TAMPA ELECTRIC

March 22, 2006

Mr. Jim Pennington
Florida Department of Environmental Protection
Division of Air Resource Management
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Via FedEx
Airbill No. 7908 5740 8938

Re: Tampa Electric Company
Polk Power Station
Unit 1 Combustion Turbine
Permit No. 1050233-016-AV, E.U. ID #001
Petcoke Additional Monitoring Report

Dear Mr. Pennington:

Enclosed, please find the additional monitoring emissions compliance report for tests performed on February 7, 2006. Per Conditions A.54 and A.55, Tampa Electric Company (Tampa Electric) shall annually maintain and submit to the Department Continuous Emissions Monitoring (CEMs) data demonstrating the gasification of a blend of petcoke and coal up to 60% petcoke did not result in a significant emissions increase of nitrogen oxide (NO_x) and sulfur dioxide (SO_2) when compared to the past actual coal levels. Per Condition A.56, Tampa Electric shall annually maintain and submit to the Department test results demonstrating the gasification of a blend of petcoke and coal up to 60% petcoke did not result in a significant emissions increase of sulfuric acid mist (H_2SO_4) when compared to the past actual coal levels.

TEC has submitted to the Department on an annual basis, for a period of five years from the date the unit began firing syngas produced from blends of petcoke and coal, a report showing compliance with the Prevention of Significant Deterioration (PSD) thresholds for NO_x, SO_2, and (H_2SO_4). This February 7, 2006 report is the last report TEC is required to submit in order to demonstrate that the operational change associated with the use of petcoke did not result in a significant emission increase pursuant to Rule 62-210.200(12)(d), F.A.C.

The following sections demonstrate Tampa Electric's compliance with these conditions. As stated in the Discussion of Results, below are the results:

- Nitrogen Oxides (NO_x) - calculated average was 0.056 lb/MMBtu and 99 lbs/hr; permit limit is 132 lbs/hr based on a 30-day rolling average.
- Sulfur Dioxide (SO_2) - calculated average was 0.191 lb/MMBtu and 339 lbs/hr; permit limit is 357 lbs/hr based on a 30-day rolling average.
- Sulfuric Acid Mist (H_2SO_4) - calculated average was 31 lbs/hr; permit limit is 55 lbs/hr based on a 30-day rolling average.

Presented below in Table 1 is Polk Power Station's historical NO_x and SO_2 baseline data from 1998 and 1999, before Unit 1 was permitted to gasify blends of petcoke and coal.

TABLE 1. Historical Emissions (Based on 1998 and 1999 AOR's)

AOR Year	NO_x [tons/yr]	SO_2 [tons/yr]	Oil Fired Hours	Syngas Fired Hours
1998	589	1,321	665	5,171
1999	608	1,183	680	5,989
Average	**599**	**1,252**	**673**	**5,580**

Table 2 provides Polk Power Station's analyses based on 2006 CEMs data compared to the past actual coal levels, as requested by the Department, to demonstrate the gasification of a blend of petcoke and coal up to 60% petcoke did not result in a significant emissions increase of NO_x and SO_2.

TABLE 2. Analysis - 50% Petcoke, 50% Coal Blend (Based on 2006 data)

Parameter	2-year Average Historical Emissions	2006 Actual Emissions (1) (50% Petcoke 50% Coal Blend)	Difference	Above Actual Coal Levels?
NO_x [tons/yr]	599	376	-223	No
SO_2 [tons/yr]	1,252	947	-305	No

(1) Sample Calculation for 2005 NO_x Emissions:

$$0.056 \frac{lb\ NOx}{MMBtu} * 1{,}719 \frac{MMBtu}{hr} * 5{,}580 \frac{Hours}{yr} \div 2{,}000 \frac{tons}{lb} + \left(.16 \frac{tons\ NOx}{hr} * 673 \frac{Oil\ fired\ hrs}{yr} \right) = 376 \frac{tons\ NOx}{yr}$$

Sample Calculation for 2005 SO_2 Emissions:

$$0.191 \frac{lb\ SO2}{MMBtu} * 1{,}719 \frac{MMBtu}{hr} * 5{,}580 \frac{Hours}{yr} \div 2{,}000 \frac{tons}{lb} + \left(.0461 \frac{tons\ SO2}{hr} * 673 \frac{Oil\ fired\ hrs}{yr} \right) = 947 \frac{tons\ SO2}{yr}$$

Table 3 provides Polk Power Station's analyses based on the 2006 stack test data compared to the past actual coal levels, as requested by the Department, to demonstrate the gasification of a blend of petcoke and coal up to 60% petcoke did not result in a significant emissions increase of sulfuric acid mist.

TABLE 3. Analysis - 50% Petcoke, 50% Coal Blend (Based on 2006 Stack Test Data)

Parameter	2000 Baseline Historical Emissions	2006 Actual Emissions (2) (50% Petcoke 50% Coal Blend)	Difference	Above Actual Coal Levels?
H_2SO_4 [tons/yr]	86.8	85.1	-2	No

(2) Sample Calculation for 2005 H_2SO_4 Emissions:

$$30.5 \frac{lb\ H2SO4}{hr} * 5{,}580 \frac{Hours}{yr} \div 2{,}000 \frac{tons}{lb} = 85.1 \frac{tons\ H2SO4}{yr}$$

As evidenced by the data above, NO_x, SO_2 and H_2SO_4 emissions resulting from the combustion of syngas produced from the gasification of petcoke and coal blends do not increase emissions above the past actual coal levels. If you have any questions, please telephone Raiza Calderon or me at (813) 228-4369.

Sincerely,

for

Byron T. Burrows, P.E.
Manager - Air Programs
Environmental, Health & Safety

EA/rlk/RC213

c/enc: Mr. Joel Smolen, FDEP SW
Mr. Jason Waters, FDEP SW

EMISSIONS TEST REPORT

POLK POWER STATION
UNIT 1
FACILITY ID NUMBER: 1050233
EMISSION UNIT ID NO: -001

SULFURIC ACID MIST (SAM)

February 7, 2006

Prepared For:
Tampa Electric Company
Polk Power Station
P.O. Box 111
Tampa, Florida 33601-0111

Prepared By:
Tampa Electric Company
Environmental Affairs Department
Environmental Services, Air Services Group

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Environmental Services
Air Services Group
5010 Causeway Boulevard
Tampa, Florida 33619- 6130

Responsible Official Certification

I have reviewed the testing results in this report, and hereby certify that this test report is authentic and accurate to the best of my knowledge.

Mark J Hornick — Signature

3/21/06 — Date

Mark J. Hornick — Name

General Manager, Polk Power Station — Title

REPORT CERTIFICATION

I have reviewed the test performance, associated quality assurance activities, the resultant calculations, and the contents of this report, and certify that all project quality objectives have been met. This report is approved for submittal.

