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**LAKELAND ELECTRIC
C.D. MCINTOSH
UNIT**

SAM and SO₂ EMISSIONS TEST REPORT

**CATALYST AIR MANAGEMENT, INC.
REPORT NUMBER 138-153**

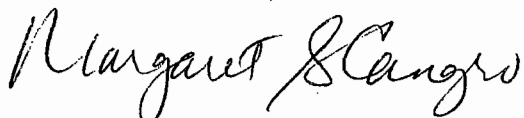
Test dates: February 1-9, 2010

Prepared for
Mr. Robby Kniss
Lakeland Electric
3030 E. Lake Parker Dr.
Lakeland, FL 33805

STATEMENT OF VALIDITY

**Lakeland Electric – C.D. McIntosh Unit 3
Catalyst Report 138-153
April 12, 2010**

To the extent practical, information and data provided in this test report has been verified as true and correct.



Margaret S. Cangro
Manager

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PROJECT FACT SHEET

NAME OF SOURCE OWNER: Lakeland Electric

SOURCE IDENTIFICATION: C.D. McIntosh Unit 3
FDEP ID No. 1050004 EU No. 006

LOCATION OF SOURCE: 3030 East Lake Parker Dr.
Lakeland, FL 33805

TYPE OF OPERATION: Electric Utility Steam Generating Unit

TYPES OF TESTS PERFORMED: Sample Traverse-EPA Method 1
Volumetric Flow Rate-EPA Method 2
Oxygen/Carbon Dioxide-EPA Method 3A
Moisture Content-EPA Method 4
Sulfuric Acid Mist-NCASI Method 8A

TEST COMPANY: Catalyst Air Management, Inc.
2505 Byington-Solway Road
Knoxville, TN 37931

SITE SUPERVISOR: Mike Taylor - Principal
Jack Martin - Engineer

TEST PERSONNEL: Josh Nicely - Testing Supervisor
Rick Derrera - Lead Technician
Dustin Urban - Scientist
William Sapp - Scientist
Huedon Love - Technician
Frank Mo - Chemist
Lang Le - Chemist
Katherine Strickland - Chemist

TEST DATES: February 1-9, 2010

OWNER'S REPRESENTATIVES: Robby Kniss
Christine More
Bret Galbreath

TEST OBSERVERS: Bill Schroeder - FDEP
James Burkholder - FDEP

1.0 Introduction

Catalyst Air Management, Inc. (Catalyst) was contracted by the City of Lakeland to conduct performance testing of the retrofitted SCR and lime sorbent injection system at C.D. McIntosh Power Plant, Unit 3. The source emission testing was to determine the sulfuric acid mist emissions from the new systems.

The sampling program was conducted February 1 through 9, 2010. The testing was performed by Messrs. Mike Taylor, Jack Martin, Rick Derrera, Dustin Urban, William Sapp, Huedon Love Frank Mo, Lang Le and Katherine Strickland of Catalyst with the assistance of personnel assigned by Lakeland Electric. Ms. Christine More and Mr. Robert Kniss of Lakeland Electric coordinated plant operation during the testing.

2.0 Summary of Test Results

A summary of test results developed by this source sampling program are presented in Tables 1 through 8. The summary tables are presented as follows:

<u>Table</u>	<u>Description</u>	<u>Page</u>
1	Summary of SAM and SO ₂ Emissions	2
2-9	SAM Sampling Summary - SCR inlet	8-15
10-17	SAM Sampling Summary – SCR outlet	16-23
18-25	SAM Sampling Summary – ESP inlet	24-31

3.0 Results of Testing

The individual test run results are tabulated in Appendices 1 through 3.

4.0 Description Of Combustion Unit

McIntosh Unit 3 is a steam generating utility boiler. The unit is permitted to burn natural gas, No. 6 residual fuel oil, bituminous coal, and co-fire with refuse derived fuel (RDF) and petroleum coke at a maximum heat input rate of 3,640 MMBtu/hr. The rated generation capacity of the turbine/generator is approximately 364 MW gross. The flue gas from the unit is passed through an electrostatic precipitator and wet scrubber for control of particulate and SO₂ emissions. Low NO_x burners are used to control NO_x emissions. The flue gas is exhausted into the Unit 3 stack.

The Unit 3 stack height is approximately 275 feet. Sampling was performed at the inlet and outlet to the SCR, as well as at the ESP inlet.

**LAKELAND ELECTRIC
MCINTOSH UNIT 3
Initial SAM testing**

Scenario (#-Type)	Run #	Unit Capacity (%)	Gross Output (MW)	Heat Input (mmBtu /hr)	Sorbent Injection Rate [lb/hr Ca(OH) ₂]	SCR Inlet (lb/mmBtu)				SCR Outlet (lb/mmBtu)				ESP Inlet (lb/mmBtu)			
						S Duct (Side 31)		N Duct (Side 32)		S Duct (Side 31)		N Duct (Side 32)		S Duct (Side 31)		N Duct (Side 32)	
						SO2 Emissions	SAM Emissions	SO2 Emissions	SAM Emissions	SO2 Emissions	SAM Emissions	SO2 Emissions	SAM Emissions	SO2 Emissions	SAM Emissions	SO2 Emissions	SAM Emissions
1- B	Run 7	100	365	3571	0	4.893	0.001	4.874	0.002	4.720	0.013	3.873	0.019	3.159	0.002	3.690	0.009
1- B	Run 8	100	365	3893	0	4.349	0.001	4.926	0.005	3.405	0.013	3.766	0.022	3.141	0.003	3.187	0.011
1- B	Run 9	100	365	3908	0	4.551	0.002	5.341	0.005	3.650	0.014	3.792	0.020	3.173	0.006	3.010	0.010
2-B	Run 13	88	320	3291	0	1.524	0.001	1.934	0.004	1.633	0.004	1.863	0.009	1.713	0.003	1.915	0.003
2-B	Run 14	88	320	3240	0	1.768	0.001	1.878	0.004	1.840	0.008	1.807	0.016	1.889	0.004	1.891	0.003
3-B	Run 18	74	270	2911	0	1.819	0.003	1.867	0.009	2.043	0.010	2.140	0.016	1.971	0.005	2.032	0.005
3-B	Run 19	74	270	2928	0	1.723	0.002	1.764	0.005	2.040	0.009	1.996	0.014	2.018	0.002	1.967	0.004
4-P	Run 10	100	365	3807	120	2.659	0.001	2.936	0.005	2.412	0.004	2.264	0.021	2.436	0.000	2.144	0.010
5-P	Run 11	100	365	3825	360	2.548	0.004	2.547	0.007	2.470	0.015	2.279	0.018	2.361	0.001	1.934	0.008
6-P	Run 12	100	365	3822	240	2.355	0.003	2.786	0.004	2.398	0.013	2.326	0.025	2.230	0.001	2.110	0.017
7-P	Run 15	88	320	3287	105	1.656	0.001	1.640	0.004	1.997	0.008	1.778	0.012	1.970	0.000	1.891	0.004
8-P	Run 16	88	320	3285	316	1.618	0.000	1.672	0.003	1.646	0.009	1.905	0.013	1.697	0.000	1.891	0.003
9-P	Run 17	88	320	3288	211	1.780	0.000	1.672	0.002	1.971	0.009	1.879	0.014	1.717	0.000	1.915	0.005
10-P	Run 20	74	270	2938	89	2.241	0.001	1.647	0.003	2.058	0.008	2.122	0.016	1.992	0.002	2.007	0.003
11-P	Run 21	74	270	2960	267	2.404	0.002	1.651	0.002	2.115	0.008	2.140	0.017	2.047	0.002	1.951	0.003
12-P	Run 22	74	270	2961	179	1.864	0.001	1.605	0.004	2.083	0.009	2.002	0.016	1.946	0.002	1.951	0.003

B=baseline

P=performance

5.0 Description of CEMS

The Unit 3 CEMS is a dilution extraction system (400:1 ratio) that measures SO₂, NO_x and CO₂ concentrations and flow at the sampling location. The CEMS analyzers include a Thermo Environmental model 42i NO_x monitor, a Thermo Environmental model 43i SO₂ monitor, a Thermo Environmental model 410i CO₂ monitor, a Thermo Environmental model 48i CO monitor, and a United Sciences Ultraflow Model 100 monitor. The recording and reporting requirements are performed by a computerized data acquisition and handling system (DAHS).

Unit 3 CEMS

- (1) TECO NO_x - 42i-0608716016
- (1) TECO SO₂ - 43i-06087106018
- (1) TECO CO₂ - 410i-0608716015
- (1) TECO CO - 48i-TLE 0712221616
- (1) United Sciences Ultraflow 100 - Serial No. 1001060

The data acquisition and handling system utilizes an Fc factor (scf/mmBtu) based on the fuel to calculate NO_x emissions in lbs/mmBtu. The analyzers measure on a wet basis. The data acquisition and handling system reports the volumetric flow data in standard cubic feet per hour (SCFH).

6.0 Sampling Program Procedures

The following test methods were utilized during the test program:

EPA Method 1	Sample and Velocity Traverse for Stationary Sources
EPA Method 2	Determination of Stack Gas Velocity and Volumetric Flow Rate
EPA Method 3A	Gas Analysis for CO ₂ , O ₂ , Excess Air and Dry Molecular Weight (Instrumental Analyzer Method)
EPA Method 4	Determination of Moisture Content in Stack Gas
NCASI Method 8A	Determination of Sulfuric Acid Vapor or Mist and Sulfur Dioxide Emissions from Stationary Sources from Kraft Recovery Furnaces

6.1 Sulfuric Acid Mist - NCASI Method 8A

Acid Mist and SO₂ emissions were determined in accordance with EPA Method 8A procedures. A gas sample was extracted at a constant flow rate from the flue gas and the sulfuric acid mist, including SO₃, was separated and measured by barium-thorin titration. The sulfuric acid mist fraction of the train was the only portion analyzed. The probe and filter were maintained at 500 °F. The condenser coil was maintained between 167 and 185°F. The sampling train consists of the following equipment connected in series:

Quartz nozzle and heated quartz lined probe

Heated quartz filter holder with quartz filter

A modified Graham condenser with Type C glass frit and 200 cm of 5-mm ID glass

A Greenburg-Smith impinger containing 100 ml of a 3% hydrogen peroxide solution

A modified Greenburg-Smith impinger containing 100 ml of a 3% hydrogen peroxide

A Greenburg-Smith impinger containing 100 ml of DI H₂O

A modified Greenburg-Smith impinger containing 250g of silica gel

The sample volume was measured by passing it through a calibrated dry gas meter. An S-type pitot tube was attached to the probe to measure stack gas velocity and to maintain isokinetic sampling. A K-type thermocouple was attached to the probe to measure the gas temperature.

After the run, the probe was disconnected from the sample train. The remaining portion was purged for 15 minutes at the average sampling rate of the run.

The probe, filter holder and condenser were triple rinsed with deionized and the washings were retained for SO₃/H₂SO₄ analysis. The peroxide and deionized H₂O impingers' contents were recovered and the impingers and connecting glassware were rinsed with distilled water and were retained, however SO₂ analysis was not performed. Each sample was analyzed by barium thurin titration to determine SO₃/H₂SO₄ concentrations.

6.2 O₂ and CO₂ – EPA Method 3A

The O₂ and CO₂ concentrations were determined simultaneously with each of the test runs. A sample was continuously extracted and introduced into a Telgan O₂/CO₂ analyzer for determination of gas concentrations. The sample was extracted through a heated stainless steel probe, heated sample line and sample conditioner to dry the sample before it enters the analyzer. A sample flow control system was used to control the flow into the analyzer. The analyzer was calibrated prior to starting the testing with EPA Protocol 1, calibration gases.

All the sampling procedures, quality assurance, analysis and calculations utilized for the program were performed in accordance with the Code of Federal Regulations, Title 40, Part 60, Appendix A.

7.0 Operating Conditions

Operating conditions were monitored throughout the duration of the sampling program by Lakeland Electric personnel.

8.0 Quality Assurance Procedures

The quality assurance procedures followed during the testing activities followed guidelines set forth by the previously mentioned methods and the EPA Quality Assurance Handbook for Source Sampling. The specific procedures for this test program are listed below.

8.1 Isokinetic Equipment

The sample nozzles were visually inspected and measured across three different diameters to determine the appropriate nozzle diameter.

The S-type pitot tubes were visually inspected and measured to meet the design specifications of EPA Method 2 for a 0.84 pitot coefficient.

Both legs of the pitot tube were leaked checked before and after each sample run.

The stack thermocouples were calibrated prior to the testing and a post-test check was performed after the testing project.

The manometer was leveled and zeroed before each sample run.

The dry gas meter is fully calibrated semi-annually using an EPA intermediate standard. Post -test dry gas meter checks were completed to verify the accuracy of the meter Yi.

Pre-test and post-test leak checks were completed and were less than 0.02 cfm at the highest sampling vacuum.

8.2 Instrumental Methods

Analyzer calibrations, system bias check and drift checks were completed before and after each sample run utilizing EPA Protocol 1 calibration gases.

The analyzer interference responses were determined in accordance with Section 7.2 through 7.6 of Method 6C.

9.0 Discussion

9.1 Chain of Custody

The ammonia field samples, were collected, sealed and transported to the Catalyst, TN office in Knoxville, TN then shipped to the Maxxam Analytics laboratory in Burlington, Ontario, Canada under the supervision of Mike Taylor. The SO₃ samples were processed and analyzed in the plant laboratory.

The samples were labeled to identify the following:

Client and source
Type of Sample
Sample location

Date
Run number
Sample fraction

9.2 Sampling Conditions and Concerns

The SO₃ testing was performed February 1 through 9, 2010 at baseline conditions (no lime injection) and various lime injection rates with the unit operating at 270, 320 and 365 MW.

APPENDIX 1
TEST SCENARIO SUMMARY TABLES

TABLE 2
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet 31**

Run Number:	7	8	9
Date:	2/2/10	2/2/10	2/2/10
Load (MW):	365	365	365
Run Time: Start	15:05	17:30	19:44
End	16:05	18:30	20:44
Pbar - Barometric Pressure:	29.99	30.00	30.01
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	24.301	24.232	24.390
TM - Avg. Meter Temp (F):	78	83	82
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	23.689	23.409	23.609
Vlc - Volume Water Collected:	54.3	43.3	30.4
%M - Percent Moisture:	9.74	8.01	5.72
Bws - Mole Fraction, Dry:	0.097	0.080	0.057
%CO2 - Carbon Dioxide, Dry:	12.6	13.0	13.0
%O2 - Oxygen, Dry:	6.9	6.5	6.4
MD - Dry Molecular Weight:	30.29	30.34	30.34
MS - Wet Molecular Weight:	29.09	29.35	29.63
PS - Static Press. (in. of Hg):	29.62	29.63	29.64

SO3

ppm - Emission Concentration:	0.5	0.5	0.9
ppm @ 3% O2 - Emission Concentration	0.6	0.6	1.2
lb/mmbtu - Emission Rate:	0.001	0.001	0.002

Average ppm **0.6**
 Average ppm @ 3%O2 **0.8**
 Average lb/mmBtu **0.001**

SO2

ppm - Emission Concentration:	2018.8	1845.5	1944.9
ppm @ 3% O2 - Emission Concentration	2581.2	2294.1	2400.9
lb/mmbtu - Emission Rate:	4.893	4.349	4.551

Average ppm **1936.4**
 Average ppm @ 3%O2 **2425.4**
 Average lb/mmBtu **4.598**

TABLE 3
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet 31**

Run Number:	10	11	12
Date:	2/3/10	2/3/10	2/3/10
Load (MW):	365	365	365
Run Time: Start	8:45	12:55	17:25
End	9:45	13:55	18:25
Pbar - Barometric Pressure:	29.75	30.14	29.95
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	24.117	24.682	24.716
TM - Avg. Meter Temp (F):	61	73	81
PM - Avg. Delta H (in. of H ₂ O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	24.075	24.423	23.954
Vlc - Volume Water Collected:	104	101	100
%M - Percent Moisture:	16.91	16.30	16.43
Bws - Mole Fraction, Dry:	0.169	0.163	0.164
%CO ₂ - Carbon Dioxide, Dry:	13.5	14.6	14.5
%O ₂ - Oxygen, Dry:	5.9	4.9	4.9
MD - Dry Molecular Weight:	30.40	30.53	30.52
MS - Wet Molecular Weight:	28.30	28.49	28.46
PS - Static Press. (in. of Hg):	29.38	29.77	29.58

SO₃

ppm - Emission Concentration:	0.8	2.7	2.0
ppm @ 3% O ₂ - Emission Concentration	1.0	3.1	2.3
lb/mmbtu - Emission Rate:	0.001	0.004	0.003

SO₂

ppm - Emission Concentration:	1175.5	1201.6	1110.7
ppm @ 3% O ₂ - Emission Concentration	1402.7	1344.3	1242.6
lb/mmbtu - Emission Rate:	2.659	2.548	2.355

TABLE 4
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet 31**

Run Number:	13	14	15	16	17
Date:	2/8/10	2/8/10	2/8/10	2/8/10	2/8/10
Load (MW):	320	320	320	320	320
Run Time: Start	8:30	10:20	12:20	15:30	17:07
End	9:30	11:20	13:20	16:30	18:07
Pbar - Barometric Pressure:	29.60	29.60	29.60	29.60	29.60
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	24.205	24.335	24.597	24.713	25.031
TM - Avg. Meter Temp (F):	56	64	75	75	76
PM - Avg. Delta H (in. of H ₂ O):	0.50	0.50	0.50	0.50	0.50
Y - Meter Calibration Factor:	0.99	0.99	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	24.263	24.017	23.814	23.896	24.174
Vlc - Volume Water Collected:	42.7	43.4	47.6	36.8	40.7
%M - Percent Moisture:	7.65	7.84	8.60	6.76	7.35
Bws - Mole Fraction, Dry:	0.077	0.078	0.086	0.068	0.073
%CO ₂ - Carbon Dioxide, Dry:	14.5	13.7	13.4	13.9	13.5
%O ₂ - Oxygen, Dry:	4.8	5.6	5.8	5.5	5.8
MD - Dry Molecular Weight:	30.51	30.42	30.38	30.44	30.39
MS - Wet Molecular Weight:	29.55	29.44	29.31	29.60	29.48
PS - Static Press. (in. of Hg):	29.60	29.23	29.23	29.23	29.23
SO₃					
ppm - Emission Concentration:	0.4	0.8	0.6	0.0	0.0
ppm @ 3% O ₂ - Emission Concentration	0.4	1.0	0.8	0.0	0.0
lb/mmbtu - Emission Rate:	0.001	0.001	0.001	0.000	0.000
SO₂					
ppm - Emission Concentration:	723.4	797.2	737.0	734.4	792.0
ppm @ 3% O ₂ - Emission Concentration	804.2	932.7	873.7	853.7	938.9
lb/mmbtu - Emission Rate:	1.524	1.768	1.656	1.618	1.780

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TABLE 5
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet - 31**

Run Number:	18	19	20	21	22
Date:	2/9/10	2/9/10	2/9/10	2/9/10	2/9/10
Load (MW):	270	270	270	270	270
Run Time: Start	6:18	8:05	9:55	11:40	13:25
End	7:18	9:05	10:55	12:40	14:25
Pbar - Barometric Pressure:	29.50	29.50	29.50	29.50	29.50
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	24.155	24.248	24.391	25.364	24.673
TM - Avg. Meter Temp (F):	56	57	61	70	66
PM - Avg. Delta H (in. of H2O):	0.50	0.50	0.50	0.50	0.50
Y - Meter Calibration Factor:	0.99	0.99	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	24.154	24.173	24.152	24.701	24.207
Vlc - Volume Water Collected:	44.2	40.3	44.1	43.6	47.6
%M - Percent Moisture:	7.93	7.28	7.92	7.68	8.48
Bws - Mole Fraction, Dry:	0.079	0.073	0.079	0.077	0.085
%CO2 - Carbon Dioxide, Dry:	13.8	14.2	14.0	14.0	14.0
%O2 - Oxygen, Dry:	5.5	5.3	5.4	5.4	5.3
MD - Dry Molecular Weight:	30.43	30.48	30.46	30.46	30.45
MS - Wet Molecular Weight:	29.44	29.58	29.47	29.50	29.40
PS - Static Press. (in. of Hg):	29.13	29.13	29.13	29.13	29.13
SO3					
ppm - Emission Concentration:	1.9	1.1	0.7	1.1	0.6
ppm @ 3% O2 - Emission Concentration	2.3	1.2	0.9	1.3	0.7
lb/mmbtu - Emission Rate:	0.003	0.002	0.001	0.002	0.001
SO2					
ppm - Emission Concentration:	825.7	792.0	1023.9	1098.1	856.8
ppm @ 3% O2 - Emission Concentration	959.7	908.8	1182.5	1268.1	983.2
lb/mmbtu - Emission Rate:	1.819	1.723	2.241	2.404	1.864

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TABLE 6
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet 32**

Run Number:	7	8	9
Date:	2/2/10	2/2/10	2/2/10
Load (MW):	365	365	365
Run Time: Start	15:05	17:30	19:44
End	16:05	18:30	20:44
Pbar - Barometric Pressure:	29.99	30.00	30.01
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	24.043	23.286	23.296
TM - Avg. Meter Temp (F):	73	73	72
PM - Avg. Delta H (in. of H2O):	0.75	0.50	0.50
Y - Meter Calibration Factor:	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	23.657	22.903	22.974
Vlc - Volume Water Collected:	22.8	57.4	63
%M - Percent Moisture:	4.34	10.56	11.44
Bws - Mole Fraction, Dry:	0.043	0.106	0.114
%CO2 - Carbon Dioxide, Dry:	12.4	12.7	13.3
%O2 - Oxygen, Dry:	7.1	6.7	6.3
MD - Dry Molecular Weight:	30.27	30.30	30.38
MS - Wet Molecular Weight:	29.74	29.00	28.96
PS - Static Press. (in. of Hg):	29.62	29.63	29.64

SO3

ppm - Emission Concentration:	1.2	2.6	2.6
ppm @ 3% O2 - Emission Concentration	1.6	3.3	3.2
lb/mmbtu - Emission Rate:	0.002	0.005	0.005

Average ppm **2.2**
 Average ppm @ 3%O2 **2.7**
 Average lb/mmBtu **0.004**

SO2

ppm - Emission Concentration:	1982.1	2061.5	2298.2
ppm @ 3% O2 - Emission Concentration	2571.0	2598.6	2817.6
lb/mmbtu - Emission Rate:	4.874	4.926	5.341

Average ppm **2113.9**
 Average ppm @ 3%O2 **2662.4**
 Average lb/mmBtu **5.047**

TABLE 7
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet 32**

Run Number:	10	11	12
Date:	2/3/10	2/3/10	2/3/10
Load (MW):	365	365	365
Run Time: Start	8:45	12:55	17:25
End	9:45	13:55	18:25
Pbar - Barometric Pressure:	29.75	29.75	29.95
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	23.905	23.518	23.811
TM - Avg. Meter Temp (F):	63	73	82
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.50
Y - Meter Calibration Factor:	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	23.795	22.956	22.995
Vlc - Volume Water Collected:	104	101	100
%M - Percent Moisture:	17.07	17.17	17.00
Bws - Mole Fraction, Dry:	0.171	0.172	0.170
%CO2 - Carbon Dioxide, Dry:	13.3	14.4	14.7
%O2 - Oxygen, Dry:	6.1	4.9	4.8
MD - Dry Molecular Weight:	30.37	30.50	30.54
MS - Wet Molecular Weight:	28.26	28.35	28.41
PS - Static Press. (in. of Hg):	29.38	29.38	29.58

SO3

ppm - Emission Concentration:	2.9	4.6	2.8
ppm @ 3% O2 - Emission Concentration	3.5	5.1	3.1
lb/mmbtu - Emission Rate:	0.005	0.007	0.004

SO2

ppm - Emission Concentration:	1280.8	1201.2	1321.8
ppm @ 3% O2 - Emission Concentration	1549.1	1343.8	1469.6
lb/mmbtu - Emission Rate:	2.936	2.547	2.786

TABLE 8
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet - 32**

Run Number:	13	14	15	16	17
Date:	2/8/10	2/8/10	2/8/10	2/8/10	2/8/10
Load (MW):	320	320	320	320	320
Run Time: Start	8:30	10:20	12:20	15:30	17:07
End	9:30	11:20	13:20	16:30	18:07
Pbar - Barometric Pressure:	29.60	29.60	29.60	29.60	29.60
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	24.588	24.441	24.754	24.769	24.519
TM - Avg. Meter Temp (F):	56	63	76	79	82
PM - Avg. Delta H (in. of H2O):	0.50	0.50	0.50	0.50	0.50
Y - Meter Calibration Factor:	0.99	0.99	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	24.643	24.179	23.888	23.784	23.432
Vlc - Volume Water Collected:	50.2	37.7	35.4	34.0	26.4
%M - Percent Moisture:	8.75	6.84	6.52	6.31	5.04
Bws - Mole Fraction, Dry:	0.088	0.068	0.065	0.063	0.050
%CO2 - Carbon Dioxide, Dry:	14.4	14.0	13.7	13.5	13.7
%O2 - Oxygen, Dry:	5.0	5.4	5.7	5.8	5.7
MD - Dry Molecular Weight:	30.50	30.46	30.42	30.39	30.42
MS - Wet Molecular Weight:	29.41	29.60	29.61	29.61	29.79
PS - Static Press. (in. of Hg):	29.23	29.23	29.23	29.23	29.23
SO3					
ppm - Emission Concentration:	2.8	2.6	2.1	1.6	1.1
ppm @ 3% O2 - Emission Concentration	3.1	3.0	2.5	1.8	1.3
lb/mmbtu - Emission Rate:	0.004	0.004	0.004	0.003	0.002
SO2					
ppm - Emission Concentration:	906.4	857.8	734.7	737.9	749.0
ppm @ 3% O2 - Emission Concentration	1020.5	990.7	865.2	882.1	882.1
lb/mmbtu - Emission Rate:	1.934	1.878	1.640	1.672	1.672

014

TABLE 9
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Inlet - 32**

Run Number:	18	19	20	21	22
Date:	2/9/10	2/9/10	2/9/10	2/9/10	2/9/10
Load (MW):	270	270	270	270	270
Run Time: Start	6:18	8:05	9:55	11:40	13:25
End	7:18	9:05	10:55	12:40	14:25
Pbar - Barometric Pressure:	29.50	29.50	29.50	29.50	29.50
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	24.865	25.010	24.978	35.032	24.684
TM - Avg. Meter Temp (F):	64	68	68	77	76
PM - Avg. Delta H (in. of H2O):	0.50	0.50	0.50	0.50	0.50
Y - Meter Calibration Factor:	0.99	0.99	0.99	0.99	0.99
VMSTD - Std. Gas Volume (SCF):	24.473	24.433	24.382	33.640	23.777
Vlc - Volume Water Collected:	40.6	37.4	36	40.6	32.2
%M - Percent Moisture:	7.25	6.72	6.50	5.38	6.00
Bws - Mole Fraction, Dry:	0.072	0.067	0.065	0.054	0.060
%CO2 - Carbon Dioxide, Dry:	13.9	14.1	14.0	14.1	14.2
%O2 - Oxygen, Dry:	5.5	5.2	5.4	5.3	5.3
MD - Dry Molecular Weight:	30.44	30.46	30.46	30.47	30.48
MS - Wet Molecular Weight:	29.54	29.63	29.65	29.80	29.74
PS - Static Press. (in. of Hg):	29.13	29.13	29.13	29.13	29.13
SO3					
ppm - Emission Concentration:	5.2	2.8	1.5	1.0	2.6
ppm @ 3% O2 - Emission Concentration	6.1	3.2	1.8	1.2	3.0
lb/mmbtu - Emission Rate:	0.009	0.005	0.003	0.002	0.004
SO3					
ppm - Emission Concentration:	847.5	816.3	752.5	758.9	738.1
ppm @ 3% O2 - Emission Concentration	985.1	930.7	869.0	870.8	847.0
lb/mmbtu - Emission Rate:	1.867	1.764	1.647	1.651	1.605

015

TABLE 10
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 31**

Run Number:	7	8	9
Date:	2/2/10	2/2/10	2/2/10
Load (MW):	365	365	365
Run Time: Start	15:05	17:30	19:44
End	16:05	18:30	20:44
Pbar - Barometric Pressure:	29.97	30.00	30.01
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	30.679	31.477	31.190
TM - Avg. Meter Temp (F):	79	78	74
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.01	1.01	1.01
VMSTD - Std. Gas Volume (SCF):	30.476	31.354	31.262
Vlc - Volume Water Collected:	65.9	56.4	52.7
%M - Percent Moisture:	9.24	7.81	7.36
Bws - Mole Fraction, Dry:	0.092	0.078	0.074
%CO2 - Carbon Dioxide, Dry:	13.3	13.8	13.6
%O2 - Oxygen, Dry:	6.2	5.6	5.8
MD - Dry Molecular Weight:	30.38	30.43	30.41
MS - Wet Molecular Weight:	29.23	29.46	29.50
PS - Static Press. (in. of Hg):	30.01	30.04	30.05

SO3

ppm - Emission Concentration:	7.6	8.1	8.1
ppm @ 3% O2 - Emission Concentration	9.2	9.5	9.5
lb/mmbtu - Emission Rate:	0.013	0.013	0.014

Average ppm	7.9
Average ppm @ 3%O2	9.4
Average lb/mmBtu	0.013

SO2

ppm - Emission Concentration:	2044.9	1535.3	1624.3
ppm @ 3% O2 - Emission Concentration	2490.0	1796.2	1925.5
lb/mmbtu - Emission Rate:	4.720	3.405	3.650

Average ppm	1734.9
Average ppm @ 3%O2	2070.6
Average lb/mmBtu	3.925

TABLE 11
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 31**

Run Number:	10	11	12
Date:	2/3/10	2/3/10	2/3/10
Load (MW):	365	365	365
Run Time: Start	8:45	12:55	17:25
End	9:45	13:55	18:25
Pbar - Barometric Pressure:	29.75	29.75	29.75
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	30.454	30.453	30.313
TM - Avg. Meter Temp (F):	61	68	63
PM - Avg. Delta H (in. of H ₂ O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.01	1.01	1.01
VMSTD - Std. Gas Volume (SCF):	31.025	30.642	30.807
Vlc - Volume Water Collected:	104	101	100
%M - Percent Moisture:	13.64	13.44	13.26
Bws - Mole Fraction, Dry:	0.136	0.134	0.133
%CO ₂ - Carbon Dioxide, Dry:	14.2	14.6	13.7
%O ₂ - Oxygen, Dry:	5.0	4.8	5.6
MD - Dry Molecular Weight:	30.47	30.53	30.42
MS - Wet Molecular Weight:	28.77	28.84	28.77
PS - Static Press. (in. of Hg):	29.79	29.79	29.79

SO₃

ppm - Emission Concentration:	2.4	9.7	7.7
ppm @ 3% O ₂ - Emission Concentration	2.7	10.8	9.0
lb/mmbtu - Emission Rate:	0.004	0.015	0.013

SO₂

ppm - Emission Concentration:	1130.4	1172.2	1081.5
ppm @ 3% O ₂ - Emission Concentration	1272.6	1303.3	1265.3
lb/mmbtu - Emission Rate:	2.412	2.470	2.398

TABLE 12
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 31**

Run Number:	13	14	15	16	17
Date:	2/8/10	2/8/10	2/8/10	2/8/10	2/8/10
Load (MW):	320	320	320	320	320
Run Time: Start	8:30	10:20	12:20	15:30	17:07
End	9:30	11:20	13:20	16:30	18:07
Pbar - Barometric Pressure:	29.60	29.60	29.60	29.60	29.60
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	30.676	30.689	30.758	31.176	31.088
TM - Avg. Meter Temp (F):	52	57	69	73	73
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.01	1.01	1.01	1.01	1.01
VMSTD - Std. Gas Volume (SCF):	31.666	31.388	30.730	30.904	30.846
Vlc - Volume Water Collected:	45.1	50.8	54.2	53.7	47.9
%M - Percent Moisture:	6.29	7.08	7.67	7.57	6.82
Bws - Mole Fraction, Dry:	0.063	0.071	0.077	0.076	0.068
%CO2 - Carbon Dioxide, Dry:	14.2	13.5	13.6	13.5	13.2
%O2 - Oxygen, Dry:	5.2	5.9	5.9	6.0	6.2
MD - Dry Molecular Weight:	30.48	30.40	30.41	30.40	30.36
MS - Wet Molecular Weight:	29.70	29.52	29.46	29.46	29.52
PS - Static Press. (in. of Hg):	29.64	29.64	29.64	29.64	29.64
SO3					
ppm - Emission Concentration:	2.6	4.8	4.8	5.1	5.1
ppm @ 3% O2 - Emission Concentration	3.0	5.7	5.7	6.2	6.2
lb/mmbtu - Emission Rate:	0.004	0.008	0.008	0.009	0.009
SO2					
ppm - Emission Concentration:	755.8	813.3	882.7	722.8	775.9
ppm @ 3% O2 - Emission Concentration	861.7	970.6	1053.3	868.3	944.8
lb/mmbtu - Emission Rate:	1.633	1.840	1.997	1.646	1.791

018

TABLE 13
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 31**

Run Number:	18	19	20	21	22
Date:	2/9/10	2/9/10	2/9/10	2/9/10	2/9/10
Load (MW):	270	270	270	270	270
Run Time: Start	6:18	8:05	9:55	11:40	13:25
End	7:18	9:05	10:55	12:40	14:25
Pbar - Barometric Pressure:	29.50	29.50	29.50	29.50	29.50
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	30.808	31.328	30.934	31.218	31.091
TM - Avg. Meter Temp (F):	57	69	68	72	77
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.01	1.01	1.01	1.01	1.01
VMSTD - Std. Gas Volume (SCF):	31.378	31.174	30.840	30.899	30.473
Vlc - Volume Water Collected:	51.8	49.3	52.8	52.6	48.3
%M - Percent Moisture:	7.21	6.93	7.46	7.42	6.95
Bws - Mole Fraction, Dry:	0.072	0.069	0.075	0.074	0.069
%CO2 - Carbon Dioxide, Dry:	13.7	13.5	13.0	13.0	13.0
%O2 - Oxygen, Dry:	5.7	6.0	6.4	6.4	6.4
MD - Dry Molecular Weight:	30.42	30.40	30.34	30.34	30.34
MS - Wet Molecular Weight:	29.52	29.54	29.42	29.42	29.48
PS - Static Press. (in. of Hg):	29.54	29.54	29.54	29.54	29.54
SO3					
ppm - Emission Concentration:	6.1	5.4	4.7	5.3	5.0
ppm @ 3% O2 - Emission Concentration	7.2	6.5	5.8	6.5	6.2
lb/mmbtu - Emission Rate:	0.010	0.009	0.008	0.009	0.009
SO2					
ppm - Emission Concentration:	915.3	895.7	879.5	903.6	890.1
ppm @ 3% O2 - Emission Concentration	1077.8	1076.0	1085.7	1115.5	1098.8
lb/mmbtu - Emission Rate:	2.043	2.040	2.058	2.115	2.083

019

TABLE 14
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 32**

Run Number:	7	8	9
Date:	2/2/10	2/2/10	2/2/10
Load (MW):	365	365	365
Run Time: Start	15:05	17:30	19:44
End	16:05	18:30	20:44
Pbar - Barometric Pressure:	29.99	30.00	30.01
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	31.894	31.938	31.852
TM - Avg. Meter Temp (F):	71	71	67
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.97	0.97	0.97
VMSTD - Std. Gas Volume (SCF):	30.732	30.785	30.974
Vlc - Volume Water Collected:	60.3	58.1	58.3
%M - Percent Moisture:	8.46	8.16	8.14
Bws - Mole Fraction, Dry:	0.085	0.082	0.081
%CO2 - Carbon Dioxide, Dry:	13.6	13.8	13.7
%O2 - Oxygen, Dry:	5.7	5.7	5.7
MD - Dry Molecular Weight:	30.40	30.44	30.42
MS - Wet Molecular Weight:	29.35	29.42	29.41
PS - Static Press. (in. of Hg):	30.03	30.04	30.05

SO3

ppm - Emission Concentration:	11.1	13.0	12.2
ppm @ 3% O2 - Emission Concentration	13.1	15.3	14.4
lb/mmBtu - Emission Rate:	0.019	0.022	0.020

Average ppm	12.1
Average ppm @ 3%O2	14.3
Average lb/mmBtu	0.020

SO2

ppm - Emission Concentration:	1735.1	1687.0	1698.6
ppm @ 3% O2 - Emission Concentration	2043.3	1986.7	2000.3
lb/mmBtu - Emission Rate:	3.873	3.766	3.792

Average ppm	1706.9
Average ppm @ 3%O2	2010.1
Average lb/mmBtu	3.810

TABLE 15
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 32**

Run Number:	10	11	12
Date:	2/3/10	2/3/10	2/3/10
Load (MW):	365	365	365
Run Time: Start	8:45	12:55	17:25
End	9:45	13:55	18:25
Pbar - Barometric Pressure:	29.75	29.75	29.75
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	31.567	31.620	32.138
TM - Avg. Meter Temp (F):	56	64	74
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.97	0.97	0.97
VMSTD - Std. Gas Volume (SCF):	31.051	30.667	30.547
Vlc - Volume Water Collected:	104	101	100
%M - Percent Moisture:	13.63	13.43	13.36
Bws - Mole Fraction, Dry:	0.136	0.134	0.134
%CO2 - Carbon Dioxide, Dry:	14.2	14.3	14.3
%O2 - Oxygen, Dry:	5.1	5.0	5.0
MD - Dry Molecular Weight:	30.48	30.49	30.49
MS - Wet Molecular Weight:	28.78	28.81	28.82
PS - Static Press. (in. of Hg):	29.79	29.79	29.79
SO3			
ppm - Emission Concentration:	13.2	11.0	15.6
ppm @ 3% O2 - Emission Concentration	14.9	12.4	17.5
lb/mmbtu - Emission Rate:	0.021	0.018	0.025
SO2			
ppm - Emission Concentration:	1054.2	1067.4	1090.0
ppm @ 3% O2 - Emission Concentration	1194.3	1201.6	1227.2
lb/mmbtu - Emission Rate:	2.264	2.278	2.326

TABLE 16
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 32**

Run Number:	13	14	15	16	17
Date:	2/8/10	2/8/10	2/8/10	2/8/10	2/8/10
Load (MW):	320	320	320	320	320
Run Time: Start	8:30	10:20	12:20	15:30	17:07
End	9:30	11:20	13:20	16:30	18:07
Pbar - Barometric Pressure:	29.60	29.60	29.60	29.60	29.60
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	30.757	30.726	31.032	30.907	30.917
TM - Avg. Meter Temp (F):	52	59	69	75	79
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.96	0.96	0.96	0.96	0.96
VMSTD - Std. Gas Volume (SCF):	30.148	29.760	29.441	28.994	28.806
Vlc - Volume Water Collected:	57.2	48.9	48.9	45.9	44.3
%M - Percent Moisture:	8.20	7.18	7.26	6.94	6.75
Bws - Mole Fraction, Dry:	0.082	0.072	0.073	0.069	0.068
%CO2 - Carbon Dioxide, Dry:	14.3	13.7	13.5	13.3	13.2
%O2 - Oxygen, Dry:	5.0	5.8	5.9	6.2	5.9
MD - Dry Molecular Weight:	30.49	30.42	30.40	30.38	30.35
MS - Wet Molecular Weight:	29.46	29.53	29.50	29.52	29.51
PS - Static Press. (in. of Hg):	29.64	29.64	29.64	29.64	29.64
SO3					
ppm - Emission Concentration:	5.9	9.7	7.4	7.6	8.1
ppm @ 3% O2 - Emission Concentration	6.7	11.5	8.8	9.2	9.6
lb/mmbtu - Emission Rate:	0.009	0.016	0.012	0.013	0.014
SO2					
ppm - Emission Concentration:	873.2	804.2	785.8	825.4	830.8
ppm @ 3% O2 - Emission Concentration	983.1	953.3	937.7	1005.1	991.5
lb/mmbtu - Emission Rate:	1.863	1.807	1.778	1.905	1.879

022

TABLE 17
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **SCR Outlet 32**

Run Number:	18	19	20	21	22
Date:	2/9/10	2/9/10	2/9/10	2/9/10	2/9/10
Load (MW):	270	270	270	270	270
Run Time: Start	6:18	8:05	9:55	11:40	13:25
End	7:18	9:05	10:55	12:40	14:25
Pbar - Barometric Pressure:	29.50	29.50	29.50	29.50	29.50
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	30.766	31.123	31.209	31.108	31.123
TM - Avg. Meter Temp (F):	58	71	70	72	80
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.96	0.96	0.96	0.96	0.96
VMSTD - Std. Gas Volume (SCF):	29.755	29.317	29.500	29.257	28.837
Vlc - Volume Water Collected:	57.2	39.2	48	44.2	47.8
%M - Percent Moisture:	8.30	5.92	7.12	6.64	7.24
Bws - Mole Fraction, Dry:	0.083	0.059	0.071	0.066	0.072
%CO2 - Carbon Dioxide, Dry:	13.8	13.2	13.3	13.2	13.2
%O2 - Oxygen, Dry:	5.6	6.1	6.2	6.2	5.9
MD - Dry Molecular Weight:	30.43	30.36	30.38	30.36	30.35
MS - Wet Molecular Weight:	29.40	29.62	29.50	29.54	29.45
PS - Static Press. (in. of Hg):	29.54	29.54	29.54	29.54	29.54
SO3					
ppm - Emission Concentration:	9.9	8.2	9.1	9.8	9.7
ppm @ 3% O2 - Emission Concentration	11.6	10.0	11.1	11.9	11.6
lb/mmbtu - Emission Rate:	0.016	0.014	0.016	0.017	0.016
SO2					
ppm - Emission Concentration:	965.2	870.8	919.5	927.1	885.2
ppm @ 3% O2 - Emission Concentration	1129.2	1053.2	1119.6	1128.9	1056.4
lb/mmbtu - Emission Rate:	2.140	1.996	2.122	2.140	2.002

