C _{ma} Upscale gas	14.100	5.930
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Calibration Span Value (CS)

	14.100	13.900
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System Bias as Percent of Calibration Span Value (SB) (5%)

Zero gas	0.1%	0.7%
Upscale gas	-1.5%	-0.5%

System Bias Status

Zero gas	OK	OK
Upscale gas	OK	OK

Previous System Response to Calibration Gases (C_S)

C _{oi} Zero gas	-0.024	0.155
C _{ul} Upscale gas	13.867	5.978

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

Zero gas	0.0%	0.0%
Upscale gas	0.0%	0.0%

Drift Assessment Status

Zero gas	OK	OK
Upscale gas	OK	OK

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14:49:21	-0.029	9.831
14:49:36	-0.031	9.833
14:49:51	-0.037	9.834
14:50:06	-0.057	9.834
14:50:21	-0.035	9.835
14:50:36	-0.022	6.099
14:50:51	-0.021	0.763
14:51:06	-0.022	0.285
14:51:21	-0.021	0.219
14:51:36	-0.023	0.186
14:51:51	-0.022	0.169
14:52:06	-0.023	0.157
14:52:21	-0.023	0.145
14:52:36	1.336	0.357
14:52:51	11.521	4.463
14:53:06	13.696	5.829
14:53:21	13.828	5.941
14:53:36	13.849	5.961
14:53:51	13.860	5.971
14:54:06	13.869	5.977
14:54:21	13.876	5.982