Signature: 20-FEB-06

Raymond A. McDarby, Jr.
Senior Environmental Technician
Quality Assurance/Quality Control Specialist
Air Services Group
Environmental Health & Safety
Tampa Electric Company

The sampling and subsequent data entry/reduction detailed in this report were conducted at my direction, and I hereby certify that this test report is authentic and accurate to the best of my knowledge.

Signature:

Charles R. Dufeny
Environmental Technician
Test Team Lead
Air Services Group
Environmental Health & Safety
Tampa Electric Company

I have reviewed the testing details and results submitted in this report, and hereby certify that this test report is authentic and accurate to the best of my knowledge.

Signature:

David A. Smith
Coordinator – Air Services Group
Environmental Health & Safety
Tampa Electric Company

TABLE OF CONTENTS

1.0 INTRODUCTION

On February 7, 2006, Tampa Electric Company's, Environmental Services, Air Services Group performed Sulfuric Acid Mist (SAM) source emission tests on Unit No. 1 at the Polk Power Station. Unit No. 1 is an integrated coal gasification combined cycle (IGCC) generating unit. The combustion turbine was fired with syngas from the coal gasification system. A blend of petroleum coke and bituminous coal was gasified for this test. Testing was conducted according to United States Environmental Protection Agency (USEPA) test methods stipulated in 40 CFR Part 60, Appendix A and Florida Department of Environmental Protection (FDEP) Permit No. 1050233-016-AV.

Nitrogen Oxides (NO_x) and Sulfur Dioxide (SO_2) data was taken from the Continuous Emissions Monitoring System's (CEMS) Data Acquisition and Handling System (DAHS) and is presented as averages over the test period.

2.0 DISCUSSION OF RESULTS

The Sulfuric Acid Mist (H_2SO_4) emission rate was derived from three 1-hour test runs. The calculated average H_2SO_4 emission rate was 31 lbs/hr. The FDEP permitted emission rate is 55 lbs/hr based on a 30-day rolling average.

Sulfur Dioxide (SO_2) concentration and emissions during the sulfuric acid mist testing were determined to be 0.19 lb/mmBtu and 339 lbs/hr.

Nitrogen Oxides (NOx) concentration and emissions during the sulfuric acid mist testing were determined to be 12 ppmvd @ 15% O_2 , 0.056 lbs/mmBtu, and 99 lbs/hr.

During the tests on February 7, 2006, Unit No. 1 Combustion Turbine was operated at an average load of 192 megawatts and an average heat input of 1774 mmBtu/hr. The FDEP permitted heat input is 1755 mmBtu/hr, at an ambient temperature of 59° (corrected to 1751 mmBtu/hr based on an average inlet vane temperature of 73°F, and the manufacturer's heat input correction curve for this unit). The calculated capacity factor during the test was 101%.

3.0 SOURCE DESCRIPTION/TEST PROCEDURES

Polk Power Electrical Generating Station is located at County Road 630 approximately 13 miles southwest of Bartow, Polk County, Florida. Unit No. 1 is an IGCC generating unit, with a net capacity of 192 MW when fired with Syngas fuel. The source sampling location consists of a circular stack 19 feet in diameter with four sample ports located 90 degrees apart on the stack circumference. A diagram of the stack sampling location is included along with other pertinent information on the test site.

Sulfuric acid mist sampling and analysis was performed in accordance with USEPA Reference Method 8 (40 CFR Part 60, Appendix A) "Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources", and FDEP Permit No. 1050233-016-AV, Condition A.56.

Sulfur Dioxide and Nitrogen Oxides emissions data were taken from the CEMS DAHS. This data was taken as 1-minute averages over the time frame from 9:12 through 13:49, representing the time frame of the sulfuric acid mist test.

Plant operational data was taken from the Plant Information (PI) server system. This data was taken as 1-minute averages over the time period from 9:12 through 13:49, representing time frame of the sulfuric acid mist test. Data captured included the average unit load, average fuel flow, average inlet vane temperature, and average saturator readings. Details are included in Appendix B.

4.0 TABULATED RESULTS

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Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Summary

Customer: Polk Power Station
Facility: Unit 1
Sampling Location: Stack
Operating Conditions: Full Load
Test Date: February 7, 2006

	Run #1	Run #2	Run #3	Average
Gas Flow Rates				
Q_s, acfm:	1413087.9	1396668.7	1405512.1	1405089.59
$Q_{s(std)}$, dscfm:	907742.9	902994.6	902109.2	904282.22
Sampled Volume, $V_{m(std)}$, dscf:	39.69	39.29	39.29	39.421
Stack Moisture, B_{ws} x 100, %:	4.63	4.15	4.49	4.426
Isokinetic Sampling Rate, I, %:	97.6	97.1	97.2	97.3
C_{H2SO4}, lb/dscf:	6.255E-07	5.493E-07	5.092E-07	5.613E-07
E_{H2SO4}, lb/mmBtu:	0.0166	0.0144	0.0137	0.0149
E_{H2SO4}, lbs/hr:	34	30	28	31

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POLK POWER STATION
NO_X & SO_2 COMPLIANCE DATA FROM CEMS

COMBINED CYCLE COMBUSTION TURBINE
UNIT 1
February 7, 2006

	CEM Data				Calculated Data			
	NO_x	SO_2	O_2	CO_2	NO_x[1]	NO_x[2]	SO_2[3]	SO_2[4]
	ppmvw	ppmvw	% w	% w	ppmvd @ 15% O_2	lbs/hr	lb/mmBtu	lbs/hr
From CEMS Report:	17.62	43.47	10.46	8.72	12	99	0.19	339

CEMS Data are average of readings from 02/07/2006 09:11 through 13:49.