023

TABLE 18
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet 31**

Run Number:	7	8	9
Date:	2/2/10	2/2/10	2/2/10
Load (MW):	365	365	365
Run Time: Start	15:05	17:30	19:44
End	16:05	18:30	20:44
Pbar - Barometric Pressure:	29.75	29.75	30.01
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	29.648	25.005	28.391
TM - Avg. Meter Temp (F):	76	74	74
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.02	1.02	1.02
VMSTD - Std. Gas Volume (SCF):	29.677	25.112	28.752
Vlc - Volume Water Collected:	19.3	31	21.4
%M - Percent Moisture:	2.97	5.49	3.39
Bws - Mole Fraction, Dry:	0.030	0.055	0.034
%CO2 - Carbon Dioxide, Dry:	13.3	13.3	13.3
%O2 - Oxygen, Dry:	6.1	6.3	6.3
MD - Dry Molecular Weight:	30.37	30.38	30.38
MS - Wet Molecular Weight:	30.00	29.70	29.96
PS - Static Press. (in. of Hg):	29.13	29.13	29.39

SO3

ppm - Emission Concentration:	1.4	1.8	3.2
ppm @ 3% O2 - Emission Concentration	1.7	2.2	3.9
lb/mmbtu - Emission Rate:	0.002	0.003	0.006

Average ppm	2.1
Average ppm @ 3%O2	2.6
Average lb/mmBtu	0.004

SO2

ppm - Emission Concentration:	1377.7	1351.7	1365.2
ppm @ 3% O2 - Emission Concentration	1666.3	1657.2	1673.7
lb/mmbtu - Emission Rate:	3.159	3.141	3.173

Average ppm	1364.9
Average ppm @ 3%O2	1665.8
Average lb/mmBtu	3.158

TABLE 19
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet 31**

Run Number:	10	11	12
Date:	2/3/10	2/3/10	2/3/10
Load (MW):	365	365	365
Run Time: Start	8:45	12:55	17:25
End	9:45	13:55	18:25
Pbar - Barometric Pressure:	29.75	29.75	29.75
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	27.430	28.437	28.412
TM - Avg. Meter Temp (F):	62	70	65
PM - Avg. Delta H (in. of H ₂ O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.02	1.02	1.02
VMSTD - Std. Gas Volume (SCF):	28.167	28.751	29.004
Vlc - Volume Water Collected:	104	101	100
%M - Percent Moisture:	14.81	14.20	13.97
Bws - Mole Fraction, Dry:	0.148	0.142	0.140
%CO ₂ - Carbon Dioxide, Dry:	13.3	13.4	0.0
%O ₂ - Oxygen, Dry:	6.1	6.0	6.0
MD - Dry Molecular Weight:	30.37	30.38	28.24
MS - Wet Molecular Weight:	28.54	28.63	26.81
PS - Static Press. (in. of Hg):	29.13	29.13	29.75
SO₃			
ppm - Emission Concentration:	0.0	0.4	0.6
ppm @ 3% O ₂ - Emission Concentration	0.0	0.5	0.8
lb/mmbtu - Emission Rate:	0.000	0.001	0.001
SO₂			
ppm - Emission Concentration:	1062.7	1036.9	979.3
ppm @ 3% O ₂ - Emission Concentration	1285.2	1245.6	1176.5
lb/mmbtu - Emission Rate:	2.436	2.361	2.230

TABLE 20
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet 31**

Run Number:	13	14	15	16	17
Date:	2/8/10	2/8/10	2/8/10	2/8/10	2/8/10
Load (MW):	320	320	320	320	320
Run Time: Start	8:30	10:20	12:20	15:30	17:07
End	9:30	11:20	13:20	16:30	18:07
Pbar - Barometric Pressure:	29.60	29.75	29.60	29.60	29.60
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	28.125	27.979	28.962	28.386	28.103
TM - Avg. Meter Temp (F):	52	60	64	64	65
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.02	1.02	1.02	1.02	1.02
VMSTD - Std. Gas Volume (SCF):	29.301	28.859	29.506	28.910	28.571
Vlc - Volume Water Collected:	48	50	50	52	53
%M - Percent Moisture:	7.16	7.54	7.39	7.81	8.04
Bws - Mole Fraction, Dry:	0.072	0.075	0.074	0.078	0.080
%CO2 - Carbon Dioxide, Dry:	13.7	13.0	13.3	13.4	13.4
%O2 - Oxygen, Dry:	5.8	6.5	6.0	6.0	6.0
MD - Dry Molecular Weight:	30.42	30.34	30.37	30.38	30.38
MS - Wet Molecular Weight:	29.53	29.41	29.45	29.42	29.39
PS - Static Press. (in. of Hg):	28.98	29.13	28.98	28.98	28.98
SO3					
ppm - Emission Concentration:	1.6	2.1	0.0	0.0	0.0
ppm @ 3% O2 - Emission Concentration	1.9	2.6	0.0	0.0	0.0
lb/mmbtu - Emission Rate:	0.003	0.004	0.000	0.000	0.000
SO2					
ppm - Emission Concentration:	762.3	801.6	865.2	745.1	753.9
ppm @ 3% O2 - Emission Concentration	903.7	996.5	1039.4	895.1	905.7
lb/mmbtu - Emission Rate:	1.713	1.889	1.970	1.697	1.717

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TABLE 21
ACID MIST SAMPLING SUMMARY
EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet - 31**

Run Number:	18	19	20	21	22
Date:	2/9/10	2/9/10	2/9/10	2/9/10	2/9/10
Load (MW):	270	270	270	270	270
Run Time: Start	6:18	8:05	9:55	11:40	13:25
End	7:18	9:05	10:55	12:40	14:25
Pbar - Barometric Pressure:	29.50	29.50	29.50	29.50	29.50
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	27.955	27.916	28.170	28.859	28.846
TM - Avg. Meter Temp (F):	51	55	60	67	64
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	1.02	1.02	1.02	1.02	1.02
VMSTD - Std. Gas Volume (SCF):	29.111	28.807	28.804	29.098	29.284
Vlc - Volume Water Collected:	51	50	52	54	51
%M - Percent Moisture:	7.62	7.56	7.84	8.04	7.58
Bws - Mole Fraction, Dry:	0.076	0.076	0.078	0.080	0.076
%CO2 - Carbon Dioxide, Dry:	13.5	13.3	13.4	13.4	13.7
%O2 - Oxygen, Dry:	5.8	6.0	5.8	5.9	5.7
MD - Dry Molecular Weight:	30.39	30.37	30.38	30.38	30.42
MS - Wet Molecular Weight:	29.45	29.43	29.41	29.38	29.48
PS - Static Press. (in. of Hg):	28.88	28.88	28.88	28.88	28.88
SO3					
ppm - Emission Concentration:	3.0	1.1	1.0	1.3	1.0
ppm @ 3% O2 - Emission Concentration	3.6	1.3	1.2	1.5	1.1
lb/mmbtu - Emission Rate:	0.005	0.002	0.002	0.002	0.002
SO2					
ppm - Emission Concentration:	876.9	886.2	886.3	904.7	871.8
ppm @ 3% O2 - Emission Concentration	1039.5	1064.6	1050.6	1079.7	1026.6
lb/mmbtu - Emission Rate:	1.971	2.018	1.992	2.047	1.946

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TABLE 22
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet 32**

Run Number:	7	8	9
Date:	2/2/10	2/2/10	2/2/10
Load (MW):	365	365	365
Run Time: Start	15:05	17:30	19:44
End	16:05	18:30	20:44
Pbar - Barometric Pressure:	29.75	29.75	30.01
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	32.021	31.722	31.380
TM - Avg. Meter Temp (F):	66	66	60
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.98	0.98	0.98
VMSTD - Std. Gas Volume (SCF):	31.386	31.078	31.354
Vlc - Volume Water Collected:	47.1	35.9	39.4
%M - Percent Moisture:	6.60	5.16	5.59
Bws - Mole Fraction, Dry:	0.066	0.052	0.056
%CO2 - Carbon Dioxide, Dry:	13.0	13.4	13.3
%O2 - Oxygen, Dry:	6.5	6.1	6.2
MD - Dry Molecular Weight:	30.34	30.39	30.38
MS - Wet Molecular Weight:	29.53	29.75	29.68
PS - Static Press. (in. of Hg):	29.13	29.13	29.39

SO3

ppm - Emission Concentration:	5.0	6.6	6.1
ppm @ 3% O2 - Emission Concentration	6.2	8.0	7.4
lb/mmbtu - Emission Rate:	0.009	0.011	0.010

Average ppm **5.9**
 Average ppm @ 3%O2 **7.2**
 Average lb/mmBtu **0.010**

SO2

ppm - Emission Concentration:	1566.2	1390.1	1304.0
ppm @ 3% O2 - Emission Concentration	1946.8	1681.2	1587.9
lb/mmbtu - Emission Rate:	3.690	3.187	3.010

Average ppm **1420.1**
 Average ppm @ 3%O2 **1738.7**
 Average lb/mmBtu **3.296**

TABLE 23
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet 32**

Run Number:	10	11	12
Date:	2/3/10	2/3/10	2/3/10
Load (MW):	365	365	365
Run Time: Start	8:45	12:55	17:25
End	9:45	13:55	18:25
Pbar - Barometric Pressure:	29.75	29.75	30.01
TT - Sampling Time:	60.0	60.0	60.0
VM - Meter Volume:	31.500	30.408	30.816
TM - Avg. Meter Temp (F):	51	57	71
PM - Avg. Delta H (in. of H ₂ O):	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.98	0.98	0.98
VMSTD - Std. Gas Volume (SCF):	31.788	30.281	30.186
Vlc - Volume Water Collected:	104	101	100
%M - Percent Moisture:	13.35	13.58	13.50
Bws - Mole Fraction, Dry:	0.134	0.136	0.135
%CO ₂ - Carbon Dioxide, Dry:	13.4	13.3	13.3
%O ₂ - Oxygen, Dry:	6.0	6.0	6.0
MD - Dry Molecular Weight:	30.38	30.37	30.37
MS - Wet Molecular Weight:	28.73	28.69	28.70
PS - Static Press. (in. of Hg):	29.13	29.13	29.39
SO₃			
ppm - Emission Concentration:	5.6	4.4	9.7
ppm @ 3% O ₂ - Emission Concentration	6.7	5.3	11.7
lb/mmbtu - Emission Rate:	0.010	0.008	0.017
SO₂			
ppm - Emission Concentration:	941.6	849.4	926.7
ppm @ 3% O ₂ - Emission Concentration	1131.2	1020.4	1113.2
lb/mmbtu - Emission Rate:	2.144	1.934	2.110

TABLE 24
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet 32**

Run Number:	13	14	15	16	17
Date:	2/8/10	2/8/10	2/8/10	2/8/10	2/8/10
Load (MW):	320	320	320	320	320
Run Time: Start	8:30	10:20	12:20	15:30	17:07
End	9:30	11:20	13:20	16:30	18:07
Pbar - Barometric Pressure:	29.60	29.60	29.60	29.60	29.60
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	30.038	31.675	31.974	31.624	31.044
TM - Avg. Meter Temp (F):	42	51	64	72	74
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.98	0.98	0.98	0.98	0.98
VMSTD - Std. Gas Volume (SCF):	30.681	31.762	31.312	30.498	29.794
Vlc - Volume Water Collected:	40	42	44	41	43
%M - Percent Moisture:	5.79	5.86	6.21	5.95	6.37
Bws - Mole Fraction, Dry:	0.058	0.059	0.062	0.060	0.064
%CO2 - Carbon Dioxide, Dry:	13.6	13.9	13.8	13.8	13.7
%O2 - Oxygen, Dry:	5.7	5.5	5.5	5.5	5.7
MD - Dry Molecular Weight:	30.40	30.44	30.43	30.43	30.42
MS - Wet Molecular Weight:	29.69	29.71	29.66	29.69	29.63
PS - Static Press. (in. of Hg):	28.98	28.98	28.98	28.98	28.98
SO3					
ppm - Emission Concentration:	1.5	2.1	2.2	1.8	2.9
ppm @ 3% O2 - Emission Concentration	1.8	2.4	2.5	2.1	3.4
lb/mmBtu - Emission Rate:	0.003	0.003	0.004	0.003	0.005
SO2					
ppm - Emission Concentration:	858.1	858.1	858.1	858.1	858.1
ppm @ 3% O2 - Emission Concentration	1010.5	997.4	997.4	997.4	1010.5
lb/mmBtu - Emission Rate:	1.915	1.891	1.891	1.891	1.915

TABLE 25
ACID MIST SAMPLING SUMMARY
 EPA Method 8A

Client: **Lakeland Electric**
 Plant: **McIntosh Unit 3**
 Location: **ESP Inlet 32**

Run Number:	18	19	20	21	22
Date:	2/9/10	2/9/10	2/9/10	2/9/10	2/9/10
Load (MW):	270	270	270	270	270
Run Time: Start	6:18	8:05	9:55	11:40	13:25
End	7:18	9:05	10:55	12:40	14:25
Pbar - Barometric Pressure:	29.50	29.50	29.50	29.50	29.50
TT - Sampling Time:	60.0	60.0	60.0	60.0	60.0
VM - Meter Volume:	31.725	28.575	31.466	31.760	32.122
TM - Avg. Meter Temp (F):	61	67	64	73	76
PM - Avg. Delta H (in. of H2O):	0.75	0.75	0.75	0.75	0.75
Y - Meter Calibration Factor:	0.98	0.98	0.98	0.98	0.98
VMSTD - Std. Gas Volume (SCF):	31.141	27.708	30.657	30.459	30.638
Vlc - Volume Water Collected:	50	50	51	49	48
%M - Percent Moisture:	7.03	7.83	7.27	7.04	6.87
Bws - Mole Fraction, Dry:	0.070	0.078	0.073	0.070	0.069
%CO2 - Carbon Dioxide, Dry:	13.8	13.8	14.0	13.9	13.8
%O2 - Oxygen, Dry:	5.5	5.5	5.5	5.5	5.5
MD - Dry Molecular Weight:	30.43	30.43	30.46	30.44	30.43
MS - Wet Molecular Weight:	29.55	29.45	29.55	29.57	29.57
PS - Static Press. (in. of Hg):	28.88	28.88	28.88	28.88	28.88
SO3					
ppm - Emission Concentration:	3.3	2.7	1.6	1.6	1.6
ppm @ 3% O2 - Emission Concentration	3.8	3.1	1.8	1.8	1.9
lb/mmbtu - Emission Rate:	0.005	0.004	0.003	0.003	0.003
SO2					
ppm - Emission Concentration:	922.2	892.5	910.8	890.5	885.3
ppm @ 3% O2 - Emission Concentration	1071.9	1037.4	1058.6	1029.0	1029.0
lb/mmbtu - Emission Rate:	2.032	1.967	2.007	1.951	1.951

APPENDIX 2
TEST RESULTS

SCR Inlet

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Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet 31

Run No: 7 Date: 2/2/10 Start Time: 15:05
 End Time: 16:05

BAROMETRIC PRESSURE: 29.99 P_{bar} VOLUME OF MOISTURE: 54.3 V_{lc}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		564.345								
	10.0	568.4	0.75	76	75	496	168			
	10.0	572.4	0.75	79	75	499	169	12.6	6.9	-5.00
	10.0	576.4	0.75	81	76	496	178			
	10.0	580.5	0.75	82	77	495	179			
	10.0	584.5	0.75	82	77	495	178			
	10.0	588.646	0.75	82	77	499	175			

RESULTS

TT	VM	PM		TM		CO2	O2	Static
60.0	24.301	0.750		78		12.6	6.9	-5.00
net	net	avg		avg		avg	avg	avg
$P_s =$	29.62		$V_{m(\text{std})} =$	23.689	$V_{w(\text{std})} =$	2.558		%M = 9.74
$B_{ws} =$	0.097		$M_d =$	30.29	$M_s =$	29.09		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.5	0.6	0.001
SO2	2018.8	2581.2	4.893

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 31**

Run No: **9** Date: **2/2/10** Start Time: **19:44**
 End Time: **20:44**

BAROMETRIC PRESSURE: **30.01** P_{bar} VOLUME OF MOISTURE: **30.4** V_{lc}
 GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS		METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		METER	PM ORIFICE	IN	OUT					
		613.510								
	10.0	617.6	0.75	82	81	500	173			
	10.0	621.5	0.75	87	83	499	173	13.0	6.4	-5.00
	10.0	625.6	0.75	84	81	504	176			
	10.0	629.8	0.75	84	81	500	175			
	10.0	633.8	0.75	83	81	499	177			
	10.0	637.900	0.75	82	80	501	176			

RESULTS	TT	VM	PM	TM	CO2	O2	Static			
	60.0	24.390	0.750	82	13.0	6.4	-5.00			
	net	net	avg	avg	avg	avg	avg			
	P _s =	29.64		V _{m(std)} =	23.609		V _{w(std)} =	1.432	%M =	5.72
	B _{ws} =	0.057		M _d =	30.34		M _s =	29.63		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.9	1.2	0.002
SO2	1944.9	2400.9	4.551

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 31**

Run No: **10** Date: **2/3/10** Start Time: **8:45**
 End Time: **9:45**

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 104 V_{ic}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		638.435								
	10.0	642.6	0.75	59	56	500	180			
	10.0	646.5	0.75	61	57	499	182	13.5	5.9	-5.00
	10.0	650.6	0.75	65	59	500	179			
	10.0	654.6	0.75	66	60	501	176			
	10.0	658.5	0.75	67	60	499	176			
	10.0	662.552	0.75	67	60	501	180			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.117	0.750	61				13.5	5.9	-5.00
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.38		$V_{m(std)} =$	24.075	$V_{w(std)} =$	4.898		%M=	16.91
	$B_{ws} =$	0.169		$M_d =$	30.40	$M_s =$	28.30			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.8	1.0	0.001
SO2	1175.5	1402.7	2.659

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 31**

Run No: **12** Date: **2/3/10** Start Time: **17:25**
 End Time: **18:25**

BAROMETRIC PRESSURE: **29.95** P_{bar} VOLUME OF MOISTURE: **100** V_{lc}
 GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		687.787								
	10.0	692.0	0.75	75	75	500	169			
	10.0	696.0	0.75	82	77	499	175	14.5	4.9	-5.00
	10.0	700.1	0.75	83	77	498	179			
	10.0	704.2	0.75	85	80	499	180			
	10.0	708.3	0.75	86	81	501	176			
	10.0	712.503	0.75	86	81	498	172			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	24.716	0.750	81	14.5	4.9	-5.00
	net	net	avg	avg	avg	avg	avg
	$P_s =$	29.58	$V_{m(std)} =$	23.954	$V_{w(std)} =$	4.710	$\%M =$ 16.43
	$B_{ws} =$	0.164	$M_d =$	30.52	$M_s =$	28.46	

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.0	2.3	0.003
SO2	1110.7	1242.6	2.355

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet 31

Run No: **13** Date: **2/8/10** Start Time: **8:30**
 End Time: **9:30**

BAROMETRIC PRESSURE: **29.60** P_{bar} VOLUME OF MOISTURE: **42.7** V_{lc}
 GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		881.480								
	10.0	885.4	0.50	52	51	499	171			
	10.0	889.4	0.50	57	52	501	172	14.5	4.8	0.00
	10.0	893.5	0.50	59	53	500	175			
	10.0	897.6	0.50	60	56	498	175			
	10.0	901.6	0.50	60	56	503	174			
	10.0	905.685	0.50	63	57	503	171			

RESULTS	TT	VM	PM	TM		CO2	O2	Static
	60.0	24.205	0.500	56		14.5	4.8	0.00
	net	net	avg	avg		avg	avg	avg

$P_s = 29.60$ $V_{m(std)} = 24.263$ $V_{w(std)} = 2.011$ $\%M = 7.65$
 $B_{ws} = 0.077$ $M_d = 30.51$ $M_s = 29.55$

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.4	0.4	0.001
SO2	723.4	804.2	1.524

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 31**

Run No: **14** Date: **2/8/10** Start Time: **10:20**
 End Time: **11:20**

BAROMETRIC PRESSURE: **29.60** P_{bar} VOLUME OF MOISTURE: **43.4** V_{ic}
 GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		905.856								
	10.0	909.9	0.50	61	58	502	173			
	10.0	913.9	0.50	64	59	500	176	13.7	5.6	-5.00
	10.0	918.0	0.50	66	60	500	176			
	10.0	922.1	0.50	70	63	500	175			
	10.0	926.1	0.50	71	65	501	178			
	10.0	930.191	0.50	71	65	199	170			

RESULTS	TT	VM	PM	TM		CO2	O2	Static	
	60.0	24.335	0.500	64		13.7	5.6	-5.00	
	net	net	avg	avg		avg	avg	avg	
	$P_s =$	29.23		$V_{m(std)} =$	24.017	$V_{w(std)} =$	2.044	$\%M =$	7.84
	$B_{ws} =$	0.078		$M_d =$	30.42	$M_s =$	29.44		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.8	1.0	0.001
SO2	797.2	932.7	1.768

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO₃ Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 31**

Run No: **15** Date: **2/8/10** Start Time: **12:20**
 End Time: **13:20**

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 47.6 V_{lc}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS	PM	METER TEMP		OVEN	COIL	CO ₂ %	O ₂ %	STATIC
		METER	ORIFICE	IN	OUT	TEMP	TEMP			PRESS.
		930.416								
	10.0	934.6	0.50	72	70	500	176			
	10.0	938.6	0.50	74	71	500	177	13.4	5.8	-5.00
	10.0	942.6	0.50	76	71	499	180			
	10.0	946.6	0.50	79	73	500	181			
	10.0	950.6	0.50	79	73	500	184			
	10.0	955.013	0.50	81	76	501	184			
RESULTS	TT	VM	PM	TM				CO ₂	O ₂	Static
	60.0	24.597	0.500	75				13.4	5.8	-5.00
	net	net	avg	avg				avg	avg	avg
	P _s =	29.23		V _{m(std)} = 23.814		V _{w(std)} = 2.242			%M =	8.60
	B _{ws} =	0.086		M _d = 30.38		M _s = 29.31				

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O ₂)	Emission Rate (lb/mmBtu)
SO ₃	0.6	0.8	0.001
SO ₂	737.0	873.7	1.656

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
Unit Tested: McIntosh Unit 3
Sampling Location: SCR Inlet 31

Run No: 16 Date: 2/8/10 Start Time: 15:30
End Time: 16:30

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 36.8 V_{lc}
GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS	PM	METER TEMP		OVEN	COIL	CO2%	O2%	STATIC PRESS.
		METER	ORIFICE	IN	OUT	TEMP	TEMP			
		955.240								
	10.0	959.4	0.50	73	73	500	170			
	10.0	963.7	0.50	75	72	498	169	13.9	5.5	-5.00
	10.0	967.9	0.50	77	73	500	175			
	10.0	971.9	0.50	77	73	498	176			
	10.0	975.9	0.50	80	75	500	174			
	10.0	979.953	0.50	80	75	500	173			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.713	0.500	75				13.9	5.5	-5.00
	net	net	avg	avg				avg	avg	avg
	P_s =	29.23		$V_{m(std)}$ =	23.896	$V_{w(std)}$ =	1.733	$\%M$ =	6.76	
	B_{ws} =	0.068		M_d =	30.44	M_s =	29.60			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.0	0.0	0.000
SO2	734.4	853.7	1.618

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 31**

Run No: **17**

Date: **2/8/10**

Start Time: **17:07**

End Time: **18:07**

BAROMETRIC PRESSURE: **29.60** P_{bar}
 GAS METER Y-FACTOR: **0.99** Y

VOLUME OF MOISTURE: **40.7** V_{ic}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		980.220								
	10.0	984.4	0.50	74	73	501	180			
	10.0	958.5	0.50	77	73	500	174	13.5	5.8	-5.00
	10.0	992.6	0.50	79	74	499	169			
	10.0	996.9	0.50	79	74	500	171			
	10.0	1001.0	0.50	80	74	497	173			
	10.0	1005.251	0.50	80	74	500	170			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	25.031	0.500	76	13.5	5.8	-5.00
	net	net	avg	avg	avg	avg	avg

$P_s =$ 29.23 $V_{m(std)} =$ 24.174 $V_{w(std)} =$ 1.917 %M = 7.35
 $B_{ws} =$ 0.073 $M_d =$ 30.39 $M_s =$ 29.48

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.0	0.0	0.000
SO2	792.0	938.9	1.780

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: SCR Inlet - 31

Run No: **18** Date: 2/9/10 Start Time: 6:18
End Time: 7:18

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 44.2 V_{ic}
GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		5.541								
	10.0	9.6	0.50	55	53	500	171			
	10.0	13.5	0.50	55	53	499	175	13.8	5.5	-5.00
	10.0	17.6	0.50	57	54	501	177			
	10.0	21.6	0.50	58	55	500	169			
	10.0	25.6	0.50	58	55	498	171			
	10.0	29.696	0.50	61	56	499	175			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.155	0.500	56				13.8	5.5	-5.00
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.13		$V_{m(std)} =$	24.154	$V_{w(std)} =$	2.082		%M=	7.93
	$B_{ws} =$	0.079		$M_d =$	30.43	$M_s =$	29.44			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.9	2.3	0.003
SO2	825.7	959.7	1.819

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet - 31**

Run No: **19** Date: **2/9/10** Start Time: **8:05**
 End Time: **9:05**

BAROMETRIC PRESSURE: **29.50** P_{bar} VOLUME OF MOISTURE: **40.3** V_{ic}
 GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		29.953								
	10.0	34.2	0.50	56	55	500	178			
	10.0	38.2	0.50	58	55	499	181	14.2	5.3	-5.00
	10.0	42.1	0.50	58	55	501	180			
	10.0	46.1	0.50	60	56	500	175			
	10.0	50.1	0.50	60	58	501	169			
	10.0	54.201	0.50	60	58	500	171			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.248	0.500	57				14.2	5.3	-5.00
	net	net	avg	avg				avg	avg	avg

$P_s = 29.13$ $V_{m(std)} = 24.173$ $V_{w(std)} = 1.898$ $\%M = 7.28$
 $B_{ws} = 0.073$ $M_d = 30.48$ $M_s = 29.58$

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.1	1.2	0.002
SO2	792.0	908.8	1.723

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
Unit Tested: McIntosh Unit 3
Sampling Location: SCR Inlet - 31

Run No: 20 Date: 2/9/10 Start Time: 9:55
 End Time: 10:55

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 44.1 V_{lc}
GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS		METER TEMP		OVEN	COIL	CO2%	O2%	STATIC PRESS.
		METER	PM ORIFICE	IN	OUT	TEMP	TEMP			
		54.414								
	10.0	58.5	0.50	59	58	500	170			
	10.0	62.5	0.50	60	58	497	173	14.0	5.4	-5.00
	10.0	66.6	0.50	60	58	498	178			
	10.0	70.6	0.50	63	61	500	182			
	10.0	74.6	0.50	65	62	501	178			
	10.0	78.805	0.50	65	62	495	180			
RESULTS:	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.391	0.500	61				14.0	5.4	-5.00
	net	net	avg	avg				avg	avg	avg
	P _s =	29.13		V _{m(std)} =	24.152	V _{w(std)} =	2.077		%M=	7.92
	B _{ws} =	0.079		M _d =	30.46	M _s =	29.47			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.7	0.9	0.001
SO2	1023.9	1182.5	2.241

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet - 31**

Run No: **21**

Date: **2/9/10**

Start Time: **11:40**

End Time: **12:40**

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 43.6 V_{ic}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		79.173								
	10.0	83.5	0.50	68	65	500	170			
	10.0	88.0	0.50	72	67	499	175	14.0	5.4	-5.00
	10.0	92.3	0.50	72	67	501	176			
	10.0	96.2	0.50	72	69	498	177			
	10.0	100.4	0.50	72	70	500	174			
	10.0	104.537	0.50	72	70	499	173			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	25.364	0.500	70				14.0	5.4	-5.00
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.13		$V_{m(std)} =$	24.701	$V_{w(std)} =$	2.054		$\%M =$	7.68
	$B_{ws} =$	0.077		$M_d =$	30.46	$M_s =$	29.50			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.1	1.3	0.002
SO2	1098.1	1268.1	2.404

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet - 31

Run No: **22**

Date: 2/9/10

Start Time: 13:25

End Time: 14:25

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 47.6 V_{lc}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.	
		105.380									
	10.0	109.5	0.50	65	65	500	168				
	10.0	113.8	0.50	66	65	499	170	14.0	5.3	-5.00	
	10.0	117.7	0.50	67	65	500	174				
	10.0	121.7	0.50	67	65	500	175				
	10.0	125.8	0.50	67	65	497	175				
	10.0	130.053	0.50	67	65	499	173				

RESULTS	TT	VM	PM	TM		CO2	O2	Static
	60.0	24.673	0.500		66	14.0	5.3	-5.00
	net	net	avg		avg	avg	avg	avg

$P_s =$ 29.13 $V_{m(std)} =$ 24.207 $V_{w(std)} =$ 2.242 %M= 8.48
 $B_{ws} =$ 0.085 $M_d =$ 30.45 $M_s =$ 29.40

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.6	0.7	0.001
SO2	856.8	983.2	1.864

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet 32

Run No: 7

Date: 2/2/10

Start Time: 15:05

End Time: 16:05

BAROMETRIC PRESSURE: 29.99 P_{bar}
 GAS METER Y-FACTOR: 0.99 Y

VOLUME OF MOISTURE: 22.8
 PITOT COEFFICIENT: 0.84

V_{ic}
 C_p

POINT	TIME	GAS		METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		METER	PM ORIFICE	IN	OUT					
		263.872								
	10.0	267.5	0.75	70	69	500	170			
	10.0	271.3	0.75	73	71	501	170	12.4	7.1	-5.00
	10.0	275.0	0.75	75	73	500	170			
	10.0	279.1	0.75	75	73	500	170			
	10.0	283.2	0.75	76	74	501	171			
	10.0	287.915	0.75	76	74	500	172			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	24.043	0.750		73			12.4	7.1	-5.00
	net	net	avg		avg			avg	avg	avg

P_s = 29.62 V_{m(std)} = 23.657 V_{w(std)} = 1.074 %M = 4.34
 B_{ws} = 0.043 M_d = 30.27 M_s = 29.74

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.2	1.6	0.002
SO2	1982.1	2571.0	4.874

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet 32

Run No: 8 Date: 2/2/10 Start Time: 17:30
 End Time: 18:30

BAROMETRIC PRESSURE: 30.00 P_{bar} VOLUME OF MOISTURE: 57 V_{lc}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS	PM	METER TEMP		OVEN	COIL	CO2%	O2%	STATIC
		METER	ORIFICE	IN	OUT					
		288.026								
	10.0	292.1	0.50	73	71	501	176			
	10.0	296.0	0.50	74	71	500	179	12.7	6.7	-5.00
	10.0	299.8	0.50	74	71	500	179			
	10.0	303.8	0.50	76	72	503	181			
	10.0	307.4	0.50	76	72	503	180			
	10.0	311.312	0.50	77	73	502	179			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	23.286	0.500	73				12.7	6.7	-5.00
	net	net	avg	avg				avg	avg	avg

P_s = 29.63 V_{m(std)} = 22.903 V_{w(std)} = 2.704 %M = 10.56
 B_{ws} = 0.106 M_d = 30.30 M_s = 29.00

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.6	3.3	0.005
SO2	2061.5	2598.6	4.926

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 32**

Run No: **10** Date: **2/3/10** Start Time: **8:45**
 End Time: **9:45**

BAROMETRIC PRESSURE: **29.75** P_{bar} VOLUME OF MOISTURE: **104** V_{ic}
 GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		335.895								
	10.0	339.9	0.75	58	57	498	168			
	10.0	343.8	0.75	63	61	500	172	13.3	6.1	-5.00
	10.0	347.8	0.75	64	62	501	171			
	10.0	351.6	0.75	66	63	504	173			
	10.0	355.6	0.75	67	63	503	176			
	10.0	359.800	0.75	67	64	501	178			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	23.905	0.750		63			13.3	6.1	-5.00
	net	net	avg		avg			avg	avg	avg
	P _s =	29.38		V _{m(std)} =	23.795	V _{w(std)} =	4.898		%M =	17.07
	B _{ws} =	0.171		M _d =	30.37	M _s =	28.26			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.9	3.5	0.005
SO2	1280.8	1549.1	2.936

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
Unit Tested: McIntosh Unit 3
Sampling Location: SCR Inlet 32

Run No: 11 Date: 2/3/10 Start Time: 12:55
End Time: 13:55

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 101 V_{ic}
GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		362.982									
	10.0	366.9	0.75	67	67		500	167			
	10.0	370.8	0.75	72	70		500	173	14.4	4.9	-5.00
	10.0	374.8	0.75	73	70		501	178			
	10.0	378.7	0.75	76	76		504	178			
	10.0	382.6	0.75	78	75		503	181			
	10.0	386.500	0.75	79	76		502	181			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
60.0		23.518	0.750	73	14.4	4.9	-5.00
net		net	avg	avg	avg	avg	avg
P _s =		29.38		V _{m(std)} = 22.956		V _{w(std)} = 4.757	%M = 17.17
B _{ws} =		0.172		M _d = 30.50		M _s = 28.35	

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.6	5.1	0.007
SO2	1201.2	1343.8	2.547

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 32**

Run No: **12** Date: **2/3/10** Start Time: **17:25**
 End Time: **18:25**

BAROMETRIC PRESSURE: 29.95 P_{bar} VOLUME OF MOISTURE: 100 V_{ic}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	PROBE TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		387.865								
	10.0	391.8	0.50	79	78	500	170			
	10.0	395.7	0.50	83	82	500	172	14.7	4.8	-5.00
	10.0	399.7	0.50	84	82	501	171			
	10.0	403.6	0.50	85	83	499	173			
	10.0	407.5	0.50	84	81	500	176			
	10.0	411.676	0.50	84	82	502	176			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	23.811	0.500	82				14.7	4.8	-5.00
	net	net	avg	avg				avg	avg	avg

P_s = 29.58 V_{m(std)} = 22.995 V_{w(std)} = 4.710 %M = 17.00
 B_{ws} = 0.170 M_d = 30.54 M_s = 28.41

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.8	3.1	0.004
SO2	1321.8	1469.6	2.786

Catalyst Air Management, Inc.

EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**

Unit Tested: **McIntosh Unit 3**

Sampling Location: **SCR Inlet - 32**

Run No: **13**

Date: **2/8/10**

Start Time: **8:30**

End Time: **9:30**

BAROMETRIC PRESSURE: **29.60** P_{bar}
 GAS METER Y-FACTOR: **0.99** Y

VOLUME OF MOISTURE: **50.2** V_{ic}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		435.587								
	10.0	439.6	0.50	53	53	500	167			
	10.0	443.6	0.50	56	53	500	167	14.4	5.0	-5.00
	10.0	447.7	0.50	58	55	502	169			
	10.0	451.8	0.50	59	56	502	170			
	10.0	455.9	0.50	60	57	502	170			
	10.0	460.175	0.50	60	57	502	170			

RESULTS	TT	VM	PM	TM		CO2	O2	Static	
	60.0	24.588	0.500	56		14.4	5.0	-5.00	
	net	net	avg	avg		avg	avg	avg	
	P _s =	29.23		V _{m(std)} =	24.643	V _{w(std)} =	2.364	%M =	8.75
	B _{ws} =	0.088		M _d =	30.50	M _s =	29.41		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.8	3.1	0.004
SO2	906.4	1020.5	1.934

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet - 32**

Run No: **14**

Date: **2/8/10**

Start Time: **10:20**

End Time: **11:20**

BAROMETRIC PRESSURE: 29.60 P_{bar}
 GAS METER Y-FACTOR: 0.99 Y

VOLUME OF MOISTURE: 37.7 V_{ic}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		461.236								
	10.0	465.3	0.50	58	58	501	170			
	10.0	469.3	0.50	63	60	500	176	14.0	5.4	-5.00
	10.0	473.4	0.50	64	61	500	169			
	10.0	477.5	0.50	67	64	502	171			
	10.0	481.6	0.50	67	64	502	173			
	10.0	485.677	0.50	68	64	504	173			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.441	0.500	63				14.0	5.4	-5.00
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.23		$V_{\text{m(std)}} =$	24.179	$V_{\text{w(std)}} =$	1.776		$\%M =$	6.84
	$B_{\text{ws}} =$	0.068		$M_d =$	30.46	$M_s =$	29.60			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.6	3.0	0.004
SO2	857.8	990.7	1.878

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet - 32

Run No: **15** Date: **2/8/10** Start Time: **12:20**
 End Time: **13:20**

BAROMETRIC PRESSURE: **29.60** P_{bar} VOLUME OF MOISTURE: **35.4** V_{lc}
 GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS	PM	METER TEMP		OVEN	COIL	CO2%	O2%	STATIC
		METER	ORIFICE	IN	OUT	TEMP	TEMP			
		486.453								
	10.0	490.0	0.50	75	74	500	172			
	10.0	494.7	0.50	75	74	501	172	13.7	5.7	-5.00
	10.0	498.8	0.50	78	74	501	174			
	10.0	502.7	0.50	79	75	500	173			
	10.0	506.8	0.50	80	76	500	173			
	10.0	511.207	0.50	80	76	500	173			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	24.754	0.500	76	13.7	5.7	-5.00
	net	net	avg	avg	avg	avg	avg

$P_s =$ 29.23 $V_{m(std)} =$ 23.888 $V_{w(std)} =$ 1.667 %M= 6.52
 $B_{ws} =$ 0.065 $M_d =$ 30.42 $M_s =$ 29.61

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.1	2.5	0.004
SO2	734.7	865.2	1.640

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
 Unit Tested: McIntosh Unit 3
 Sampling Location: SCR Inlet - 32

Run No: 16

Date: 2/8/10

Start Time: 15:30

End Time: 16:30

BAROMETRIC PRESSURE: 29.60 P_{bar}
 GAS METER Y-FACTOR: 0.99 Y

VOLUME OF MOISTURE: 34.0 V_{ic}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS		METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		METER	PM ORIFICE	IN	OUT					
		512.447								
	10.0	516.6	0.50	78	77	500	170			
	10.0	520.5	0.50	77	77	498	170	13.5	5.8	-5.00
	10.0	524.7	0.50	78	77	499	173			
	10.0	528.9	0.50	80	78	500	176			
	10.0	533.0	0.50	82	79	501	174			
	10.0	537.216	0.50	84	81	499	169			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.769	0.500	79				13.5	5.8	-5.00
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.23		$V_{m(std)} =$	23.784	$V_{w(std)} =$	1.601		$\%M =$	6.31
	$B_{ws} =$	0.063		$M_d =$	30.39	$M_s =$	29.61			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.6	1.8	0.003
SO2	737.9	874.8	1.658

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet - 32

Run No: 17 Date: 2/8/10 Start Time: 17:07
 End Time: 18:07

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 26.4 V_{ic}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS	PM	METER TEMP		OVEN	COIL	CO2%	O2%	STATIC
		METER	ORIFICE	IN	OUT	TEMP	TEMP			
		538.334								
	10.0	542.4	0.50	81	79	500	172			
	10.0	546.6	0.50	81	79	499	172	13.7	5.7	-5.00
	10.0	550.5	0.50	83	80	500	174			
	10.0	554.7	0.50	83	81	501	174			
	10.0	558.7	0.50	84	82	501	175			
	10.0	562.853	0.50	84	82	500	176			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	24.519	0.500	82				13.7	5.7	-5.00
	net	net	avg	avg				avg	avg	avg
	P _s =	29.23		V _{m(std)} =	23.432	V _{w(std)} =	1.243		%M=	5.04
	B _{ws} =	0.050		M _d =	30.42	M _s =	29.79			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.1	1.3	0.002
SO2	749.0	882.1	1.672

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet - 32**

Run No: **18**

Date: **2/9/10**

Start Time: **6:18**

End Time: **7:18**

BAROMETRIC PRESSURE: **29.50** P_{bar}
 GAS METER Y-FACTOR: **0.99** Y

VOLUME OF MOISTURE: **40.6** V_{lc}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		563.304								
	10.0	567.4	0.50	62	61	498	175			
	10.0	571.6	0.50	63	62	495	176	13.9	5.5	-5.00
	10.0	575.7	0.50	63	62	500	176			
	10.0	579.9	0.50	66	64	499	179			
	10.0	584.0	0.50	68	65	500	180			
	10.0	588.169	0.50	68	65	501	180			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	24.865	0.500		64			13.9	5.5	-5.00
	net	net	avg		avg			avg	avg	avg
	$P_s =$	29.13		$V_{m(std)} =$	24.473	$V_{w(std)} =$	1.912		$\%M =$	7.25
	$B_{ws} =$	0.072		$M_d =$	30.44	$M_s =$	29.54			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	5.2	6.1	0.009
SO2	847.5	985.1	1.867

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet - 32**

Run No: **19** Date: **2/9/10** Start Time: **8:05**
 End Time: **9:05**

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 37.4 V_{lc}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.	
				IN	OUT						
		589.127									
	10.0	593.3	0.50	66	65	497	167				
	10.0	597.4	0.50	67	66	499	175	14.1	5.2	-5.00	
	10.0	601.6	0.50	69	68	500	176				
	10.0	605.6	0.50	70	68	500	177				
	10.0	609.8	0.50	70	68	500	177				
	10.0	614.137	0.50	70	69	501	174				
RESULTS	TT	VM	PM	TM				CO2	O2	Static	
	60.0	25.010	0.500	68				14.1	5.2	-5.00	
	net	net	avg	avg				avg	avg	avg	
	$P_s =$	29.13		$V_{m(std)} =$	24.433	$V_{w(std)} =$	1.762		$\%M =$	6.72	
	$B_{ws} =$	0.067		$M_d =$	30.46	$M_s =$	29.63				

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.8	3.2	0.005
SO2	816.3	930.7	1.764

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Inlet - 32

Run No: **21**

Date: 2/9/10

Start Time: 11:40

End Time: 12:40

BAROMETRIC PRESSURE: 29.50 P_{bar}
 GAS METER Y-FACTOR: 0.99 Y

VOLUME OF MOISTURE: 40.6 V_{lc}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		640.282								
	10.0	644.4	0.50	75	74	498	176			
	10.0	648.6	0.50	75	74	500	176	14.1	5.3	-5.00
	10.0	652.7	0.50	77	75	499	180			
	10.0	656.9	0.50	78	75	500	181			
	10.0	671.1	0.50	81	79	500	179			
	10.0	675.314	0.50	83	80	501	179			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	35.032	0.500		77			14.1	5.3	-5.00
	net	net	avg		avg			avg	avg	avg
	P _s =	29.13		V _{m(std)} =	33.640	V _{w(std)} =	1.912		%M =	5.38
	B _{ws} =	0.054		M _d =	30.47	M _s =	29.80			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.0	1.2	0.002
SO2	758.9	870.8	1.651