[1] NO_x, ppmvd @ 15% O_2 is calculated as:

NO_x, ppmvw / (1 - % moisture) x (5.9 / (20.9 - (% O_2w/ (1 - % moisture)))

where: % moisture = 0.07 assumed by CEMS

[2] NO_x, lbs/hr is calculated as:

NO_x, ppmvw x 1.194E-07 x F_c x (100 / % CO_2w) x Heat Input, mmBtu/hr

where: F_c = 2310 scf/mmBtu, assigned F-factor for synthetic gas

Heat Input = 1774 mmBtu/hr

NOx, lbs/mmBtu is calculated as:

NO_x, ppmvw x 1.194E-07 x F_c x (100 / % CO_2w)

= 0.056 lbs/mmBtu

[3] SO_2, lb/mmBtu is calculated as:

SO_2, ppmvw x 1.660E-07 x F_c x (100 / % CO_2w)

where: F_c = 2310 scf/mmBtu, assigned F-factor for synthetic gas

[4] SO2, lbs/hr is calculated as:

SO2, lb/mmbtu x Heat Input, mmBtu/hr

where: Heat Input = 1774 mmBtu/hr

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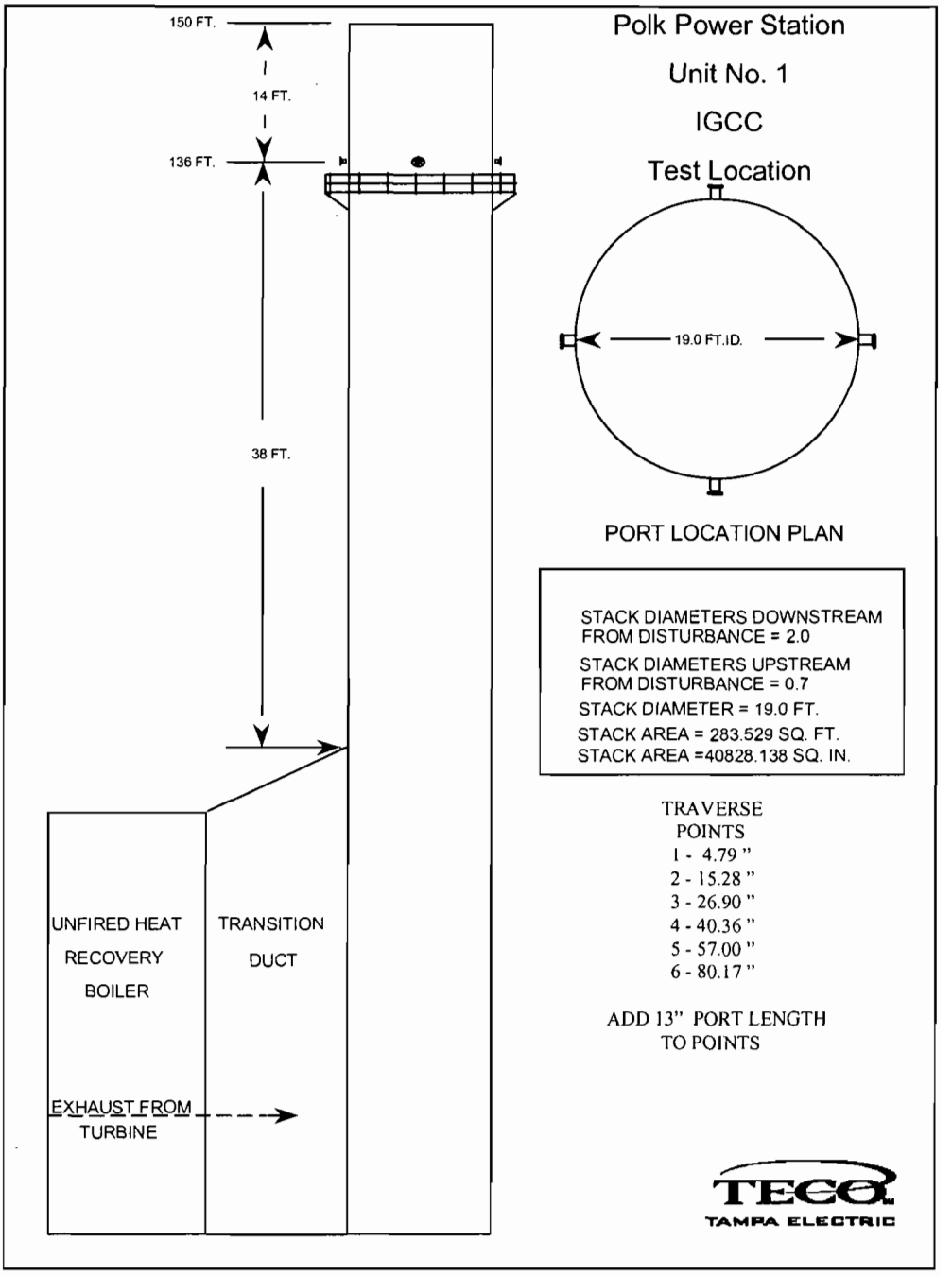
POLK POWER STATION
HEAT INPUT CALCULATION

COMBINED CYCLE COMBUSTION TURBINE
UNIT 1
February 7, 2006

Average fuel flow:	7306.5726	Kcfh
Mole weight correction to meter cal:	0.9883	mole weight correction factor
Corrected fuel flow:[1]	7221.0857	Kcfh, corrected for density
Average moisture:	6.2828935	% H_20 added to fuel
Corrected fuel flow:[2]	6767.3926	Kscfh, corrected for moisture
Gross heating value of fuel (HHV):	262.08	Btu/scf
Heat Input:	1774	mmBtu/hr

Average fuel flow from Plant Information Data Base.
Mole weight correction factor to meter calibration is taken from ratio of syngas mole weight to calibration gas mole weight.
[1]Average fuel flow times mole weight correction factor.
[2]Corrected fuel flow times (1 - (Average moisture / 100)).
Gross Heating value of fuel (HHV) is from fuel analysis.
Heat input is (HHV x Corrected fuel flow) / 1000.

5.0 SAMPLING LOCATION TRAVERSE DIAGRAM


150 FT.
14 FT.
136 FT.
38 FT.
UNFIRED HEAT RECOVERY BOILER
TRANSITION DUCT
EXHAUST FROM TURBINE
Polk Power Station
Unit No. 1
IGCC
Test Location
19.0 FT.ID.
PORT LOCATION PLAN
STACK DIAMETERS DOWNSTREAM FROM DISTURBANCE = 2.0
STACK DIAMETERS UPSTREAM FROM DISTURBANCE = 0.7
STACK DIAMETER = 19.0 FT.
STACK AREA = 283.529 SQ. FT.
STACK AREA =40828.138 SQ. IN.
TRAVERSE POINTS
1 - 4.79 "
2 - 15.28 "
3 - 26.90 "
4 - 40.36 "
5 - 57.00 "
6 - 80.17 "
ADD 13" PORT LENGTH TO POINTS
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APPENDIX A

SULFURIC ACID MIST TEST INFORMATION

CALCULATED RUN DATA

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Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Unit 1
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 1
Date: 02/07/06