SCR Outlet

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
Unit Tested: McIntosh Unit 3
Sampling Location: SCR Outlet 31

Run No: 7 Date: 2/2/10 Start Time: 15:05
End Time: 16:05

BAROMETRIC PRESSURE: 29.97 P_{bar} VOLUME OF MOISTURE: 65.9 V_{lc}
GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		423.451								
	10.0	428.7	0.75	77	78	498	176			
	10.0	433.4	0.75	78	77	499	176	13.3	6.2	0.54
	10.0	438.5	0.75	79	77	501	176			
	10.0	443.7	0.75	80	77	500	177			
	10.0	449.2	0.75	81	78	502	176			
	10.0	454.130	0.75	82	78	503	176			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	30.679	0.750		79			13.3	6.2	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	30.01		$V_{m(std)} =$	30.476	$V_{w(std)} =$	3.104		$\%M =$	9.24
	$B_{ws} =$	0.092		$M_d =$	30.38	$M_s =$	29.23			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	7.6	9.2	0.013
SO2	2044.9	2490.0	4.720

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 31**

Run No: **9**

Date: **2/2/10**

Start Time: **19:44**

End Time: **20:44**

BAROMETRIC PRESSURE: **30.01** P_{bar}
 GAS METER Y-FACTOR: **1.01** Y

VOLUME OF MOISTURE: **52.7** V_{lc}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		487.372								
	10.0	492.6	0.75	73	73	504	168			
	10.0	497.8	0.75	74	73	505	169	13.6	5.8	0.54
	10.0	503.0	0.75	75	73	503	169			
	10.0	508.1	0.75	76	73	500	171			
	10.0	513.3	0.75	77	74	502	172			
	10.0	518.562	0.75	78	74	502	171			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.190	0.750		74			13.6	5.8	0.54
	net	net	avg		avg			avg	avg	avg

$P_s =$ 30.05 $V_{m(std)} =$ 31.262 $V_{w(std)} =$ 2.482 $\%M =$ 7.36
 $B_{ws} =$ 0.074 $M_d =$ 30.41 $M_s =$ 29.50

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	8.1	9.5	0.014
SO2	1624.3	1925.5	3.650

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 31**

Run No: **10**

Date: **2/3/10**

Start Time: **8:45**
 End Time: **9:45**

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 104 V_{ic}
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		519.382								
	10.0	524.5	0.75	60	60	500	167			
	10.0	529.6	0.75	61	60	501	168	14.2	5.0	0.54
	10.0	534.6	0.75	62	60	501	168			
	10.0	539.7	0.75	63	60	502	169			
	10.0	544.7	0.75	64	60	503	169			
	10.0	549.836	0.75	65	60	503	169			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	30.454	0.750	61	14.2	5.0	0.54
	net	net	avg	avg	avg	avg	avg

$P_s =$ 29.79 $V_{m(std)} =$ 31.025 $V_{w(std)} =$ 4.898 %M= 13.64
 $B_{ws} =$ 0.136 $M_d =$ 30.47 $M_s =$ 28.77

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.4	2.7	0.004
SO2	1130.4	1272.6	2.412

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 31**

Run No: **11**

Date: **2/3/10**

Start Time: **12:55**

End Time: **13:55**

BAROMETRIC PRESSURE: **29.75**

P_{bar}

VOLUME OF MOISTURE: **101**

V_{lc}

GAS METER Y-FACTOR: **1.01**

Y

PITOT COEFFICIENT: **0.84**

C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		551.070									
	10.0	556.1	0.75	65	64		501	167			
	10.0	560.3	0.75	68	64		502	167	14.6	4.8	0.54
	10.0	565.5	0.75	70	64		505	168			
	10.0	570.8	0.75	72	65		504	169			
	10.0	576.3	0.75	73	66		503	170			
	10.0	581.523	0.75	75	67		501	169			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	30.453	0.750		68				14.6	4.8	0.54
	net	net	avg		avg				avg	avg	avg
	$P_s =$	29.79		$V_{m(std)} =$	30.642		$V_{w(std)} =$	4.757		%M=	13.44
	$B_{ws} =$	0.134		$M_d =$	30.53		$M_s =$	28.84			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	9.7	10.8	0.015
SO2	1172.2	1303.3	2.470

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: 12

Date: 2/3/10

Start Time: 17:25

End Time: 18:25

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 100 V_{lc}
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		582.290								
	10.0	587.4	0.75	60	60	505	167			
	10.0	592.3	0.75	62	60	502	169	13.7	5.6	0.54
	10.0	597.2	0.75	64	60	504	170			
	10.0	602.3	0.75	65	60	504	172			
	10.0	607.4	0.75	67	61	502	171			
	10.0	612.603	0.75	69	62	504	171			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	30.313	0.750	63.	13.7	5.6	0.54
	net	net	avg	avg	avg	avg	avg

$P_s =$ 29.79 $V_{m(std)} =$ 30.807 $V_{w(std)} =$ 4.710 $\%M =$ 13.26
 $B_{ws} =$ 0.133 $M_d =$ 30.42 $M_s =$ 28.77

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	7.7	9.0	0.013
SO2	1081.5	1265.3	2.398

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: **13** Date: 2/8/10 Start Time: 8:30
 End Time: 9:30

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 45.1 V_{ic}
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		773.850								
	10.0	779.0	0.75	50	50	503	168			
	10.0	784.1	0.75	51	50	504	168	14.2	5.2	0.54
	10.0	789.2	0.75	52	50	505	170			
	10.0	794.2	0.75	54	50	502	171			
	10.0	799.3	0.75	56	51	503	171			
	10.0	804.526	0.75	57	51	504	170			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	30.676	0.750	52	14.2	5.2	0.54
	net	net	avg	avg	avg	avg	avg

P_s = 29.64 V_{m(std)} = 31.666 V_{w(std)} = 2.124 %M = 6.29
 B_{ws} = 0.063 M_d = 30.48 M_s = 29.70

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.6	3.0	0.004
SO2	755.8	861.7	1.633

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: **14** Date: **2/8/10** Start Time: **10:20**
 End Time: **11:20**

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 50.8 V_{lc}
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		805.981								
	10.0	811.0	0.75	56	52	505	167			
	10.0	816.2	0.75	57	52	502	169	13.5	5.9	0.54
	10.0	821.1	0.75	59	52	504	170			
	10.0	826.3	0.75	61	54	502	171			
	10.0	831.4	0.75	62	55	504	171			
	10.0	836.670	0.75	63	56	502	172			

RESULTS	TT	VM	PM	TM	CO2	O2	Static				
	60.0	30.689	0.750	57	13.5	5.9	0.54				
	net	net	avg	avg	avg	avg	avg				
	$P_s =$	29.64		$V_{m(std)} =$	31.388		$V_{w(std)} =$	2.393		$\%M =$	7.08
	$B_{ws} =$	0.071		$M_d =$	30.40		$M_s =$	29.52			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.8	5.7	0.008
SO2	813.3	970.6	1.840

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
 Unit Tested: McIntosh Unit 3
 Sampling Location: SCR Outlet 31

Run No: 15 Date: 2/8/10 Start Time: 12:20
 End Time: 13:20

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 54.2 V_{lc}
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS		METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		METER	PM ORIFICE	IN	OUT					
		836.962								
	10.0	842.0	0.75	66	65	508	169			
	10.0	847.2	0.75	68	65	505	170	13.6	5.9	0.54
	10.0	852.4	0.75	70	66	502	171			
	10.0	857.4	0.75	72	67	504	172			
	10.0	862.5	0.75	74	68	503	172			
	10.0	867.720	0.75	76	69	505	173			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	30.758	0.750	69				13.6	5.9	0.54
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.64		$V_{m(std)} =$	30.730	$V_{w(std)} =$	2.553		$\%M =$	7.67
	$B_{ws} =$	0.077		$M_d =$	30.41	$M_s =$	29.46			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.8	5.7	0.008
SO2	882.7	1053.3	1.997

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: 16

Date: 2/8/10

Start Time: 15:30

End Time: 16:30

BAROMETRIC PRESSURE: 29.60 P_{bar}
 GAS METER Y-FACTOR: 1.01 Y

VOLUME OF MOISTURE: 53.7 V_{ic}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		868.206								
	10.0	873.4	0.75	70	70	505	169			
	10.0	878.6	0.75	74	70	502	170	13.5	6.0	0.54
	10.0	883.7	0.75	75	71	504	171			
	10.0	888.9	0.75	76	71	506	171			
	10.0	894.1	0.75	77	72	502	170			
	10.0	899.382	0.75	78	72	504	170			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	31.176	0.750	73				13.5	6.0	0.54
	net	net	avg	avg				avg	avg	avg

$P_s =$ 29.64 $V_{m(std)} =$ 30.904 $V_{w(std)} =$ 2.529 %M= 7.57
 $B_{ws} =$ 0.076 $M_d =$ 30.40 $M_s =$ 29.46

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	5.1	6.2	0.009
SO2	722.8	868.3	1.646

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 31**

Run No: 17

Date: 2/8/10

Start Time: 17:07

End Time: 18:07

BAROMETRIC PRESSURE: 29.60 P_{bar}
 GAS METER Y-FACTOR: 1.01 Y

VOLUME OF MOISTURE: 47.9 V_{lc}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		900.220								
	10.0	905.4	0.75	71	70	504	167			
	10.0	910.5	0.75	74	70	506	169	13.2	6.2	0.54
	10.0	915.7	0.75	75	70	508	170			
	10.0	920.9	0.75	75	70	507	171			
	10.0	926.0	0.75	76	71	505	172			
	10.0	931.308	0.75	77	71	506	172			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.088	0.750		73			13.2	6.2	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	29.64		$V_{m(std)} =$	30.846	$V_{w(std)} =$	2.256		$\%M =$	6.82
	$B_{ws} =$	0.068		$M_d =$	30.36	$M_s =$	29.52			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	5.1	6.2	0.009
SO2	775.9	944.8	1.791

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: SCR Outlet 31

Run No: **19** Date: **2/9/10** Start Time: **8:05**
End Time: **9:05**

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 49.3 V_{lc}
GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		963.808								
	10.0	969.0	0.75	67	67	503	167			
	10.0	974.2	0.75	68	67	504	169	13.5	6.0	0.54
	10.0	979.3	0.75	70	67	506	170			
	10.0	984.5	0.75	71	68	508	170			
	10.0	989.7	0.75	73	69	510	171			
	10.0	995.136	0.75	74	69	507	172			

RESULTS	TT	VM	PM	TM		CO2	O2	Static	
	60.0	31.328	0.750		69	13.5	6.0		0.54
	net	net	avg		avg	avg	avg		avg
	$P_s =$	29.54		$V_{m(std)} =$	31.174	$V_{w(std)} =$	2.322	$\%M =$	6.93
	$B_{ws} =$	0.069		$M_d =$	30.40	$M_s =$	29.54		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	5.4	6.5	0.009
SO2	895.7	1076.0	2.040

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: **20** Date: 2/9/10 Start Time: 9:55
 End Time: 10:55

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 52.8 V_{ic}
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		995.506								
	10.0	1000.6	0.75	67	67	505	168			
	10.0	1005.7	0.75	69	67	505	168	13.0	6.4	0.54
	10.0	1010.9	0.75	69	67	506	170			
	10.0	1016.0	0.75	70	67	509	170			
	10.0	1021.2	0.75	70	67	510	171			
	10.0	1026.440	0.75	71	67	506	171			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	30.934	0.750	68				13.0	6.4	0.54
	net	net	avg	avg				avg	avg	avg
	P _s =	29.54		V _{m(std)} =	30.840	V _{w(std)} =	2.487		%M =	7.46
	B _{ws} =	0.075		M _d =	30.34	M _s =	29.42			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.7	5.8	0.008
SO2	879.5	1085.7	2.058

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: 13 Date: 2/8/10 Start Time: 8:30
 End Time: 9:30

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 45.1 V_{lc}
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		773.850								
	10.0	779.0	0.75	50	50	503	168			
	10.0	784.1	0.75	51	50	504	168	14.2	5.2	0.54
	10.0	789.2	0.75	52	50	505	170			
	10.0	794.2	0.75	54	50	502	171			
	10.0	799.3	0.75	56	51	503	171			
	10.0	804.526	0.75	57	51	504	170			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	30.676	0.750	52				14.2	5.2	0.54
	net	net	avg	avg				avg	avg	avg
	P _s =	29.64		V _{m(std)} =	31.666	V _{w(std)} =	2.124	%M =	6.29	
	B _{ws} =	0.063		M _d =	30.48	M _s =	29.70			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.6	3.0	0.004
SO2	755.8	861.7	1.633

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 32

Run No: 7 Date: 2/2/10 Start Time: 15:05
 End Time: 16:05

BAROMETRIC PRESSURE: 29.99 P_{bar} VOLUME OF MOISTURE: 60.3 V_{lc}
 GAS METER Y-FACTOR: 0.97 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		600.470								
	10.0	605.7	0.75	67		505	181			
	10.0	610.6	0.75	71		506	184	13.6	5.7	0.54
	10.0	616.3	0.75	71		507	179			
	10.0	621.6	0.75	72		509	179			
	10.0	627.0	0.75	73		510	179			
	10.0	632.364	0.75	74		505	177			

RESULTS	TT	VM	PM	TM	CO2	O2	Static	
	60.0	31.894	0.750	71	13.6	5.7	0.54	
	net	net	avg	avg	avg	avg	avg	
	P _s =	30.03	V _{m(std)} =	30.732	V _{w(std)} =	2.840	%M=	8.46
	B _{ws} =	0.085	M _d =	30.40	M _s =	29.35		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	11.1	13.1	0.019
SO2	1735.1	2043.3	3.873

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 32

Run No: **8**

Date: **2/2/10**

Start Time: **17:30**

End Time: **18:30**

BAROMETRIC PRESSURE: **30.00** P_{bar}
 GAS METER Y-FACTOR: **0.97** Y

VOLUME OF MOISTURE: **58.1** V_{lc}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		632.575								
	10.0	637.9	0.75	69		511	175			
	10.0	643.1	0.75	70		511	180	13.8	5.7	0.54
	10.0	648.4	0.75	71		508	182			
	10.0	653.8	0.75	72		509	182			
	10.0	659.2	0.75	73		509	181			
	10.0	664.513	0.75	73		508	182			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.938	0.750		71			13.8	5.7	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	30.04		$V_{m(std)} =$	30.785	$V_{w(std)} =$	2.737		$\%M =$	8.16
	$B_{ws} =$	0.082		$M_d =$	30.44	$M_s =$	29.42			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	13.0	15.3	0.022
SO2	1687.0	1986.7	3.766

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 32

Run No: **11** Date: 2/3/10 Start Time: 12:55
 End Time: 13:55

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 101 V_{lc}
 GAS METER Y-FACTOR: 0.97 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	PROBE TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		730.380								
	10.0	735.7	0.75	60		521	181			
	10.0	740.1	0.75	61		522	184	14.3	5.0	0.54
	10.0	746.1	0.75	63		510	183			
	10.0	751.4	0.75	65		508	175			
	10.0	756.7	0.75	66		509	176			
	10.0	762.000	0.75	67		507	181			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	31.620	0.750	64				14.3	5.0	0.54
	net	net	avg	avg				avg	avg	avg
	P _s =	29.79		V _{m(std)} =	30.667	V _{w(std)} =	4.757		%M =	13.43
	B _{ws} =	0.134		M _d =	30.49	M _s =	28.81			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	11.0	12.4	0.018
SO2	1067.4	1201.6	2.278

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 32**

Run No: **14**

Date: **2/8/10**

Start Time: **10:20**
 End Time: **11:20**

BAROMETRIC PRESSURE: **29.60** P_{bar}
 GAS METER Y-FACTOR: **0.96** Y

VOLUME OF MOISTURE: **48.9** V_{ic}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		863.850								
	10.0	869.0	0.75	56	56	509	168			
	10.0	874.1	0.75	57	57	510	169	13.7	5.8	0.54
	10.0	879.0	0.75	58	58	508	170			
	10.0	884.1	0.75	59	59	510	172			
	10.0	889.3	0.75	60	60	509	173			
	10.0	894.576	0.75	61	61	506	173			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	30.726	0.750		59			13.7	5.8	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	29.64		$V_{m(std)} =$	29.760	$V_{w(std)} =$	2.303		%M=	7.18
	$B_{ws} =$	0.072		$M_d =$	30.42	$M_s =$	29.53			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	9.7	11.5	0.016
SO2	804.2	953.3	1.807

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 32**

Run No: 15

Date: 2/8/10

Start Time: 12:20
 End Time: 13:20

BAROMETRIC PRESSURE: 29.60 P_{bar}
 GAS METER Y-FACTOR: 0.96 Y

VOLUME OF MOISTURE: 48.9 V_{lc}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		895.426								
	10.0	900.5	0.75	65	65	510	168			
	10.0	905.6	0.75	66	66	509	171	13.5	5.9	0.54
	10.0	910.8	0.75	68	68	508	172			
	10.0	916.0	0.75	70	70	506	174			
	10.0	921.2	0.75	72	72	507	176			
	10.0	926.458	0.75	75	75	509	177			

RESULTS	TT	VM	PM	TM	CO2	O2	Static		
	60.0	31.032	0.750	69	13.5	5.9	0.54		
	net	net	avg	avg	avg	avg	avg		
	$P_s =$	29.64		$V_{m(std)} =$	29.441	$V_{w(std)} =$	2.303	$\%M =$	7.26
	$B_{ws} =$	0.073		$M_d =$	30.40	$M_s =$	29.50		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	7.4	8.8	0.012
SO2	785.8	937.7	1.778

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 32**

Run No: **16**

Date: **2/8/10**

Start Time: **15:30**

End Time: **16:30**

BAROMETRIC PRESSURE: **29.60** P_{bar}
 GAS METER Y-FACTOR: **0.96** Y

VOLUME OF MOISTURE: **45.9** V_{lc}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		928.294								
	10.0	933.4	0.75	73	73	512	170			
	10.0	938.6	0.75	74	74	510	170	13.3	6.2	0.54
	10.0	943.6	0.75	75	75	510	170			
	10.0	948.7	0.75	76	76	506	170			
	10.0	953.9	0.75	77	77	507	170			
	10.0	959.201	0.75	77	77	509	170			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	30.907	0.750		75			13.3	6.2	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	29.64		$V_{m(std)} =$	28.994	$V_{w(std)} =$	2.162		$\%M =$	6.94
	$B_{ws} =$	0.069		$M_d =$	30.38	$M_s =$	29.52			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	7.6	9.2	0.013
SO2	825.4	1005.1	1.905

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
 Unit Tested: McIntosh Unit 3
 Sampling Location: SCR Outlet 32

Run No: 17 Date: 2/8/10 Start Time: 17:07
 End Time: 18:07

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 44.3 V_{ic}
 GAS METER Y-FACTOR: 0.96 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.	
				IN	OUT						
		959.711									
	10.0	964.9	0.75	78	78	510	169				
	10.0	970.0	0.75	79	79	507	172	13.2	6.2	0.54	
	10.0	975.2	0.75	79	79	508	174				
	10.0	980.3	0.75	79	79	511	174				
	10.0	985.4	0.75	79	79	510	175				
	10.0	990.628	0.75	80	80	509	177				
RESULTS	TT	VM	PM	TM				CO2	O2	Static	
	60.0	30.917	0.750	79				13.2	5.9	0.54	
	net	net	avg	avg				avg	avg	avg	
		P _s =	29.64		V _{m(std)} =	28.806	V _{w(std)} =	2.087		%M =	6.75
	B _{ws} =	0.068		M _d =	30.35	M _s =	29.51				

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	8.1	9.6	0.014
SO2	830.8	991.5	1.879

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 32**

Run No: **19** Date: **2/9/10** Start Time: **8:05**
 End Time: **9:05**

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 39.2 V_{ic}
 GAS METER Y-FACTOR: 0.96 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		27.337								
	10.0	32.4	0.75	68	68	511	169			
	10.0	37.5	0.75	69	69	510	170	13.2	6.1	0.54
	10.0	42.6	0.75	71	71	509	172			
	10.0	47.8	0.75	72	72	510	174			
	10.0	53.0	0.75	74	74	511	176			
	10.0	58.460	0.75	74	74	510	178			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.123	0.750		71			13.2	6.1	0.54
	net	net	avg		avg			avg	avg	avg

$P_s = 29.54$ $V_{m(std)} = 29.317$ $V_{w(std)} = 1.846$ $\%M = 5.92$
 $B_{ws} = 0.059$ $M_d = 30.36$ $M_s = 29.62$

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	8.2	10.0	0.014
SO3	870.8	1053.2	1.996

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 32**

Run No: **20** Date: **2/9/10** Start Time: **9:55**
 End Time: **10:55**

BAROMETRIC PRESSURE: **29.50** P_{bar} VOLUME OF MOISTURE: **48.0** V_{lc}
 GAS METER Y-FACTOR: **0.96** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		59.102								
	10.0	64.3	0.75	68	68	510	169			
	10.0	69.5	0.75	68	68	510	172	13.3	6.2	0.54
	10.0	74.6	0.75	69	69	512	174			
	10.0	79.8	0.75	70	70	509	176			
	10.0	85.0	0.75	71	71	510	178			
	10.0	90.311	0.75	71	71	511	180			

RESULTS	TT	VM	PM	TM		CO2	O2	Static
	60.0	31.209	0.750	70		13.3	6.2	0.54
	net	net	avg	avg		avg	avg	avg

P_s = 29.54 V_{m(std)} = 29.500 V_{w(std)} = 2.261 %M = 7.12
 B_{ws} = 0.071 M_d = 30.38 M_s = 29.50

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	9.1	11.1	0.016
SO3	919.5	1119.6	2.122

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 32

Run No: **21** Date: 2/9/10 Start Time: 11:40
 End Time: 12:40

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 44.2 V_{1c}
 GAS METER Y-FACTOR: 0.96 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		91.030								
	10.0	96.2	0.75	70	70	514	169			
	10.0	101.3	0.75	71	71	510	170	13.2	6.2	0.54
	10.0	106.6	0.75	71	71	509	173			
	10.0	111.7	0.75	72	72	511	174			
	10.0	116.9	0.75	74	74	510	177			
	10.0	122.138	0.75	75	75	508	178			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	31.108	0.750	72				13.2	6.2	0.54
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.54		$V_{m(\text{std})} =$	29.257	$V_{w(\text{std})} =$	2.082		%M=	6.64
	$B_{ws} =$	0.066		$M_d =$	30.36	$M_s =$	29.54			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	9.8	11.9	0.017
SO3	927.1	1128.9	2.140

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 32

Run No: 22 Date: 2/9/10 Start Time: 13:25 End Time: 14:25

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 47.8 V_{lc}
 GAS METER Y-FACTOR: 0.96 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		125.280								
	10.0	130.4	0.75	78	78	513	170			
	10.0	135.5	0.75	79	79	511	171	13.2	6.2	0.54
	10.0	140.7	0.75	80	80	510	174			
	10.0	146.0	0.75	81	81	508	176			
	10.0	151.1	0.75	81	81	509	178			
	10.0	156.403	0.75	82	82	511	179			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.123	0.750		80			13.2	5.9	0.54
	net	net	avg		avg			avg	avg	avg
	P _s =	29.54		V _{m(std)} =	28.837	V _{w(std)} =	2.251		%M =	7.24
	B _{ws} =	0.072		M _d =	30.35	M _s =	29.45			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	9.7	11.6	0.016
SO3	885.2	1056.4	2.002

ESP Inlet

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 31**

Run No: 7 Date: 2/2/10 Start Time: 15:05
 End Time: 16:05

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 19.3 V_{lc}
 GAS METER Y-FACTOR: 1.02 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		170.369									
	10.0	175.1	0.75	70	68	468	467	169			
	10.0	179.8	0.75	80	73	470	466	169	13.3	6.1	-8.50
	10.0	184.6	0.75	81	74	470	464	168			
	10.0	190.0	0.75	81	74	471	463	168			
	10.0	194.4	0.75	81	74	469	462	167			
	10.0	200.017	0.75	79	74	468	462	168			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	29.648	0.750		76				13.3	6.1	-8.50
	net	net	avg		avg				avg	avg	avg
	P_s =	29.13		$V_{m(std)}$ =	29.677		$V_{w(std)}$ =	0.909		%M =	2.97
	B_{ws} =	0.030		M_d =	30.37		M_s =	30.00			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.4	1.7	0.002
SO2	1377.7	1666.3	3.159

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
 Unit Tested: McIntosh Unit 3
 Sampling Location: ESP Inlet 31

Run No: 8

Date: 2/2/10

Start Time: 17:30
 End Time: 18:30

BAROMETRIC PRESSURE: 29.75 P_{bar}
 GAS METER Y-FACTOR: 1.02 Y

VOLUME OF MOISTURE: 31.0
 PITOT COEFFICIENT: 0.84

V_{ic}
 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		200.231									
	10.0	205.0	0.75	73	72	472	468	167			
	10.0	209.3	0.75	78	73	473	468	168	13.3	6.3	-8.50
	10.0	213.9	0.75	76	73	473	469	169			
	10.0	217.0	0.75	76	73	472	468	168			
	10.0	221.2	0.75	76	72	473	461	169			
	10.0	225.236	0.75	75	71	470	462	168			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	25.005	0.750		74				13.3	6.3	-8.50
	net	net	avg		avg				avg	avg	avg
	P _s =	29.13		V _{m(std)} =	25.112		V _{w(std)} =	1.460		%M =	5.49
	B _{ws} =	0.055		M _d =	30.38		M _s =	29.70			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.8	2.2	0.003
SO2	1351.7	1657.2	3.141

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 31**

Run No: **11** Date: **2/3/10** Start Time: **12:55**
 End Time: **13:55**

BAROMETRIC PRESSURE: **29.75** P_{bar} VOLUME OF MOISTURE: **101** V_{ic}
 GAS METER Y-FACTOR: **1.02** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		283.357									
	10.0	287.9	0.75	68	67	470	460	169			
	10.0	292.7	0.75	75	65	464	459	168	13.4	6.0	-8.50
	10.0	297.5	0.75	74	65	465	449	169			
	10.0	302.2	0.75	75	66	465	451	170			
	10.0	307.0	0.75	77	67	475	459	170			
	10.0	311.794	0.75	78	68	474	458	170			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	28.437	0.750		70				13.4	6.0	-8.50
	net	net	avg		avg				avg	avg	avg
	P _s =	29.13		V _{m(std)} =	28.751		V _{w(std)} =	4.757		%M=	14.20
	B _{ws} =	0.142		M _d =	30.38		M _s =	28.63			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.4	0.5	0.001
SO2	1036.9	1245.6	2.361

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 31**

Run No: **12** Date: **2/3/10** Start Time: **17:25**
 End Time: **18:25**

BAROMETRIC PRESSURE: **29.75** P_{bar} VOLUME OF MOISTURE: **100** V_{lc}
 GAS METER Y-FACTOR: **1.02** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS	PM	METER TEMP		PROBE	OVEN	COIL	CO2%	O2%	STATIC PRESS.
		METER	ORIFICE	IN	OUT	TEMP	TEMP	TEMP			
		312.012									
	10.0	315.0	0.75	67	61	482	486	169			
	10.0	321.7	0.75	65	62	488	479	170	0.0	6.0	0.00
	10.0	326.3	0.75	68	62	487	478	170			
	10.0	330.9	0.75	69	63	488	476	170			
	10.0	335.6	0.75	70	63	489	478	171			
	10.0	340.424	0.75	71	63	488	478	170			
RESULTS	TT	VM	PM	TM					CO2	O2	Static
	60.0	28.412	0.750	65					0.0	6.0	0.00
	net	net	avg	avg					avg	avg	avg
	$P_s =$	29.75		$V_{m(std)} =$	29.004		$V_{w(std)} =$	4.710		$\%M =$	13.97
	$B_{ws} =$	0.140		$M_d =$	28.24		$M_s =$	26.81			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.6	0.8	0.001
SO2	979.3	1176.5	2.230

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 31**

Run No: **14** Date: **2/8/10** Start Time: **10:20**
 End Time: **11:20**

BAROMETRIC PRESSURE: **29.75** P_{bar} VOLUME OF MOISTURE: **50** V_{lc}
 GAS METER Y-FACTOR: **1.02** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		399.003									
	10.0	403.7	0.75	56	55	437	501	167			
	10.0	408.4	0.75	61	55	468	500	169	13.0	6.5	-8.50
	10.0	413.1	0.75	63	56	480	500	173			
	10.0	417.7	0.75	65	57	485	501	172			
	10.0	422.3	0.75	66	58	483	501	172			
	10.0	426.982	0.75	68	59	484	500	173			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	27.979	0.750		60				13.0	6.5	-8.50
	net	net	avg		avg				avg	avg	avg
	$P_s =$	29.13		$V_{m(std)} =$	28.859		$V_{w(std)} =$	2.355		%M =	7.54
	$B_{ws} =$	0.075		$M_d =$	30.34		$M_s =$	29.41			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.1	2.6	0.004
SO2	801.6	996.5	1.889

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **ESP Inlet 31**

Run No: **15** Date: **2/8/10** Start Time: **12:20**
End Time: **13:20**

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 50 V_{lc}
GAS METER Y-FACTOR: 1.02 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		427.207									
	10.0	432.8	0.75	58	58	457	501	169			
	10.0	437.4	0.75	61	59	471	503	173	13.3	6.0	-8.50
	10.0	442.0	0.75	66	60	482	500	172			
	10.0	446.6	0.75	70	62	483	500	173			
	10.0	451.3	0.75	72	63	487	500	172			
	10.0	456.169	0.75	73	63	486	501	171			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	28.962	0.750		64				13.3	6.0	-8.50
	net	net	avg		avg				avg	avg	avg

$P_s =$ 28.98 $V_{m(std)} =$ 29.506 $V_{w(std)} =$ 2.355 $\%M =$ 7.39
 $B_{ws} =$ 0.074 $M_d =$ 30.37 $M_s =$ 29.45

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.0	0.0	0.000
SO2	865.2	1039.4	1.970

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 31**

Run No: **16** Date: **2/8/10** Start Time: **15:30**
 End Time: **16:30**

BAROMETRIC PRESSURE: **29.60** P_{bar} VOLUME OF MOISTURE: **52** V_{ic}
 GAS METER Y-FACTOR: **1.02** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		456.321									
	10.0	461.1	0.75	61	61	456	499	168			
	10.0	465.9	0.75	63	61	459	501	169	13.4	6.0	-8.50
	10.0	470.6	0.75	65	62	459	501	169			
	10.0	475.3	0.75	67	63	472	498	169			
	10.0	480.0	0.75	68	63	470	500	169			
	10.0	484.707	0.75	69	64	468	498	171			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	28.386	0.750		64				13.4	6.0	-8.50
	net	net	avg		avg				avg	avg	avg
	$P_s =$	28.98		$V_{m(std)} =$	28.910		$V_{w(std)} =$	2.449		%M=	7.81
	$B_{ws} =$	0.078		$M_d =$	30.38		$M_s =$	29.42			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.0	0.0	0.000
SO2	745.1	895.1	1.697

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **ESP Inlet 31**

Run No: **17** Date: **2/8/10** Start Time: **17:07**
End Time: **18:07**

BAROMETRIC PRESSURE: **29.60** P_{bar} VOLUME OF MOISTURE: **53** V_{lc}
GAS METER Y-FACTOR: **1.02** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.	
		484.941										
	10.0	489.6	0.75	62	62	454	499	168				
	10.0	494.3	0.75	64	62	467	498	168	13.4	6.0	-8.50	
	10.0	498.9	0.75	67	63	481	500	170				
	10.0	503.6	0.75	69	63	477	499	170				
	10.0	508.3	0.75	69	64	475	499	170				
	10.0	513.044	0.75	69	64	472	502	171				
RESULTS	TT	VM	PM	TM		CO2	O2	Static				
	60.0	28.103	0.750	65		13.4	6.0	-8.50				
	net	net	avg	avg		avg	avg	avg				
	$P_s =$	28.98		$V_{m(std)} =$	28.571	$V_{w(std)} =$	2.496	$\%M =$	8.04			
	$B_{ws} =$	0.080		$M_d =$	30.38	$M_s =$	29.39					

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.0	0.0	0.000
SO2	753.9	905.7	1.717

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: ESP Inlet - 31

Run No: **18** Date: 2/9/10 Start Time: 6:18
 End Time: 7:18

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 51 V_{ic}
 GAS METER Y-FACTOR: 1.02 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		513.151									
	10.0	517.9	0.75	48	48	447	500	168			
	10.0	522.6	0.75	50	48	460	500	169	13.5	5.8	-8.50
	10.0	527.3	0.75	51	49	468	501	170			
	10.0	531.9	0.75	53	50	481	500	169			
	10.0	526.5	0.75	55	50	477	500	170			
	10.0	541.106	0.75	55	51	484	501	171			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	27.955	0.750		51				13.5	5.8	-8.50
	net	net	avg		avg				avg	avg	avg
	P _s =	28.88		V _{m(std)} =	29.111		V _{w(std)} =	2.402		%M =	7.62
	B _{ws} =	0.076		M _d =	30.39		M _s =	29.45			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.0	3.6	0.005
SO2	876.9	1039.5	1.971

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **ESP Inlet - 31**

Run No: **21**

Date: **2/9/10**

Start Time: **11:40**

End Time: **12:40**

BAROMETRIC PRESSURE: **29.50** P_{bar}
GAS METER Y-FACTOR: **1.02** Y

VOLUME OF MOISTURE: **54** V_{lc}
PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		597.904									
	10.0	602.9	0.75	63	63	448	501	169			
	10.0	607.7	0.75	66	64	458	500	174	13.4	5.9	-8.50
	10.0	612.6	0.75	69	64	474	500	173			
	10.0	617.4	0.75	71	65	482	500	174			
	10.0	622.0	0.75	75	67	483	501	173			
	10.0	626.763	0.75	75	67	482	499	173			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	28.859	0.750	67	13.4	5.9	-8.50
	net	net	avg	avg	avg	avg	avg
$P_s =$	28.88	$V_{m(std)} =$	29.098	$V_{w(std)} =$	2.543	$\%M =$	8.04
$B_{ws} =$	0.080	$M_d =$	30.38	$M_s =$	29.38		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.3	1.5	0.002
SO2	904.7	1079.7	2.047

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO₃ Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **ESP Inlet - 31**

Run No: **22**

Date: **2/9/10**

Start Time: **13:25**

End Time: **14:25**

BAROMETRIC PRESSURE: **29.50** P_{bar}
GAS METER Y-FACTOR: **1.02** Y

VOLUME OF MOISTURE: **51** V_{ic}
PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO ₂ %	O ₂ %	STATIC PRESS.
		626.765									
	10.0	631.4	0.75	61	61	454	498	169			
	10.0	636.1	0.75	63	62	459	499	171	13.7	5.7	-8.50
	10.0	640.9	0.75	67	62	473	500	173			
	10.0	645.6	0.75	68	63	483	500	172			
	10.0	650.2	0.75	68	62	488	500	172			
	10.0	655.611	0.75	67	62	483	499	173			
RESULTS	TT	VM	PM		TM				CO ₂	O ₂	Static
	60.0	28.846	0.750		64				13.7	5.7	-8.50
	net	net	avg		avg				avg	avg	avg
	P_s =	28.88		$V_{m(std)}$ =	29.284		$V_{w(std)}$ =	2.402		%M=	7.58
	B_{ws} =	0.076		M_d =	30.42		M_s =	29.48			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O ₂)	Emission Rate (lb/mmBtu)
SO ₃	1.0	1.1	0.002
SO ₂	871.8	1026.6	1.946

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
 Unit Tested: McIntosh Unit 3
 Sampling Location: ESP Inlet 32

Run No: 7 Date: 2/2/10 Start Time: 15:05
 End Time: 16:05

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 47.1 V_{ic}
 GAS METER Y-FACTOR: 0.98 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		168.901									
	10.0	175.4	0.75	63	62	490	471	165			
	10.0	180.2	0.75	67	63	492	478	170	13.0	6.5	-8.50
	10.0	185.6	0.75	68	64	492	475	166			
	10.0	190.5	0.75	69	64	492	470	165			
	10.0	195.8	0.75	69	65	492	464	166			
	10.0	200.922	0.75	69	65	490	465	170			

RESULTS	TT	VM	PM	TM	CO2	O2	Static				
	60.0	32.021	0.750	66	13.0	6.5	-8.50				
	net	net	avg	avg	avg	avg	avg				
	$P_s =$	29.13		$V_{m(std)} =$	31.386		$V_{w(std)} =$	2.218		$\%M =$	6.60
	$B_{ws} =$	0.066		$M_d =$	30.34		$M_s =$	29.53			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	5.0	6.2	0.009
SO2	1566.2	1946.8	3.690

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **ESP Inlet 32**

Run No: **8** Date: **2/2/10** Start Time: **17:30**
End Time: **18:30**

BAROMETRIC PRESSURE: **29.75** P_{bar} VOLUME OF MOISTURE: **35.9** V_{lc}
GAS METER Y-FACTOR: **0.98** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
201.475											
	10.0	207.4	0.75	65	63	467	477	165			
	10.0	212.5	0.75	66	63	493	474	167	13.4	6.1	-8.50
	10.0	217.8	0.75	68	64	492	471	170			
	10.0	223.4	0.75	69	64	494	473	170			
	10.0	228.0	0.75	69	65	491	470	166			
	10.0	233.197	0.75	70	65	494	468	169			

RESULTS

TT	VM	PM		TM		CO2	O2	Static
60.0	31.722	0.750		66		13.4	6.1	-8.50
net	net	avg		avg		avg	avg	avg
$P_s =$	29.13		$V_{m(\text{std})} =$	31.078	$V_{v(\text{std})} =$	1.691		%M= 5.16
$B_{ws} =$	0.052		$M_d =$	30.39	$M_s =$	29.75		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	6.6	8.0	0.011
SO2	1390.1	1681.2	3.187

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: ESP Inlet 32

Run No: **9** Date: **2/2/10** Start Time: **19:44**
 End Time: **20:44**

BAROMETRIC PRESSURE: **30.01** P_{bar} VOLUME OF MOISTURE: **39.4** V_{lc}
 GAS METER Y-FACTOR: **0.98** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS	PM	METER TEMP		PROBE	OVEN	COIL	CO2%	O2%	STATIC PRESS.	
		METER	ORIFICE	IN	OUT	TEMP	TEMP	TEMP				
		233.935										
	10.0	239.2	0.75	61	60	469	478	165				
	10.0	244.4	0.75	61	59	491	477	168	13.3	6.2	-8.50	
	10.0	249.6	0.75	62	59	492	478	172				
	10.0	254.8	0.75	62	58	491	481	169				
	10.0	259.9	0.75	62	58	492	483	170				
	10.0	265.315	0.75	62	58	492	485	172				

RESULTS	TT	VM	PM		TM			CO2	O2	Static	
	60.0	31.380	0.750		60				13.3	6.2	-8.50
net	net	avg		avg				avg	avg	avg	
$P_s =$	29.39			$V_{m(std)} =$	31.354		$V_{w(std)} =$	1.856		$\%M =$	5.59
$B_{ws} =$	0.056			$M_d =$	30.38		$M_s =$	29.68			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	6.1	7.4	0.010
SO2	1304.0	1587.9	3.010

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: **11** Date: **2/3/10** Start Time: **12:55**
 End Time: **13:55**

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 101 V_{lc}
 GAS METER Y-FACTOR: 0.98 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		298.885									
	10.0	304.0	0.75	54	53	476	494	180			
	10.0	308.7	0.75	54	52	491	473	177	13.3	6.0	-8.50
	10.0	314.1	0.75	58	54	489	466	171			
	10.0	319.3	0.75	62	56	489	465	169			
	10.0	324.4	0.75	64	58	488	464	167			
	10.0	329.293	0.75	65	59	488	470	167			

RESULTS	TT	VM	PM	TM	CO2	O2	Static	
	60.0	30.408	0.750	57	13.3	6.0	-8.50	
	net	net	avg	avg	avg	avg	avg	
	P _s =	29.13	V _{m(std)} =	30.281	V _{w(std)} =	4.757	%M =	13.58
	B _{ws} =	0.136	M _d =	30.37	M _s =	28.69		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.4	5.3	0.008
SO2	849.4	1020.4	1.934

Catalyst Air Management, Inc.

EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: ESP Inlet 32

Run No: **12**

Date: 2/3/10

Start Time: 17:25

End Time: 18:25

BAROMETRIC PRESSURE: 30.01 P_{bar}
 GAS METER Y-FACTOR: 0.98 Y

VOLUME OF MOISTURE: 100 V_{lc}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		330.570									
	10.0	335.7	0.75	69	67	481	459	173			
	10.0	341.1	0.75	70	67	485	453	172	13.3	6.0	-8.50
	10.0	346.4	0.75	71	68	490	462	171			
	10.0	351.4	0.75	74	69	489	464	173			
	10.0	356.4	0.75	75	70	489	469	173			
	10.0	361.386	0.75	76	71	489	471	173			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	30.816	0.750		71				13.3	6.0	-8.50
	net	net	avg		avg				avg	avg	avg

P_s = 29.39 V_{m(std)} = 30.186 V_{w(std)} = 4.710 %M = 13.50
 B_{ws} = 0.135 M_d = 30.37 M_s = 28.70

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	9.7	11.7	0.017
SO2	926.7	1113.2	2.110

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: **13**

Date: **2/8/10**

Start Time: **8:30**

End Time: **9:30**

BAROMETRIC PRESSURE: **29.60** P_{bar}
 GAS METER Y-FACTOR: **0.98** **Y**

VOLUME OF MOISTURE: **40** V_{ic}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		392.502									
	10.0	397.4	0.75	40	39	472	438	175			
	10.0	402.5	0.75	41	39	471	460	170	13.6	5.7	-8.50
	10.0	407.6	0.75	44	39	468	462	168			
	10.0	412.0	0.75	44	39	462	465	170			
	10.0	417.1	0.75	48	40	467	461	169			
	10.0	422.540	0.75	48	42	472	464	170			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	30.038	0.750	42	13.6	5.7	-8.50
	net	net	avg	avg	avg	avg	avg
	$P_s =$	28.98		$V_{m(std)} =$	30.681	$V_{w(std)} =$	1.884
	$B_{ws} =$	0.058		$M_d =$	30.40	$M_s =$	29.69
						%M=	5.79

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.5	1.8	0.003
SO2	858.1	1010.5	1.915

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: **14** Date: **2/8/10** Start Time: **10:20**
 End Time: **11:20**

BAROMETRIC PRESSURE: **29.60** P_{bar} VOLUME OF MOISTURE: **42** V_{ic}
 GAS METER Y-FACTOR: **0.98** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		423.028									
	10.0	429.0	0.75	49	46	478	452	169			
	10.0	434.1	0.75	53	48	470	446	168	13.9	5.5	-8.50
	10.0	438.9	0.75	54	49	491	462	167			
	10.0	444.5	0.75	54	49	494	464	168			
	10.0	449.6	0.75	56	50	490	458	168			
	10.0	454.703	0.75	57	50	491	460	170			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	31.675	0.750		51				13.9	5.5	-8.50
	net	net	avg		avg				avg	avg	avg
	$P_s =$	28.98		$V_{m(std)} =$	31.762		$V_{w(std)} =$	1.978		$\%M =$	5.86
	$B_{ws} =$	0.059		$M_d =$	30.44		$M_s =$	29.71			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.1	2.4	0.003
SO2	858.1	997.4	1.891

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: **15** Date: **2/8/10** Start Time: **12:20**
 End Time: **13:20**

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 44 V_{lc}
 GAS METER Y-FACTOR: 0.98 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		455.171									
	10.0	4601.0	0.75	60	58	461	452	172			
	10.0	466.1	0.75	65	60	490	471	176	13.8	5.5	-8.50
	10.0	471.4	0.75	66	60	491	468	170			
	10.0	476.6	0.75	67	61	489	482	168			
	10.0	482.0	0.75	69	62	490	478	170			
	10.0	487.145	0.75	71	63	491	475	168			

RESULTS	TT	VM	PM	TM	CO2	O2	Static				
	60.0	31.974	0.750	64	13.8	5.5	-8.50				
	net	net	avg	avg	avg	avg	avg				
	P _s =	28.98		V _{m(std)} =	31.312		V _{w(std)} =	2.072		%M =	6.21
	B _{ws} =	0.062		M _d =	30.43		M _s =	29.66			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.2	2.5	0.004
SO2	858.1	997.4	1.891

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: **16** Date: **2/8/10** Start Time: **15:30**
 End Time: **16:30**

BAROMETRIC PRESSURE: **29.60** P_{bar} VOLUME OF MOISTURE: **41** V_{lc}
 GAS METER Y-FACTOR: **0.98** **Y** PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		487.558									
	10.0	493.5	0.75	70	68	481	475	177			
	10.0	498.5	0.75	70	68	481	468	176	13.8	5.5	-8.50
	10.0	504.0	0.75	73	69	486	457	176			
	10.0	509.1	0.75	75	70	487	461	175			
	10.0	514.1	0.75	77	71	491	465	177			
	10.0	519.182	0.75	77	71	490	465	177			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	31.624	0.750		72				13.8	5.5	-8.50
	net	net	avg		avg				avg	avg	avg
	$P_s =$	28.98		$V_{m(std)} =$	30.498	$V_{w(std)} =$	1.931		$\%M =$	5.95	
	$B_{ws} =$	0.060		$M_d =$	30.43	$M_s =$	29.69				

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.8	2.1	0.003
SO2	858.1	997.4	1.891

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **ESP Inlet 32**

Run No: 17 Date: 2/8/10 Start Time: 17:07
End Time: 18:07

BAROMETRIC PRESSURE: 29.60 P_{bar} VOLUME OF MOISTURE: 43 V_{lc}
GAS METER Y-FACTOR: 0.98 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		519.571									
	10.0	524.6	0.75	73	71	487	455	177			
	10.0	630.2	0.75	74	71	482	457	172	13.7	5.7	-8.50
	10.0	535.3	0.75	75	71	480	456	170			
	10.0	540.2	0.75	78	73	490	458	168			
	10.0	545.2	0.75	78	73	492	455	170			
	10.0	550.615	0.75	79	74	490	453	175			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	31.044	0.750	74	13.7	5.7	-8.50
	net	net	avg	avg	avg	avg	avg
	$P_s =$	28.98	$V_{m(std)} =$	29.794	$V_{w(std)} =$	2.025	%M= 6.37
	$B_{ws} =$	0.064	$M_d =$	30.42	$M_s =$	29.63	

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.9	3.4	0.005
SO2	858.1	1010.5	1.915

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO₃ Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: **18** Date: **2/9/10** Start Time: **6:18**
 End Time: **7:18**

BAROMETRIC PRESSURE: 29.50 P_{bar} VOLUME OF MOISTURE: 50 V_{ic}
 GAS METER Y-FACTOR: 0.98 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO ₂ %	O ₂ %	STATIC PRESS.
		550.850									
	10.0	555.9	0.75	58	57	477	452	171			
	10.0	561.2	0.75	60	58	472	460	169	13.8	5.5	-8.50
	10.0	567.0	0.75	62	58	475	461	170			
	10.0	572.0	0.75	62	58	474	462	170			
	10.0	577.4	0.75	64	59	471	466	172			
	10.0	582.575	0.75	69	61	472	468	172			

RESULTS	TT	VM	PM	TM	CO ₂	O ₂	Static
	60.0	31.725	0.750	61	13.8	5.5	-8.50
	net	net	avg	avg	avg	avg	avg
	$P_s =$	28.88		$V_{m(std)} =$	31.141		$V_{w(std)} =$
	$B_{ws} =$	0.070		$M_d =$	30.43		$M_s =$
							$\%M =$
							7.03

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O ₂)	Emission Rate (lb/mmBtu)
SO ₃	3.3	3.8	0.005
SO ₂	922.2	1071.9	2.032

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **ESP Inlet 32**

Run No: **20**

Date: **2/9/10**

Start Time: **9:55**

End Time: **10:55**

BAROMETRIC PRESSURE: **29.50**

P_{bar}

VOLUME OF MOISTURE: **51**

V_{lc}

GAS METER Y-FACTOR: **0.98**

Y

PITOT COEFFICIENT: **0.84**

C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		615.315									
	10.0	620.9	0.75	63	61	473	475	169			
	10.0	625.9	0.75	63	61	474	475	170	14.0	5.5	-8.50
	10.0	631.0	0.75	65	62	475	467	171			
	10.0	636.1	0.75	68	63	476	465	169			
	10.0	641.3	0.75	68	64	472	466	172			
	10.0	646.781	0.75	70	65	472	467	175			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	31.466	0.750	64	14.0	5.5	-8.50
	net	net	avg	avg	avg	avg	avg

$P_s =$ 28.88 $V_{m(std)} =$ 30.657 $V_{w(std)} =$ 2.402 %M= 7.27
 $B_{ws} =$ 0.073 $M_d =$ 30.46 $M_s =$ 29.55

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.6	1.8	0.003
SO2	910.8	1058.6	2.007

APPENDIX 3
PLANT OPERATING DATA

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/02/2010 15:05 Through 02/02/2010 16:05

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/02/10	15:05	1,196	365	0.7331
02/02/10	15:06	1,192	365	13.8551
02/02/10	15:07	1,183	365	-0.0431
02/02/10	15:08	1,182	365	0.3841
02/02/10	15:09	1,182	365	0.6011
02/02/10	15:10	1,190	365	0.662
02/02/10	15:11	1,193	365	0.693
02/02/10	15:12	1,197	365	0.719
02/02/10	15:13	1,202	365	0.723
02/02/10	15:14	1,203	365	0.674
02/02/10	15:15	1,203	366	0.614
02/02/10	15:16	1,203	365	0.565
02/02/10	15:17	1,203	365	0.528
02/02/10	15:18	1,204	365	0.514
02/02/10	15:19	1,204	365	0.522
02/02/10	15:20	1,203	365	0.7551
02/02/10	15:21	1,196	365	14.4321
02/02/10	15:22	1,192	365	-0.0201
02/02/10	15:23	1,191	365	0.4051
02/02/10	15:24	1,190	365	0.6351
02/02/10	15:25	1,190	365	0.689
02/02/10	15:26	1,191	365	0.720
02/02/10	15:27	1,193	365	0.735
02/02/10	15:28	1,192	365	0.699
02/02/10	15:29	1,191	365	0.640
02/02/10	15:30	1,185	365	0.586
02/02/10	15:31	1,185	365	0.545
02/02/10	15:32	1,186	365	0.520
02/02/10	15:33	1,184	365	0.517
02/02/10	15:34	1,184	365	0.530
02/02/10	15:35	1,187	365	0.7571
02/02/10	15:36	1,193	365	14.5521
02/02/10	15:37	1,195	365	-0.0251
02/02/10	15:38	1,203	365	0.4121
02/02/10	15:39	1,203	365	0.6381
02/02/10	15:40	1,202	365	0.697
02/02/10	15:41	1,204	365	0.713

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

133

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/02/2010 15:05 Through 02/02/2010 16:05

Time Online Criteria: 1 minute(s)

Source	MPP3		
Parameter (Unit)	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/02/10 15:42	1,197	365	0.689
02/02/10 15:43	1,186	365	0.670
02/02/10 15:44	1,191	365	0.624
02/02/10 15:45	1,191	365	0.573
02/02/10 15:46	1,180	365	0.548
02/02/10 15:47	1,189	365	0.540
02/02/10 15:48	1,198	365	0.551
02/02/10 15:49	1,201	365	0.575
02/02/10 15:50	1,202	365	0.8151
02/02/10 15:51	1,202	365	15.0601
02/02/10 15:52	1,201	365	-0.0271
02/02/10 15:53	1,200	365	0.4071
02/02/10 15:54	1,199	365	0.5981
02/02/10 15:55	1,196	365	0.618
02/02/10 15:56	1,197	365	0.605
02/02/10 15:57	1,199	365	0.606
02/02/10 15:58	1,198	365	0.611
02/02/10 15:59	1,197	364	0.620
02/02/10 16:00	1,196	364	0.609
02/02/10 16:01	1,196	365	0.590
02/02/10 16:02	1,197	365	0.588
02/02/10 16:03	1,202	365	0.595
02/02/10 16:04	1,202	365	0.618
02/02/10 16:05	1,199	365	0.8801

Average	1,195	365	0.616
Minimum	1,180	364	0.514
Maximum	1,204	366	0.735
Summation	72,893	22,264	24.635

Included Data Points	61	61	40
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

134

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/02/2010 17:30 Through 02/02/2010 18:30

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/02/10	17:30	1,174	365	0.682
02/02/10	17:31	1,175	365	0.669
02/02/10	17:32	1,180	365	0.665
02/02/10	17:33	1,186	365	0.653
02/02/10	17:34	1,192	365	0.622
02/02/10	17:35	1,192	365	0.799
02/02/10	17:36	1,190	365	15.666
02/02/10	17:37	1,194	365	-0.829
02/02/10	17:38	1,194	365	0.382
02/02/10	17:39	1,189	365	0.599
02/02/10	17:40	1,191	365	0.662
02/02/10	17:41	1,192	365	0.704
02/02/10	17:42	1,181	365	0.739
02/02/10	17:43	1,183	365	0.757
02/02/10	17:44	1,185	365	0.743
02/02/10	17:45	1,183	365	0.698
02/02/10	17:46	1,185	365	0.637
02/02/10	17:47	1,187	365	0.584
02/02/10	17:48	1,189	365	0.553
02/02/10	17:49	1,189	365	0.549
02/02/10	17:50	1,193	365	0.767
02/02/10	17:51	1,199	365	18.075
02/02/10	17:52	1,200	365	-0.823
02/02/10	17:53	1,193	365	0.424
02/02/10	17:54	1,189	366	0.661
02/02/10	17:55	1,180	365	0.722
02/02/10	17:56	1,179	365	0.745
02/02/10	17:57	1,184	365	0.757
02/02/10	17:58	1,183	365	0.730
02/02/10	17:59	1,182	365	0.675
02/02/10	18:00	1,187	365	0.619
02/02/10	18:01	1,187	365	0.583
02/02/10	18:02	1,184	364	0.568
02/02/10	18:03	1,184	365	0.580
02/02/10	18:04	1,184	365	0.615
02/02/10	18:05	1,190	365	0.878
02/02/10	18:06	1,188	365	18.107

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

135

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/02/2010 17:30 Through 02/02/2010 18:30

Time Online Criteria: 1 minute(s)

Source Parameter (Unit)	MPP3		
	FLOW (Kscf/min)	LOAD (MW)	SO2#MM (lb/mmBTU)
02/02/10 18:07	1,187	365	0.0121
02/02/10 18:08	1,193	365	0.4621
02/02/10 18:09	1,185	364	0.7411
02/02/10 18:10	1,179	365	0.769
02/02/10 18:11	1,183	365	0.716
02/02/10 18:12	1,186	365	0.666
02/02/10 18:13	1,194	364	0.623
02/02/10 18:14	1,203	365	0.611
02/02/10 18:15	1,210	365	0.606
02/02/10 18:16	1,205	365	0.619
02/02/10 18:17	1,204	365	0.655
02/02/10 18:18	1,204	365	0.683
02/02/10 18:19	1,204	365	0.702
02/02/10 18:20	1,183	365	0.9691
02/02/10 18:21	1,194	365	19.3021
02/02/10 18:22	1,193	365	0.0021
02/02/10 18:23	1,191	365	0.4001
02/02/10 18:24	1,198	364	0.6181
02/02/10 18:25	1,208	365	0.673
02/02/10 18:26	1,203	365	0.710
02/02/10 18:27	1,191	365	0.742
02/02/10 18:28	1,189	365	0.770
02/02/10 18:29	1,185	366	0.780
02/02/10 18:30	1,178	365	0.753

Average	1,190	365	0.673
Minimum	1,174	364	0.549
Maximum	1,210	366	0.780
Summation	72,567	22,263	27.589
Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

136

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/02/2010 19:44 Through 02/02/2010 20:44

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/02/10	19:44	1,202	366	0.736
02/02/10	19:45	1,197	365	0.764
02/02/10	19:46	1,191	365	0.751
02/02/10	19:47	1,176	363	0.754
02/02/10	19:48	1,170	363	0.674
02/02/10	19:49	1,164	364	0.681
02/02/10	19:50	1,164	364	0.944i
02/02/10	19:51	1,169	365	18.735i
02/02/10	19:52	1,174	365	0.013i
02/02/10	19:53	1,175	365	0.419i
02/02/10	19:54	1,177	365	0.634i
02/02/10	19:55	1,176	365	0.686
02/02/10	19:56	1,175	365	0.708
02/02/10	19:57	1,177	365	0.718
02/02/10	19:58	1,178	365	0.686
02/02/10	19:59	1,191	365	0.646
02/02/10	20:00	1,193	365	0.619
02/02/10	20:01	1,196	365	0.642
02/02/10	20:02	1,191	365	0.675
02/02/10	20:03	1,188	365	0.722
02/02/10	20:04	1,166	365	0.759
02/02/10	20:05	1,167	365	1.066i
02/02/10	20:06	1,168	366	21.454i
02/02/10	20:07	1,185	365	0.038i
02/02/10	20:08	1,191	365	0.447i
02/02/10	20:09	1,194	365	0.655i
02/02/10	20:10	1,204	365	0.699
02/02/10	20:11	1,201	365	0.707
02/02/10	20:12	1,196	365	0.698
02/02/10	20:13	1,196	366	0.686
02/02/10	20:14	1,189	365	0.692
02/02/10	20:15	1,175	365	0.711
02/02/10	20:16	1,174	365	0.741
02/02/10	20:17	1,174	365	0.731
02/02/10	20:18	1,181	365	0.680
02/02/10	20:19	1,181	365	0.654
02/02/10	20:20	1,186	365	0.899i

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

137

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/02/2010 19:44 Through 02/02/2010 20:44

Time Online Criteria: 1 minute(s)

Source	MPP3		
Parameter (Unit)	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/02/10 20:21	1,198	365	16.7931
02/02/10 20:22	1,205	365	0.0051
02/02/10 20:23	1,208	366	0.4851
02/02/10 20:24	1,211	365	0.7551
02/02/10 20:25	1,216	365	0.832
02/02/10 20:26	1,215	365	0.836
02/02/10 20:27	1,214	365	0.803
02/02/10 20:28	1,207	365	0.727
02/02/10 20:29	1,199	365	0.650
02/02/10 20:30	1,186	365	0.601
02/02/10 20:31	1,179	365	0.579
02/02/10 20:32	1,172	365	0.592
02/02/10 20:33	1,159	365	0.627
02/02/10 20:34	1,160	365	0.673
02/02/10 20:35	1,162	365	0.9621
02/02/10 20:36	1,166	365	29.7071
02/02/10 20:37	1,183	365	0.0331
02/02/10 20:38	1,191	365	0.5181
02/02/10 20:39	1,196	365	0.8011
02/02/10 20:40	1,192	365	0.809
02/02/10 20:41	1,190	365	0.754
02/02/10 20:42	1,181	365	0.687
02/02/10 20:43	1,180	365	0.640
02/02/10 20:44	1,179	365	0.639

Average	1,185	365	0.699
Minimum	1,159	363	0.579
Maximum	1,216	366	0.836
Summation	72,301	22,263	28.669

Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

138

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/03/2010 08:45 Through 02/03/2010 09:45

Time Online Criteria: 1 minute(s)

Source Parameter (Unit)	MPP3		
	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/03/10 08:45	1,161	365	0.583
02/03/10 08:46	1,162	365	0.616
02/03/10 08:47	1,169	365	0.651
02/03/10 08:48	1,171	365	0.696
02/03/10 08:49	1,181	365	0.734
02/03/10 08:50	1,182	365	1.038
02/03/10 08:51	1,181	365	20.647
02/03/10 08:52	1,181	365	0.018
02/03/10 08:53	1,181	365	0.424
02/03/10 08:54	1,176	365	0.613
02/03/10 08:55	1,172	365	0.606
02/03/10 08:56	1,164	365	0.584
02/03/10 08:57	1,163	365	0.580
02/03/10 08:58	1,162	365	0.600
02/03/10 08:59	1,163	365	0.634
02/03/10 09:00	1,165	365	0.669
02/03/10 09:01	1,173	365	0.694
02/03/10 09:02	1,174	365	0.725
02/03/10 09:03	1,174	366	0.748
02/03/10 09:04	1,168	365	0.753
02/03/10 09:05	1,163	365	0.989
02/03/10 09:06	1,143	365	19.332
02/03/10 09:07	1,144	365	0.002
02/03/10 09:08	1,145	365	0.369
02/03/10 09:09	1,154	365	0.536
02/03/10 09:10	1,162	365	0.560
02/03/10 09:11	1,169	365	0.573
02/03/10 09:12	1,162	365	0.609
02/03/10 09:13	1,165	365	0.651
02/03/10 09:14	1,173	365	0.696
02/03/10 09:15	1,179	365	0.728
02/03/10 09:16	1,182	365	0.762
02/03/10 09:17	1,185	365	0.776
02/03/10 09:18	1,180	365	0.745
02/03/10 09:19	1,179	365	0.727
02/03/10 09:20	1,179	365	0.930
02/03/10 09:21	1,171	365	17.779

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

139

Average Data
 Plant: C.D. MCINTOSH JR.
 Interval: 1 Minute
 Type: Roll

Report Period: 02/03/2010 08:45 Through 02/03/2010 09:45
 Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/03/10	09:22	1,166	365	-0.0121
02/03/10	09:23	1,165	365	0.3511
02/03/10	09:24	1,162	365	0.5611
02/03/10	09:25	1,162	365	0.618
02/03/10	09:26	1,162	365	0.652
02/03/10	09:27	1,170	365	0.700
02/03/10	09:28	1,171	365	0.732
02/03/10	09:29	1,170	365	0.776
02/03/10	09:30	1,169	365	0.798
02/03/10	09:31	1,167	365	0.778
02/03/10	09:32	1,163	365	0.722
02/03/10	09:33	1,162	365	0.664
02/03/10	09:34	1,155	365	0.598
02/03/10	09:35	1,158	365	0.7831
02/03/10	09:36	1,160	365	13.7451
02/03/10	09:37	1,163	365	-0.0101
02/03/10	09:38	1,169	365	0.3961
02/03/10	09:39	1,175	365	0.6251
02/03/10	09:40	1,180	365	0.702
02/03/10	09:41	1,181	365	0.736
02/03/10	09:42	1,181	365	0.752
02/03/10	09:43	1,185	365	0.783
02/03/10	09:44	1,175	365	0.762
02/03/10	09:45	1,164	365	0.736

Average	1,169	365	0.688
Minimum	1,143	365	0.560
Maximum	1,185	366	0.798
Summation	71,293	22,266	28.209

Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/03/2010 12:55 Through 02/03/2010 13:55

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/03/10	12:55	1,165	365	0.526
02/03/10	12:56	1,162	365	0.561
02/03/10	12:57	1,165	365	0.591
02/03/10	12:58	1,165	365	0.618
02/03/10	12:59	1,170	365	0.631
02/03/10	13:00	1,170	365	0.612
02/03/10	13:01	1,170	365	0.572
02/03/10	13:02	1,171	365	0.524
02/03/10	13:03	1,169	365	0.494
02/03/10	13:04	1,169	365	0.476
02/03/10	13:05	1,171	365	0.6661
02/03/10	13:06	1,172	365	10.6761
02/03/10	13:07	1,175	365	-0.0271
02/03/10	13:08	1,174	365	0.3411
02/03/10	13:09	1,176	365	0.5221
02/03/10	13:10	1,184	365	0.560
02/03/10	13:11	1,178	365	0.584
02/03/10	13:12	1,175	365	0.601
02/03/10	13:13	1,178	365	0.584
02/03/10	13:14	1,174	365	0.538
02/03/10	13:15	1,168	366	0.488
02/03/10	13:16	1,175	365	0.454
02/03/10	13:17	1,177	365	0.438
02/03/10	13:18	1,178	365	0.452
02/03/10	13:19	1,178	365	0.479
02/03/10	13:20	1,182	365	0.7161
02/03/10	13:21	1,183	365	11.8031
02/03/10	13:22	1,178	364	-0.0211
02/03/10	13:23	1,174	365	0.3761
02/03/10	13:24	1,172	365	0.5721
02/03/10	13:25	1,160	365	0.610
02/03/10	13:26	1,160	365	0.614
02/03/10	13:27	1,161	365	0.568
02/03/10	13:28	1,162	365	0.508
02/03/10	13:29	1,162	365	0.468
02/03/10	13:30	1,166	364	0.473
02/03/10	13:31	1,170	365	0.500

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

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Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/03/2010 12:55 Through 02/03/2010 13:55

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/03/10	13:32	1,172	365	0.528
02/03/10	13:33	1,172	365	0.546
02/03/10	13:34	1,173	365	0.569
02/03/10	13:35	1,175	365	0.8461
02/03/10	13:36	1,178	366	14.3131
02/03/10	13:37	1,180	365	-0.0091
02/03/10	13:38	1,182	365	0.3971
02/03/10	13:39	1,177	364	0.5421
02/03/10	13:40	1,171	364	0.533
02/03/10	13:41	1,164	365	0.499
02/03/10	13:42	1,160	365	0.489
02/03/10	13:43	1,161	365	0.505
02/03/10	13:44	1,165	365	0.529
02/03/10	13:45	1,169	365	0.562
02/03/10	13:46	1,173	365	0.593
02/03/10	13:47	1,178	365	0.626
02/03/10	13:48	1,180	365	0.645
02/03/10	13:49	1,180	364	0.643
02/03/10	13:50	1,180	364	0.8061
02/03/10	13:51	1,182	365	13.8851
02/03/10	13:52	1,188	365	-0.0191
02/03/10	13:53	1,188	365	0.3171
02/03/10	13:54	1,184	365	0.4871
02/03/10	13:55	1,182	365	0.545

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Average	1,173	365	0.545
Minimum	1,160	364	0.438
Maximum	1,188	366	0.645
Summation	71,553	22,261	22.336

Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/03/2010 17:25 Through 02/03/2010 18:25

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/03/10	17:25	1,144	364	0.744
02/03/10	17:26	1,146	365	0.757
02/03/10	17:27	1,148	365	0.727
02/03/10	17:28	1,152	365	0.699
02/03/10	17:29	1,159	365	0.669
02/03/10	17:30	1,162	365	0.639
02/03/10	17:31	1,171	365	0.609
02/03/10	17:32	1,175	365	0.622
02/03/10	17:33	1,179	365	0.652
02/03/10	17:34	1,190	365	0.687
02/03/10	17:35	1,190	365	0.972
02/03/10	17:36	1,190	365	17.989
02/03/10	17:37	1,184	365	0.024
02/03/10	17:38	1,181	365	0.454
02/03/10	17:39	1,178	365	0.688
02/03/10	17:40	1,173	365	0.702
02/03/10	17:41	1,175	365	0.668
02/03/10	17:42	1,179	365	0.642
02/03/10	17:43	1,180	365	0.659
02/03/10	17:44	1,182	365	0.667
02/03/10	17:45	1,187	365	0.644
02/03/10	17:46	1,185	365	0.644
02/03/10	17:47	1,185	366	0.673
02/03/10	17:48	1,194	365	0.704
02/03/10	17:49	1,194	366	0.733
02/03/10	17:50	1,191	365	1.007
02/03/10	17:51	1,187	365	17.953
02/03/10	17:52	1,184	365	0.009
02/03/10	17:53	1,181	365	0.398
02/03/10	17:54	1,180	365	0.598
02/03/10	17:55	1,187	365	0.612
02/03/10	17:56	1,187	365	0.623
02/03/10	17:57	1,200	365	0.658
02/03/10	17:58	1,199	365	0.684
02/03/10	17:59	1,198	365	0.710
02/03/10	18:00	1,197	365	0.735
02/03/10	18:01	1,194	365	0.725

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

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Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/03/2010 17:25 Through 02/03/2010 18:25

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/03/10	18:02	1,192	365	0.688
02/03/10	18:03	1,189	365	0.659
02/03/10	18:04	1,189	365	0.644
02/03/10	18:05	1,189	365	0.8581
02/03/10	18:06	1,194	365	14.7211
02/03/10	18:07	1,195	365	-0.0021
02/03/10	18:08	1,192	364	0.4151
02/03/10	18:09	1,191	365	0.6451
02/03/10	18:10	1,190	364	0.716
02/03/10	18:11	1,181	365	0.738
02/03/10	18:12	1,179	365	0.718
02/03/10	18:13	1,179	364	0.686
02/03/10	18:14	1,176	365	0.649
02/03/10	18:15	1,175	365	0.608
02/03/10	18:16	1,173	365	0.586
02/03/10	18:17	1,174	365	0.608
02/03/10	18:18	1,172	365	0.647
02/03/10	18:19	1,168	364	0.683
02/03/10	18:20	1,168	365	1.0011
02/03/10	18:21	1,161	364	18.4961
02/03/10	18:22	1,152	364	0.0311
02/03/10	18:23	1,151	365	0.4351
02/03/10	18:24	1,150	364	0.6191
02/03/10	18:25	1,149	364	0.614

Average	1,179	365	0.672
Minimum	1,144	364	0.586
Maximum	1,200	366	0.757
Summation	71,897	22,258	27.532

Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 08:30 Through 02/08/2010 09:30

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10	08:30	1,051	320	
02/08/10	08:31	1,047	320	0.318
02/08/10	08:32	1,038	320	0.335
02/08/10	08:33	1,045	320	0.348
02/08/10	08:34	1,049	320	0.364
02/08/10	08:35	1,050	320	0.6031
02/08/10	08:36	1,058	320	6.0901
02/08/10	08:37	1,065	320	-0.3221
02/08/10	08:38	1,064	320	0.1511
02/08/10	08:39	1,071	320	0.2501
02/08/10	08:40	1,080	320	0.269
02/08/10	08:41	1,069	320	0.286
02/08/10	08:42	1,069	320	0.299
02/08/10	08:43	1,069	320	0.315
02/08/10	08:44	1,054	320	0.330
02/08/10	08:45	1,049	319	0.339
02/08/10	08:46	1,046	319	0.347
02/08/10	08:47	1,043	320	0.361
02/08/10	08:48	1,040	320	0.339
02/08/10	08:49	1,053	319	0.292
02/08/10	08:50	1,053	319	0.4291
02/08/10	08:51	1,052	319	3.4061
02/08/10	08:52	1,049	320	-0.1321
02/08/10	08:53	1,049	320	0.1511
02/08/10	08:54	1,047	320	0.2571
02/08/10	08:55	1,049	319	0.281
02/08/10	08:56	1,052	319	0.292
02/08/10	08:57	1,052	319	0.304
02/08/10	08:58	1,052	319	0.315
02/08/10	08:59	1,052	319	0.329
02/08/10	09:00	1,051	319	0.332
02/08/10	09:01	1,050	319	0.332
02/08/10	09:02	1,054	319	0.302
02/08/10	09:03	1,056	319	0.274
02/08/10	09:04	1,050	320	0.269
02/08/10	09:05	1,049	319	0.4461
02/08/10	09:06	1,047	319	4.0341

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

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Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 08:30 Through 02/08/2010 09:30

Time Online Criteria: 1 minute(s)

Source Parameter (Unit)	MPP3		
	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10 09:07	1,047	319	-0.1251
02/08/10 09:08	1,047	320	0.1741
02/08/10 09:09	1,045	319	0.2941
02/08/10 09:10	1,047	319	0.312
02/08/10 09:11	1,047	320	0.325
02/08/10 09:12	1,040	319	0.334
02/08/10 09:13	1,046	320	0.335
02/08/10 09:14	1,052	320	0.325
02/08/10 09:15	1,053	320	0.295
02/08/10 09:16	1,055	320	0.277
02/08/10 09:17	1,057	319	0.272
02/08/10 09:18	1,049	320	0.269
02/08/10 09:19	1,049	320	0.272
02/08/10 09:20	1,050	320	0.4441
02/08/10 09:21	1,054	320	4.1531
02/08/10 09:22	1,057	320	-0.1251
02/08/10 09:23	1,059	320	0.1741
02/08/10 09:24	1,060	320	0.2971
02/08/10 09:25	1,064	320	0.321
02/08/10 09:26	1,066	320	0.333
02/08/10 09:27	1,068	320	0.339
02/08/10 09:28	1,076	320	0.344
02/08/10 09:29	1,077	320	0.321
02/08/10 09:30	1,078	320	0.291

Average	1,054	320	0.313
Minimum	1,038	319	0.269
Maximum	1,080	320	0.364
Summation	64,317	19,499	12.537
Included Data Points	61	61	40
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

146

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 10:20 Through 02/08/2010 11:20

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10	10:20	1,070	320	0.4011
02/08/10	10:21	1,072	319	3.4061
02/08/10	10:22	1,064	319	-0.1621
02/08/10	10:23	1,065	319	0.2001
02/08/10	10:24	1,066	319	0.3101
02/08/10	10:25	1,059	320	0.345
02/08/10	10:26	1,063	320	0.360
02/08/10	10:27	1,074	320	0.342
02/08/10	10:28	1,078	320	0.312
02/08/10	10:29	1,080	320	0.295
02/08/10	10:30	1,084	320	0.285
02/08/10	10:31	1,080	320	0.278
02/08/10	10:32	1,072	320	0.287
02/08/10	10:33	1,071	320	0.300
02/08/10	10:34	1,072	320	0.308
02/08/10	10:35	1,082	320	0.4821
02/08/10	10:36	1,088	320	7.6191
02/08/10	10:37	1,092	319	-0.1591
02/08/10	10:38	1,074	319	0.1831
02/08/10	10:39	1,069	319	0.3311
02/08/10	10:40	1,061	320	0.360
02/08/10	10:41	1,052	319	0.336
02/08/10	10:42	1,060	320	0.308
02/08/10	10:43	1,070	320	0.297
02/08/10	10:44	1,067	320	0.294
02/08/10	10:45	1,069	320	0.294
02/08/10	10:46	1,078	320	0.305
02/08/10	10:47	942	319	0.323
02/08/10	10:48	823	319	0.330
02/08/10	10:49	823	319	0.335
02/08/10	10:50	301	320	0.5161
02/08/10	10:51	-1	320	8.2471
02/08/10	10:52	-1	319	-0.1421
02/08/10	10:53	631	319	0.2001
02/08/10	10:54	1,054	319	0.3401
02/08/10	10:55	1,055	319	0.334
02/08/10	10:56	1,056	319	0.311

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

147

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 10:20 Through 02/08/2010 11:20

Time Online Criteria: 1 minute(s)

Source	MPP3		
Parameter (Unit)	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10 10:57	1,057	319	0.302
02/08/10 10:58	1,059	319	0.307
02/08/10 10:59	1,060	319	0.313
02/08/10 11:00	1,061	320	0.315
02/08/10 11:01	1,060	320	0.312
02/08/10 11:02	1,058	319	0.311
02/08/10 11:03	1,054	319	0.321
02/08/10 11:04	1,042	319	0.333
02/08/10 11:05	1,037	319	0.5311
02/08/10 11:06	1,034	319	0.4561
02/08/10 11:07	1,032	319	-0.1401
02/08/10 11:08	1,033	319	0.2071
02/08/10 11:09	1,036	319	0.3291
02/08/10 11:10	1,042	319	0.313
02/08/10 11:11	1,051	320	0.303
02/08/10 11:12	1,054	320	0.297
02/08/10 11:13	1,047	320	0.305
02/08/10 11:14	1,044	320	0.313
02/08/10 11:15	1,039	320	0.319
02/08/10 11:16	1,038	320	0.330
02/08/10 11:17	1,039	320	0.338
02/08/10 11:18	1,048	320	0.347
02/08/10 11:19	1,048	320	0.354
02/08/10 11:20	1,062	320	0.5511

Average	996	320	0.317
Minimum	-1	319	0.278
Maximum	1,092	320	0.360
Summation	60,750	19,492	12.672
Included Data Points	61	61	40
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

148

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 12:20 Through 02/08/2010 13:20

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10	12:20	1,053	319	0.5641
02/08/10	12:21	1,057	320	6.9021
02/08/10	12:22	1,063	320	-0.1001
02/08/10	12:23	1,064	320	0.1721
02/08/10	12:24	1,063	320	0.2881
02/08/10	12:25	1,063	320	0.322
02/08/10	12:26	1,063	320	0.336
02/08/10	12:27	1,060	320	0.345
02/08/10	12:28	1,059	319	0.346
02/08/10	12:29	1,053	319	0.349
02/08/10	12:30	1,051	319	0.358
02/08/10	12:31	1,050	320	0.370
02/08/10	12:32	1,052	320	0.374
02/08/10	12:33	1,054	320	0.353
02/08/10	12:34	1,064	320	0.326
02/08/10	12:35	1,066	320	0.3951
02/08/10	12:36	1,067	320	4.3031
02/08/10	12:37	1,068	320	-0.1551
02/08/10	12:38	1,068	320	0.1921
02/08/10	12:39	1,069	320	0.2971
02/08/10	12:40	1,079	320	0.331
02/08/10	12:41	1,081	319	0.343
02/08/10	12:42	1,088	320	0.356
02/08/10	12:43	1,086	320	0.359
02/08/10	12:44	1,081	320	0.364
02/08/10	12:45	1,074	320	0.358
02/08/10	12:46	1,067	320	0.354
02/08/10	12:47	1,066	320	0.326
02/08/10	12:48	1,063	320	0.306
02/08/10	12:49	1,066	320	0.300
02/08/10	12:50	1,067	320	0.3921
02/08/10	12:51	1,067	320	4.7811
02/08/10	12:52	1,065	320	-0.1421
02/08/10	12:53	1,067	320	0.1971
02/08/10	12:54	1,064	320	0.2981
02/08/10	12:55	1,053	320	0.327
02/08/10	12:56	1,048	320	0.342

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

149

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 12:20 Through 02/08/2010 13:20

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)	
02/08/10 12:57	1,043	320	0.358	
02/08/10 12:58	1,040	320	0.376	
02/08/10 12:59	1,041	320	0.382	
02/08/10 13:00	1,054	320	0.373	
02/08/10 13:01	1,057	320	0.344	
02/08/10 13:02	1,060	320	0.318	
02/08/10 13:03	1,056	320	0.302	
02/08/10 13:04	1,058	319	0.299	
02/08/10 13:05	1,062	319	0.4051	
02/08/10 13:06	1,062	319	4.6611	
02/08/10 13:07	1,062	319	-0.1361	
02/08/10 13:08	1,063	320	0.2081	
02/08/10 13:09	1,049	320	0.3031	
02/08/10 13:10	1,045	319	0.328	
02/08/10 13:11	1,045	319	0.345	
02/08/10 13:12	1,043	319	0.362	
02/08/10 13:13	1,044	319	0.369	
02/08/10 13:14	1,052	319	0.370	
02/08/10 13:15	1,054	319		
02/08/10 13:16	1,055	319		
02/08/10 13:17	1,064	319		
02/08/10 13:18	1,064	319		
02/08/10 13:19	1,061	319		
02/08/10 13:20	1,061	319		

Average	1,060	320	0.345
Minimum	1,040	319	0.299
Maximum	1,088	320	0.382
Summation	64,684	19,500	12.071
Included Data Points	61	61	35
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

150

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 15:30 Through 02/08/2010 16:30

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10	15:30	1,069	319	0.365
02/08/10	15:31	1,068	319	0.341
02/08/10	15:32	1,077	319	0.312
02/08/10	15:33	1,074	319	0.294
02/08/10	15:34	1,068	319	0.289
02/08/10	15:35	1,067	320	0.417
02/08/10	15:36	1,068	320	2.719
02/08/10	15:37	1,068	320	-0.064
02/08/10	15:38	1,070	320	0.215
02/08/10	15:39	1,071	319	0.299
02/08/10	15:40	1,072	319	0.312
02/08/10	15:41	1,065	319	0.328
02/08/10	15:42	1,058	319	0.339
02/08/10	15:43	1,054	319	0.857
02/08/10	15:44	1,058	320	0.359
02/08/10	15:45	1,060	320	0.358
02/08/10	15:46	1,060	320	0.347
02/08/10	15:47	1,069	320	0.327
02/08/10	15:48	1,074	319	0.320
02/08/10	15:49	1,074	319	0.318
02/08/10	15:50	1,073	320	0.433
02/08/10	15:51	1,068	320	2.779
02/08/10	15:52	1,063	320	-0.090
02/08/10	15:53	1,064	319	0.192
02/08/10	15:54	1,067	319	0.073
02/08/10	15:55	1,066	319	0.285
02/08/10	15:56	1,066	319	0.297
02/08/10	15:57	1,068	320	0.312
02/08/10	15:58	1,068	320	0.328
02/08/10	15:59	1,059	320	0.331
02/08/10	16:00	1,064	320	0.323
02/08/10	16:01	1,072	320	0.321
02/08/10	16:02	1,070	320	0.328
02/08/10	16:03	1,072	320	0.338
02/08/10	16:04	1,075	320	0.341
02/08/10	16:05	1,063	319	0.499
02/08/10	16:06	1,065	320	3.825

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

151

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 15:30 Through 02/08/2010 16:30

Time Online Criteria: 1 minute(s)

Source Parameter (Unit)	MPP3		
	FLOW (Kscf/min)	LOAD (MW)	SO2#MM (lb/mmBTU)
02/08/10 16:07	1,068	320	-0.0751
02/08/10 16:08	1,066	320	0.2101
02/08/10 16:09	1,065	320	0.2851
02/08/10 16:10	1,074	320	0.296
02/08/10 16:11	1,077	320	0.302
02/08/10 16:12	1,079	320	0.315
02/08/10 16:13	1,083	320	0.327
02/08/10 16:14	1,088	320	0.332
02/08/10 16:15	1,093	320	0.337
02/08/10 16:16	1,085	320	0.354
02/08/10 16:17	1,080	320	0.360
02/08/10 16:18	1,080	320	0.349
02/08/10 16:19	1,080	320	0.335
02/08/10 16:20	1,080	320	0.4811
02/08/10 16:21	1,075	320	3.3471
02/08/10 16:22	1,077	320	-0.0801
02/08/10 16:23	1,073	320	0.2121
02/08/10 16:24	1,063	320	0.2981
02/08/10 16:25	1,062	320	0.308
02/08/10 16:26	1,061	320	0.307
02/08/10 16:27	1,067	320	0.305
02/08/10 16:28	1,074	320	0.311
02/08/10 16:29	1,079	320	0.323
02/08/10 16:30	1,078	320	0.340

Average	1,070	320	0.338
Minimum	1,054	319	0.285
Maximum	1,093	320	0.857
Summation	65,294	19,503	13.871
Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

152

Average Data
 Plant: C.D. MCINTOSH JR.
 Interval: 1 Minute
 Type: Roll

Report Period: 02/08/2010 17:07 Through 02/08/2010 18:07
 Time Online Criteria: 1 minute(s)

Source		MPP3		
		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10	17:07	1,068	319	-0.120i
02/08/10	17:08	1,062	319	0.165i
02/08/10	17:09	1,057	320	0.281i
02/08/10	17:10	1,056	320	0.317
02/08/10	17:11	1,057	320	0.334
02/08/10	17:12	1,059	320	0.359
02/08/10	17:13	1,061	319	0.369
02/08/10	17:14	1,062	319	0.366
02/08/10	17:15	1,063	319	0.357
02/08/10	17:16	1,065	319	0.330
02/08/10	17:17	1,067	320	0.308
02/08/10	17:18	1,071	320	0.296
02/08/10	17:19	1,073	320	0.296
02/08/10	17:20	1,073	320	0.488i
02/08/10	17:21	1,071	319	6.275i
02/08/10	17:22	1,078	320	-0.103i
02/08/10	17:23	1,081	320	0.173i
02/08/10	17:24	1,084	320	0.291i
02/08/10	17:25	1,086	320	0.320
02/08/10	17:26	1,090	320	0.338
02/08/10	17:27	1,082	320	0.348
02/08/10	17:28	1,083	320	0.359
02/08/10	17:29	1,085	320	0.367
02/08/10	17:30	1,077	320	0.355
02/08/10	17:31	1,075	320	0.330
02/08/10	17:32	1,084	320	0.313
02/08/10	17:33	1,085	320	0.309
02/08/10	17:34	1,084	320	0.312
02/08/10	17:35	1,083	320	0.531i
02/08/10	17:36	1,080	320	5.160i
02/08/10	17:37	1,073	320	-0.084i
02/08/10	17:38	1,071	320	0.181i
02/08/10	17:39	1,070	320	0.288i
02/08/10	17:40	1,075	320	0.326
02/08/10	17:41	1,072	320	0.353
02/08/10	17:42	1,069	320	0.362
02/08/10	17:43	1,072	320	0.374