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.197 inches
Barometric Pressure, P_b:	29.85 "Hg	Nozzle Area, A_n:	0.00021166 ft^2
Stack Pressure, P_s:	29.78 "Hg	Average Orifice Meter, ΔH:	1.445 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	39.682 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	71.8 °F
Gas Analysis:	8.7 % CO_2	Average Stack Temp., T_s:	320.3 °F
	10.6 % O_2	Average $\sqrt{\Delta p}$:	1.223 "H_2O
	0.0 % CO	Condensate Volume, V_c:	40.9 ml
	80.7 % N_2	Meter Box Y:	1.006 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.928 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	39.686 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.046 %
$FDA = 1.0 - B_{ws}$	0.954 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.82 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.27 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	83.07 ft/second
$Q_s = v_s \times A_s \times 60$	1413087.9 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	907742.9 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60$	97.6 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00969
Volume Titrant Blank, V_{tb}	0.01
Volume Titrant Sample, V_t	4.75
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	6.255E-07 lb/dscf
F_c-factor =	2310 dscf/mmBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01661 lb/mmBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	34 lb/hr

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40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Unit 1
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 2
Date: 02/07/06

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.197 inches
Barometric Pressure, P_b:	29.90 "Hg	Nozzle Area, A_n:	0.00021166 ft^2
Stack Pressure, P_s:	29.83 "Hg	Average Orifice Meter, ΔH:	1.420 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	39.304 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	72.9 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	320.5 °F
	10.5 % O_2	Average $\sqrt{\Delta p}$:	1.211 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	36.1 ml
	80.7 % N_2	Meter Box Y:	1.006 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.702 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	39.285 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.042 %
$FDA = 1.0 - B_{ws}$	0.958 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.83 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.34 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	82.10 ft/second
$Q_s = v_s \times A_s \times 60$	1396668.7 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	902994.6 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times$	97.1 %

Data from Laboratory Analysis:	**H_2SO_4**
Normality of Barium Chloride titrant, N	0.00969
Volume Titrant Blank, V_{tb}	0.01
Volume Titrant Sample, V_t	4.13
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	5.493E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	30 lb/hr

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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Unit 1
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 3
Date: 02/07/06

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.197 inches
Barometric Pressure, P_b:	29.86 "Hg	Nozzle Area, A_n:	0.00021166 ft^2
Stack Pressure, P_s:	29.79 "Hg	Average Orifice Meter, ΔH:	1.442 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	39.733 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	78.0 °F
Gas Analysis:	8.6 % CO_2	Average Stack Temp., T_s:	322.4 °F
	11.8 % O_2	Average $\sqrt{\Delta p}$:	1.216 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	39.2 ml
	79.6 % N_2	Meter Box Y:	1.006 *dimensionless*

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.848 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	39.292 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.045 %
$FDA = 1.0 - B_{ws}$	0.955 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \% CO))$	29.85 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.32 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	82.62 ft/second
$Q_s = v_s \times A_s \times 60$	1405512.1 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	902109.2 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times$	97.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00969
Volume Titrant Blank, V_{tb}	0.01
Volume Titrant Sample, V_t	3.83
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	5.092E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	28 lb/hr

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 2/13/2006

Laboratory ID: AA82175

Location Code: TE_PPS_1_SAM_SYNGAS

Sample Information

Description: Polk No. 1 Acid Mist Comp on Syngas

Project Account Code:

Sample Collection Method:

Sampled By:

Date and Time Collected: 2/8/2006 12:00:00 AM

Date of Sample Receipt: 2/8/2006

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.00969		0.0001			MM	2/8/2006 8:30:00 AM			
SO3 emission rate, lbs/hr	31	lbs/hr			EPA - RM8	RAM	2/13/2006 1:25:00 PM			
SO3, Avg. of Blank Titrations	0.01	milliliters	0.01	I	EPA - Meth.8	MM	2/8/2006 8:30:00 AM			
SO3, Run #1, Avg. of Titrations	4.75	milliliters	0.01		EPA - Meth.8	MM	2/8/2006 8:30:00 AM			
SO3, Run #2, Avg. of Titrations	4.13	milliliters	0.01		EPA - Meth.8	MM	2/8/2006 8:30:00 AM			
SO3, Run #3, Avg. of Titrations	3.83	milliliters	0.01		EPA - Meth.8	MM	2/8/2006 8:30:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	2/8/2006 8:30:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	2/8/2006 8:30:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

I - The reported value is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit (PQL). PQL = 4 x MDL.

Subcontracted Laboratories:

Robert Dorey,
Manager, Laboratory Services

TECO
TAMPA ELECTRIC

COMPLIANCE TEST CHAIN OF CUSTODY

ENVIRONMENTAL SERVICES - AIR SERVICES GROUP

5012 CAUSEWAY BLVD., TAMPA, FL, 33619 PHONE:(813)228-4111

Labworks Sample #	CLIENT NAME	CLIENT PHONE	REQUIRED ANALYSIS	DUE DATE IS 5 WORKING DAYS FROM SAMPLE DELIVERY
			Short Prox; NH3 (Ammonia); Particulate Matter; H2SO4 (SO2, SO3); (oil) BTU, Sulfur, CHN	Due Date:
SAMPLER'S PRINTED NAME: R.A. BARTHELETTE JR.	SAMPLER'S SIGNATURE:		PRESERVATIVE: None; None; None; None; None	NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
PLANT: POLK STATION	UNIT I.D.: UNIT #1 HRSG			
REFERENCE METHOD: RM 8	TEST TYPE: SULFURIC ACID MIST			

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING DATE	SAMPLING TIME	* MATRIX	NUMBER OF CONTAINERS SUBMITTED	REMARKS
RUN 1	PROBE & 1ST IMP. IPA	2-7-06	10:45	80% IPA	1	AA 82175
RUN 2	" " "	"	12:35	"	1	
RUN 3	" " "	"	14:15	"	1	
BLANK	80% IPA BLANK	"	"	"	1	

SAMPLE TRANSFERS

RELINQUISHED BY:	RECEIVED BY:	DATE	TIME
PERSON'S NAME: [signature] FACILITY NAME: TECO / FH2S / AIR SERVICES	PERSON'S NAME: [signature] FACILITY NAME: CTL	2/8/06	7:45
PERSON'S NAME: FACILITY NAME:	PERSON'S NAME: FACILITY NAME:		
PERSON'S NAME: FACILITY NAME:	PERSON'S NAME: FACILITY NAME:		

H:\Environmental Services\AirForms\Admin Forms\Chain of Custody_Revised 2006.xls

SO_2/SO_3 Analysis

(EPA METHOD 8)

Standard in glass

Analysis Date: 2/6/06
Analysis Time: 10:00
Analyst: Mary Ann

Sampe No: AA 82175
Unit: 701K Unit #1 HRSG
Collection Date: 2/7/06

Reagents:

0.01N NaOH - RW4040	Phph - RW-C-1478	80:1 IPA - RW-4124
0.01N $BaCl_2$ - RW4041	IPA - C-1704, C-1705	RW-4125
0.01N H_2SO_4 - RW4038	Known - RW-4061	
Thorin - RW-4039		

NaOH STANDARDIZATION

(RW_ 4040)

Runs	gm KHP (as weighed)	ml NaOH (burette reading)	Normality of NaOH [gmKHP/(0.20423*ml NaOH)]
1	0.0213	12.3	0.00848
2	0.0194	11.3	0.00841
3	0.0194	11.3	0.00841

(phenolphtalein indicator)

Avg. N. NaOH = 0.00843

H_2SO_4 STANDARDIZATION

(RW_4038)

Runs	ml H_2SO_4 (10 ml)	ml NaOH (burette reading)	Normality of H_2SO_4 [(ml NaOH* N. NaOH)/(10ml H_2SO_4)]
1	10	11.6	0.00978
2	10	11.5	0.00969
3	10	11.45	0.00965

(phenolphtalein indicator)

Avg. N. H_2SO_4 = 0.00971

$BaCl_2$-$2H_2O$ STANDARDIZATION

(RW_4041)

Runs	ml $BaCl_2$ -$2H_2O$	Normality of $BaCl_2$ - $2H_2O$ [(Avg. N. H_2SO_4 * 10ml H_2SO_4)/(Avg. ml $BaCl_2$-$2H_2O$)]
1	10.05	0.00966
2	10.0	0.00971
3	10.0	0.00971

(Thorin Indicator)

Avg. ml . BaCl2 -2H2O= 0.00969

(Sample = 10ml H2SO4 + 40ml Isopropanol)

Known Sample RW-4061

10ml + 40 ml Isopropanol vs. $BaCl_2$-$2H_2O$ titrant

check

Initial	ml $BaCl_2$ -$2H_2O$	% Recovery
1	6.6	97.55

ID: 3200-M6-PE-M

I.V. 1000 mg/dscm

APPROVED & QC'D

[redacted]

Gail A. Harrison

SO_3 Analysis
(EPA METHOD 8)

Analysis Date: 2/8/06
Analysis Time: 8:30
Analyst: Mary Ann

Sampe No: AA 82175
Unit: Polk Unit #1 HRSG
Collection Date: 2/7/06

Sample	Final Vol. of sample (ml)	Sample Aliquot (ml)	Titrant Volume (ml)	Avg. of runs (ml)
Run 1	500	100	4.7	4.75
Run 1	500	100	4.8	
Run 2	500	100	4.1	4.13
Run 2	500	100	4.15	
Run 3	500	100	3.85	3.83
Run 3	500	100	3.8	

Field Blank	Final Vol. of sample	Sample Aliquot	Titrant Volume	Avg. of titrant volume
1	500	100	0.01	0.01
2	500	100	0.01	

Blank	Final Vol. of sample	Sample Aliquot	Titrant Volume	Avg. of titrant volume
1	40	100	0.02	0.02
2	40	100	0.02	

Known Sample RW-4061
10ml + 40 ml Isopropanol vs. $BaCl_2$-$2H_2O$ titrant

Initial	ml $BaCl_2$ -$2H_2O$	% Recovery
1	6.65	98.28
2	6.70	99.02

R.V. 1000 mg/dscm

Final	ml $BaCl_2$ -$2H_2O$	% Recovery
1	6.65	98.28
2	6.60	97.55

Note: Titrant is the Standardized $BaCl_2$ -$2H_2O$ with Thorin Indicator

Blank = 100 ml of 80% Isopropanol

FIELD DATA SHEETS

Sulfuric Acid Mist Field Data Form

Plant	Polk	Nozzle I.D. No.	SN06	Dry Gas Meter Volume	
Location	Unit 1	Nozzle Diameter	0.157	Final	830.435 Ft.³
Date	2-7-06	Pitot Tube No.	pt10	Initial	790.753 Ft.³
Method No.	RM-8	Pitot Tube (C_p)	0.84	Net	39.682 Ft.³
Run No.	1	Probe Length	8'		
Box Operator	CND	Probe Liner Material	p/pox	Equipment Leak Checks	
Probe Operator	JAV - RAB	Probe Heater Setting	220	Initial	0.00 CFM @ 15 "Hg
Time - Start:	911 End: 1018	Pressure	Pb ("Hg): 29.85 Pg ("H2O): -.9 Ps ("Hg): 29.78	Final	0.00 CFM @ 7 "H2O
Sampling Time	60	Ambient Temperature		Pitot Tube	OK e "H2O
Min.\ Pt.	2.5	Assumed Moisture (%)	7		
Meter Box No.	M866	Filter Holder No.		Moisture Determination	
Stack Area Ft.²		Comments	C_p - 10.6	Impinger	22 ml
Meter Cal. (Δ H)	1.771		C_{O_2} - 8.7	Silica Gel	18.9 gm
Meter Cal. (Δ Y)	1.006			Total	40.9

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)	
1	911	792.4	1.50	1.45	220	320	71		60	5	
2		794.09	1.5	1.45	220	320	71		58	5	
3		795.68	1.4	1.35	~~221~~ 221	321	72		59	4.5	
4		797.29	1.5	1.45	216	320	71		60	5	
5		798.98	1.6	1.54	219	320	71		61	5	
6	926	800.633	1.5	1.45	216	321	71		61	5	
1	929	802.200	1.3	1.25	220	321	71		62	4	
2		803.79	1.4	1.35	218	320	71		63	4	
3		805.42	1.5	1.45	220	320	72		63	5	
4	807.0 (10)	~~808.75~~	1.5	1.45	223	320	72		63	5	
5		808.73	~~1.5~~ 1.4	~~1.45~~ 1.35	~~213~~ 220	~~321~~ 321	~~72~~ 72		~~64~~ 64	5	CND
6	944	810.35	1.4	1.35	213	321	72		64	5	

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	946	812.00	1.4	1.36	210	319	73		65	5
2		813.6	1.4	1.35	207	320	72		63	5
3		815.29	1.6	1.55	214	320	72		63	5
4		816.96	1.5	1.45	222	320	72		63	5
5		818.67	1.6	1.55	222	320	72		62	5
6	1001	820.328	1.5	1.45	218	320	72		61	5
1	1003	822.01	1.5	1.45	211	320	72		65	5
2		823.68	1.5	1.45	217	321	72		62	5
3		825.37	1.6	1.55	216	321	72		63	5
4		827.07	1.6	1.55	216	321	72		65	5
5		828.78	1.6	1.55	214	320	72		63	5
6	1018	830.435	1.5	1.45	217	320	72		63	5
						2/10/2006				