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

153

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/08/2010 17:07 Through 02/08/2010 18:07

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/08/10	17:44	1,070	320	0.382
02/08/10	17:45	1,067	320	0.358
02/08/10	17:46	1,064	320	0.323
02/08/10	17:47	1,063	320	0.308
02/08/10	17:48	1,063	319	0.305
02/08/10	17:49	1,071	319	0.321
02/08/10	17:50	1,071	319	0.549
02/08/10	17:51	1,073	319	5.856
02/08/10	17:52	1,079	319	-0.087
02/08/10	17:53	1,079	319	0.188
02/08/10	17:54	1,078	319	0.312
02/08/10	17:55	1,073	319	0.340
02/08/10	17:56	1,076	320	0.351
02/08/10	17:57	1,077	320	0.363
02/08/10	17:58	1,079	320	0.377
02/08/10	17:59	1,080	320	0.370
02/08/10	18:00	1,083	320	0.361
02/08/10	18:01	1,080	320	0.342
02/08/10	18:02	1,078	320	0.319
02/08/10	18:03	1,077	320	0.312
02/08/10	18:04	1,076	320	0.324
02/08/10	18:05	1,072	320	0.583
02/08/10	18:06	1,074	320	5.408
02/08/10	18:07	1,074	320	-0.077

Average	1,073	320	0.339
Minimum	1,056	319	0.296
Maximum	1,090	320	0.382
Summation	65,481	19,505	13.554
Included Data Points	61	61	40
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

154

Average Data
 Plant: C.D. MCINTOSH JR.
 Interval: 1 Minute
 Type: Roll

Report Period: 02/09/2010 06:18 Through 02/09/2010 07:18
 Time Online Criteria: 1 minute(s)

Source		MPP3		
		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10	06:18	945	271	0.427
02/09/10	06:19	945	271	0.401
02/09/10	06:20	951	271	0.499
02/09/10	06:21	948	271	4.751
02/09/10	06:22	944	271	-0.002
02/09/10	06:23	938	270	0.279
02/09/10	06:24	935	271	0.309
02/09/10	06:25	937	271	0.432
02/09/10	06:26	947	271	0.446
02/09/10	06:27	947	271	0.457
02/09/10	06:28	946	271	0.468
02/09/10	06:29	955	271	0.477
02/09/10	06:30	952	271	0.488
02/09/10	06:31	948	271	0.478
02/09/10	06:32	951	271	0.437
02/09/10	06:33	952	271	0.384
02/09/10	06:34	949	271	0.360
02/09/10	06:35	953	271	0.501
02/09/10	06:36	957	271	7.410
02/09/10	06:37	955	271	-0.141
02/09/10	06:38	957	271	0.223
02/09/10	06:39	959	271	0.375
02/09/10	06:40	955	271	0.411
02/09/10	06:41	953	271	0.424
02/09/10	06:42	952	271	0.434
02/09/10	06:43	953	271	0.447
02/09/10	06:44	953	271	0.451
02/09/10	06:45	951	271	0.448
02/09/10	06:46	949	271	0.440
02/09/10	06:47	947	271	0.410
02/09/10	06:48	939	271	0.382
02/09/10	06:49	939	271	0.374
02/09/10	06:50	936	271	0.537
02/09/10	06:51	942	271	7.739
02/09/10	06:52	944	271	-0.148
02/09/10	06:53	944	271	0.228
02/09/10	06:54	950	271	0.380

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F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/09/2010 06:18 Through 02/09/2010 07:18

Time Online Criteria: 1 minute(s)

Source	MPP3		
Parameter (Unit)	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10 06:55	960	271	0.414
02/09/10 06:56	961	271	0.427
02/09/10 06:57	962	271	0.426
02/09/10 06:58	969	271	0.434
02/09/10 06:59	966	271	0.445
02/09/10 07:00	961	271	0.419
02/09/10 07:01	961	271	0.388
02/09/10 07:02	956	271	0.360
02/09/10 07:03	949	271	0.353
02/09/10 07:04	942	271	0.359
02/09/10 07:05	935	271	0.5161
02/09/10 07:06	929	271	8.2171
02/09/10 07:07	934	271	-0.1421
02/09/10 07:08	936	271	0.2281
02/09/10 07:09	935	271	0.3631
02/09/10 07:10	938	271	0.396
02/09/10 07:11	940	271	0.409
02/09/10 07:12	934	271	0.419
02/09/10 07:13	940	270	0.424
02/09/10 07:14	944	270	0.409
02/09/10 07:15	945	271	0.365
02/09/10 07:16	944	271	0.338
02/09/10 07:17	943	271	0.330
02/09/10 07:18	937	270	0.338

Average	948	271	0.413
Minimum	929	270	0.330
Maximum	969	271	0.488
Summation	57,799	16,527	16.929

Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

156

Average Data

Plant: C.D. MCINTOSH JR.
Interval: 1 Minute
Type: Roll

Report Period: 02/09/2010 08:05 Through 02/09/2010 09:05
Time Online Criteria: 1 minute(s)

Source Parameter (Unit)		MPP3		
		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10	08:05	931	271	0.5501
02/09/10	08:06	931	271	4.9601
02/09/10	08:07	932	271	-0.1021
02/09/10	08:08	936	271	0.2481
02/09/10	08:09	940	271	0.3671
02/09/10	08:10	939	271	0.354
02/09/10	08:11	941	271	0.308
02/09/10	08:12	943	271	0.279
02/09/10	08:13	943	271	0.278
02/09/10	08:14	944	271	0.290
02/09/10	08:15	945	271	0.301
02/09/10	08:16	944	271	0.314
02/09/10	08:17	945	271	0.328
02/09/10	08:18	948	271	0.343
02/09/10	08:19	948	271	0.354
02/09/10	08:20	948	271	0.5571
02/09/10	08:21	948	271	4.9001
02/09/10	08:22	944	271	-0.1041
02/09/10	08:23	939	271	0.2431
02/09/10	08:24	937	271	0.3671
02/09/10	08:25	937	271	0.358
02/09/10	08:26	936	271	0.324
02/09/10	08:27	935	271	0.304
02/09/10	08:28	939	271	0.303
02/09/10	08:29	939	271	0.311
02/09/10	08:30	938	271	0.320
02/09/10	08:31	938	271	0.340
02/09/10	08:32	939	271	0.342
02/09/10	08:33	937	271	0.350
02/09/10	08:34	938	271	0.355
02/09/10	08:35	940	271	0.5621
02/09/10	08:36	944	271	4.7811
02/09/10	08:37	945	271	-0.0861
02/09/10	08:38	941	271	0.2661
02/09/10	08:39	939	271	0.3601
02/09/10	08:40	937	271	0.350
02/09/10	08:41	939	271	0.307

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

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Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/09/2010 08:05 Through 02/09/2010 09:05

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10	08:42	936	271	0.293
02/09/10	08:43	934	271	0.296
02/09/10	08:44	935	271	0.305
02/09/10	08:45	935	271	0.303
02/09/10	08:46	935	271	0.297
02/09/10	08:47	945	271	0.312
02/09/10	08:48	947	271	0.327
02/09/10	08:49	947	271	0.342
02/09/10	08:50	947	271	0.5461
02/09/10	08:51	952	271	4.0641
02/09/10	08:52	955	271	-0.0871
02/09/10	08:53	957	270	0.2571
02/09/10	08:54	962	271	0.3791
02/09/10	08:55	961	271	0.402
02/09/10	08:56	959	271	0.378
02/09/10	08:57	958	271	0.323
02/09/10	08:58	959	271	0.278
02/09/10	08:59	965	271	0.269
02/09/10	09:00	965	271	0.275
02/09/10	09:01	964	271	0.281
02/09/10	09:02	956	271	0.297
02/09/10	09:03	954	271	0.311
02/09/10	09:04	950	271	0.325
02/09/10	09:05	950	271	0.5171

Average	945	271	0.318
Minimum	931	270	0.269
Maximum	965	271	0.402
Summation	57,615	16,530	12.727

Included Data Points	61	61	40
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

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Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/09/2010 09:55 Through 02/09/2010 10:55

Time Online Criteria: 1 minute(s)

Source	MPP3		
Parameter (Unit)	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10 09:55	951	271	0.337
02/09/10 09:56	944	271	0.346
02/09/10 09:57	944	271	0.362
02/09/10 09:58	952	271	0.363
02/09/10 09:59	945	271	0.368
02/09/10 10:00	940	270	0.375
02/09/10 10:01	939	270	0.383
02/09/10 10:02	939	271	0.376
02/09/10 10:03	940	271	0.336
02/09/10 10:04	942	271	0.294
02/09/10 10:05	942	271	0.373
02/09/10 10:06	934	271	4.452
02/09/10 10:07	933	271	-0.197
02/09/10 10:08	933	271	0.157
02/09/10 10:09	938	270	0.279
02/09/10 10:10	942	270	0.303
02/09/10 10:11	945	271	
02/09/10 10:12	950	271	
02/09/10 10:13	952	271	
02/09/10 10:14	954	271	
02/09/10 10:15	953	271	
02/09/10 10:16	951	271	
02/09/10 10:17	948	271	
02/09/10 10:18	950	271	
02/09/10 10:19	949	270	
02/09/10 10:20	948	270	
02/09/10 10:21	948	270	
02/09/10 10:22	946	270	
02/09/10 10:23	947	270	
02/09/10 10:24	948	270	
02/09/10 10:25	950	270	
02/09/10 10:26	950	270	
02/09/10 10:27	948	270	
02/09/10 10:28	939	270	
02/09/10 10:29	936	270	
02/09/10 10:30	933	270	
02/09/10 10:31	942	271	0.384

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F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/09/2010 09:55 Through 02/09/2010 10:55

Time Online Criteria: 1 minute(s)

Source	MPP3		
Parameter (Unit)	FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10 10:32	945	271	0.398
02/09/10 10:33	950	271	0.408
02/09/10 10:34	946	270	0.403
02/09/10 10:35	945	271	0.5031
02/09/10 10:36	939	271	6.3351
02/09/10 10:37	936	270	-0.1741
02/09/10 10:38	935	271	0.1701
02/09/10 10:39	933	270	0.2821
02/09/10 10:40	935	270	0.311
02/09/10 10:41	936	270	0.326
02/09/10 10:42	930	270	0.336
02/09/10 10:43	932	270	0.347
02/09/10 10:44	945	270	0.365
02/09/10 10:45	951	270	0.371
02/09/10 10:46	957	270	0.371
02/09/10 10:47	815	270	0.383
02/09/10 10:48	815	270	0.388
02/09/10 10:49	815	271	0.403
02/09/10 10:50	-10	271	0.5401
02/09/10 10:51	-10	271	7.8581
02/09/10 10:52	-10	271	-0.1421
02/09/10 10:53	925	271	0.1711
02/09/10 10:54	944	271	0.2831
02/09/10 10:55	941	271	0.310

160

Average	890	271	0.360
Minimum	-10	270	0.294
Maximum	957	271	0.408
Summation	54,285	16,503	9.347
Included Data Points	61	61	26
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data
 Plant: C.D. MCINTOSH JR.
 Interval: 1 Minute
 Type: Roll

Report Period: 02/09/2010 11:40 Through 02/09/2010 12:40
 Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10	11:40	937	271	0.316
02/09/10	11:41	939	271	0.327
02/09/10	11:42	942	271	0.341
02/09/10	11:43	945	271	0.350
02/09/10	11:44	949	271	0.366
02/09/10	11:45	949	271	0.381
02/09/10	11:46	949	271	0.386
02/09/10	11:47	950	271	0.395
02/09/10	11:48	949	271	0.410
02/09/10	11:49	949	271	0.412
02/09/10	11:50	948	271	0.538I
02/09/10	11:51	945	271	5.408I
02/09/10	11:52	948	271	-0.146I
02/09/10	11:53	946	271	0.184I
02/09/10	11:54	943	271	0.294I
02/09/10	11:55	946	271	0.319
02/09/10	11:56	950	271	0.333
02/09/10	11:57	943	271	0.346
02/09/10	11:58	941	271	0.348
02/09/10	11:59	938	271	0.359
02/09/10	12:00	938	271	0.367
02/09/10	12:01	940	271	0.383
02/09/10	12:02	942	271	0.397
02/09/10	12:03	946	271	0.414
02/09/10	12:04	950	271	0.415
02/09/10	12:05	952	271	0.572I
02/09/10	12:06	955	271	6.544I
02/09/10	12:07	961	271	-0.113I
02/09/10	12:08	959	271	0.240I
02/09/10	12:09	957	271	0.375I
02/09/10	12:10	949	271	0.404
02/09/10	12:11	945	271	0.419
02/09/10	12:12	940	271	0.398
02/09/10	12:13	939	271	0.336
02/09/10	12:14	937	271	0.304
02/09/10	12:15	936	271	0.306
02/09/10	12:16	934	271	0.314

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F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/09/2010 11:40 Through 02/09/2010 12:40

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10	12:17	933	271	0.321
02/09/10	12:18	936	271	0.336
02/09/10	12:19	940	271	0.348
02/09/10	12:20	941	271	0.509
02/09/10	12:21	942	271	5.797
02/09/10	12:22	950	271	-0.116
02/09/10	12:23	943	271	0.249
02/09/10	12:24	943	271	0.383
02/09/10	12:25	942	271	0.404
02/09/10	12:26	938	270	0.362
02/09/10	12:27	937	270	0.322
02/09/10	12:28	930	271	0.307
02/09/10	12:29	930	271	0.310
02/09/10	12:30	930	271	0.319
02/09/10	12:31	933	271	0.328
02/09/10	12:32	934	271	0.337
02/09/10	12:33	947	270	0.349
02/09/10	12:34	948	270	0.360
02/09/10	12:35	949	270	0.549
02/09/10	12:36	945	271	4.831
02/09/10	12:37	944	271	-0.083
02/09/10	12:38	944	271	0.260
02/09/10	12:39	934	271	0.377
02/09/10	12:40	933	271	0.355

Average	943	271	0.356
Minimum	930	270	0.304
Maximum	961	271	0.419
Summation	57,532	16,526	14.604

Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/09/2010 13:25 Through 02/09/2010 14:25

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10	13:25	944	271	0.342
02/09/10	13:26	942	271	0.353
02/09/10	13:27	944	271	0.372
02/09/10	13:28	950	271	0.389
02/09/10	13:29	949	271	0.396
02/09/10	13:30	948	271	0.400
02/09/10	13:31	950	271	0.380
02/09/10	13:32	949	271	0.342
02/09/10	13:33	947	271	0.314
02/09/10	13:34	947	271	0.306
02/09/10	13:35	946	271	0.4011
02/09/10	13:36	942	271	2.7491
02/09/10	13:37	947	271	-0.0921
02/09/10	13:38	949	271	0.2171
02/09/10	13:39	948	271	0.3251
02/09/10	13:40	948	271	0.358
02/09/10	13:41	949	270	0.372
02/09/10	13:42	947	270	0.386
02/09/10	13:43	944	271	0.393
02/09/10	13:44	942	271	0.396
02/09/10	13:45	941	271	0.366
02/09/10	13:46	939	271	0.329
02/09/10	13:47	935	270	0.313
02/09/10	13:48	938	270	0.312
02/09/10	13:49	938	270	0.317
02/09/10	13:50	939	271	0.4871
02/09/10	13:51	944	271	3.2871
02/09/10	13:52	948	271	-0.0831
02/09/10	13:53	946	271	0.2411
02/09/10	13:54	944	271	0.3591
02/09/10	13:55	942	271	0.388
02/09/10	13:56	942	271	0.400
02/09/10	13:57	942	271	0.408
02/09/10	13:58	947	271	0.380
02/09/10	13:59	949	271	0.333
02/09/10	14:00	956	271	0.306
02/09/10	14:01	955	271	0.304

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

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Average Data

Plant: C.D. MCINTOSH JR.

Interval: 1 Minute

Type: Roll

Report Period: 02/09/2010 13:25 Through 02/09/2010 14:25

Time Online Criteria: 1 minute(s)

Source		MPP3		
Parameter (Unit)		FLOW (Kscf/min)	LOAD (MW)	SO2#/MM (lb/mmBTU)
02/09/10	14:02	953	271	0.308
02/09/10	14:03	948	271	0.317
02/09/10	14:04	948	271	0.326
02/09/10	14:05	948	271	0.5201
02/09/10	14:06	952	271	3.6451
02/09/10	14:07	954	271	-0.0831
02/09/10	14:08	955	271	0.2441
02/09/10	14:09	955	271	0.3591
02/09/10	14:10	954	271	0.389
02/09/10	14:11	943	271	0.397
02/09/10	14:12	942	271	0.376
02/09/10	14:13	939	271	0.338
02/09/10	14:14	935	271	0.308
02/09/10	14:15	936	271	0.308
02/09/10	14:16	939	271	0.316
02/09/10	14:17	951	271	0.322
02/09/10	14:18	953	271	0.330
02/09/10	14:19	950	271	0.337
02/09/10	14:20	950	271	0.5351
02/09/10	14:21	958	271	3.4361
02/09/10	14:22	956	271	-0.0871
02/09/10	14:23	957	271	0.2421
02/09/10	14:24	960	270	0.3571
02/09/10	14:25	957	271	0.385

Average	947	271	0.352
Minimum	935	270	0.304
Maximum	960	271	0.408
Summation	57,770	16,525	14.412

Included Data Points	61	61	41
Total number of Data Points	61	61	61

F = Unit Offline E = Exceedance C = Calibration S = Substituted I = Invalid M = Maintenance T = Out Of Control * = Suspect

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LAKELAND ELECTRIC
 MCINTOSH UNIT 3
 HEAT INPUT

Heating Value

Feb. 1 **12468** BTU/#
 Feb. 2 **12821** BTU/#
 Feb. 3 **12436** BTU/#
 Feb. 8 **13123** BTU/#
 Feb. 9 **11880** BTU/#

COAL KLB/H					
	Run	CEMS Time	Avg. Flow	Avg. HI MMBtu/hr	Sulfur %
Feb. 1	1	1035-1135	222	2767.01	1.65
	2	1310-1410	223	2776.60	1.65
	3	1543-1643	265	3305.44	1.65
	4	1756-1856	265	3307.41	1.65
Feb. 2	5	0635-0735	221	2832.11	1.55
	6	0902-1002	222	2842.41	1.55
	7	1305-1405	279	3571.48	1.55
	8	1730-1830	304	3893.54	1.55
Feb. 3	9	1944-2044	305	3907.07	1.55
	10	0845-0945	306	3806.83	1.72
	11	1255-1355	308	3824.92	1.72
Feb. 8	12	1725-1825	307	3822.06	1.72
	13	0830-0930	251	3291.19	1.31
	14	1020-1120	247	3239.91	1.31
Feb. 9	15	1220-1320	250	3286.78	1.31
	16	1530-1630	250	3284.64	1.31
	17	1707-1807	251	3287.72	1.31
	18	0618-0718	222	2911.31	1.43
Feb. 9	19	0805-0905	223	2928.06	1.43
	20	0955-1055	224	2938.39	1.43
	21	1140-1240	226	2959.50	1.43
	22	1325-1425	226	2960.76	1.43

From EtaPro

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Unit 3 Sorbent Injection - Common, APH, and ESP Feeder

Run 5		Run 6		Run 7		Run 8	
Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr
2/2/2010 6:35	955	2/2/2010 9:02	499	2/2/2010 13:05	507	2/2/2010 17:30	0
2/2/2010 6:36	951	2/2/2010 9:03	500	2/2/2010 13:06	505	2/2/2010 17:31	0
2/2/2010 6:37	954	2/2/2010 9:04	500	2/2/2010 13:07	505	2/2/2010 17:32	0
2/2/2010 6:38	958	2/2/2010 9:05	501	2/2/2010 13:08	505	2/2/2010 17:33	0
2/2/2010 6:39	958	2/2/2010 9:06	502	2/2/2010 13:09	505	2/2/2010 17:34	0
2/2/2010 6:40	956	2/2/2010 9:07	502	2/2/2010 13:10	506	2/2/2010 17:35	0
2/2/2010 6:41	953	2/2/2010 9:08	502	2/2/2010 13:11	321	2/2/2010 17:36	0
2/2/2010 6:42	952	2/2/2010 9:09	501	2/2/2010 13:12	0	2/2/2010 17:37	0
2/2/2010 6:43	948	2/2/2010 9:10	500	2/2/2010 13:13	0	2/2/2010 17:38	0
2/2/2010 6:44	949	2/2/2010 9:11	502	2/2/2010 13:14	0	2/2/2010 17:39	0
2/2/2010 6:45	957	2/2/2010 9:12	503	2/2/2010 13:15	0	2/2/2010 17:40	0
2/2/2010 6:46	970	2/2/2010 9:13	503	2/2/2010 13:16	0	2/2/2010 17:41	0
2/2/2010 6:47	965	2/2/2010 9:14	503	2/2/2010 13:17	0	2/2/2010 17:42	0
2/2/2010 6:48	964	2/2/2010 9:15	503	2/2/2010 13:18	0	2/2/2010 17:43	0
2/2/2010 6:49	963	2/2/2010 9:16	503	2/2/2010 13:19	0	2/2/2010 17:44	0
2/2/2010 6:50	961	2/2/2010 9:17	503	2/2/2010 13:20	0	2/2/2010 17:45	0
2/2/2010 6:51	958	2/2/2010 9:18	502	2/2/2010 13:21	0	2/2/2010 17:46	0
2/2/2010 6:52	953	2/2/2010 9:19	504	2/2/2010 13:22	0	2/2/2010 17:47	0
2/2/2010 6:53	956	2/2/2010 9:20	505	2/2/2010 13:23	0	2/2/2010 17:48	0
2/2/2010 6:54	954	2/2/2010 9:21	504	2/2/2010 13:24	0	2/2/2010 17:49	0
2/2/2010 6:55	953	2/2/2010 9:22	503	2/2/2010 13:25	0	2/2/2010 17:50	0
2/2/2010 6:56	947	2/2/2010 9:23	503	2/2/2010 13:26	0	2/2/2010 17:51	0
2/2/2010 6:57	944	2/2/2010 9:24	504	2/2/2010 13:27	0	2/2/2010 17:52	0
2/2/2010 6:58	943	2/2/2010 9:25	505	2/2/2010 13:28	0	2/2/2010 17:53	0
2/2/2010 6:59	942	2/2/2010 9:26	506	2/2/2010 13:29	0	2/2/2010 17:54	0
2/2/2010 7:00	944	2/2/2010 9:27	507	2/2/2010 13:30	0	2/2/2010 17:55	0
2/2/2010 7:01	951	2/2/2010 9:28	505	2/2/2010 13:31	0	2/2/2010 17:56	0
2/2/2010 7:02	958	2/2/2010 9:29	503	2/2/2010 13:32	0	2/2/2010 17:57	0
2/2/2010 7:03	957	2/2/2010 9:30	502	2/2/2010 13:33	0	2/2/2010 17:58	0
2/2/2010 7:04	956	2/2/2010 9:31	501	2/2/2010 13:34	0	2/2/2010 17:59	0
2/2/2010 7:05	957	2/2/2010 9:32	502	2/2/2010 13:35	0	2/2/2010 18:00	0
2/2/2010 7:06	958	2/2/2010 9:33	503	2/2/2010 13:36	0	2/2/2010 18:01	0
2/2/2010 7:07	960	2/2/2010 9:34	504	2/2/2010 13:37	0	2/2/2010 18:02	0
2/2/2010 7:08	961	2/2/2010 9:35	506	2/2/2010 13:38	0	2/2/2010 18:03	0
2/2/2010 7:09	960	2/2/2010 9:36	504	2/2/2010 13:39	0	2/2/2010 18:04	0
2/2/2010 7:10	956	2/2/2010 9:37	503	2/2/2010 13:40	0	2/2/2010 18:05	0
2/2/2010 7:11	951	2/2/2010 9:38	503	2/2/2010 13:41	0	2/2/2010 18:06	0
2/2/2010 7:12	951	2/2/2010 9:39	503	2/2/2010 13:42	0	2/2/2010 18:07	0
2/2/2010 7:13	949	2/2/2010 9:40	501	2/2/2010 13:43	0	2/2/2010 18:08	0
2/2/2010 7:14	950	2/2/2010 9:41	500	2/2/2010 13:44	0	2/2/2010 18:09	0
2/2/2010 7:15	955	2/2/2010 9:42	501	2/2/2010 13:45	0	2/2/2010 18:10	0
2/2/2010 7:16	957	2/2/2010 9:43	502	2/2/2010 13:46	0	2/2/2010 18:11	0
2/2/2010 7:17	951	2/2/2010 9:44	502	2/2/2010 13:47	0	2/2/2010 18:12	0
2/2/2010 7:18	947	2/2/2010 9:45	500	2/2/2010 13:48	0	2/2/2010 18:13	0
2/2/2010 7:19	948	2/2/2010 9:46	501	2/2/2010 13:49	0	2/2/2010 18:14	0
2/2/2010 7:20	948	2/2/2010 9:47	502	2/2/2010 13:50	0	2/2/2010 18:15	0
2/2/2010 7:21	952	2/2/2010 9:48	503	2/2/2010 13:51	0	2/2/2010 18:16	0
2/2/2010 7:22	960	2/2/2010 9:49	503	2/2/2010 13:52	0	2/2/2010 18:17	0
2/2/2010 7:23	959	2/2/2010 9:50	504	2/2/2010 13:53	0	2/2/2010 18:18	0
2/2/2010 7:24	960	2/2/2010 9:51	504	2/2/2010 13:54	0	2/2/2010 18:19	0
2/2/2010 7:25	964	2/2/2010 9:52	502	2/2/2010 13:55	0	2/2/2010 18:20	0
2/2/2010 7:26	962	2/2/2010 9:53	505	2/2/2010 13:56	0	2/2/2010 18:21	0
2/2/2010 7:27	958	2/2/2010 9:54	510	2/2/2010 13:57	0	2/2/2010 18:22	0
2/2/2010 7:28	961	2/2/2010 9:55	508	2/2/2010 13:58	0	2/2/2010 18:23	0
2/2/2010 7:29	956	2/2/2010 9:56	505	2/2/2010 13:59	0	2/2/2010 18:24	0
2/2/2010 7:30	960	2/2/2010 9:57	502	2/2/2010 14:00	0	2/2/2010 18:25	0
2/2/2010 7:31	967	2/2/2010 9:58	503	2/2/2010 14:01	0	2/2/2010 18:26	0
2/2/2010 7:32	963	2/2/2010 9:59	503	2/2/2010 14:02	0	2/2/2010 18:27	0
2/2/2010 7:33	964	2/2/2010 10:00	505	2/2/2010 14:03	0	2/2/2010 18:28	0
2/2/2010 7:34	961	2/2/2010 10:01	506	2/2/2010 14:04	0	2/2/2010 18:29	0
2/2/2010 7:35	958	2/2/2010 10:02	507	2/2/2010 14:05	0	2/2/2010 18:30	0

Unit 3 Sorbent Injection - Common, APH, and ESP Feeder

Run 9		Run 10		Run 11		Run 12	
Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr
2/2/2010 19:44	0	2/3/2010 8:45	120	2/3/2010 12:55	360	2/3/2010 17:25	243
2/2/2010 19:45	0	2/3/2010 8:46	120	2/3/2010 12:56	360	2/3/2010 17:26	243
2/2/2010 19:46	0	2/3/2010 8:47	120	2/3/2010 12:57	360	2/3/2010 17:27	243
2/2/2010 19:47	0	2/3/2010 8:48	120	2/3/2010 12:58	360	2/3/2010 17:28	244
2/2/2010 19:48	0	2/3/2010 8:49	120	2/3/2010 12:59	360	2/3/2010 17:29	244
2/2/2010 19:49	0	2/3/2010 8:50	120	2/3/2010 13:00	360	2/3/2010 17:30	244
2/2/2010 19:50	0	2/3/2010 8:51	120	2/3/2010 13:01	360	2/3/2010 17:31	245
2/2/2010 19:51	0	2/3/2010 8:52	120	2/3/2010 13:02	360	2/3/2010 17:32	245
2/2/2010 19:52	0	2/3/2010 8:53	120	2/3/2010 13:03	360	2/3/2010 17:33	245
2/2/2010 19:53	0	2/3/2010 8:54	120	2/3/2010 13:04	361	2/3/2010 17:34	245
2/2/2010 19:54	0	2/3/2010 8:55	120	2/3/2010 13:05	361	2/3/2010 17:35	245
2/2/2010 19:55	0	2/3/2010 8:56	120	2/3/2010 13:06	361	2/3/2010 17:36	245
2/2/2010 19:56	0	2/3/2010 8:57	120	2/3/2010 13:07	361	2/3/2010 17:37	245
2/2/2010 19:57	0	2/3/2010 8:58	120	2/3/2010 13:08	361	2/3/2010 17:38	245
2/2/2010 19:58	0	2/3/2010 8:59	120	2/3/2010 13:09	361	2/3/2010 17:39	245
2/2/2010 19:59	0	2/3/2010 9:00	120	2/3/2010 13:10	361	2/3/2010 17:40	245
2/2/2010 20:00	0	2/3/2010 9:01	120	2/3/2010 13:11	361	2/3/2010 17:41	245
2/2/2010 20:01	0	2/3/2010 9:02	120	2/3/2010 13:12	361	2/3/2010 17:42	246
2/2/2010 20:02	0	2/3/2010 9:03	120	2/3/2010 13:13	361	2/3/2010 17:43	246
2/2/2010 20:03	0	2/3/2010 9:04	120	2/3/2010 13:14	361	2/3/2010 17:44	246
2/2/2010 20:04	0	2/3/2010 9:05	120	2/3/2010 13:15	362	2/3/2010 17:45	246
2/2/2010 20:05	0	2/3/2010 9:06	120	2/3/2010 13:16	362	2/3/2010 17:46	246
2/2/2010 20:06	0	2/3/2010 9:07	120	2/3/2010 13:17	362	2/3/2010 17:47	246
2/2/2010 20:07	0	2/3/2010 9:08	120	2/3/2010 13:18	362	2/3/2010 17:48	246
2/2/2010 20:08	0	2/3/2010 9:09	120	2/3/2010 13:19	361	2/3/2010 17:49	246
2/2/2010 20:09	0	2/3/2010 9:10	120	2/3/2010 13:20	361	2/3/2010 17:50	246
2/2/2010 20:10	0	2/3/2010 9:11	121	2/3/2010 13:21	360	2/3/2010 17:51	247
2/2/2010 20:11	0	2/3/2010 9:12	120	2/3/2010 13:22	360	2/3/2010 17:52	247
2/2/2010 20:12	0	2/3/2010 9:13	120	2/3/2010 13:23	360	2/3/2010 17:53	247
2/2/2010 20:13	0	2/3/2010 9:14	121	2/3/2010 13:24	360	2/3/2010 17:54	248
2/2/2010 20:14	0	2/3/2010 9:15	120	2/3/2010 13:25	359	2/3/2010 17:55	248
2/2/2010 20:15	0	2/3/2010 9:16	120	2/3/2010 13:26	360	2/3/2010 17:56	248
2/2/2010 20:16	0	2/3/2010 9:17	120	2/3/2010 13:27	360	2/3/2010 17:57	248
2/2/2010 20:17	0	2/3/2010 9:18	120	2/3/2010 13:28	361	2/3/2010 17:58	248
2/2/2010 20:18	0	2/3/2010 9:19	120	2/3/2010 13:29	360	2/3/2010 17:59	248
2/2/2010 20:19	0	2/3/2010 9:20	120	2/3/2010 13:30	361	2/3/2010 18:00	248
2/2/2010 20:20	0	2/3/2010 9:21	120	2/3/2010 13:31	360	2/3/2010 18:01	249
2/2/2010 20:21	0	2/3/2010 9:22	120	2/3/2010 13:32	361	2/3/2010 18:02	249
2/2/2010 20:22	0	2/3/2010 9:23	120	2/3/2010 13:33	361	2/3/2010 18:03	249
2/2/2010 20:23	0	2/3/2010 9:24	120	2/3/2010 13:34	360	2/3/2010 18:04	249
2/2/2010 20:24	0	2/3/2010 9:25	120	2/3/2010 13:35	361	2/3/2010 18:05	248
2/2/2010 20:25	0	2/3/2010 9:26	120	2/3/2010 13:36	361	2/3/2010 18:06	247
2/2/2010 20:26	0	2/3/2010 9:27	120	2/3/2010 13:37	361	2/3/2010 18:07	247
2/2/2010 20:27	0	2/3/2010 9:28	120	2/3/2010 13:38	361	2/3/2010 18:08	247
2/2/2010 20:28	0	2/3/2010 9:29	120	2/3/2010 13:39	361	2/3/2010 18:09	247
2/2/2010 20:29	0	2/3/2010 9:30	120	2/3/2010 13:40	361	2/3/2010 18:10	247
2/2/2010 20:30	0	2/3/2010 9:31	120	2/3/2010 13:41	361	2/3/2010 18:11	248
2/2/2010 20:31	0	2/3/2010 9:32	120	2/3/2010 13:42	361	2/3/2010 18:12	248
2/2/2010 20:32	0	2/3/2010 9:33	120	2/3/2010 13:43	361	2/3/2010 18:13	248
2/2/2010 20:33	0	2/3/2010 9:34	120	2/3/2010 13:44	361	2/3/2010 18:14	248
2/2/2010 20:34	0	2/3/2010 9:35	120	2/3/2010 13:45	361	2/3/2010 18:15	248
2/2/2010 20:35	0	2/3/2010 9:36	120	2/3/2010 13:46	360	2/3/2010 18:16	249
2/2/2010 20:36	0	2/3/2010 9:37	121	2/3/2010 13:47	361	2/3/2010 18:17	248
2/2/2010 20:37	0	2/3/2010 9:38	120	2/3/2010 13:48	361	2/3/2010 18:18	247
2/2/2010 20:38	0	2/3/2010 9:39	121	2/3/2010 13:49	360	2/3/2010 18:19	247
2/2/2010 20:39	0	2/3/2010 9:40	120	2/3/2010 13:50	360	2/3/2010 18:20	246
2/2/2010 20:40	0	2/3/2010 9:41	120	2/3/2010 13:51	360	2/3/2010 18:21	246
2/2/2010 20:41	0	2/3/2010 9:42	121	2/3/2010 13:52	360	2/3/2010 18:22	246
2/2/2010 20:42	0	2/3/2010 9:43	121	2/3/2010 13:53	360	2/3/2010 18:23	247
2/2/2010 20:43	0	2/3/2010 9:44	120	2/3/2010 13:54	361	2/3/2010 18:24	247
2/2/2010 20:44	0	2/3/2010 9:45	120	2/3/2010 13:55	360	2/3/2010 18:25	246

Unit 3 Sorbent Injection - Common, APH, and ESP Feeder

Run 13		Run 14		Run 15		Run 16	
Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr
2/8/2010 8:30	0	2/8/2010 10:20	0	2/8/2010 12:20	105	2/8/2010 15:30	316
2/8/2010 8:31	0	2/8/2010 10:21	0	2/8/2010 12:21	105	2/8/2010 15:31	316
2/8/2010 8:32	0	2/8/2010 10:22	0	2/8/2010 12:22	105	2/8/2010 15:32	317
2/8/2010 8:33	0	2/8/2010 10:23	0	2/8/2010 12:23	105	2/8/2010 15:33	317
2/8/2010 8:34	0	2/8/2010 10:24	0	2/8/2010 12:24	105	2/8/2010 15:34	317
2/8/2010 8:35	0	2/8/2010 10:25	0	2/8/2010 12:25	105	2/8/2010 15:35	317
2/8/2010 8:36	0	2/8/2010 10:26	0	2/8/2010 12:26	105	2/8/2010 15:36	317
2/8/2010 8:37	0	2/8/2010 10:27	0	2/8/2010 12:27	105	2/8/2010 15:37	316
2/8/2010 8:38	0	2/8/2010 10:28	0	2/8/2010 12:28	105	2/8/2010 15:38	317
2/8/2010 8:39	0	2/8/2010 10:29	0	2/8/2010 12:29	105	2/8/2010 15:39	317
2/8/2010 8:40	0	2/8/2010 10:30	0	2/8/2010 12:30	105	2/8/2010 15:40	317
2/8/2010 8:41	0	2/8/2010 10:31	0	2/8/2010 12:31	105	2/8/2010 15:41	318
2/8/2010 8:42	0	2/8/2010 10:32	0	2/8/2010 12:32	105	2/8/2010 15:42	318
2/8/2010 8:43	0	2/8/2010 10:33	0	2/8/2010 12:33	105	2/8/2010 15:43	319
2/8/2010 8:44	0	2/8/2010 10:34	0	2/8/2010 12:34	105	2/8/2010 15:44	320
2/8/2010 8:45	0	2/8/2010 10:35	0	2/8/2010 12:35	105	2/8/2010 15:45	320
2/8/2010 8:46	0	2/8/2010 10:36	0	2/8/2010 12:36	105	2/8/2010 15:46	316
2/8/2010 8:47	0	2/8/2010 10:37	0	2/8/2010 12:37	105	2/8/2010 15:47	316
2/8/2010 8:48	0	2/8/2010 10:38	0	2/8/2010 12:38	105	2/8/2010 15:48	317
2/8/2010 8:49	0	2/8/2010 10:39	0	2/8/2010 12:39	105	2/8/2010 15:49	316
2/8/2010 8:50	0	2/8/2010 10:40	0	2/8/2010 12:40	105	2/8/2010 15:50	315
2/8/2010 8:51	0	2/8/2010 10:41	0	2/8/2010 12:41	105	2/8/2010 15:51	316
2/8/2010 8:52	0	2/8/2010 10:42	0	2/8/2010 12:42	105	2/8/2010 15:52	316
2/8/2010 8:53	0	2/8/2010 10:43	0	2/8/2010 12:43	105	2/8/2010 15:53	316
2/8/2010 8:54	0	2/8/2010 10:44	0	2/8/2010 12:44	105	2/8/2010 15:54	315
2/8/2010 8:55	0	2/8/2010 10:45	0	2/8/2010 12:45	105	2/8/2010 15:55	316
2/8/2010 8:56	0	2/8/2010 10:46	0	2/8/2010 12:46	105	2/8/2010 15:56	316
2/8/2010 8:57	0	2/8/2010 10:47	0	2/8/2010 12:47	105	2/8/2010 15:57	315
2/8/2010 8:58	0	2/8/2010 10:48	0	2/8/2010 12:48	105	2/8/2010 15:58	317
2/8/2010 8:59	0	2/8/2010 10:49	0	2/8/2010 12:49	105	2/8/2010 15:59	316
2/8/2010 9:00	0	2/8/2010 10:50	0	2/8/2010 12:50	105	2/8/2010 16:00	316
2/8/2010 9:01	0	2/8/2010 10:51	0	2/8/2010 12:51	105	2/8/2010 16:01	316
2/8/2010 9:02	0	2/8/2010 10:52	0	2/8/2010 12:52	105	2/8/2010 16:02	316
2/8/2010 9:03	0	2/8/2010 10:53	0	2/8/2010 12:53	105	2/8/2010 16:03	315
2/8/2010 9:04	0	2/8/2010 10:54	0	2/8/2010 12:54	105	2/8/2010 16:04	316
2/8/2010 9:05	0	2/8/2010 10:55	0	2/8/2010 12:55	105	2/8/2010 16:05	316
2/8/2010 9:06	0	2/8/2010 10:56	0	2/8/2010 12:56	105	2/8/2010 16:06	316
2/8/2010 9:07	0	2/8/2010 10:57	0	2/8/2010 12:57	105	2/8/2010 16:07	317
2/8/2010 9:08	0	2/8/2010 10:58	0	2/8/2010 12:58	105	2/8/2010 16:08	316
2/8/2010 9:09	0	2/8/2010 10:59	0	2/8/2010 12:59	105	2/8/2010 16:09	315
2/8/2010 9:10	0	2/8/2010 11:00	0	2/8/2010 13:00	105	2/8/2010 16:10	316
2/8/2010 9:11	0	2/8/2010 11:01	0	2/8/2010 13:01	105	2/8/2010 16:11	317
2/8/2010 9:12	0	2/8/2010 11:02	0	2/8/2010 13:02	105	2/8/2010 16:12	316
2/8/2010 9:13	0	2/8/2010 11:03	0	2/8/2010 13:03	105	2/8/2010 16:13	316
2/8/2010 9:14	0	2/8/2010 11:04	0	2/8/2010 13:04	105	2/8/2010 16:14	316
2/8/2010 9:15	0	2/8/2010 11:05	0	2/8/2010 13:05	105	2/8/2010 16:15	316
2/8/2010 9:16	0	2/8/2010 11:06	0	2/8/2010 13:06	105	2/8/2010 16:16	316
2/8/2010 9:17	0	2/8/2010 11:07	0	2/8/2010 13:07	105	2/8/2010 16:17	316
2/8/2010 9:18	0	2/8/2010 11:08	0	2/8/2010 13:08	105	2/8/2010 16:18	316
2/8/2010 9:19	0	2/8/2010 11:09	0	2/8/2010 13:09	105	2/8/2010 16:19	316
2/8/2010 9:20	0	2/8/2010 11:10	0	2/8/2010 13:10	105	2/8/2010 16:20	316
2/8/2010 9:21	0	2/8/2010 11:11	0	2/8/2010 13:11	105	2/8/2010 16:21	316
2/8/2010 9:22	0	2/8/2010 11:12	0	2/8/2010 13:12	105	2/8/2010 16:22	316
2/8/2010 9:23	0	2/8/2010 11:13	0	2/8/2010 13:13	105	2/8/2010 16:23	317
2/8/2010 9:24	0	2/8/2010 11:14	0	2/8/2010 13:14	105	2/8/2010 16:24	316
2/8/2010 9:25	0	2/8/2010 11:15	0	2/8/2010 13:15	105	2/8/2010 16:25	315
2/8/2010 9:26	0	2/8/2010 11:16	0	2/8/2010 13:16	105	2/8/2010 16:26	316
2/8/2010 9:27	0	2/8/2010 11:17	0	2/8/2010 13:17	105	2/8/2010 16:27	316
2/8/2010 9:28	0	2/8/2010 11:18	0	2/8/2010 13:18	105	2/8/2010 16:28	316
2/8/2010 9:29	0	2/8/2010 11:19	0	2/8/2010 13:19	105	2/8/2010 16:29	316
2/8/2010 9:30	0	2/8/2010 11:20	0	2/8/2010 13:20	105	2/8/2010 16:30	316

Unit 3 Sorbent Injection - Common, APH, and ESP Feeder

Run 17		Run 18		Run 19		Run 20	
Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr
2/8/2010 17:07	211	2/9/2010 6:18	0	2/9/2010 8:05	0	2/9/2010 9:55	89
2/8/2010 17:08	211	2/9/2010 6:19	0	2/9/2010 8:06	0	2/9/2010 9:56	89
2/8/2010 17:09	211	2/9/2010 6:20	0	2/9/2010 8:07	0	2/9/2010 9:57	89
2/8/2010 17:10	211	2/9/2010 6:21	0	2/9/2010 8:08	0	2/9/2010 9:58	89
2/8/2010 17:11	211	2/9/2010 6:22	0	2/9/2010 8:09	0	2/9/2010 9:59	89
2/8/2010 17:12	211	2/9/2010 6:23	0	2/9/2010 8:10	0	2/9/2010 10:00	89
2/8/2010 17:13	211	2/9/2010 6:24	0	2/9/2010 8:11	0	2/9/2010 10:01	89
2/8/2010 17:14	211	2/9/2010 6:25	0	2/9/2010 8:12	0	2/9/2010 10:02	89
2/8/2010 17:15	211	2/9/2010 6:26	0	2/9/2010 8:13	0	2/9/2010 10:03	89
2/8/2010 17:16	211	2/9/2010 6:27	0	2/9/2010 8:14	0	2/9/2010 10:04	89
2/8/2010 17:17	211	2/9/2010 6:28	0	2/9/2010 8:15	0	2/9/2010 10:05	89
2/8/2010 17:18	211	2/9/2010 6:29	0	2/9/2010 8:16	0	2/9/2010 10:06	89
2/8/2010 17:19	211	2/9/2010 6:30	0	2/9/2010 8:17	0	2/9/2010 10:07	89
2/8/2010 17:20	211	2/9/2010 6:31	0	2/9/2010 8:18	0	2/9/2010 10:08	89
2/8/2010 17:21	211	2/9/2010 6:32	0	2/9/2010 8:19	0	2/9/2010 10:09	89
2/8/2010 17:22	211	2/9/2010 6:33	0	2/9/2010 8:20	0	2/9/2010 10:10	89
2/8/2010 17:23	211	2/9/2010 6:34	0	2/9/2010 8:21	0	2/9/2010 10:11	89
2/8/2010 17:24	211	2/9/2010 6:35	0	2/9/2010 8:22	0	2/9/2010 10:12	89
2/8/2010 17:25	211	2/9/2010 6:36	0	2/9/2010 8:23	0	2/9/2010 10:13	89
2/8/2010 17:26	211	2/9/2010 6:37	0	2/9/2010 8:24	0	2/9/2010 10:14	89
2/8/2010 17:27	211	2/9/2010 6:38	0	2/9/2010 8:25	0	2/9/2010 10:15	89
2/8/2010 17:28	211	2/9/2010 6:39	0	2/9/2010 8:26	0	2/9/2010 10:16	89
2/8/2010 17:29	211	2/9/2010 6:40	0	2/9/2010 8:27	0	2/9/2010 10:17	89
2/8/2010 17:30	211	2/9/2010 6:41	0	2/9/2010 8:28	0	2/9/2010 10:18	89
2/8/2010 17:31	211	2/9/2010 6:42	0	2/9/2010 8:29	0	2/9/2010 10:19	89
2/8/2010 17:32	211	2/9/2010 6:43	0	2/9/2010 8:30	0	2/9/2010 10:20	89
2/8/2010 17:33	211	2/9/2010 6:44	0	2/9/2010 8:31	0	2/9/2010 10:21	89
2/8/2010 17:34	211	2/9/2010 6:45	0	2/9/2010 8:32	0	2/9/2010 10:22	89
2/8/2010 17:35	211	2/9/2010 6:46	0	2/9/2010 8:33	0	2/9/2010 10:23	89
2/8/2010 17:36	211	2/9/2010 6:47	0	2/9/2010 8:34	0	2/9/2010 10:24	89
2/8/2010 17:37	211	2/9/2010 6:48	0	2/9/2010 8:35	0	2/9/2010 10:25	89
2/8/2010 17:38	211	2/9/2010 6:49	0	2/9/2010 8:36	0	2/9/2010 10:26	89
2/8/2010 17:39	211	2/9/2010 6:50	0	2/9/2010 8:37	0	2/9/2010 10:27	89
2/8/2010 17:40	211	2/9/2010 6:51	0	2/9/2010 8:38	0	2/9/2010 10:28	89
2/8/2010 17:41	211	2/9/2010 6:52	0	2/9/2010 8:39	0	2/9/2010 10:29	89
2/8/2010 17:42	211	2/9/2010 6:53	0	2/9/2010 8:40	0	2/9/2010 10:30	89
2/8/2010 17:43	211	2/9/2010 6:54	0	2/9/2010 8:41	0	2/9/2010 10:31	89
2/8/2010 17:44	211	2/9/2010 6:55	0	2/9/2010 8:42	0	2/9/2010 10:32	89
2/8/2010 17:45	211	2/9/2010 6:56	0	2/9/2010 8:43	0	2/9/2010 10:33	89
2/8/2010 17:46	211	2/9/2010 6:57	0	2/9/2010 8:44	0	2/9/2010 10:34	89
2/8/2010 17:47	211	2/9/2010 6:58	0	2/9/2010 8:45	0	2/9/2010 10:35	89
2/8/2010 17:48	211	2/9/2010 6:59	0	2/9/2010 8:46	0	2/9/2010 10:36	89
2/8/2010 17:49	211	2/9/2010 7:00	0	2/9/2010 8:47	0	2/9/2010 10:37	89
2/8/2010 17:50	211	2/9/2010 7:01	0	2/9/2010 8:48	0	2/9/2010 10:38	89
2/8/2010 17:51	211	2/9/2010 7:02	0	2/9/2010 8:49	0	2/9/2010 10:39	89
2/8/2010 17:52	211	2/9/2010 7:03	0	2/9/2010 8:50	0	2/9/2010 10:40	89
2/8/2010 17:53	211	2/9/2010 7:04	0	2/9/2010 8:51	0	2/9/2010 10:41	89
2/8/2010 17:54	211	2/9/2010 7:05	0	2/9/2010 8:52	0	2/9/2010 10:42	89
2/8/2010 17:55	211	2/9/2010 7:06	0	2/9/2010 8:53	0	2/9/2010 10:43	89
2/8/2010 17:56	211	2/9/2010 7:07	0	2/9/2010 8:54	0	2/9/2010 10:44	89
2/8/2010 17:57	211	2/9/2010 7:08	0	2/9/2010 8:55	0	2/9/2010 10:45	89
2/8/2010 17:58	211	2/9/2010 7:09	0	2/9/2010 8:56	0	2/9/2010 10:46	89
2/8/2010 17:59	211	2/9/2010 7:10	0	2/9/2010 8:57	0	2/9/2010 10:47	89
2/8/2010 18:00	211	2/9/2010 7:11	0	2/9/2010 8:58	0	2/9/2010 10:48	89
2/8/2010 18:01	211	2/9/2010 7:12	0	2/9/2010 8:59	0	2/9/2010 10:49	89
2/8/2010 18:02	211	2/9/2010 7:13	0	2/9/2010 9:00	0	2/9/2010 10:50	89
2/8/2010 18:03	211	2/9/2010 7:14	0	2/9/2010 9:01	0	2/9/2010 10:51	89
2/8/2010 18:04	211	2/9/2010 7:15	0	2/9/2010 9:02	0	2/9/2010 10:52	89
2/8/2010 18:05	211	2/9/2010 7:16	0	2/9/2010 9:03	0	2/9/2010 10:53	89
2/8/2010 18:06	211	2/9/2010 7:17	0	2/9/2010 9:04	0	2/9/2010 10:54	89
2/8/2010 18:07	211	2/9/2010 7:18	0	2/9/2010 9:05	0	2/9/2010 10:55	89

Unit 3 Sorbent Injection - Common, APH, and ESP Feeder

Run 21		Run 22	
Date - Time	Rate lbs/hr	Date - Time	Rate lbs/hr
2/9/2010 11:40	268	2/9/2010 13:25	179
2/9/2010 11:41	267	2/9/2010 13:26	179
2/9/2010 11:42	268	2/9/2010 13:27	179
2/9/2010 11:43	267	2/9/2010 13:28	179
2/9/2010 11:44	269	2/9/2010 13:29	179
2/9/2010 11:45	268	2/9/2010 13:30	179
2/9/2010 11:46	267	2/9/2010 13:31	179
2/9/2010 11:47	268	2/9/2010 13:32	179
2/9/2010 11:48	268	2/9/2010 13:33	179
2/9/2010 11:49	268	2/9/2010 13:34	179
2/9/2010 11:50	268	2/9/2010 13:35	179
2/9/2010 11:51	268	2/9/2010 13:36	179
2/9/2010 11:52	268	2/9/2010 13:37	179
2/9/2010 11:53	268	2/9/2010 13:38	179
2/9/2010 11:54	268	2/9/2010 13:39	179
2/9/2010 11:55	268	2/9/2010 13:40	179
2/9/2010 11:56	268	2/9/2010 13:41	179
2/9/2010 11:57	268	2/9/2010 13:42	179
2/9/2010 11:58	267	2/9/2010 13:43	179
2/9/2010 11:59	267	2/9/2010 13:44	179
2/9/2010 12:00	267	2/9/2010 13:45	179
2/9/2010 12:01	267	2/9/2010 13:46	179
2/9/2010 12:02	267	2/9/2010 13:47	179
2/9/2010 12:03	268	2/9/2010 13:48	179
2/9/2010 12:04	267	2/9/2010 13:49	179
2/9/2010 12:05	268	2/9/2010 13:50	179
2/9/2010 12:06	268	2/9/2010 13:51	179
2/9/2010 12:07	268	2/9/2010 13:52	179
2/9/2010 12:08	268	2/9/2010 13:53	179
2/9/2010 12:09	267	2/9/2010 13:54	179
2/9/2010 12:10	267	2/9/2010 13:55	179
2/9/2010 12:11	268	2/9/2010 13:56	179
2/9/2010 12:12	268	2/9/2010 13:57	179
2/9/2010 12:13	268	2/9/2010 13:58	179
2/9/2010 12:14	268	2/9/2010 13:59	179
2/9/2010 12:15	268	2/9/2010 14:00	179
2/9/2010 12:16	268	2/9/2010 14:01	179
2/9/2010 12:17	267	2/9/2010 14:02	179
2/9/2010 12:18	268	2/9/2010 14:03	179
2/9/2010 12:19	268	2/9/2010 14:04	179
2/9/2010 12:20	267	2/9/2010 14:05	179
2/9/2010 12:21	267	2/9/2010 14:06	179
2/9/2010 12:22	267	2/9/2010 14:07	179
2/9/2010 12:23	267	2/9/2010 14:08	179
2/9/2010 12:24	267	2/9/2010 14:09	179
2/9/2010 12:25	267	2/9/2010 14:10	179
2/9/2010 12:26	267	2/9/2010 14:11	179
2/9/2010 12:27	267	2/9/2010 14:12	179
2/9/2010 12:28	267	2/9/2010 14:13	179
2/9/2010 12:29	267	2/9/2010 14:14	179
2/9/2010 12:30	267	2/9/2010 14:15	179
2/9/2010 12:31	267	2/9/2010 14:16	179
2/9/2010 12:32	267	2/9/2010 14:17	179
2/9/2010 12:33	267	2/9/2010 14:18	179
2/9/2010 12:34	267	2/9/2010 14:19	179
2/9/2010 12:35	266	2/9/2010 14:20	179
2/9/2010 12:36	268	2/9/2010 14:21	179
2/9/2010 12:37	267	2/9/2010 14:22	179
2/9/2010 12:38	267	2/9/2010 14:23	179
2/9/2010 12:39	268	2/9/2010 14:24	179
2/9/2010 12:40	268	2/9/2010 14:25	179

APPENDIX 4
PRELIMINARY TEST RUNS
(1 - 6)

SCR Inlet

ACID MIST SAMPLING SUMMARY

EPA Method 8A

Catalyst Air Management, Inc.

EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric

Unit Tested: McIntosh Unit 3

Sampling Location: SCR Inlet 31

Run No: 1

Date: 2/1/10

Start Time: 10:35

End Time: 11:35

BAROMETRIC PRESSURE: 29.75 P_{bar}

GAS METER Y-FACTOR: 0.99 Y

VOLUME OF MOISTURE: 65

PITOT COEFFICIENT: 0.84

V_{ic}

C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		377.251								
	10.0	382.2	0.75	73	70	501	173			
	10.0	387.0	0.75	73	70	500	171	14.0	5.3	-5.00
	10.0	392.0	0.75	78	73	498	169			
	10.0	397.0	0.75	79	73	499	168			
	10.0	401.9	0.75	80	75	502	170			
	10.0	406.884	0.75	80	75	501	171			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	29.633	0.750	75	14.0	5.3	-5.00
	net	net	avg	avg	avg	avg	avg

P_s = 29.38 V_{m(std)} = 28.835 V_{w(std)} = 3.071 %M = 9.63
 B_{ws} = 0.096 M_d = 30.45 M_s = 29.25

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.7	4.2	0.006
SO2	1243.4	1426.7	2.704

ACID MIST SAMPLING SUMMARY
EPA Method 8A

Catalyst Air Management, Inc.

EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**

Unit Tested: **McIntosh Unit 3**

Sampling Location: SCR Inlet 31

Run No: 3

Date: 2/1/10

Start Time: 15:43

End Time: 16:43

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 73 V_{ic}
GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		438.481								
	10.0	441.3	0.75	77	79	505	169			
	10.0	447.0	0.75	85	79	503	173	14.0	5.3	-5.00
	10.0	453.7	0.75	87	81	500	175			
	10.0	458.5	0.75	89	83	501	173			
	10.0	463.5	0.75	91	85	500	171			
	10.0	468.524	0.75	91	86	501	171			

RESULTS

	TT	VM	PM		TM		CO2	O2	Static
	60.0	30.043	0.750		84		14.0	5.3	-5.00
	net	net	avg		avg		avg	avg	avg

$P_s = 29.38$ $V_{m(std)} = 28.723$ $V_{w(std)} = 3.419$ %M = 10.64
 $B_{ws} = 0.106$ $M_d = 30.45$ $M_s = 29.13$

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.7	4.2	0.006
SO2	1248.2	1432.2	2.715

ACID MIST SAMPLING SUMMARY
EPA Method 8A

Catalyst Air Management, Inc.

EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric

Unit Tested: McIntosh Unit 3

Sampling Location: SCR Inlet 31

Run No: 4

Date: 2/1/10

Start Time: 17:56

End Time: 18:56

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 54.5 V_{lc}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		468.970								
	10.0	474.3	0.75	89	85	502	169			
	10.0	479.3	0.75	88	85	500	174	14.5	4.8	-5.00
	10.0	484.1	0.75	90	86	500	175			
	10.0	489.3	0.75	92	87	501	175			
	10.0	494.2	0.75	92	87	500	174			
	10.0	499.213	0.75	92	87	500	175			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	30.243	0.750		88			14.5	4.8	-5.00
	net	net	avg		avg			avg	avg	avg

$P_s = 29.38$ $V_{m(std)} = 28.708$ $V_{w(std)} = 2.567$ %M= 8.21
 $B_{ws} = 0.082$ $M_d = 30.51$ $M_s = 29.49$

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.8	3.2	0.004
SO2	1248.9	1388.5	2.632

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **SCR Inlet 31**

Run No: 6 Date: 2/2/10 Start Time: 9:02
End Time: 10:02

BAROMETRIC PRESSURE: 29.95 P_{bar} VOLUME OF MOISTURE: 52.1 V_c
GAS METER Y-FACTOR: 0.99 Y , PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		529.655								
	10.0	534.6	0.75	80	79	500	178			
	10.0	540.1	0.75	80	79	501	179	12.5	7.0	-5.00
	10.0	544.7	0.75	84	80	500	179			
	10.0	549.5	0.75	86	80	501	181			
	10.0	554.5	0.75	87	80	500	182			
	10.0	559.469	0.75	89	82	501	175			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	29.814	0.750	82				12.5	7.0	-5.00
	net	net	avg	avg				avg	avg	avg
	$P_s =$	29.58		$V_{m(std)} =$	28.815	$V_{w(std)} =$	2.454		%M=	7.85
	$B_{ws} =$	0.078		$M_d =$	30.28	$M_s =$	29.32			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.4	0.5	0.001
SO2	967.7	1246.2	2.362

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 32**

Run No: **3**

Date: **2/1/10**

Start Time: **16:43**

End Time: **17:43**

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 46.0 V_{lc}
 GAS METER Y-FACTOR: 0.99 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		140.345								
	10.0	144.8	0.75	79	76	503	176			
	10.0	149.2	0.75	80	79	504	178	14.2	5.1	-5.00
	10.0	153.2	0.75	81	80	503	177			
	10.0	157.5	0.75	83	81	505	180			
	10.0	161.9	0.75	84	83	505	180			
	10.0	166.342	0.75	85	83	502	179			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	25.997	0.750	81	14.2	5.1	-5.00
	net	net	avg	avg	avg	avg	avg

P_s = 29.38 V_{m(std)} = 25.004 V_{w(std)} = 2.167 %M = 7.97
 B_{ws} = 0.080 M_d = 30.48 M_s = 29.48

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.0	0.0	0.000
SO2	1274.5	1443.9	2.737

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 32**

Run No: **4**

Date: **2/1/10**

Start Time: **17:56**

End Time: **18:56**

BAROMETRIC PRESSURE: **29.97** P_{bar}
 GAS METER Y-FACTOR: **0.99** Y

VOLUME OF MOISTURE: **78** V_{ic}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		167.826								
	10.0	173.0	0.75	81	80	500	178			
	10.0	178.2	0.75	83	82	503	180	14.4	5.0	-5.00
	10.0	183.3	0.75	86	84	502	177			
	10.0	188.5	0.75	87	84	504	179			
	10.0	193.8	0.75	89	85	506	181			
	10.0	199.000	0.75	88	85	503	180			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	31.174	0.750	85	14.4	5.0	-5.00
	net	net	avg	avg	avg	avg	avg

P_s = 29.60 V_{m(std)} = 30.020 V_{w(std)} = 3.688 %M = 10.94
 B_{ws} = 0.109 M_d = 30.50 M_s = 29.14

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.7	4.2	0.006
SO2	1017.4	1145.3	2.171

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
Unit Tested: **McIntosh Unit 3**
Sampling Location: **SCR Inlet 32**

Run No: **5** Date: **2/2/10** Start Time: **6:35**
End Time: **7:35**

BAROMETRIC PRESSURE: **29.95** P_{bar} VOLUME OF MOISTURE: **68.3** V_t
GAS METER Y-FACTOR: **0.99** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		199.251								
	10.0	204.5	0.75	71	69	500	175			
	10.0	209.4	0.75	72	71	502	176	13.2	6.4	-5.00
	10.0	214.6	0.75	74	72	499	176			
	10.0	219.6	0.75	75	73	503	179			
	10.0	224.5	0.75	76	74	503	177			
	10.0	229.432	0.75	76	74	499	180			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	30.181	0.750		73			13.2	6.4	-5.00
	net	net	avg		avg			avg	avg	avg
	P _s =	29.58		V _{m(std)} =	29.667	V _{w(std)} =	3.217		%M =	9.78
	B _{ws} =	0.098		M _d =	30.37	M _s =	29.16			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	0.8	1.0	0.001
SO2	1119.0	1381.4	2.619

SCR Outlet

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: 2 Date: 2/1/10 Start Time: 13:10
 End Time: 14:10

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 40.3 V_k
 GAS METER Y-FACTOR: 1.01 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		255.115								
	10.0	260.3	0.75	68	65	502	170			
	10.0	265.5	0.75	70	65	500	174	12.3	7.2	0.54
	10.0	270.7	0.75	72	67	501	174			
	10.0	275.9	0.75	74	68	505	175			
	10.0	281.0	0.75	76	69	506	175			
	10.0	286.712	0.75	78	70	505	176			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.597	0.750		70			12.3	7.2	0.54
	net	net	avg		avg			avg	avg	avg
	P _s =	29.79		V _{m(std)} =	31.648	V _{w(std)} =	1.898		%M =	5.66
	B _{ws} =	0.057		M _d =	30.26	M _s =	29.56			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.7	4.8	0.007
SO2	1049.0	1370.5	2.598

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 31**

Run No: **3**

Date: **2/1/10**

Start Time: **15:43**
 End Time: **16:43**

BAROMETRIC PRESSURE: **29.75** P_{bar}
 GAS METER Y-FACTOR: **1.01** Y

VOLUME OF MOISTURE: **45.9** V_{lc}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		288.150								
	10.0	293.5	0.75	72	70	502	168			
	10.0	298.9	0.75	73	70	500	168	12.5	7.0	0.54
	10.0	304.0	0.75	75	70	503	168			
	10.0	309.2	0.75	77	71	502	168			
	10.0	314.4	0.75	78	72	504	169			
	10.0	319.468	0.75	79	73	504	171			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.318	0.750		73			12.5	7.0	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	29.79		$V_{m(std)} =$	31.182	$V_{w(std)} =$	2.162		$\%M =$	6.48
	$B_{ws} =$	0.065		$M_d =$	30.28	$M_s =$	29.48			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.7	4.7	0.007
SO2	817.6	1052.9	1.996

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 31**

Run No: 4

Date: 2/1/10

Start Time: 17:56
 End Time: 18:56

BAROMETRIC PRESSURE: 29.75 P_{bar}
 GAS METER Y-FACTOR: 1.01 Y

VOLUME OF MOISTURE: 30.9 V_{ic}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		320.910								
	10.0	326.1	0.75	70	70	505	167			
	10.0	329.3	0.75	71	71	504	168	12.5	7.1	0.54
	10.0	334.5	0.75	72	71	506	169			
	10.0	340.0	0.75	74	72	501	169			
	10.0	347.0	0.75	76	73	502	170			
	10.0	352.296	0.75	78	74	504	170			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	31.386	0.750	73	12.5	7.1	0.54
	net	net	avg	avg	avg	avg	avg

P_s = 29.79 V_{m(std)} = 31.289 V_{w(std)} = 1.455 %M = 4.44
 B_{ws} = 0.044 M_d = 30.28 M_s = 29.74

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.6	4.7	0.007
SO2	891.2	1156.0	2.191

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 31

Run No: **5** Date: **2/2/10** Start Time: **6:35**
 End Time: **7:35**

BAROMETRIC PRESSURE: **29.97** P_{bar} VOLUME OF MOISTURE: **54.1** V_c
 GAS METER Y-FACTOR: **1.01** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS		METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		METER	PM ORIFICE	IN	OUT					
		354.340								
	10.0	359.5	0.75	65	64	503	167			
	10.0	364.5	0.75	69	64	504	169	13.4	6.0	0.54
	10.0	369.7	0.75	71	65	505	169			
	10.0	375.0	0.75	73	65	505	170			
	10.0	379.0	0.75	75	67	504	170			
	10.0	385.178	0.75	76	68	501	171			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	30.838	0.750		69			13.4	6.0	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	30.01		$V_{m(std)} =$	31.214	$V_{w(std)} =$	2.548		$\%M =$	7.55
	$B_{ws} =$	0.075		$M_d =$	30.38	$M_s =$	29.45			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	6.5	7.9	0.011
SO2	1191.2	1431.0	2.713

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 31**

Run No: **6** Date: **2/2/10** Start Time: **9:02**
 End Time: **10:02**

BAROMETRIC PRESSURE: **29.97** P_{bar} VOLUME OF MOISTURE: **52.5** V_{ic}
 GAS METER Y-FACTOR: **1.01** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT						
		385.600									
	10.0	390.8	0.75	71	70		502	168			
	10.0	396.0	0.75	72	70		504	170	13.5	5.8	0.54
	10.0	401.2	0.75	74	71		505	170			
	10.0	406.4	0.75	76	71		504	170			
	10.0	411.6	0.75	78	72		503	170			
	10.0	416.550	0.75	79	72		502	170			
RESULTS	TT	VM	PM	TM					CO2	O2	Static
	60.0	30.950	0.750	73					13.5	5.8	0.54
	net	net	avg	avg					avg	avg	avg
	$P_s =$	30.01		$V_{m(std)} =$	31.063		$V_{w(std)} =$	2.473		%M=	7.37
	$B_{ws} =$	0.074		$M_d =$	30.39		$M_s =$	29.48			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	7.1	8.4	0.012
SO2	1282.5	1520.3	2.882

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Outlet 32**

Run No: **1** Date: **2/1/10** Start Time: **10:35**
 End Time: **11:35**

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 49.5 V_{ic}
 GAS METER Y-FACTOR: 0.97 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP IN	METER TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		401.150								
	10.0	406.6	0.75	60	60	505	182			
	10.0	412.1	0.75	61	61	497	178	12.3	7.0	0.54
	10.0	417.6	0.75	62	62	505	178			
	10.0	423.0	0.75	63	63	514	180			
	10.0	428.5	0.75	64	64	509	179			
	10.0	434.028	0.75	64	64	510	176			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	32.878	0.750		62			12.3	7.0	0.54
	net	net	avg		avg			avg	avg	avg
	P _s =	29.79		V _{m(std)} =	31.969	V _{w(std)} =	2.331		%M =	6.80
	B _{vs} =	0.068		M _d =	30.25	M _s =	29.42			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	2.7	3.5	0.005
SO2	1038.4	1337.3	2.535

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **SCR Inlet 32**

Run No: **4**

Date: **2/1/10**

Start Time: **17:56**
 End Time: **18:56**

BAROMETRIC PRESSURE: **29.75** P_{bar}
 GAS METER Y-FACTOR: **0.97** Y

VOLUME OF MOISTURE: **78** V_{lc}
 PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		501.536								
	10.0	507.0	0.75	70	70	516	174			
	10.0	512.1	0.75	70	70	514	180	12.4	6.9	0.54
	10.0	517.5	0.75	72	72	514	180			
	10.0	523.7	0.75	73	73	514	178			
	10.0	529.1	0.75	73	73	513	179			
	10.0	534.680	0.75	73	73	511	178			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	33.144	0.750		72			12.4	6.9	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	29.79		$V_{m(std)} =$	31.652	$V_{w(std)} =$	3.688		$\%M =$	10.44
	$B_{ws} =$	0.104		$M_d =$	30.26	$M_s =$	28.98			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.7	4.8	0.007
SO2	964.9	1233.7	2.339

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
Unit Tested: McIntosh Unit 3
Sampling Location: SCR Outlet 32

Run No: 5 Date: 2/2/10 Start Time: 6:35
End Time: 7:35

BAROMETRIC PRESSURE: 29.95 P_{bar} VOLUME OF MOISTURE: 62.2 V_c
GAS METER Y-FACTOR: 0.97 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER TEMP		OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
				IN	OUT					
		535.212								
	10.0	540.6	0.75	82		518	178			
	10.0	545.9	0.75	83		518	183	13.5	5.8	0.54
	10.0	551.4	0.75	83		519	183			
	10.0	556.6	0.75	85		519	184			
	10.0	561.9	0.75	85		517	185			
	10.0	567.453	0.75	87		519	185			
RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	32.241	0.750		84			13.5	5.8	0.54
	net	net	avg		avg			avg	avg	avg
	$P_s =$	29.99		$V_{m(std)} =$	30.293	$V_{w(std)} =$	2.930		$%M =$	8.82
	$B_{ws} =$	0.088		$M_d =$	30.39	$M_s =$	29.30			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	11.1	13.1	0.019
SO2	1139.7	1351.0	2.561

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: SCR Outlet 32

Run No: 6 Date: 2/2/10 Start Time: 9:02
 End Time: 10:02

BAROMETRIC PRESSURE: 29.97 P_{bar} VOLUME OF MOISTURE: 55.1 V_{lc}
 GAS METER Y-FACTOR: 0.97 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS	PM	METER TEMP		OVEN	COIL	CO2%	O2%	STATIC
		METER	ORIFICE	IN	OUT	TEMP	TEMP			
		568.189								
	10.0	573.3	0.75	78		517	177			
	10.0	578.8	0.75	78		510	178	13.7	5.7	0.54
	10.0	584.2	0.75	78		511	179			
	10.0	589.4	0.75	79		510	181			
	10.0	594.8	0.75	80		509	178			
	10.0	600.251	0.75	81		510	175			
RESULTS	TT	VM	PM	TM				CO2	O2	Static
	60.0	32.062	0.750	79				13.7	5.7	0.54
	net	net	avg	avg				avg	avg	avg
	$P_s =$	30.01		$V_{m(std)} =$	30.434	$V_{w(std)} =$	2.595		$\%M =$	7.86
	$B_{ws} =$	0.079		$M_d =$	30.42	$M_s =$	29.44			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	9.5	11.2	0.016
SO2	1221.7	1438.7	2.727

ESP Inlet

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 31**

Run No: **1** Date: **2/1/10** Start Time: **10:35**
 End Time: **11:35**

BAROMETRIC PRESSURE: **29.75** P_{bar} VOLUME OF MOISTURE: **46.3** V_c
 GAS METER Y-FACTOR: **1.02** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		984.235									
	10.0	989.0	0.75	55	55	472	505	170			
	10.0	993.7	0.75	67	58	495	493	169	12.5	7.0	-8.50
	10.0	998.4	0.75	68	58	495	489	171			
	10.0	1003.1	0.75	67	58	479	478	173			
	10.0	1007.7	0.75	67	57	478	479	180			
	10.0	1012.561	0.75	66	57	480	479	178			

RESULTS

TT	VM	PM		TM		CO2	O2	Static
60.0	28.326	0.750		61		12.5	7.0	-8.50
net	net	avg		avg		avg	avg	avg
$P_s =$	29.13		$V_{m(std)} =$	29.152		$V_{w(std)} =$	2.181	%M= 6.96
$B_{ws} =$	0.070		$M_d =$	30.28		$M_s =$	29.43	

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	3.9	5.1	0.007
SO2	1138.8	1466.5	2.780

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric
 Unit Tested: McIntosh Unit 3
 Sampling Location: ESP Inlet 31

Run No: 2 Date: 2/1/10 Start Time: 13:10
 End Time: 14:10

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 46.9 V_{lc}
 GAS METER Y-FACTOR: 1.02 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		13.109									
	10.0	17.9	0.75	58	57	478	476	168			
	10.0	22.6	0.75	65	58	478	498	167	12.7	6.8	-8.50
	10.0	27.7	0.75	65	58	477	500	168			
	10.0	32.3	0.75	65	59	487	505	168			
	10.0	37.0	0.75	65	59	492	510	169			
	10.0	41.787	0.75	65	59	492	509	169			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	28.678	0.750		61				12.7	6.8	-8.50
	net	net	avg		avg				avg	avg	avg
	$P_s =$	29.13		$V_{m(std)} =$	29.514		$V_{w(std)} =$	2.209		$%M =$	6.96
	$B_{ws} =$	0.070		$M_d =$	30.30		$M_s =$	29.45			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.1	5.2	0.007
SO2	1214.8	1542.1	2.923

Catalyst Air Management, Inc.
 EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: #REF!
 Unit Tested: #REF!
 Sampling Location: #REF!

Run No: 3

Date: 2/1/10

Start Time: 15:43

End Time: 16:43

BAROMETRIC PRESSURE: 29.75

P_{bar}

VOLUME OF MOISTURE: 45.1

V_{ic}

GAS METER Y-FACTOR: 1.02

Y

PITOT COEFFICIENT: 0.84

C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		43.121									
	10.0	47.7	0.75	62	63	479	482	169			
	10.0	52.4	0.75	62	60	478	469	169	12.7	6.8	-8.50
	10.0	57.1	0.75	64	59	479	472	168			
	10.0	61.9	0.75	68	61	479	473	169			
	10.0	66.6	0.75	69	61	479	476	170			
	10.0	71.256	0.75	70	61	479	476	171			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	28.135	0.750		63				12.7	6.8	-8.50
	net	net	avg		avg				avg	avg	avg
	$P_s =$	29.13		$V_{\text{m(std)}} =$	28.831		$V_{\text{w(std)}} =$	2.124		%M=	6.86
	$B_{\text{ws}} =$	0.069		$M_{\text{d}} =$	30.30		$M_s =$	29.46			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.4	5.6	0.008
SO2	1013.3	1286.3	2.438

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: #REF!
 Unit Tested: #REF!
 Sampling Location: #REF!

Run No: 4

Date: 2/1/10

Start Time: 17:56
 End Time: 18:56

BAROMETRIC PRESSURE: 29.75 P_{bar}
 GAS METER Y-FACTOR: 1.02 Y

VOLUME OF MOISTURE: 40.8 V_{ic}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		72.309									
	10.0	77.0	0.75	66	65	473	469	167			
	10.0	81.8	0.75	73	65	473	469	168	12.4	7.0	-8.50
	10.0	86.5	0.75	73	65	473	472	168			
	10.0	91.3	0.75	74	65	473	471	167			
	10.0	96.1	0.75	74	66	472	473	170			
	10.0	100.866	0.75	75	66	473	472	170			

RESULTS	TT	VM	PM	TM	CO2	O2	Static		
	60.0	28.557	0.750	69	12.4	7.0	-8.50		
	net	net	avg	avg	avg	avg	avg		
	$P_s =$	29.13		$V_{m(std)} =$	28.954	$V_{w(std)} =$	1.922	$\%M =$	6.22
	$B_{ws} =$	0.062		$M_d =$	30.26	$M_s =$	29.50		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	4.6	5.9	0.008
SO2	1008.9	1299.3	2.463

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: ESP Inlet 31

Run No: **6** Start Time: 9:02
 End Time: 10:02

BAROMETRIC PRESSURE:
 GAS METER Y-FACTOR:

VOLUME OF MOISTURE: 47.4 V_{ic}
 PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS O METER #	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		135.041					
	10.0	139.9	469	168			
	10.0	144.6	468	169	11.3	8.2	-8.50
	10.0	149.5	469	170			
	10.0	154.3	468	172			
	10.0	159.8	468	172			
	10.0	163.993	469	170			
RESULTS	TT	VM			CO2	O2	Static
	60.0	28.952			11.3	8.2	-8.50
	net	net			avg	avg	avg
	P _s =	29.13	V _{w(std)} =	2.233		%M=	7.06
	B _{ws} =	0.071	M _s =	29.28			

EMISSIONS

Concentration (ppm)	Emission Rate (lb/mmBtu)
SO3 0.0	0.000
SO2 949.5	2.537

SO2

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: **3** Date: **2/1/10** Start Time: **10:35**
 End Time: **11:35**

BAROMETRIC PRESSURE: **29.75** P_{bar} VOLUME OF MOISTURE: **44.4** V_{lc}
 GAS METER Y-FACTOR: **0.98** Y PITOT COEFFICIENT: **0.84** C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		30.240									
	10.0	35.3	0.75	66	64	504	495	174			
	10.0	40.8	0.75	68	65	503	498	176	10.9	8.7	-8.50
	10.0	45.8	0.75	70	65	503	492	179			
	10.0	51.1	0.75	71	66	502	590	180			
	10.0	56.2	0.75	73	67	502	501	182			
	10.0	61.430	0.75	75	68	502	497	179			

RESULTS	TT	VM	PM		TM			CO2	O2	Static
	60.0	31.190	0.750		68			10.9	8.7	-8.50
	net	net	avg		avg			avg	avg	avg
	P_s =	29.13		$V_{m(std)}$ =	30.427		$V_{w(std)}$ =	2.091	$\%M$ =	6.43
	B_{ws} =	0.064		M_d =	30.09		M_s =	29.31		

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	6.4	9.4	0.013
SO2	1047.4	1536.8	2.913

Catalyst Air Management, Inc.
EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: **Lakeland Electric**
 Unit Tested: **McIntosh Unit 3**
 Sampling Location: **ESP Inlet 32**

Run No: 4

Date: 2/1/10

Start Time: 9:02
 End Time: 10:02

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 48.2 V_{lc}
 GAS METER Y-FACTOR: 0.98 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		63.189									
	10.0	68.3	0.75	69	67	500	497	167			
	10.0	73.1	0.75	69	66	505	491	169	11.1	8.5	-8.50
	10.0	78.2	0.75	71	67	505	495	176			
	10.0	83.1	0.75	74	68	502	496	178			
	10.0	88.5	0.75	76	70	505	488	180			
	10.0	94.185	0.75	76	70	502	486	180			

RESULTS	TT	VM	PM	TM	CO2	O2	Static
	60.0	30.996	0.750	70	11.1	8.5	-8.50
	net	net	avg	avg	avg	avg	avg
	$P_s =$	29.13	$V_{m(std)} =$	30.119	$V_{w(std)} =$	2.270	%M= 7.01
	$B_{ws} =$	0.070	$M_d =$	30.12	$M_s =$	29.27	

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	5.7	8.3	0.012
SO2	1014.0	1463.8	2.775

Catalyst Air Management, Inc.

EPA Method 8A - Controlled Condensate SO3 Sample Sheet

Client: Lakeland Electric

Unit Tested: McIntosh Unit 3

Sampling Location: ESP Inlet 32

Run No: 6

Date: 2/2/10

Start Time: 9:02

End Time: 10:02

BAROMETRIC PRESSURE: 29.75 P_{bar} VOLUME OF MOISTURE: 32.4 V_{lc}
 GAS METER Y-FACTOR: 0.98 Y PITOT COEFFICIENT: 0.84 C_p

POINT	TIME	GAS METER	PM ORIFICE	METER IN	TEMP OUT	PROBE TEMP	OVEN TEMP	COIL TEMP	CO2%	O2%	STATIC PRESS.
		129.101									
	10.0	134.4	0.75	77	75	487	485	174			
	10.0	139.6	0.75	77	75	492	501	175	10.6	9.0	-8.50
	10.0	144.5	0.75	80	76	491	478	177			
	10.0	150.0	0.75	82	77	492	476	179			
	10.0	155.3	0.75	85	78	491	490	177			
	10.0	160.522	0.75	86	80	490	495	170			
RESULTS	TT	VM	PM		TM				CO2	O2	Static
	60.0	31.421	0.750		79				10.6	9.0	-8.50
	net	net	avg		avg				avg	avg	avg
	$P_s =$	29.13		$V_{m(std)} =$	30.036		$V_{w(std)} =$	1.526		$\%M =$	4.83
	$B_{vs} =$	0.048		$M_d =$	30.06		$M_s =$	29.47			

EMISSIONS

	Concentration (ppm)	Concentration (ppm @ 3% O2)	Emission Rate (lb/mmBtu)
SO3	1.2	1.8	0.003
SO2	574.7	864.5	1.639

APPENDIX 5
LABORATORY ANALYSIS

SO₂

SCR Inlet

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 31

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	15:43	17:56
End Time:	11:35	14:10	16:43	18:56
VMstd:	28.835	29.797	28.723	28.708
Sample Volume (ml):	280	310	290	270
SO2 (mg):	2700	2700	2700	2700
SO2 (mg/dscf):	93.637	90.614	94.000	94.050
SO2 (gr/dscf):	1.445	1.398	1.450	1.451
SO2 (lb/mmBtu):	2.704	2.651	2.715	2.632
PPM (as SO2)	1243.4	1203.3	1248.2	1248.9

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 31

Run Number:	5	6
Date:	2/2/2010	2/2/2010
Start Time:	6:35	9:02
End Time:	7:35	10:02
VMstd:	29.096	28.815
Sample Volume (ml):	270	270
SO2 (mg):	2500	2100
SO2 (mg/dscf):	85.922	72.879
SO2 (gr/dscf):	1.326	1.125
SO2 (lb/mmBtu):	2.785	2.362
PPM (as SO2)	1140.9	967.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 31

Run Number:	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010
Start Time:	15:05	17:30	19:44
End Time:	16:05	18:30	20:44
VMstd:	23.689	23.409	23.609
Sample Volume (ml):	287	250	240
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.675	0.700	0.775
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
SO ₂ (lbs/dscf):	4.20E-04	3.84E-04	4.05E-04
PPM (as SO ₂)	2018.8	1845.5	1944.9

CATALYST AIR MANAGEMENT, INC.

Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet - 31

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMSTD:	24.075	24.423	23.954
Sample Volume (ml):	270	280	275
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO4)2 : Volume (ml)	0.650	0.650	0.600
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
SO2 (lbs/dscf):	2.44E-04	2.50E-04	2.31E-04
PPM (SO2)	1175.5	1201.6	1110.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 31

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	24.263	24.017	23.814	23.896	24.174
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.550	0.600	0.550	0.550	0.600
Normality Ba(ClO ₄) ₂ :	0.00940	0.00940	0.00940	0.00940	0.00940
SO ₂ (lbs/dscf):	1.50E-04	1.66E-04	1.53E-04	1.53E-04	1.65E-04
PPM (SO ₂)	723.4	797.2	737.0	734.4	792.0

CATALYST AIR MANAGEMENT, INC.

Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet - 31

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMSTD:	24.154	24.173	24.152	24.701	24.207
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.625	0.600	0.775	0.850	0.650
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.72E-04	1.65E-04	2.13E-04	2.28E-04	1.78E-04
PPM (SO2)	825.7	792.0	1023.9	1098.1	856.8

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 32

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	16:43	17:56
End Time:	11:35	14:10	17:43	18:56
VMstd:	26.458	25.006	25.004	30.020
Sample Volume (ml):	280	290	260	300
SO2 (mg):	2800	2600	2400	2300
SO2 (mg/dscf):	105.826	103.976	95.983	76.615
SO2 (gr/dscf):	1.633	1.604	1.481	1.182
SO2 (lb/mmBtu):	3.076	3.003	2.737	2.171
PPM (as SO2)	1405.2	1380.7	1274.5	1017.4

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 32

Run Number:	5	6
Date:	2/2/2010	2/2/2010
Start Time:	6:35	13:10
End Time:	7:35	14:10
VMstd:	29.667	28.849
Sample Volume (ml):	310	320
SO2 (mg):	2500	2400
SO2 (mg/dscf):	84.270	83.191
SO2 (gr/dscf):	1.300	1.284
SO2 (lb/mmBtu):	2.619	2.736
PPM (as SO2)	1119.0	1104.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 32

Run Number:	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010
Start Time:	15:05	17:30	19:44
End Time:	16:05	18:30	20:44
VMstd:	23.657	22.903	22.974
Sample Volume (ml):	262	255	295
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO4)2 : Volume (ml)	0.725	0.750	0.725
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
SO2 (lbs/dscf):	4.12E-04	4.29E-04	4.78E-04
PPM (as SO2)	1982.1	2061.5	2298.2

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 32

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	23.795	22.956	22.995
Sample Volume (ml):	280	285	290
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO4)2 : Volume (ml)	0.675	0.600	0.650
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
SO2 (lbs/dscf):	2.66E-04	2.50E-04	2.75E-04
PPM (as SO2)	1280.8	1201.2	1321.8

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet - 32

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	24.643	24.179	23.888	23.784	23.432
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.700	0.650	0.550	0.550	0.550
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.89E-04	1.78E-04	1.53E-04	1.53E-04	1.56E-04
PPM (SO2)	906.4	857.8	734.7	737.9	749.0

CATALYST AIR MANAGEMENT, INC.