Run No. 1

Sulfuric Acid Mist Field Data Form

Plant	Polk	Nozzle I.D. No.	SNG	Dry Gas Meter Volume	
Location	Unit 1	Nozzle Diameter	0.197	Final	79.880 Ft.³
Date	2-7-06	Pitot Tube No.	PT10	Initial	40.576 Ft.³
Method No.	M 8	Pitot Tube (C_p)	0.84	Net	39.304 Ft.³
Run No.	2	Probe Length	8'		
Box Operator	CLD	Probe Liner Material	Pyrex	Equipment Leak Checks	
Probe Operator	JAH / MBB	Probe Heater Setting	220	Initial	0.00 CFM @ 15 "Hg
Time - Start:	1104 End: 1210	Pressure	Pb ("Hg): 29.9 Pg ("H2O): -.9 Ps ("Hg): 29.83	Final	0.00 CFM @ 7 "H2O
Sampling Time	60	Ambient Temperature		Pitot Tube	ok e 5 "H2O
Min.\ Pt.	2.5	Assumed Moisture (%)	7		
Meter Box No.	MB6	Filter Holder No.		Moisture Determination	
Stack Area Ft.³		Comments	O_2 - 10.5	Impinger	14 ml
Meter Cal. (Δ H)	1.771		CO_2 - 8.8	Silica Gel	22.1 gm
Meter Cal. (Δ Y)	1.006			Total	36.1

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1104	42.29	1.5	1.45	215	320	70		65	5
2		43.95	1.5	1.44	217	321	70		64	5
3		45.61	1.5	1.44	217	321	70		64	5
4		47.30	1.6	1.54	221	321	70		61	5.5
5		49.01	1.6	1.54	216	321	71		63	5.5
6	1119	50.613	~~1.6~~ 1.4	1.35	220	320	71		61	5
1	1121	52.3	1.5	1.45	225	320	71		61	5
2		53.89	1.4	1.35	210	320	71		65	5
3		55.55	1.5	1.45	210	320	72		66	5
4		57.2	1.5	1.45	210	320	72		66	5
5		58.85	1.5	1.45	211	321	72		67	5
6	1136	60.433	1.4	1.35	211	320	72		67	5

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1138	62.06	1.4	1.35	220	320	72		65	5
2		63.66	1.4	1.36	224	320	74		64	5
3		65.25	1.4	1.36	219	320	74		63	5
4		66.88	1.5	1.46	221	320	74		63	5
5		68.51	1.5	1.46	219	320	75		64	5
6	1153	70.056	1.3	1.26	217	320	75		63	5
1	1155	71.68	1.4	1.36	213	320	75		65	5
2		73.28	1.4	1.36	211	320	75		63	5
3		74.9	1.5	1.46	215	321	76		64	5
4		76.56	1.5	1.46	207	322	76		64	5
5		78.27	1.6	1.53	220	322	76		64	5
6	1210	79.88	1.4	1.36	215	322	76		65	5
						2/10/2006				

Run No. 2 Page 2 of 2

Sulfuric Acid Mist Field Data Form

Plant	PJK	Nozzle I.D. No.	9V06	Dry Gas Meter Volume	
Location	Unit 1	Nozzle Diameter	0.197	Final	128.658 Ft.³
Date	2-7-06	Pitot Tube No.	PT10	Initial	88.925 Ft.³
Method No.	RM-8	Pitot Tube (C_p)	0.84	Net	39.733 Ft.³
Run No.	3	Probe Length	8		
Box Operator	CWD	Probe Liner Material	Pyrex	Equipment Leak Checks	
Probe Operator	JAV / RMB	Probe Heater Setting		Initial	0.00 CFM @ 15 "Hg
Time - Start:	1242 End: 1349	Pressure	Pb ("Hg): 29.86 Pg ("H2O): -.9 Ps ("Hg):	Final	0.00 CFM @ 8 "H2O
Sampling Time	60	Ambient Temperature		Pitot Tube	OK @ 4 "H2O
Min.\ Pt.	2.5	Assumed Moisture (%)	5.5		
Meter Box No.	MB06	Filter Holder No.		Moisture Determination	
Stack Area Ft.³		Comments	O_2 - 11.8	Impinger	18 ml
Meter Cal. (Δ H)	1.771		CO_2 - 8.6	Silica Gel	21.2 gm
Meter Cal. (Δ Y)	1.006			Total	39.2

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1242	90.48	1.30	1.27	217	322	77		65	5
2		92.22	1.50	1.46	220	323	78		64	5
3		93.87	1.5	1.46	215	324	78		63	5
4		95.54	1.6	1.56	216	324	78		65	5
5		97.25	1.6	1.56	217	323	78		66	5
6	1257	98.924	1.5	1.46	215	323	78		66	5
1	1259	100.53	1.3	1.27	221	323	78		66	5
2		102.11	1.5	1.46	226	323	78		65	5
3		103.73	1.4	1.37	228	322	78		66	5
4	1305	~~106.96~~ 105.4 (adj)	1.5	1.46	226	322	78		65	5
5		106.96	~~1.4~~ 1.3 (adj)	~~1.37~~ 1.27	224	322	78		65	5
6	1314	108.545	1.4	1.37	224	322	78		65	5

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1317	110.21	1.5	1.46	217	322	78		63	5
2		111.87	1.5	1.46	219	322	78		64	5
3		113.54	~~1.5~~ 1.5	1.46	212	322	78		66	5
4		115.22	1.5	1.46	216	322	78		66	5
5		116.92	1.6	1.56	218	322	78		66	5
6	1332	118.645	1.5	1.46	220	323	78		66	5
1	1334	120.29	1.4	1.37	225	322	78		65	5
2		121.9	1.4	1.37	225	322	78		65	5
3		123.54	1.5	1.46	225	322	78		67	5
4		125.19	1.5	1.46	221	322	78		65	5
5		126.92	1.6	1.56	220	322	78		65	5
6	1349	128.658	1.6	1.56	223	322	78		65	5
						2/16/2006				

Run No. 3 Page 2 of 2

EQUIPMENT CALIBRATIONS

TECO
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Environmental Services
Air Services Group

SUMMARY OF EQUIPMENT CALIBRATIONS

EQUIPMENT	CAL DATE	METHOD	RESULTS
CONSOLE (MB 06)		USEPA RM 5	
INITIAL	01/04/2006	(ORIFICE)	1.006
POST TEST	02/09/2006		1.011
NOZZLE (SN06)		CALIPER	
INITIAL	01/04/2006	MEASUREMENTS	0.197
POST TEST	02/09/2006		0.197
PYROMETER (PY 10)	01/04/2006	ASTM THERMOMETER	$\pm$ 2° F
PITOT TUBE (PT 10)	10/17/2005	USEPA RM 2	C_p = 0.84
BAROMETER (BR 02)	01/03/2006	NWS COMPARISON	$\pm$ 0.01" Hg