Controlled Condensate - Method 8A

Client: Lakeland Electric
 Unit: McIntosh Unit 3
 Location: SCR Inlet - 32

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	24.473	24.433	24.382	33.640	23.777
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.650	0.625	0.575	0.800	0.550
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.76E-04	1.70E-04	1.57E-04	1.58E-04	1.54E-04
PPM (SO2)	847.5	816.3	752.5	758.9	738.1

SCR Outlet

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	15:43	17:56
End Time:	11:35	14:10	16:43	18:56
VMstd:	31.485	31.648	31.182	31.289
Sample Volume (ml):	260	260	280	260
SO2 (mg):	2200	2500	1920	2100
SO2 (mg/dscf):	69.874	78.994	61.574	67.116
SO2 (gr/dscf):	1.078	1.219	0.950	1.036
SO2 (lb/mmBtu):	2.265	2.598	1.996	2.191
PPM (as SO2)	927.8	1049.0	817.6	891.2

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	5	6
Date:	2/2/2010	2/2/2010
Start Time:	6:35	9:02
End Time:	7:35	10:02
VMstd:	31.214	31.063
Sample Volume (ml):	280	280
SO2 (mg):	2800	3000
SO2 (mg/dscf):	89.704	96.579
SO2 (gr/dscf):	1.384	1.490
SO2 (lb/mmBtu):	2.713	2.882
PPM (as SO2)	1191.2	1282.5

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010
Start Time:	15:05	17:30	19:44
End Time:	16:05	18:30	20:44
VMstd:	30.476	31.354	31.262
Sample Volume (ml):	297	300	242
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.850	0.650	0.850
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
SO ₂ (lbs/dscf):	4.25E-04	3.19E-04	3.38E-04
PPM (as SO ₂)	2044.9	1535.3	1624.3

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	31.025	30.642	30.807
Sample Volume (ml):	290	297	285
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO4)2 : Volume (ml)	0.750	0.750	0.725
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
SO2 (lbs/dscf):	2.35E-04	2.44E-04	2.25E-04
PPM (SO2)	1130.4	1172.2	1081.5

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	31.666	31.388	30.730	30.904	30.846
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.750	0.800	0.850	0.700	0.750
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.57E-04	1.69E-04	1.84E-04	1.50E-04	1.61E-04
PPM (SO2)	755.8	813.3	882.7	722.8	775.9

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	31.378	31.174	30.840	30.899	30.473
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.900	0.875	0.850	0.875	0.850
Normality Ba(ClO ₄) ₂ :	0.00940	0.00940	0.00940	0.00940	0.00940
SO ₂ (lbs/dscf):	1.90E-04	1.86E-04	1.83E-04	1.88E-04	1.85E-04
PPM (SO ₂)	915.3	895.7	879.5	903.6	890.1

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	16:43	17:56
End Time:	11:35	14:10	17:43	18:56
VMstd:	31.969	31.869	31.770	31.652
Sample Volume (ml):	240	230	240	250
SO2 (mg):	2500	2400	2100	2300
SO2 (mg/dscf):	78.202	75.308	66.100	72.666
SO2 (gr/dscf):	1.207	1.162	1.020	1.121
SO2 (lb/mmBtu):	2.535	2.389	2.112	2.339
PPM (as SO2)	1038.4	1000.0	877.7	964.9

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	5	6
Date:	2/2/2010	2/2/2010
Start Time:	6:35	9:02
End Time:	7:35	10:02
VMstd:	30.293	30.434
Sample Volume (ml):	270	310
SO2 (mg):	2600	2800
SO2 (mg/dscf):	85.827	92.002
SO2 (gr/dscf):	1.324	1.420
SO2 (lb/mmBtu):	2.561	2.727
PPM (as SO2)	1139.7	1221.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010
Start Time:	15:05	17:30	19:44
End Time:	16:05	18:30	20:44
VMstd:	30.732	30.785	30.974
Sample Volume (ml):	320	255	275
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.675	0.825	0.775
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
SO ₂ (lbs/dscf):	3.61E-04	3.51E-04	3.53E-04
PPM (as SO ₂)	1735.1	1687.0	1698.6

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	31.051	30.667	30.547
Sample Volume (ml):	290	290	295
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO4)2 : Volume (ml)	0.700	0.700	0.700
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
SO2 (lbs/dscf):	2.19E-04	2.22E-04	2.27E-04
PPM (SO2)	1054.2	1067.4	1090.0

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32


Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	30.148	29.760	29.441	28.994	28.806
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.825	0.750	0.725	0.750	0.750
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.82E-04	1.67E-04	1.63E-04	1.72E-04	1.73E-04
PPM (SO2)	873.2	804.2	785.8	825.4	830.8

CATALYST AIR MANAGEMENT, INC.

Controlled Condensate - Method 8A

Client: Lakeland Electric
 Unit: McIntosh Unit 3
 Location: SCR Outlet 32

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	29.755	29.317	29.500	29.257	28.837
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.900	0.800	0.850	0.850	0.800
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	2.01E-04	1.81E-04	1.91E-04	1.93E-04	1.84E-04
PPM (SO2)	965.2	870.8	919.5	927.1	885.2



ESP Inlet

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	15:43	17:56
End Time:	11:35	14:10	16:43	18:56
VMstd:	29.152	29.514	28.831	28.954
Sample Volume (ml):	270	280	260	270
SO2 (mg):	2500	2700	2200	2200
SO2 (mg/dscf):	85.757	91.481	76.307	75.981
SO2 (gr/dscf):	1.323	1.412	1.177	1.172
SO2 (lb/mmBtu):	2.780	2.923	2.438	2.463
PPM (as SO2)	1138.8	1214.8	1013.3	1008.9

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	5	6
Date:	2/2/2010	2/2/2010
Start Time:	6:35	9:02
End Time:	7:35	10:02
VMstd:	29.308	29.369
Sample Volume (ml):	290	290
SO2 (mg):	2000	2100
SO2 (mg/dscf):	68.241	71.504
SO2 (gr/dscf):	1.053	1.103
SO2 (lb/mmBtu):	2.606	2.537
PPM (as SO2)	906.2	949.5

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010
Start Time:	15:05	17:30	19:44
End Time:	16:05	18:30	20:44
VMstd:	29.677	25.112	28.752
Sample Volume (ml):	265	250	265
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.625	0.550	0.600
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
SO ₂ (lbs/dscf):	2.87E-04	2.81E-04	2.84E-04
PPM (as SO ₂)	1377.7	1351.7	1365.2

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	28.167	28.751	29.004
Sample Volume (ml):	275	255	271
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO4)2 : Volume (ml)	0.675	0.725	0.650
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
SO2 (lbs/dscf):	2.21E-04	2.16E-04	2.04E-04
PPM (SO2)	1062.7	1036.9	979.3

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	29.301	28.859	29.506	28.910	28.571
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.700	0.725	0.800	0.675	0.675
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.59E-04	1.67E-04	1.80E-04	1.55E-04	1.57E-04
PPM (SO2)	762.3	801.6	865.2	745.1	753.9

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet - 31

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	29.111	28.807	28.804	29.098	29.284
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.800	0.800	0.800	0.825	0.800
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.82E-04	1.84E-04	1.84E-04	1.88E-04	1.81E-04
PPM (SO2)	876.9	886.2	886.3	904.7	871.8

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	10:35	9:02
End Time:	11:35	14:10	11:35	10:02
VMstd:	31.320	30.958	30.427	30.119
Sample Volume (ml):	280	270	270	300
SO2 (mg):	2800	2400	2400	2300
SO2 (mg/dscf):	89.401	77.523	78.877	76.364
SO2 (gr/dscf):	1.379	1.196	1.217	1.178
SO2 (lb/mmBtu):	3.302	2.863	2.913	2.775
PPM (as SO2)	1187.1	1029.4	1047.4	1014.0

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	5	6
Date:	2/2/2010	2/2/2010
Start Time:	6:35	9:02
End Time:	7:35	10:02
VMstd:	30.441	30.036
Sample Volume (ml):	290	250
SO2 (mg):	1500	1300
SO2 (mg/dscf):	49.275	43.281
SO2 (gr/dscf):	0.760	0.668
SO2 (lb/mmBtu):	1.805	1.639
PPM (as SO2)	654.3	574.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010
Start Time:	15:05	17:30	19:44
End Time:	16:05	18:30	20:44
VMstd:	31.386	31.078	31.354
Sample Volume (ml):	295	250	265
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.675	0.700	0.625
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
SO ₂ (lbs/dscf):	3.26E-04	2.89E-04	2.71E-04
PPM (as SO ₂)	1566.2	1390.1	1304.0

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	31.788	30.281	30.186
Sample Volume (ml):	275	290	257
Aliquot Volume (ml):	0.02	0.02	0.02
Titrant Ba(ClO4)2 : Volume (ml)	0.675	0.550	0.675
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
SO2 (lbs/dscf):	1.96E-04	1.77E-04	1.93E-04
PPM (SO2)	941.6	849.4	926.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	30.681	31.762	31.312	30.498	29.794
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.825	0.800	0.750	0.775	0.750
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.78E-04	1.67E-04	1.59E-04	1.69E-04	1.67E-04
PPM (SO2)	858.1	803.7	764.3	810.9	803.3

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	31.141	27.708	30.657	30.459	30.638
Sample Volume (ml):	1000	1000	1000	1000	1000
Aliquot Volume (ml):	0.10	0.10	0.10	0.10	0.10
Titrant Ba(ClO4)2 : Volume (ml)	0.900	0.775	0.875	0.850	0.850
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
SO2 (lbs/dscf):	1.92E-04	1.86E-04	1.89E-04	1.85E-04	1.84E-04
PPM (SO2)	922.2	892.5	910.8	890.5	885.3

SO₃

SCR Inlet

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 31

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	15:43	17:56
End Time:	11:35	14:10	16:43	18:56
VMstd:	28.835	29.797	28.723	28.708
Sample Volume (ml):	89	71	67	56
Aliquot Volume (ml):	10	10	10	10
Titrant Ba(ClO ₄) ₂ : Volume (ml)	2.400	2.950	3.175	2.950
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	7.61E-07	7.22E-07	7.61E-07	5.91E-07
PPM (as SO ₃)	3.7	3.5	3.7	2.8

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 31

Run Number:	5	6	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010
Start Time:	6:35	9:02	15:05	17:30	19:44
End Time:	7:35	10:02	16:05	18:30	20:44
VMstd:	29.096	28.815	23.689	23.409	23.609
Sample Volume (ml):	74	45	45	45	60
Aliquot Volume (ml):	1	1	1	1	1
Titrant Ba(ClO4)2 : Volume (ml)	0.200	0.050	0.050	0.050	0.075
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950	0.00950	0.00950
H2SO4/SO3 (lbs/dscf):	5.22E-07	8.02E-08	9.75E-08	9.87E-08	1.94E-07
PPM (as SO3)	2.5	0.4	0.5	0.5	0.9

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 31

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	24.075	24.423	23.954
Sample Volume (ml):	41	60	33
Aliquot Volume (ml):	1	1	1
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.100	0.225	0.300
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	1.75E-07	5.68E-07	4.24E-07
PPM (as SO ₃)	0.8	2.7	2.0

CATALYST AIR MANAGEMENT, INC.
 Controlled Condensate - Method 8A

Client: Lakeland Electric
 Unit: McIntosh Unit 3
 Location: SCR Inlet 31

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	24.263	24.017	23.814	23.896	24.174
Sample Volume (ml):	50	50	45	98	76
Aliquot Volume (ml):	20	5	5	5	5
Titrant Ba(ClO4)2 : Volume (ml)	0.725	0.400	0.350	0.000	0.000
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
H2SO4/SO3 (lbs/dscf):	7.59E-08	1.69E-07	1.34E-07	0.00E+00	0.00E+00
PPM (as SO3)	0.4	0.8	0.6	0.0	0.0

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet - 31

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	24.154	24.173	24.152	24.701	24.207
Sample Volume (ml):	60	58	56	55	72
Aliquot Volume (ml):	5	5	5	5	5
Titrant Ba(ClO4)2 : Volume (ml)	0.800	0.450	0.325	0.500	0.200
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
H2SO4/SO3 (lbs/dscf):	4.04E-07	2.19E-07	1.53E-07	2.26E-07	1.21E-07
PPM (as SO3)	1.9	1.1	0.7	1.1	0.6

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 32

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	16:43	17:56
End Time:	11:35	14:10	17:43	18:56
VMstd:	26.458	25.006	25.004	30.020
Sample Volume (ml):	89	71	0	76
Aliquot Volume (ml):	10	10	0	1
Titrant Ba(ClO ₄) ₂ : Volume (ml)	2.400	2.950	0.000	0.300
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	8.29E-07	8.60E-07	0.00E+00	7.80E-07
PPM (as SO ₃)	4.0	4.1	0.0	3.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 32

Run Number:	5	6	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010
Start Time:	6:35	13:10	15:05	17:30	19:44
End Time:	7:35	14:10	16:05	18:30	20:44
VMstd:	29.667	28.849	23.657	22.903	22.974
Sample Volume (ml):	63	49	59	49	69
Aliquot Volume (ml):	1	1	1	1	1
Titrant Ba(ClO4)2 : Volume (ml)	0.075	0.850	0.100	0.250	0.175
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950	0.00950	0.00950
H2SO4/SO3 (lbs/dscf):	1.64E-07	1.48E-06	2.56E-07	5.49E-07	5.40E-07
PPM (as SO3)	0.8	7.1	1.2	2.6	2.6

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet 32

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	23.795	22.956	22.995
Sample Volume (ml):	80	85	87
Aliquot Volume (ml):	1	1	1
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.175	0.250	0.150
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	6.04E-07	9.51E-07	5.83E-07
PPM (as SO ₃)	2.9	4.6	2.8

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet - 32

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	24.643	24.179	23.888	23.784	23.432
Sample Volume (ml):	54	60	94	66	68
Aliquot Volume (ml):	5	5	5	5	5
Titrant Ba(ClO ₄) ₂ : Volume (ml)	1.300	1.075	0.550	0.575	0.375
Normality Ba(ClO ₄) ₂ :	0.00940	0.00940	0.00940	0.00940	0.00940
H ₂ SO ₄ /SO ₃ (lbs/dscf):	5.79E-07	5.42E-07	4.40E-07	3.24E-07	2.21E-07
PPM (as SO ₃)	2.8	2.6	2.1	1.6	1.1

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Inlet - 32

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	24.473	24.433	24.382	33.640	23.777
Sample Volume (ml):	50	52	77	80	56
Aliquot Volume (ml):	5	5	5	5	5
Titrant Ba(ClO ₄) ₂ : Volume (ml)	2.625	1.350	0.500	0.450	1.150
Normality Ba(ClO ₄) ₂ :	0.00940	0.00940	0.00940	0.00940	0.00940
H ₂ SO ₄ /SO ₃ (lbs/dscf):	1.09E-06	5.84E-07	3.21E-07	2.17E-07	5.50E-07
PPM (as SO ₃)	5.2	2.8	1.5	1.0	2.6

SCR Outlet

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	15:43	17:56
End Time:	11:35	14:10	16:43	18:56
VMstd:	31.485	31.648	31.182	31.289
Sample Volume (ml):	85	75	65	58
Aliquot Volume (ml):	10	10	10	10
Titrant Ba(ClO ₄) ₂ : Volume (ml)	2.750	3.150	3.750	3.950
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	7.62E-07	7.67E-07	8.03E-07	7.52E-07
PPM (as SO ₃)	3.7	3.7	3.9	3.6

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	5	6	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010
Start Time:	6:35	9:02	15:05	17:30	19:44
End Time:	7:35	10:02	16:05	18:30	20:44
VMstd:	31.214	31.063	30.476	31.354	31.262
Sample Volume (ml):	46	37	39	38	51
Aliquot Volume (ml):	2	1	1	1	1
Titrant Ba(ClO ₄) ₂ : Volume (ml)	1.800	1.200	1.200	1.350	1.000
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	1.36E-06	1.47E-06	1.58E-06	1.68E-06	1.68E-06
PPM (as SO ₃)	6.548	7.057	7.582	8.078	8.054

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	31.025	30.642	30.807
Sample Volume (ml):	33	31	35
Aliquot Volume (ml):	1	1	1
Titrant Ba(ClO4)2 : Volume (ml)	0.450	1.950	1.375
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
H2SO4/SO3 (lbs/dscf):	4.92E-07	2.03E-06	1.60E-06
PPM (as SO3)	2.4	9.7	7.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	31.666	31.388	30.730	30.904	30.846
Sample Volume (ml):	42	28	40	36	44
Aliquot Volume (ml):	5	1	1	1	1
Titrant Ba(ClO ₄) ₂ : Volume (ml)	2.000	1.100	0.750	0.900	0.725
Normality Ba(ClO ₄) ₂ :	0.00940	0.00940	0.00940	0.00940	0.00940
H ₂ SO ₄ /SO ₃ (lbs/dscf):	5.39E-07	9.97E-07	9.92E-07	1.07E-06	1.05E-06
PPM (as SO ₃)	2.6	4.8	4.8	5.1	5.1

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 31

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	31.378	31.174	30.840	30.899	30.473
Sample Volume (ml):	40	32	44	46	36
Aliquot Volume (ml):	1	1	1	1	1
Titrant Ba(ClO4)2 : Volume (ml)	0.975	1.075	0.675	0.725	0.875
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
H2SO4/SO3 (lbs/dscf):	1.26E-06	1.12E-06	9.79E-07	1.10E-06	1.05E-06
PPM (as SO3)	6.072	5.391	4.705	5.273	5.050

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	16:43	17:56
End Time:	11:35	14:10	17:43	18:56
VMstd:	31.969	31.869	31.770	31.652
Sample Volume (ml):	75	75	72	78
Aliquot Volume (ml):	10	10	5	5
Titrant Ba(ClO ₄) ₂ : Volume (ml)	2.350	2.500	0.950	0.700
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	5.66E-07	6.04E-07	4.42E-07	3.54E-07
PPM (as SO ₃)	2.7	2.9	2.1	1.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	5	6	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010
Start Time:	6:35	9:02	15:05	17:30	19:44
End Time:	7:35	10:02	16:05	18:30	20:44
VMstd:	30.293	30.434	30.732	30.785	30.974
Sample Volume (ml):	68	42	39	30	48
Aliquot Volume (ml):	0.20	1.00	1.00	1.00	1.00
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.200	1.400	1.775	2.700	1.600
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	2.31E-06	1.98E-06	2.31E-06	2.70E-06	2.55E-06
PPM (as SO ₃)	11.1	9.5	11.1	13.0	12.2

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	31.051	30.667	30.547
Sample Volume (ml):	42	35	41
Aliquot Volume (ml):	1.00	1.00	1.00
Titrant Ba(ClO4)2 : Volume (ml)	1.975	1.950	2.350
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950
H2SO4/SO3 (lbs/dscf):	2.74E-06	2.29E-06	3.24E-06
PPM (as SO3)	13.2	11.0	15.6

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	30.148	29.760	29.441	28.994	28.806
Sample Volume (ml):	34	62	37	46	50
Aliquot Volume (ml):	5.00	1.00	1.00	1.00	1.00
Titrant Ba(ClO ₄) ₂ : Volume (ml)	5.375	0.950	1.200	0.975	0.950
Normality Ba(ClO ₄) ₂ :	0.00940	0.00940	0.00940	0.00940	0.00940
H ₂ SO ₄ /SO ₃ (lbs/dscf):	1.23E-06	2.01E-06	1.53E-06	1.57E-06	1.68E-06
PPM (as SO ₃)	5.9	9.7	7.4	7.6	8.1

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: SCR Outlet 32

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	29.755	29.317	29.500	29.257	28.837
Sample Volume (ml):	35	60	44	39	62
Aliquot Volume (ml):	1.00	1.00	1.00	1.00	1.00
Titrant Ba(ClO4)2 : Volume (ml)	1.725	0.825	1.250	1.500	0.925
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
H2SO4/SO3 (lbs/dscf):	2.06E-06	1.72E-06	1.89E-06	2.03E-06	2.02E-06
PPM (as SO3)	9.9	8.2	9.1	9.8	9.7

ESP Inlet

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	15:43	17:56
End Time:	11:35	14:10	16:43	18:56
VMstd:	29.152	29.514	28.831	28.954
Sample Volume (ml):	30	49	48	51
Aliquot Volume (ml):	2	2	2	2
Titrant Ba(ClO4)2 : Volume (ml)	1.550	1.000	1.075	1.050
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950	0.00950
H2SO4/SO3 (lbs/dscf):	8.19E-07	8.52E-07	9.19E-07	9.50E-07
PPM (as SO3)	3.9	4.1	4.4	4.6

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	5	6	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010
Start Time:	6:35	9:02	15:05	17:30	19:44
End Time:	7:35	10:02	16:05	18:30	20:44
VMstd:	29.308	29.369	29.677	25.112	28.752
Sample Volume (ml):	52	86	43	51	74
Aliquot Volume (ml):	10	20	1	1	1
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.000	0.000	0.200	0.175	0.250
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	0.00E+00	0.00E+00	2.98E-07	3.65E-07	6.61E-07
PPM (as SO ₃)	0.0	0.0	1.4	1.8	3.2

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	28.167	28.751	29.004
Sample Volume (ml):	55	50	74
Aliquot Volume (ml):	1	1	1
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.000	0.050	0.050
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	0.00E+00	8.93E-08	1.31E-07
PPM (as SO ₃)	0.0	0.4	0.6

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 31

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	29.301	28.859	29.506	28.910	28.571
Sample Volume (ml):	48	50	98	58	98
Aliquot Volume (ml):	5	5	5	5	5
Titrant Ba(ClO4)2 : Volume (ml)	1.000	1.225	0.000	0.000	0.000
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
H2SO4/SO3 (lbs/dscf):	3.33E-07	4.31E-07	0.00E+00	0.00E+00	0.00E+00
PPM (as SO3)	1.6	2.1	0.0	0.0	0.0

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet - 31

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	29.111	28.807	28.804	29.098	29.284
Sample Volume (ml):	70	74	87	94	68
Aliquot Volume (ml):	5	5	5	5	5
Titrant Ba(ClO ₄) ₂ : Volume (ml)	1.275	0.425	0.350	0.400	0.425
Normality Ba(ClO ₄) ₂ :	0.00940	0.00940	0.00940	0.00940	0.00940
H ₂ SO ₄ /SO ₃ (lbs/dscf):	6.23E-07	2.22E-07	2.15E-07	2.63E-07	2.01E-07
PPM (as SO ₃)	3.0	1.1	1.0	1.3	1.0

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	1	2	3	4
Date:	2/1/2010	2/1/2010	2/1/2010	2/1/2010
Start Time:	10:35	13:10	10:35	9:02
End Time:	11:35	14:10	11:35	10:02
VMstd:	31.320	30.958	30.427	30.119
Sample Volume (ml):	30	28	35	28
Aliquot Volume (ml):	2	2	2	2
Titrant Ba(ClO ₄) ₂ : Volume (ml)	2.250	2.750	2.250	2.500
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	1.11E-06	1.28E-06	1.33E-06	1.19E-06
PPM (as SO ₃)	5.320	6.140	6.389	5.737

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	5	6	7	8	9
Date:	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010
Start Time:	6:35	9:02	15:05	17:30	19:44
End Time:	7:35	10:02	16:05	18:30	20:44
VMstd:	30.441	30.036	31.386	31.078	31.354
Sample Volume (ml):	37	23	30	27	44
Aliquot Volume (ml):	10	10	1	1	1
Titrant Ba(ClO4)2 : Volume (ml)	0.000	3.250	1.050	1.550	0.875
Normality Ba(ClO4)2:	0.00950	0.00950	0.00950	0.00950	0.00950
H2SO4/SO3 (lbs/dscf):	0.00E+00	2.56E-07	1.03E-06	1.38E-06	1.26E-06
PPM (as SO3)	0.0	1.2	5.0	6.6	6.1

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	10	11	12
Date:	2/3/2010	2/3/2010	2/3/2010
Start Time:	8:45	12:55	17:25
End Time:	9:45	13:55	18:25
VMstd:	31.788	30.281	30.186
Sample Volume (ml):	41	31	28
Aliquot Volume (ml):	0.20	0.20	0.20
Titrant Ba(ClO ₄) ₂ : Volume (ml)	0.175	0.175	0.425
Normality Ba(ClO ₄) ₂ :	0.00950	0.00950	0.00950
H ₂ SO ₄ /SO ₃ (lbs/dscf):	1.16E-06	9.20E-07	2.02E-06
PPM (as SO ₃)	5.6	4.4	9.7

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	13	14	15	16	17
Date:	2/8/2010	2/8/2010	2/8/2010	2/8/2010	2/8/2010
Start Time:	8:30	10:20	12:20	15:30	17:07
End Time:	9:30	11:20	13:20	16:30	18:07
VMstd:	30.681	31.762	31.312	30.498	29.794
Sample Volume (ml):	23	41	30	32	52
Aliquot Volume (ml):	5	5	5	5	5
Titrant Ba(ClO4)2 : Volume (ml)	2.075	1.650	2.300	1.800	1.700
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
H2SO4/SO3 (lbs/dscf):	3.16E-07	4.33E-07	4.48E-07	3.84E-07	6.03E-07
PPM (as SO3)	1.5	2.1	2.2	1.8	2.9

CATALYST AIR MANAGEMENT, INC.
Controlled Condensate - Method 8A

Client: Lakeland Electric
Unit: McIntosh Unit 3
Location: ESP Inlet 32

Run Number:	18	19	20	21	22
Date:	2/9/2010	2/9/2010	2/9/2010	2/9/2010	2/9/2010
Start Time:	6:18	8:05	9:55	11:40	13:25
End Time:	7:18	9:05	10:55	12:40	14:25
VMstd:	31.141	27.708	30.657	30.459	30.638
Sample Volume (ml):	52	76	60	44	38
Aliquot Volume (ml):	5	5	5	5	5
Titrant Ba(ClO4)2 : Volume (ml)	2.000	1.000	0.825	1.125	1.325
Normality Ba(ClO4)2:	0.00940	0.00940	0.00940	0.00940	0.00940
H2SO4/SO3 (lbs/dscf):	6.79E-07	5.57E-07	3.28E-07	3.30E-07	3.34E-07
PPM (as SO3)	3.263	2.680	1.578	1.588	1.606

Coal

C-3 Coal Database

DATE SAMPLED	SAMPLE ID NO.	% ADL	AS RCVD % MOIST.	AS RCVD % ASH	AS RCVD % VOL'S	AS RCVD FIXED C	AS RCVD % SULFUR	AS RCVD BTU	
1/31/10	0020101-01E	6.91	8.60	13.31	31.28	46.81	1.65	12468	2-1-10 testing
2/1/10	0020203-01	4.96	6.91	12.17	32.41	48.52	1.55	12821	2-2-10 testing
2/2/10	0020402-01	6.92	8.37	13.55	31.38	46.70	1.72	12436	2-3-10 testing
2/3/10	0020503-01E	6.92	9.21	11.23	31.87	47.69	1.66	12682	
2/4/10	0020701-01E	5.93	6.91	11.55	32.54	49.00	1.81	12961	
2/5/10	0020701-02E	5.80	6.86	11.09	32.77	49.29	1.72	13080	
2/6/10	0020701-03E	6.28	7.40	10.69	32.51	49.40	1.43	13053	
2/7/10	0020802-01E	5.86	7.55	10.09	31.69	50.68	1.31	13123	2-8-10 testing
2/8/10	0021001-01E	6.75	8.37	12.03	31.33	48.27	1.43	11880	2-9-10 testing
2/9/10	0021101-01E	6.00	7.32	11.55	32.25	48.88	1.47	12093	
2/10/10	0021204-01E	5.93	7.34	12.54	32.15	47.97	1.36	11982	

	Run	COAL KLB/H		Heating Value		Avg. HI MMBtu/hr	Sulfur %
		CEMS Time	Avg. Flow	BTU/#			
Feb. 1	1	1035-1135	222	12468		2767.01	1.65
	2	1310-1410	223			2776.60	1.65
	3	1543-1643	265			3305.44	1.65
	4	1756-1856	265			3307.41	1.65
Feb. 2	5	0635-0735	221	12821		2832.11	1.55
	6	0902-1002	222			2842.41	1.55
	7	1305-1405	279			3571.48	1.55
	8	1730-1830	304			3893.54	1.55
	9	1944-2044	305			3907.07	1.55
Feb. 3	10	0845-0945	306	12436		3806.83	1.72
	11	1255-1355	308			3824.92	1.72
	12	1725-1825	307			3822.06	1.72
Feb. 8	13	0830-0930	251	13123		3291.19	1.31
	14	1020-1120	247			3239.91	1.31
	15	1220-1320	250			3286.78	1.31
	16	1530-1630	250			3284.64	1.31
	17	1707-1807	251			3287.72	1.31
Feb. 9	18	0618-0718	222	11880		2911.31	1.43
	19	0805-0905	223			2928.06	1.43
	20	0955-1055	224			2938.39	1.43
	21	1140-1240	226			2959.50	1.43
	22	1325-1425	226			2960.76	1.43

From EtaPro

APPENDIX 6
REFERENCE METHOD QUALITY ASSURANCE

Isokinetic Sampling Equipment

CATALYST AIR MANAGEMENT, INC

Barometer Calibration Check
Lakeland Electric

DATE: 1/22/2010
CALIBRATED BY: Kelly

Hg in glass Barometer (in Hg)	29.65
Field Barometer (in Hg)	29.63
Difference	-0.02

Catalyst Air Management, Inc.

METER BOX NUMBER: 010
 DATE: 01/21/10
 CALIBRATED BY: Groff
 BENCH METER CALIBRATION FACTOR: 1.0000

Orifice Manometer	Standard Test	Dry Gas		Dry Gas Meter					Barometric Pressure	Time (Time)	Y _i	ΔH@i	Q _m	K _m	
		Meter	Meter	Inlet	Outlet	Average	Test	Test							Test
(Δ H)	Start:	(V _w)	Start:	(V _d)	(T _w)	(T _{di})	(T _{do})	(T _a)	(P _b)						
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.					
0.50	906.419	6.906	865.467	6.928	68.0	58.0	58.0	58.0	29.98	16.00	0.98	1.47	0.433	0.793	
	913.325		872.395												
1.00	913.853	6.535	872.921	6.612	66.5	64.5	62.5	63.5	29.98	11.00	0.98	1.54	0.600	0.774	
	920.388		879.533												
2.00	921.607	8.873	880.761	8.857	67.0	65.0	63.0	64.0	29.98	10.00	0.99	1.42	0.884	0.806	
	930.480		889.618												
3.00	931.309	10.881	890.423	10.849	66.7	66.0	64.3	65.2	29.98	10.00	0.99	1.43	1.083	0.805	
	942.190		901.272												
4.00	942.607	12.612	901.687	12.569	69.2	68.8	66.7	67.8	29.98	10.00	0.99	1.42	1.254	0.806	
	955.219		914.256												

Average: 0.99 1.46

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(\text{Time})(T_{do} + 460)}$$

Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 010
 DATE: 03/01/10
 CALIBRATED BY: Kelly
 BENCH METER CALIBRATION FACTOR: 1.000

PRETEST Y_i : 0.99
 POST-TEST Y_i : 0.97
 DIFFERENCE, %: -1.93

Orifice	Standard		Dry		Standard	Dry Gas Meter			Barometric					
Manometer	Test		Gas		Test	Inlet	Outlet	Average	Pressure	Time				
(ΔH)	Meter		Meter		Meter	(T_{di})	(T_{do})	(T_d)	(P_b)	(Time)				
In. H ₂ O	Start:	(V_w)	Start:	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	(P_b)	(Time)	Y_i	$\Delta H@i$	Q_m	K_m
	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.				
0.50	130.446	4.640	820.700	4.764	69.5	67.5	65.0	66.3	30.07	10.00	0.97	1.23	0.475	0.866
	135.086		825.464											
0.50	135.086	4.690	825.464	4.826	70.5	70.0	67.0	68.5	30.07	10.00	0.97	1.21	0.481	0.875
	139.776		830.290											
0.50	139.776	4.673	830.290	4.814	71.5	72.0	69.5	70.8	30.07	10.00	0.97	1.22	0.480	0.872
	144.449		835.104											

Average: 0.97 1.22

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 010
 DATE: 03/01/10
 CALIBRATED BY: Kelly
 PRETEST Y_i : 0.99
 POST-TEST Y_i : 0.98
 DIFFERENCE, %: -0.93
 BENCH METER CALIBRATION FACTOR: 1.000

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test	Inlet	Outlet	Average	Barometric	Time				
(ΔH)	Meter	(V_w)	Meter	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	Pressure	(Time)				
In. H ₂ O	Start:	ft ³	Start:	ft ³	°F	°F	°F	°F	in. of Hg	min.	Y_i	$\Delta H@i$	Q_m	K_m
0.75	112.965	5.745	803.030	5.785	61.0	52.5	53.5	53.0	30.07	10.00	0.98	1.22	0.579	0.871
	118.710		808.815											
0.75	118.710	5.711	808.815	5.760	63.0	58.5	58.0	58.3	30.07	10.00	0.98	1.24	0.576	0.863
	124.421		814.575											
0.75	124.421	5.736	814.575	5.834	66.0	63.5	61.5	62.5	30.07	10.00	0.97	1.22	0.582	0.869
	130.157		820.409											

Average: 0.98 1.23

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

METER BOX NUMBER: 011
 DATE: 01/20/10
 CALIBRATED BY: Groff
 BENCH METER CALIBRATION FACTOR: 1.0000

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test	Inlet	Outlet	Average	Barometric	Time				
Setting	Meter		Meter		Meter	(T _{di})	(T _{do})	(T _d)	Pressure	(Time)				
(Δ H)	Start:	(V _w)	Start:	(V _d)	(T _w)	(T _{di})	(T _{do})	(T _d)	(P _b)	(Time)				
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.	Y _i	ΔH@i	Q _m	K _m
0.50	851.246	6.951	989.485	6.828	70.8	67.0	65.2	66.1	29.95	15.00	1.01	1.35	0.454	0.826
	858.197		996.313											
1.00	859.070	6.391	997.175	6.311	71.8	70.3	66.8	68.6	29.95	10.00	1.00	1.42	0.629	0.808
	865.461		1003.486											
2.00	866.217	8.917	4.227	8.741	73.0	71.5	69.7	70.6	29.95	10.50	1.01	1.63	0.831	0.752
	875.134		12.968											
3.00	876.736	10.485	14.538	10.247	68.8	70.7	69.7	70.2	29.95	10.00	1.02	1.61	1.024	0.757
	887.221		24.785											
4.00	893.010	12.091	30.472	11.798	69.7	71.2	70.0	70.6	29.95	10.00	1.02	1.62	1.178	0.754
	905.101		42.270											

Average: 1.01 1.53

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(\text{Time})(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 011
 DATE: 03/02/10
 CALIBRATED BY: Kelly
 BENCH METER CALIBRATION FACTOR: 1.000

PRETEST Y_i : 1.01
 POST-TEST Y_i : 1.01
 DIFFERENCE, %: -0.34

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test				Barometric					
Setting	Meter		Meter		Meter	Inlet	Outlet	Average	Pressure	Time				
(ΔH)	Start:	(V_w)	Start:	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	(P_b)	(Time)				
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.	Y_i	$\Delta H@i$	Q_m	K_m
0.75	190.961	5.459	787.441	5.365	66.0	63.5	65.5	64.5	29.83	10.00	1.01	1.46	0.538	0.796
	196.420		792.806											
0.75	196.420	5.429	792.806	5.363	67.0	65.0	66.0	65.5	29.83	10.00	1.01	1.46	0.537	0.795
	201.849		798.169											
0.75	201.849	5.406	798.169	5.352	67.5	65.5	65.0	65.3	29.83	10.00	1.00	1.47	0.535	0.793
	207.255		803.521											

Average: 1.01 1.46

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.
 POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 012
 DATE: 01/21/10
 CALIBRATED BY: Groff

BENCH METER CALIBRATION FACTOR: 1.0000

Orifice Manometer Setting (Δ H)	Standard Test Meter Start: End:	Dry Gas Meter (V _w) ft ³	Dry Gas Meter (V _d) ft ³	Standard Test Meter (T _w) °F	Dry Gas Meter				Barometric Pressure (P _b) in. of Hg	Time (Time) min.	Y _i	ΔH@i	Q _m	K _m
					Inlet (T _{di}) °F	Outlet (T _{do}) °F	Average (T _d) °F							
0.50	955.547 961.853	6.306	169.367 175.774	63.8	65.7	64.3	65.0	29.80	15.00	0.99	1.54	0.427	0.774	
1.00	962.229 968.107	5.878	176.154 182.099	67.8	68.7	66.8	67.8	29.80	10.00	0.99	1.60	0.593	0.760	
2.00	968.479 976.715	8.236	182.469 190.747	70.0	70.0	68.5	69.3	29.80	10.00	0.99	1.65	0.827	0.747	
3.00	977.371 987.460	10.089	191.422 201.545	70.0	70.0	69.0	69.5	29.80	10.00	0.99	1.66	1.011	0.746	
4.00	988.114 1000.005	11.891	202.217 214.073	70.0	70.8	69.8	70.3	29.80	10.00	0.99	1.62	1.184	0.756	

Average: 0.99 1.61

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 012
 DATE: 03/02/10
 CALIBRATED BY: Kelly
 BENCH METER CALIBRATION FACTOR: 1.000

PRETEST Y_i : 0.99
 POST-TEST Y_i : 0.98
 DIFFERENCE, %: -0.92

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test	Inlet	Outlet	Average	Barometric	Time				
Setting	Meter		Meter		Meter	(T_{di})	(T_{do})	(T_d)	Pressure	(Time)				
(ΔH)	Start:	(V_w)	Start:	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	(P_b)	min.	Y_i	$\Delta H@i$	Q_m	K_m
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg					
0.75	221.690	4.992	144.704	5.079	62.5	63.5	62.0	62.8	29.80	10.00	0.98	1.63	0.507	0.754
	226.682		149.783											
0.75	226.682	5.522	149.783	5.637	64.0	66.0	62.0	64.0	29.80	11.00	0.98	1.61	0.510	0.758
	232.204		155.420											
0.75	232.204	5.021	155.420	5.125	65.5	68.0	64.0	66.0	29.80	10.00	0.98	1.61	0.511	0.757
	237.225		160.545											

Average: 0.98 1.62

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

Catalyst Air Management, Inc.
 POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 020
 DATE: 03/09/10
 CALIBRATED BY: Kelly

BENCH METER CALIBRATION FACTOR: 1.0000

Orifice Manometer Setting (Δ H)	Standard Test Meter Start:	Dry Gas Meter (V _w) ft ³	Dry Gas Meter Start:	Standard Test Meter (V _d) ft ³	Standard Test Meter (T _w) °F	Dry Gas Meter			Barometric Pressure (P _b) in. of Hg	Time (Time) min.	Y _i	ΔH@i	Q _m	K _m
						Inlet (T _{di}) °F	Outlet (T _{do}) °F	Average (T _d) °F						
0.50	245.020 250.959	5.939	939.089 944.959	5.870	62.0	61.7	61.0	61.4	30.02	13.50	1.01	1.46	0.435	0.794
1.00	251.364 261.205	9.841	945.365 955.040	9.675	64.5	63.0	61.0	62.0	30.02	16.00	1.01	1.52	0.604	0.780
2.00	261.544 270.408	8.864	955.375 964.067	8.692	61.5	62.5	62.0	62.3	30.02	10.50	1.02	1.62	0.827	0.756
3.00	270.802 281.160	10.358	964.455 974.653	10.198	64.0	66.0	62.5	64.3	30.02	10.00	1.01	1.61	1.016	0.757
4.00	281.450 288.590	7.140	974.850 981.800	6.950	64.5	69.0	63.5	66.3	30.02	6.00	1.02	1.67	1.152	0.743

Average: 1.01 1.58

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 020
 DATE: 03/16/09
 CALIBRATED BY: Kelly
 BENCH METER CALIBRATION FACTOR: 1.000

PRETEST Y_i : 1.01
 POST-TEST Y_i : 0.97
 DIFFERENCE, %: -4.60

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test				Barometric					
Setting	Meter		Meter		Meter	Inlet	Outlet	Average	Pressure	Time				
(ΔH)	Start:	(V_w)	Start:	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	(P_b)	(Time)				
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.	Y_i	$\Delta H@i$	Q_m	K_m
1.00	856.848	6.132	193.515	6.349	59.0	58.7	58.3	58.5	30.20	10.00	0.96	1.36	0.635	0.825
	862.980		199.864											
1.00	862.980	6.124	199.864	6.308	60.3	61.5	59.5	60.5	30.20	10.00	0.97	1.38	0.630	0.817
	869.104		206.172											
1.00	869.104	6.144	206.172	6.342	61.7	64.2	60.5	62.4	30.20	10.00	0.97	1.38	0.632	0.820
	875.248		212.514											