TECO
TAMPA ELECTRIC

USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
Quarterly Calibration

Environmental Services
Air Services Group

Red Team

Manufacturer: Thermo Anderson
Model Number: MST-C1
Instrument Code Number: ^MB06
LabWorks Sample Number:

Calibration Date: 1/4/2006
Barometric Pressure: 30 "Hg
Theoretical Critical Vacuum: 14.15 "Hg
Calibrated By: JAV

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH	Time	Initial Volume	Final Volume	Total Volume	Initial Temperatures		Final Tempertures	
					Inlet	Outlet	Inlet	Outlet
"H_2O	Minutes	ft^3	ft^3	ft^3	°F	°F	°F	°F
0.64	15	46.100	52.925	6.825	77	77	77	77
1.15	15	52.925	62.029	9.104	78	77	77	78
1.95	15	62.029	73.770	11.741	77	78	83	78
3.70	15	73.770	89.845	16.075	83	78	89	79

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures		
			Initial °F	Final °F	Average °F
48	0.3483	22.5	75	75	75.0
55	0.4660	20.0	75	75	75.0
63	0.5971	19.0	75	75	75.0
73	0.8177	16.0	75	75	75.0

CALCULATED DATA

Dry Gas Meter Volume Corrected	Critical Orifice Volume Corrected	Volume Nominal	Calibration Y Value		Calibration ΔHα Value	
$Vm_{(std)}$, ft^3	$Vcr_{(std)}$, ft^3	$Vcr_{(std)}$, ft^3	(ratio)	QA/QC ± 0.02	"H_2O	QA/QC ± 0.2
6.736	6.776	6.851	1.006	0.000	1.739	-0.032
8.989	9.066	9.165	1.009	0.003	1.744	-0.027
11.583	11.617	11.744	1.003	-0.003	1.796	0.025
15.830	15.909	16.083	1.005	-0.001	1.806	0.035
		Averages:	**1.006**		**1.771**	

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval 

Date: 18-Jan-06

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
POST - TEST CALIBRATION CHECK

Manufacturer: Thermo
Model Number: MST
Instrument Code Number: MB06
LabWorks Sample Number:
Associated Test:

Calibration Date: 2/9/2006
Barometric Pressure: 30.24 "Hg
Theoretical Critical Vacuum: 14.26 "Hg
Calibrated By: RAB
Team: RED

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH	Time	Initial Volume	Final Volume	Total Volume	Initial Temperatures		Final Tempertures	
"H_2O	Minutes	ft^3	ft^3	ft^3	°F	°F	°F	°F
1.15	10	978.800	984.870	6.070	80	75	80	76
1.15	10	984.870	990.952	6.082	80	76	80	77
1.15	10	990.952	997.042	6.090	80	77	80	77

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures Initial °F	Final °F	Average °F
55	0.4660	21.0	73	72	72.5
55	0.4660	21.0	72	72	72.0
55	0.4660	21.0	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
6.038	6.107	6.096	1.011	0.001	1.721	0.002
6.044	6.110	6.093	1.011	0.000	1.718	-0.001
6.050	6.110	6.093	1.010	-0.001	1.717	-0.002
		Averages:	**1.011**		**1.719**	
		Prior Y:	**1.006**			
		% Difference:	**-0.47%**			

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval [signature] Date: 2/10/2006

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

QUARTERLY NOZZLE CALIBRATIONS

Shared Resource

STEEL NOZZLE SET

Calibration Date: 1/4/2005 Responsible Party: **R.A. Barthelette Jr.**

Nozzle I.D.	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
^*SN01*	0.300	0.300	0.300	0.000	0.118
^*SN04*	0.320	0.320	0.320	0.000	0.126
^*SN05*	0.380	0.380	0.375	0.002	0.149
^*SN06*	0.500	0.500	0.500	0.000	0.197
^*SN09*	0.700	0.700	0.700	0.000	0.276
^*SN10*	0.755	0.755	0.750	0.002	0.297
^*SN12*	0.985	0.990	0.990	0.002	0.389
^*SN15*	0.420	0.420	0.415	0.002	0.165
^*SN16*	0.500	0.500	0.500	0.000	0.197
^*SN19*	0.715	0.710	0.710	0.002	0.280
^*SN22*	0.930	0.935	0.935	0.002	0.367
^*SN30*	0.795	0.800	0.795	0.002	0.314
^*SN36*	0.480	0.480	0.480	0.000	0.189
^*SN37*	0.520	0.525	0.525	0.002	0.206
^*SN38*	0.640	0.640	0.635	0.002	0.251
^*SN46*	0.480	0.480	0.480	0.000	0.189
^*SN47*	0.515	0.515	0.515	0.000	0.203
^*SN48*	0.640	0.640	0.635	0.002	0.251
^*SN50*	0.795	0.795	0.790	0.002	0.312
^*SN58*	0.615	0.615	0.620	0.002	0.243
^*SN68*	0.630	0.630	0.625	0.002	0.247
^*SN69*	0.950	0.950	0.955	0.002	0.375
^*SN70*	1.560	1.560	1.560	0.000	0.614
^*SN71*	1.560	1.560	1.560	0.000	0.614
^*SN72*	0.955	0.955	0.955	0.000	0.376
^*SN73*	1.280	1.285	1.280	0.002	0.505
^*SN74*	1.245	1.245	1.245	0.000	0.490

Data Notations: All micrometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

QA/QC Review by: 

Date: 18-Jan-06

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

POST TEST NOZZLE CALIBRATION

Shared Resource

Calibration Date: 2/9/2006
Calibration Personnel: RAB
Test Designation: Polk 1 SAM Compliance

Nozzle Identifier	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
SN06	0.500	0.500	0.500	0.000	0.197

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

Quarterly (pre-test) value for nozzle ID SN06 was 0.197

Difference (Pre-test/Post-test) is: 0.000

QA/QC Review by: 2/10/06

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

Pyrometer Calibration

Red Team

Pyrometer Under Test

Pyrometer Number: ^PY10
Labworks Sample # N/A
Calibration Date: 1/4/2006

Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific
Calibrator Serial Number: AOA024
Date of Last Calibration: 10/6/2005
Calibration Personnel (Typed and Signature): Jorge A Varino

Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	400	0
2	212	211	1
3	32	32	0

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Farenheit.
Difference is calculated as follows:

(reference temperature) – (pyrometer indication)

Qaulity Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

Reviewer: 

Date: 18-Jan-06

TECO
TAMPA ELECTRIC

PITOT TUBE CALIBRATION DATA SHEET

Environmental Services
Air Services Group

Pitot Tube ID # PT10
Calibration Date 10/17/2005 Operating Quarter/Year: 4 Shared Resource
Openings Damaged? ☐ Y ☑ N Repaired? ☐ Y ☑ N ☐ N/A