Average: 0.97 1.37

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

METER BOX NUMBER: 030
 DATE: 01/13/10
 CALIBRATED BY: Kelly
 BENCH METER CALIBRATION FACTOR: 1.0000

Orifice Manometer	Standard Test	Dry		Standard Test	Dry Gas Meter				Barometric Pressure	Time	Y _i	ΔH@i	Q _m	K _m
		Meter	Meter		Inlet	Outlet	Average							
(ΔH)	Start:	(V _w)	Start:	(V _d)	(T _w)	(T _d)	(T _{do})	(T _d)	(P _b)	(Time)				
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.				
0.50	648.465 654.720	6.255	912.283 918.540	6.257	66.0	77.5	73.0	75.3	30.42	15.00	1.02	1.62	0.415	0.756
1.00	655.115 662.319	7.204	918.938 926.074	7.136	66.0	77.5	71.5	74.5	30.42	12.00	1.02	1.59	0.591	0.762
2.00	662.754 672.569	9.815	926.422 936.205	9.783	66.0	78.0	72.0	75.0	30.42	12.00	1.02	1.70	0.811	0.738
3.00	673.140 682.987	9.847	936.779 946.540	9.761	69.0	78.0	71.5	74.8	30.42	10.00	1.01	1.78	0.970	0.722
4.00	684.646 695.955	11.309	947.856 958.982	11.126	69.0	79.0	72.0	75.5	30.42	10.00	1.02	1.83	1.105	0.712

Average: 1.02 1.70

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 030
 DATE: 03/01/10
 CALIBRATED BY: Kelly
 PRETEST Y_i : 1.02
 POST-TEST Y_i : 1.01
 BENCH METER CALIBRATION FACTOR: 1.000
 DIFFERENCE, %: -0.53

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test	Inlet	Outlet	Average	Barometric	Time				
(ΔH)	Start:	(V_w)	Start:	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	Pressure	(Time)				
In. H ₂ O	End:	ft^3	End:	ft^3	$^{\circ}\text{F}$	$^{\circ}\text{F}$	$^{\circ}\text{F}$	$^{\circ}\text{F}$	in. of Hg	min.	Y_i	$\Delta H@i$	Q_m	K_m
1.70	90.210	7.196	657.935	7.085	62.0	62.5	56.5	59.5	30.07	10.00	1.01	1.88	0.704	0.702
	97.406		665.020											
1.70	97.706	7.186	665.020	7.054	62.0	67.5	59.5	63.5	30.07	10.00	1.02	1.91	0.700	0.696
	104.892		672.074											
1.70	105.082	7.176	672.074	7.097	62.0	68.0	61.0	64.5	30.07	10.00	1.01	1.89	0.705	0.700
	112.258		679.171											

Average: 1.01 1.89

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(\text{Time})(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

METER BOX NUMBER: 070
 DATE: 01/20/10
 CALIBRATED BY: Love
 BENCH METER CALIBRATION FACTOR: 1.0000

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test	Inlet	Outlet	Average	Barometric	Time				
Setting	Meter		Meter		Meter	(T _{di})	(T _{do})	(T _d)	Pressure	(Time)				
(Δ H)	Start:	(V _w)	Start:	(V _d)	(T _w)	(°F)	(°F)	(°F)	(P _b)		Y _i	ΔH@i	Q _m	K _m
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.				
0.50	803.031	6.044	245.715	6.086	68.0	63.7	66.0	64.9	29.95	15.00	0.99	1.69	0.407	0.739
	809.075		251.801											
1.00	810.112	5.880	252.862	5.833	68.0	66.0	66.0	66.0	29.95	10.00	1.00	1.65	0.583	0.750
	815.992		258.695											
2.00	817.031	8.121	259.846	8.209	70.7	67.5	67.7	67.6	29.95	10.00	0.98	1.67	0.821	0.745
	825.152		268.055											
3.00	826.234	10.084	269.145	10.159	69.0	71.0	71.0	71.0	29.95	10.00	0.99	1.64	1.016	0.750
	836.318		279.304											
4.00	838.244	11.713	281.246	11.748	70.8	71.0	71.0	71.0	29.95	10.00	0.99	1.64	1.175	0.751
	849.957		292.994											

Average: 0.99 1.66

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 070
 DATE: 03/02/10
 CALIBRATED BY: Kelly
 BENCH METER CALIBRATION FACTOR: 1.000
 PRETEST Y_i : 0.99
 POST-TEST Y_i : 0.99
 DIFFERENCE, %: 0.40

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test	Inlet	Outlet	Average	Barometric	Time				
(ΔH)	Setting	Meter	Meter		Meter	(T_w)	(T_{di})	(T_{do})	(T_d)	(P_b)	(Time)			
Start:	(V_w)	Start:	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	(P_b)	(Time)	Y_i	$\Delta H@i$	Q_m	K_m	
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.				
0.75	175.365	5.094	886.046	5.006	72.0	65.0	65.0	65.0	29.83	10.00	1.00	1.68	0.501	0.742
	180.459		891.052											
0.75	180.459	5.091	891.052	5.046	74.0	66.5	66.5	66.5	29.83	10.00	0.99	1.66	0.505	0.747
	185.550		896.098											
0.75	185.550	5.064	896.098	5.068	76.0	68.0	68.0	68.0	29.83	10.00	0.98	1.65	0.507	0.749
	190.614		901.166											

Average: 0.99 1.66

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(\text{Time})(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

METER BOX NUMBER: 090
 DATE: 01/05/10
 CALIBRATED BY: Urban
 BENCH METER CALIBRATION FACTOR: 1.000

Orifice	Standard		Dry		Standard	Dry Gas Meter			Barometric					
Manometer	Test		Gas		Test									
Setting	Meter		Meter		Meter	Inlet	Outlet	Average	Pressure	Time				
(Δ H)	Start:	(V _w)	Start:	(V _d)	(T _w)	(T _{di})	(T _{do})	(T _d)	(P _b)	(Time)				
In. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.	Y _i	ΔH@i	Q _m	K _m
0.50	678.162	6.273	413.129	6.324	51.0	55.0	52.0	53.5	29.43	15.00	1.00	1.57	0.420	0.768
	684.435		419.453											
1.00	684.435	6.124	419.453	6.145	51.0	59.0	54.0	56.5	29.43	10.00	1.00	1.49	0.612	0.788
	690.559		425.598											
2.00	690.559	7.175	425.598	7.177	51.0	63.0	56.0	59.5	29.43	8.00	1.01	1.41	0.891	0.810
	697.734		432.775											
3.00	697.734	6.099	432.775	6.122	51.0	65.5	58.0	61.8	29.43	6.00	1.01	1.64	1.013	0.751
	703.833		438.897											
4.00	703.833	5.770	438.897	5.807	51.0	67.0	59.5	63.3	29.43	5.00	1.01	1.69	1.153	0.739
	709.603		444.704											

Average: 1.01 1.56

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(Time)(T_{do} + 460)}$$

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Catalyst Air Management, Inc.

POST-TEST METER BOX CALIBRATION

METER BOX NUMBER: 090
 DATE: 04/21/09
 CALIBRATED BY: Urban
 BENCH METER CALIBRATION FACTOR: 1.000

PRETEST Y_i : 1.01
 POST-TEST Y_i : 1.01
 DIFFERENCE, %: 0.29

Orifice	Standard		Dry		Standard	Dry Gas Meter								
Manometer	Test		Gas		Test	Dry Gas Meter			Barometric					
Setting	Meter		Meter		Meter	Inlet	Outlet	Average	Pressure	Time				
(ΔH)	Start:	(V_w)	Start:	(V_d)	(T_w)	(T_{di})	(T_{do})	(T_d)	(P_b)	(Time)				
ln. H ₂ O	End:	ft ³	End:	ft ³	°F	°F	°F	°F	in. of Hg	min.	Y_i	$\Delta H@i$	Q_m	K_m
1.00	925.085	5.947	944.666	5.944	51.0	53.0	49.5	51.3	29.60	10.00	1.00	1.56	0.592	0.769
	931.032		950.610											
1.00	931.032	6.051	950.610	5.998	51.0	57.0	51.5	54.3	29.60	10.00	1.01	1.55	0.597	0.773
	937.083		956.608											
1.00	937.083	6.014	956.608	5.990	51.0	61.0	54.5	57.8	29.60	10.00	1.01	1.56	0.595	0.769
	943.097		962.598											

Average: 1.01 1.56

FORMULAS

$$Y_i = \frac{(V_w)(P_b)(T_d + 460)}{(V_d)\left(P_b + \frac{H}{13.6}\right)(T_w + 460)}$$

$$K_m = Q_m \sqrt{\frac{(P_b)(29)}{(T_{do} + 460)(\Delta H)}}$$

$$\Delta H@i = \frac{0.9244}{K_m^2}$$

$$Q_m = \frac{(V_d)(T_{do} + 460)}{(\text{Time})(T_{do} + 460)}$$

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**APEX INSTRUMENTS METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
5-POINT ENGLISH UNITS**

Meter Console Information	
Console Model Number	CAC 2
Console Serial Number	
DGM Model Number	
DGM Serial Number	

Calibration Conditions			
Date	Time	15-Oct-09	12:30
Barometric Pressure		30.1	in Hg
Theoretical Critical Vacuum ¹		14.2	in Hg
Calibration Technician		SCW	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K ₁	17.647	oR/in Hg

¹For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

²The Critical Orifice Coefficient, K', must be entered in English units, (ft³*R^{1/2})/(in.Hg*min).

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(θ)	(P _m)	(V _m)	(V _m)	(t _m)	(t _m)		K'	(t _{amb})	(t _{amb})	
min	in H ₂ O	cubic feet	cubic feet	°F	°F		see above ²	°F	°F	in Hg
15.0	0.3	989.400	994.394	83	84	40	0.2430	81	82	17
11.0	0.6	994.394	999.795	84	84	48	0.3570	81	81	17
9.0	1.1	999.795	1005.534	84	85	55	0.4710	81	81	17
8.0	1.8	1023.700	1030.352	87	87	63	0.6000	82	81	17
5.0	3.4	1030.352	1036.104	87	87	73	0.8410	81	81	17

Results								
Standardized Data				Dry Gas Meter				
Dry Gas Meter		Critical Orifice		Calibration Factor		Flowrate	ΔH @	
(V _{m(Std)})	(Q _{m(Std)})	(V _{Cr(Std)})	(Q _{Cr(Std)})	Value	Variation	Std & Corr	0.75 SCFM	Variation
cubic feet	cfm	cubic feet	cfm	(Y)	(ΔY)	(Q _{m(Std)(corr)})	(ΔH@)	(ΔΔH@)
						cfm	in H ₂ O	
4.884	0.326	4.715	0.314	0.965	0.000	0.314	1.561	-0.042
5.282	0.480	5.082	0.462	0.962	-0.003	0.462	1.576	-0.027
5.614	0.624	5.486	0.610	0.977	0.012	0.610	1.635	0.032
6.488	0.811	6.209	0.776	0.957	-0.009	0.776	1.648	0.045
5.632	1.126	5.442	1.088	0.966	0.001	1.088	1.595	-0.008
				0.966	Y Average		1.603	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is ±0.02.

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**APEX INSTRUMENTS METHOD 5 POST-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
3-POINT ENGLISH UNITS**

Meter Console Information	
Console Model Number	CAC 2
Console Serial Number	
DGM Model Number	
DGM Serial Number	

Calibration Conditions			
Date	Time	16-Feb-10	3:00 PM
Barometric Pressure		30.1	in Hg
Theoretical Critical Vacuum ¹		14.2	in Hg
Calibration Technician			

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K _c	17.647	oR/in Hg

¹For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

²The Critical Orifice Coefficient, K', must be entered in English units, (ft³*R^{1/2})/(in.Hg*min).

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(θ)	(P _m)	(V _m)	(V _m)	(t _m)	(t _m)		K'	(t _{amb})	(t _{amb})	
min	in H ₂ O	cubic feet	cubic feet	°F	°F		see above ²	°F	°F	in Hg
10.0	1.0	184.400	189.270	61	62	48	0.3570	60	60	16
10.0	1.0	189.270	194.140	62	63	48	0.3570	60	60	16
10.0	1.0	194.140	199.015	63	64	48	0.3570	60	60	16

Results								
Standardized Data				Dry Gas Meter				
Dry Gas Meter		Critical Orifice		Calibration Factor		Flowrate	ΔH @	
(V _{m(Std)})	(Q _{m(Std)})	(V _{c(Std)})	(Q _{c(Std)})	Value	Variation	Std & Corr	0.75 SCFM	Variation
cubic feet	cfm	cubic feet	cfm	(Y)	(ΔY)	(Q _{m(Std)(Corr)})	(ΔH@)	(ΔΔH@)
						cfm	in H ₂ O	
4.969	0.497	4.709	0.471	0.948	-0.001	0.471	2.597	0.005
4.960	0.496	4.709	0.471	0.949	0.000	0.471	2.592	0.000
4.955	0.496	4.709	0.471	0.950	0.001	0.471	2.587	-0.005
Pretest Gamma		% Deviation	Enter Data	0.949	Y Average		2.592	ΔH@ Average

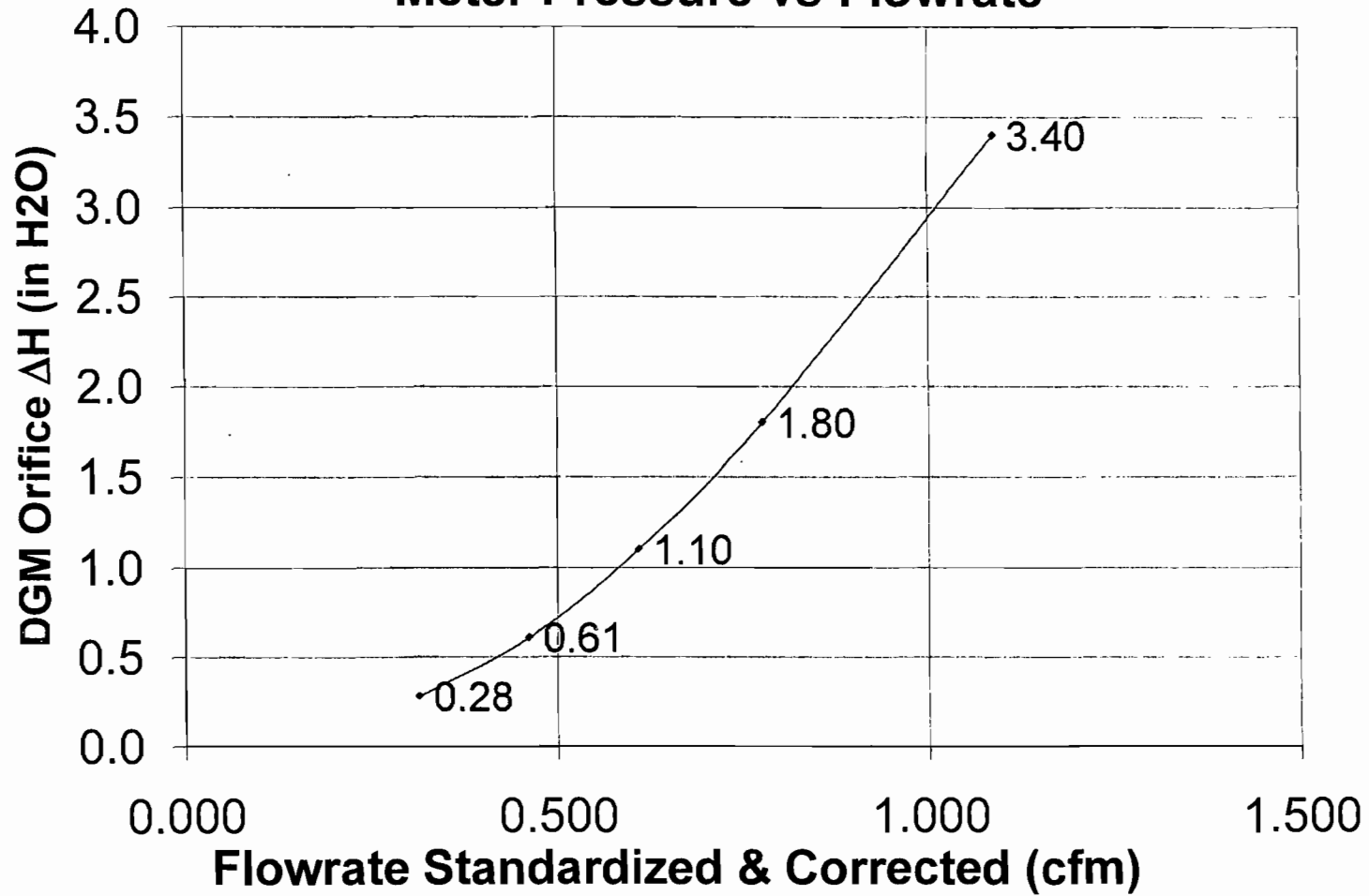
Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is ±0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR Title 40, Part 60, Appendix A-3, Method 5, 16.2.3

Signature _____

Date _____

Meter Pressure vs Flowrate



303

Calibration Gas Certification Sheets



CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

PDI WHSE KNOXVILLE HUB
3020 E INDUSTRIAL PKWY
KNOXVILLE TN 37921

Doc Number: 0000009807

Order Number: 190671600 - 5

Customer P. O. Number:

Customer Reference Number: LB216

Fill Date: 9/21/2009

Part Number: EV NIDDOXE64-AS

Lot Number: NA

Cylinder Style & Outlet: AS 590

Cylinder Pressure & Volume: 2000 psi 140 cu ft

Customer Order Number: NA

Certified Concentration:

Expiration Date:	9/28/2012	Analytical Uncertainty:
Cylinder Number:	CC65519	
10.19 %	CARBON DIOXIDE	± 1 %
12.43 %	OXYGEN	± 1 %
Balance	NITROGEN	

NOx ppm = NA (NOx Values for Reference Only)

Certification Information: Certification Date: 9/28/2009 Term: 36 Months Expiration Date: 9/28/2012

- This cylinder was certified according to the 1997 EPA Traceability Protocol, document #EPA-600/R-97/121, using procedure G1
- Do not use this standard if pressure is less than 150 PSIG.

Analytical Data: (R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: CARBON DIOXIDE

Requested Concentration: 10 %
 Certified Concentration: 10.19 %
 Instrument Used: SIEMENS ULTRAMAT 5E SN: D2-417
 Analytical Method: NON-DISPERSIVE INFRARED
 Last Multipoint Calibration: 9/15/2009

Reference Standard Type: GMS
 Ref. Std. Cylinder #: CC247549
 Ref. Std. Conc.: 11.94 %
 Ref. Std. Traceable to SRM #: 2745

First Analysis Data:		Date: 9/29/2009	
Z: 0	R: 11.51	C: 9.9	Conc: 10.18
R: 11.51	Z: 0	C: 9.91	Conc: 10.19
Z: 0	C: 9.91	R: 11.51	Conc: 10.19
UOM: %	Mean Test Assay: 10.19 %		

Second Analysis Data:		Date:	
Z: 0	R: 0	C: 0	Conc: 0
R: 0	Z: 0	C: 0	Conc: 0
Z: 0	C: 0	R: 0	Conc: 0
UOM: %	Mean Test Assay: 0 %		

2. Component: OXYGEN

Requested Concentration: 12.5 %
 Certified Concentration: 12.43 %
 Instrument Used: SIEMENS OXYMAT 5E SN F1-111
 Analytical Method: PARAMAGNETIC
 Last Multipoint Calibration: 9/3/2009

Reference Standard Type: GMS
 Ref. Std. Cylinder #: CC154663
 Ref. Std. Conc.: 22.98 %
 Ref. Std. Traceable to SRM #: 2659a

First Analysis Data:		Date: 9/28/2009	
Z: 0	R: 22.98	C: 12.44	Conc: 12.43
R: 23	Z: 0	C: 12.44	Conc: 12.43
Z: 0	C: 12.44	R: 23	Conc: 12.43
UOM: %	Mean Test Assay: 12.43 %		

Second Analysis Data:		Date:	
Z: 0	R: 0	C: 0	Conc: 0
R: 0	Z: 0	C: 0	Conc: 0
Z: 0	C: 0	R: 0	Conc: 0
UOM: %	Mean Test Assay: 0 %		

Analyzed by: Melissa Santana

Certified by: WLS 9/29/09

Information contained herein has been prepared at your request by qualified experts within GTS-Welco, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of GTS-Welco, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.



CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

PDI WHSE KNOXVILLE SUB
3020 E INDUSTRIAL PKWY
KNOXVILLE TN 37921

DocNumber: 0000009804

Order Number: 190671600 - 6

Customer P. O. Number:

Customer Reference Number: LB216

Fill Date: 9/21/2009

Part Number: EV NICDOXE113AS

Lot Number: NA

Cylinder Style & Outlet: AS 590

Cylinder Pressure & Volume: 2000 psi 140 cu ft

Customer Order Number: NA

Certified Concentration:

Expiration Date:	9/28/2012	Analytical Uncertainty:
Cylinder Number:	CC219704	
16.80 %	CARBON DIOXIDE	± 1 %
21.92 %	OXYGEN	± 1 %
Balance	NITROGEN	

NOx ppm = NA (NOx Values for Reference Only)

Certification Information: Certification Date: 9/28/2009 Term: 35 Months Expiration Date: 9/28/2012

- This cylinder was certified according to the 1997 EPA Traceability Protocol, document #EPA-600/R-97/121, using procedure G1
- Do not use this standard if pressure is less than 150 PSIG.

Analytical Data: (R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: CARBON DIOXIDE

Requested Concentration: 17 %
 Certified Concentration: 16.8 %
 Instrument Used: SIEMENS ULTRAMAT 5E SN. 02-412
 Analytical Method: NON-DISPERSIVE INFRARED
 Last Multipoint Calibration: 9/15/2009

Reference Standard Type: GMS
 Ref. Std. Cylinder #: CC109454
 Ref. Std. Conc: 17.82 %
 Ref. Std. Traceable to SRM #: 2745

First Analysis Data:		Date: 9/25/2009	
Z: 0	R: 17.22	C: 16.24	Conc: 16.8
R: 17.22	Z: 0	C: 16.24	Conc: 16.8
Z: 0	C: 16.24	R: 17.24	Conc: 16.8
UOM: %	Mean Test Assay: 16.8 %		

Second Analysis Data:		Date:	
Z: 0	R: 0	C: 0	Conc: 0
R: 0	Z: 0	C: 0	Conc: 0
Z: 0	C: 0	R: 0	Conc: 0
UOM: %	Mean Test Assay: 0 %		

2. Component: OXYGEN

Requested Concentration: 22 %
 Certified Concentration: 21.92 %
 Instrument Used: SIEMENS OXYMAT 5E SN F1-111
 Analytical Method: PARAMAGNETIC
 Last Multipoint Calibration: 9/3/2009

Reference Standard Type: GMS
 Ref. Std. Cylinder #: CC154663
 Ref. Std. Conc: 22.98 %
 Ref. Std. Traceable to SRM #: 2659a

First Analysis Data:		Date: 9/28/2009	
Z: 0	R: 22.98	C: 21.92	Conc: 21.91
R: 22.98	Z: 0	C: 21.92	Conc: 21.91
Z: 0	C: 21.94	R: 23	Conc: 21.93
UOM: %	Mean Test Assay: 21.92 %		

Second Analysis Data:		Date:	
Z: 0	R: 0	C: 0	Conc: 0
R: 0	Z: 0	C: 0	Conc: 0
Z: 0	C: 0	R: 0	Conc: 0
UOM: %	Mean Test Assay: 0 %		

Analyzed by: Melissa Santana

Certified by: M.S. 9/29/09

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DocNumber: 0000004272

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

CATALYST AIR MGT INC

Praxair Order Number: 06387548-00

Customer P. O. Number: 01506809

Customer Reference Number: WA876

Fill Date:

Port Number: EV NICDOXE54-AS

Lot Number: 109815705

Cylinder Style & Outlet: AS 590

Cylinder Pressure & Volume: 2000 psi 140cu ft

Certified Concentration:

Expiration Date:	6/13/2011		
Cylinder Number:	CC 111248		Analytical Uncertainty:
	10.22 %	CARBON DIOXIDE	± 1 %
	12.42 %	OXYGEN	± 1 %
	Balance	NITROGEN	

NOx ppm = N/A

NOX Values for Reference Only

Certification Information: Certification Date: 6/13/2008 Term: 36 Months Expiration Date: 6/13/2011

This cylinder was certified according to the 1997 EPA Traceability Protocol, Document #EPA-600/R-97/121, using Procedure G1
Do Not Use this Standard if Pressure is less than 150 PSIG

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: CARBON DIOXIDE

Requested Concentration: 10 %
 Certified Concentration: 10.22 %
 Instrument Used: Siemens Ultramat 5E S/N A12-730
 Analytical Method: NDIR
 Last Multipoint Calibration: 5/19/2008

Reference Standard Type: GMS
 Ref. Std. Cylinder #: CC 54654
 Ref. Std. Conc: 10.07 %
 Ref. Std. Traceable to SRM #: vs. 1674b
 SRM Sample #: 7-F-32
 SRM Cylinder #: CAL014645

First Analysis Data:		Date:	6/13/2008
Z:	0	R:	10.07
C:	10.21	Conc:	10.21
R:	10.06	Z:	0
C:	10.21	Conc:	10.22
R:	10.05	Conc:	10.22
UOM:	%	Mean Test Assay:	10.22 %

Second Analysis Data:		Date:	
Z:	0	R:	0
C:	0	Conc:	0
R:	0	Z:	0
C:	0	Conc:	0
R:	0	Conc:	0
UOM:	%	Mean Test Assay:	0 %

2. Component: OXYGEN

Requested Concentration: 12.5 %
 Certified Concentration: 12.42 %
 Instrument Used: Siemens Oxymat 5E S/N A12-839
 Analytical Method: Paramagnetic
 Last Multipoint Calibration: 5/19/2008

Reference Standard Type: GMS
 Ref. Std. Cylinder #: CC 85863
 Ref. Std. Conc: 15.02 %
 Ref. Std. Traceable to SRM #: vs. 2659a
 SRM Sample #: 71-37-B
 SRM Cylinder #: CUA-006734

First Analysis Data:		Date:	6/13/2008
Z:	0	R:	15.02
C:	12.42	Conc:	12.42
R:	15.02	Z:	0
C:	12.42	Conc:	12.42
R:	15.02	Conc:	12.42
UOM:	%	Mean Test Assay:	12.42 %

Second Analysis Data:		Date:	
Z:	0	R:	0
C:	0	Conc:	0
R:	0	Z:	0
C:	0	Conc:	0
R:	0	Conc:	0
UOM:	%	Mean Test Assay:	0

Analyzed by:

Peter Su

Certified by:

Helena Tran

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DocNumber: 00000015490

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

CATALYST

Praxair Order Number: 09245615-00
Customer P. O. Number: 02322041
Customer Reference Number: WAB76

Fill Date:
Part Number: EV NICDOXE111AS
Lot Number: 109908803
Cylinder Style & Outlet: AS 590
Cylinder Pressure & Volume: 2000 psi 140 cu ft

Certified Concentration:

Expiration Date:	3/19/2012		
Cylinder Number:	CC 86060		Analytical Uncertainty:
16.68	%	CARBON DIOXIDE	± 1 %
22.02	%	OXYGEN	± 1 %
Balance		NITROGEN	

NOx ppm = N/A

NOX Values for Reference Only

Certification Information: Certification Date: 3/19/2009 Term: 36 Months Expiration Date: 3/19/2012

This cylinder was certified according to the 1997 EPA Traceability Protocol, Document #EPA-600/R-97/121, using Procedure G1
Do Not Use this Standard if Pressure is less than 150 PSIG

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: CARBON DIOXIDE

Requested Concentration: 17 %
Certified Concentration: 16.68 %
Instrument Used: Siemens Ultramat 5E SNA12-730
Analytical Method: NDIR
Last Multipoint Calibration: 3/10/2009

Reference Standard Type: GMS
Ref. Std. Cylinder #: ND 18693
Ref. Std. Conc: 17.98 %
Ref. Std. Traceable to SRM #: vs. 2745
SRM Sample #: 9-B-09
SRM Cylinder #: CAL010768

First Analysis Data:		Date:	3/19/2009
Z:	0	R:	17.98
C:	16.68	Conc:	16.68
R:	17.98	Z:	0
C:	16.68	Conc:	16.68
Z:	0	R:	17.98
C:	16.68	Conc:	16.68
UOM:	%	Mean Test Assay:	16.68 %

Second Analysis Data:		Date:	
Z:	0	R:	0
C:	0	Conc:	0
R:	0	Z:	0
C:	0	Conc:	0
Z:	0	R:	0
C:	0	Conc:	0
UOM:	%	Mean Test Assay:	0 %

2. Component: OXYGEN

Requested Concentration: 21 %
Certified Concentration: 22.02 %
Instrument Used: OXYMAT 5E
Analytical Method: PARAMAGNETIC
Last Multipoint Calibration: 3/10/2009

Reference Standard Type: GMS
Ref. Std. Cylinder #: SA 11655
Ref. Std. Conc: 21.02 %
Ref. Std. Traceable to SRM #: 2659A
SRM Sample #: 71-37-B
SRM Cylinder #: CLM 005734

First Analysis Data:		Date:	3/19/2009
Z:	0	R:	21.02
C:	22.02	Conc:	22.02
R:	21.02	Z:	0
C:	22.02	Conc:	22.02
Z:	0	R:	21.02
C:	22.02	Conc:	22.02
UOM:	%	Mean Test Assay:	22.02 %

Second Analysis Data:		Date:	
Z:	0	R:	0
C:	0	Conc:	0
R:	0	Z:	0
C:	0	Conc:	0
Z:	0	R:	0
C:	0	Conc:	0
UOM:	%	Mean Test Assay:	0 %

Analyzed by:

Pablo Reyes

Certified by:

Eric Young

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Making Our Planet More Productive

APPENDIX 7
SAMPLE CALCULATIONS

SAMPLE EQUATIONS FOR ISOKINETIC SAMPLING

CALCULATIONS FOR FLUE GAS VOLUME AND ISOKINETIC RATIO

Time	Dry Gas	Pitot	Orifice	Dry Gas		Flue Gas	Stack
	Meter Ft ³	ΔP In. H ₂ O	ΔH In. H ₂ O	Temp. °F In	Out	Static Pressure In. H ₂ O	
T	V _m	Δp	ΔH	TMI	TMO	P _g	t _s

1. D_n = Nozzle Diameter (inches)
- 1a. A_n = Area of Nozzle (ft²)
2. P_{bar} = Barometric Pressure (in. Hg)
3. TT = Net Sampling Time (minutes)
4. V_m = V_m Final - V_m Initial = Sample Gas Volume (Ft³)
5. T_m = Average Dry Gas Temperature at Meter (°F)

$$T_m = \frac{\text{Avg. TMI} + \text{Avg. TMO}}{2}$$

6. Δp = Velocity head of stack gas (in. H₂O)
7. ΔH = Average Orifice Pressure Drop (in. H₂O)
8. Volume of dry gas sampled at standard conditions^a (DSCF)

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

9. V_{lc} = Total Water Collected = gm H₂O Silica gel + ml Imp. H₂O = ml
10. Volume of water vapor at standard conditions^b (SCF)

$$V_{w(std)} = 0.0471(V_{lc}) = SCF$$

11. Percent moisture in flue gas

$$\%M = \frac{100(V_{w(std)})}{V_{m(std)} + V_{w(std)}}$$

12. Mole fraction of water vapor in flue gas

$$B_{ws} = \frac{\%M}{100}$$

13. Molecular Weight of dry flue gas

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$

- 13a. %EA = % Excess Air =

$$\frac{[(\%O_2) - 0.5(\%CO)]}{[0.264(\%N_2)] - [(\%O_2) - 0.5(\%CO)]} \times 100$$

14. Molecular weight of wet flue gas

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$

15. A = Cross-sectional area of stack (Ft²)

$$\frac{\pi r^2}{144}$$

16. P_s = Flue gas pressure (in, Hg)

$$P_s = P_{bar} + P_g$$

NOTE:
$$P_g(Hg) = \frac{P_g(in.H_2O)}{13.6}$$

17. T_s = Absolute stack temperature (°R)

$$T_s = 460 + t_s$$

18. Flue velocity at stack conditions (FT/SEC)

$$V_s = (K_p)(C_p) \left[(\sqrt{\Delta p})_{avg} \right] \sqrt{\frac{T_s(avg)}{P_s * M_s}}$$

C_p = pitot tube coefficient

K_p = pitot tube constant = 85.49ft/sec

19. Flue gas volumetric flow rate at standard conditions^b (SCFM)

$$Q_s = (V_s)(A) \left(\frac{528}{T_s(avg.)} \right) \left(\frac{P_s}{29.92} \right) (60)$$

20. Flue gas volumetric flow rate at standard conditions^c (DSCFM)

$$Q_{sd} = (1 - B_{ws})(V_s)(A) \left(\frac{528}{T_s(avg.)} \right) \left(\frac{P_s}{29.92} \right) (60)$$

21. Flue gas volumetric flow rate at stack conditions (ACFM)

$$Q_a = (V_s)(A)(60)$$

22. Percent Isokinetic

$$\%I = \frac{K_4(T_s)(V_{m(std)})}{P_s V_s A_n \Theta (1 - B_{ws})}$$

$K_4 = 0.09450$

$\Theta = \text{time}(\text{min})$

NOTES:

^aDry standard cubic feet at 68°F, 29.92 in. Hg

^bStandard conditions at 68°F, 29.92 in. Hg

^cDry standard cubic feet per minute at 68°F, 29.92 in. Hg

III. Calculations for concentration and emission rates

36. SO₂/H₂SO₄ (gr/DSCF)

$$gr / DSCF = 0.01543 \left(\frac{mg}{V_{m(std)}} \right)$$

37. SO₂/H₂SO₄ at stack conditions (gr/ACF)

$$gr / ACF = \frac{17.64 gr / DSCF (P_s)(M_d)}{(T_s + 460)}$$

38. SO₂/H₂SO₄ (lbs/hr), concentration method

$$lbs / hr = 0.00857 * gr / DSCF * Q_{sd}$$

39. SO₂/H₂SO₄ (lbs/mmBtu)

$$\frac{lbs / hr}{10^6 Btu / hr}$$

40. SO₂/H₂SO₄ (lbs/ton)

$$lbs / ton = \frac{lbs / hr}{tons / hr}$$

41. SO₂/H₂SO₄ (lbs/mmBtu), F-Factor Method

$$\text{Using } O_2 = \frac{(0.01543)(mg)(F - Factor)(20.9)}{(7000)(V_{m(std)})(20.9 - \%O_2)}$$

42. SO₂/H₂SO₄ (lbs/mmBtu), F-Factor Method (Continued)

$$\text{Using } CO_2 = \frac{(0.01543)(mg)(F - Factor)(100)}{(7000)(V_{m(std)})(\%CO_2)}$$

CALCULATION QUALITY ASSURANCE CHECK

SCR Inlet 31 Run 7

$$V_{m\text{std}} = \frac{17.64(24.307)(0.99)(29.99 + \frac{0.75}{13.6})}{78 + 460} = 23.69$$

$$V_{w\text{std}} = 0.047(54.3) = 2.55$$

$$\%M = 100(2.55) / 23.69 + 2.55 = 9.74$$

$$B_{ws} = 9.74 / 100 = 0.097$$

$$M_d = 0.44(12.6) + 0.32(6.9) + 0.28(100 - 19.5) = 30.29$$

$$M_s = 30.29(1 - 0.097) + 18(0.097) = 29.09$$

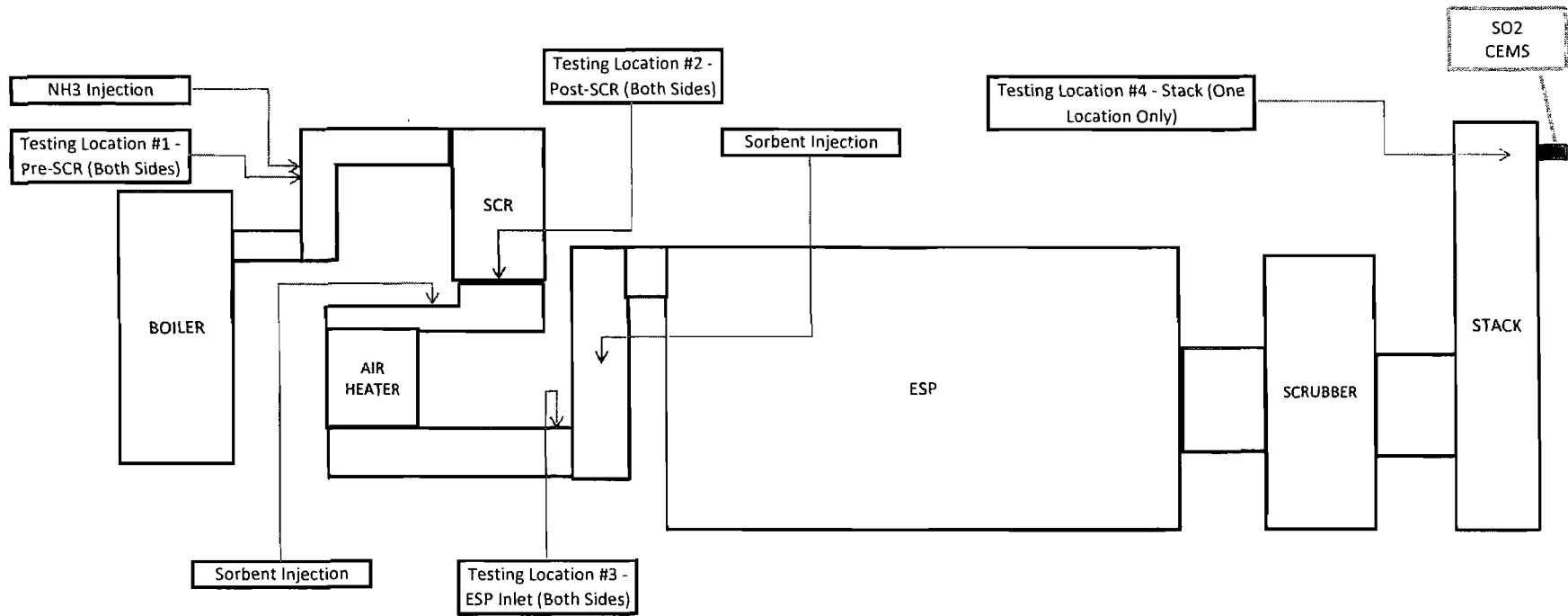
$$P_s = 29.99 + \frac{-SPD}{13.6} = 29.62$$

$$\frac{SO_3}{\text{lb/mmBtu}} = 0.5(9780)(1.243 \times 10^7)(20.9 / 20.9 - 6.9) = 0.001$$

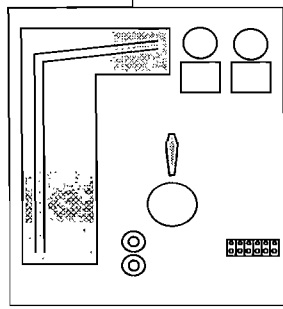
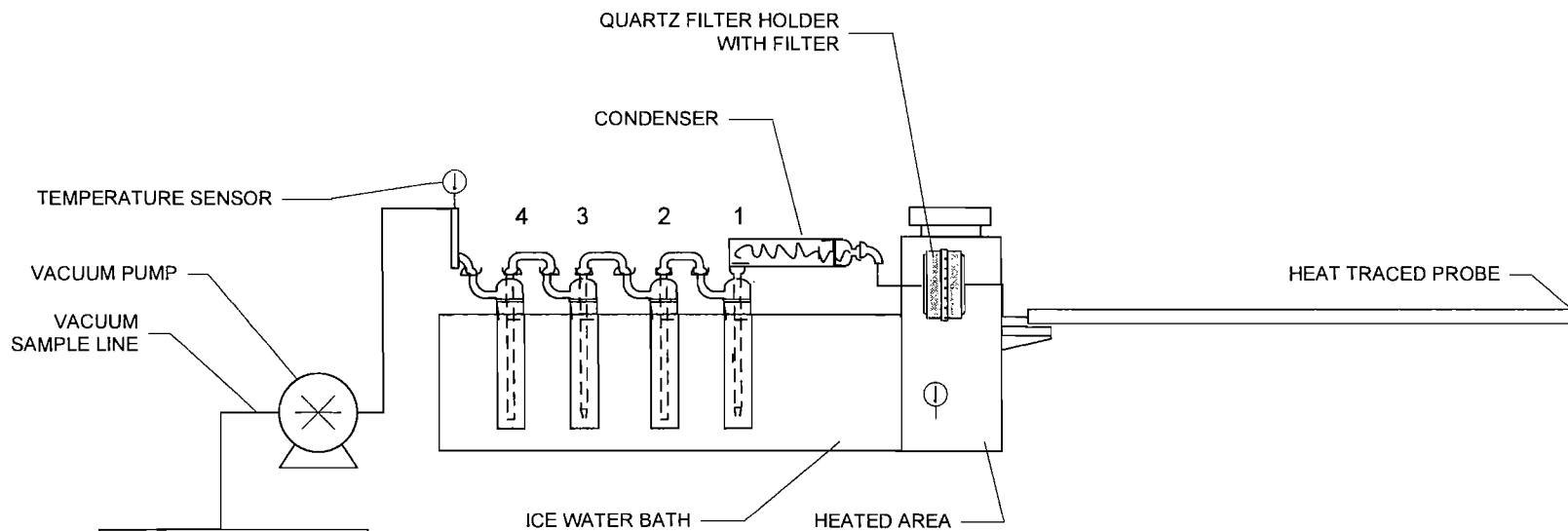
$$\frac{SO_2}{\text{lb/mmBtu}} = 2018.8(9780)(1.243 \times 10^7)(20.9 / 20.9 - 6.9) = 4.89$$

APPENDIX 8
FIGURES

Lakeland Electric McIntosh Unit 3 Process Schematic



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GAS SAMPLING METER BOX

- NOTE:**
- METER BOX CONTAINS:
1. VACUUM GAUGE
 2. MAIN VALVE
 3. PUMP BY-PASS VALVE
 4. DRY GAS METER
 5. ORIFICE & FLOW MANOMETERS
 6. GAS INLET & OUTLET TEMPERATURE SENSORS AND INDICATORS

- *IMPINGER CONTENTS**
- Condenser Coil
- 1 3% H₂O₂ - 100ml
 - 2 3% H₂O₂ - 100mi
 - 3 DI Water - 100ml
 - 4 Silical Gel

TITLE EPA METHOD 8A SAMPLE TRAIN		
DESCRIPTION ACID MIST SO₃ SAMPLING TRAIN		DATE 6-10-06
SCALE NONE	DRAWN BY MJ Taylor	REVISED

319