Labworks #: AA79435

Alpha and Beta Angle Determinations

α_1	0.8	degrees	*Pass*
α_2	1.2	degrees	*Pass*
β_1	0.1	degrees	*Pass*
β_2	0.2	degrees	*Pass*

Gamma, Theta, A, Z, and W Determinations

ψ	0.1	degrees	
A	2.43	cm	
Z	0.004	cm	*Pass*
o	1.3	degrees	
W	0.055	cm	*Pass*

Acceptable Limits:
Dt 0.48 < Dt > 0.95 cm
α < 10 degrees
(α_1 measured across top impact openings)
(α_2 measured across bottom impact openings)
β_1 < 5 degrees (alongside top impact openings)
β_2 < 5 degrees (alongside bottom impact openings)
Z < 0.32 cm (Asinψ)
W < 0.08 cm (Asino)
A distance between tips
o angle of plane on side of pitots
ψ angle between tips

NOTES

All measurements are taken in accordance with the requirements of 40 CFR 60, Appendix A - Test Methods, Method 2, "Determination of stack gas velocity and volumetric flow rate (Type S pitot tube)". Measurement details are found in EPA/600/4-77/027b, "Quality Assurance Handbook for Air Pollution Measurement Systems: Stationary Source Specific Methods", sub-section 3.1.1, Procuement of Apparatus and Supplies.

Comments: REMOVABLE

Calibrated by: Juan Ramirez

Quality Assurance Review / Approval: 17-Oct-05

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

BAROMETER CALIBRATION

Blue Team

Instrument Number: ^BR02
Calibration Date: 01/03/2006
Calibration Personnel: R.A. Barthelette Jr.
Labworks #:

Time	Barometer Reading Inches Mercury	Reference Reading Inches Mercury	Difference "Hg
10:35	30.00	30.02	-0.02
12:10	29.98	30.02	-0.04
		Average Difference:	-0.03

Note: Barometric readings must agree within + 0.1 "Hg.
Current Reference is National Weather Service, TIA.
Current Conditions at Tampa International Airport
Comments (Note any adjustments):

QA/QC Review by:  Date: 18-Jan-06

APPENDIX B

TURBINE DATA

PI Ops Data

Plant Information Source: polk-1pisrv
Start Time: 2/7/2006 9:12
End Time: 2/7/2006 13:49
Time Interval: 1 Min

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
Run Average:	191.518322	7306.57258	73.4711102	6.28289354
07-Feb-06 09:12:00	192.1288147	7252.82861	64.2213974	6.50704861
07-Feb-06 09:13:00	192.0754547	7251.17871	64.7196884	6.50666714
07-Feb-06 09:14:00	191.7931824	7249.52832	64.9516296	6.50628567
07-Feb-06 09:15:00	191.3609161	7277.23877	65.1835709	6.5059042
07-Feb-06 09:16:00	191.6625671	7322.8335	65.4155121	6.50552273
07-Feb-06 09:17:00	192.0321808	7292.20752	65.20224	6.50514126
07-Feb-06 09:18:00	192.1638336	7258.32861	65.0494995	6.50475979
07-Feb-06 09:19:00	191.526474	7263.60889	65.0697174	6.50437784
07-Feb-06 09:20:00	191.8067017	7273.20752	65.5274124	6.50399637
07-Feb-06 09:21:00	191.6235809	7267.4043	65.8332596	6.5036149
07-Feb-06 09:22:00	191.8021851	7264.8208	65.683548	6.50323343
07-Feb-06 09:23:00	191.8202057	7263.25098	65.6654358	6.50285196
07-Feb-06 09:24:00	191.7798309	7267.70166	66.1231384	6.50247049
07-Feb-06 09:25:00	192.409317	7261.15625	66.2096939	6.50208902
07-Feb-06 09:26:00	192.202179	7261.25586	66.3649597	6.50170755
07-Feb-06 09:27:00	191.5558319	7264.84961	66.8280182	6.50132608
07-Feb-06 09:28:00	192.04216	7259.37988	66.9820099	6.50094461
07-Feb-06 09:29:00	191.9876862	7253.91016	67.1104431	6.50056314
07-Feb-06 09:30:00	191.178421	7257.10059	66.9577026	6.50018167
07-Feb-06 09:31:00	191.2994537	7255.1416	66.7947769	6.49980021
07-Feb-06 09:32:00	191.8082733	7265.95898	66.3365479	6.49941874
07-Feb-06 09:33:00	192.0485687	7287.66943	65.8783264	6.49903727
07-Feb-06 09:34:00	191.6096954	7307.08496	66.7943954	6.4986558
07-Feb-06 09:35:00	191.1708374	7322.44873	67.0119553	6.49827433
07-Feb-06 09:36:00	191.0958099	7366.84131	67.2172775	6.49789286
07-Feb-06 09:37:00	192.1004333	7356.95361	67.4226074	6.49751139
07-Feb-06 09:38:00	192.5331268	7318.75781	67.2643356	6.49712992
07-Feb-06 09:39:00	191.458786	7317.12549	67.4183273	6.49674845
07-Feb-06 09:40:00	191.9042511	7320.34961	67.3008194	6.49636698
07-Feb-06 09:41:00	191.6746216	7312.83252	67.1474533	6.49598551
07-Feb-06 09:42:00	191.5156708	7297.19043	66.9940872	6.49560404
07-Feb-06 09:43:00	192.3639679	7279.85352	66.8407211	6.49522257
07-Feb-06 09:44:00	191.1596069	7279.57959	66.9322433	6.4948411
07-Feb-06 09:45:00	191.4785767	7279.30566	67.0849838	6.49445963

PI Ops Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
07-Feb-06 09:46:00	191.7975464	7279.03174	66.8921814	6.49407816
07-Feb-06 09:47:00	191.2572021	7278.72217	67.2617645	6.49369669
07-Feb-06 09:48:00	192.2488708	7278.35547	67.4362946	6.49331522
07-Feb-06 09:49:00	191.8756714	7277.98877	68.0781937	6.49293375
07-Feb-06 09:50:00	191.845871	7265.46973	67.899559	6.49255228
07-Feb-06 09:51:00	191.7506866	7253.87451	68.1305466	6.49217081
07-Feb-06 09:52:00	191.5950623	7257.79102	68.3615341	6.49178934
07-Feb-06 09:53:00	191.7074585	7259.3252	68.5925293	6.49140787
07-Feb-06 09:54:00	191.5588837	7269.65332	69.0480881	6.4910264
07-Feb-06 09:55:00	191.4754791	7268.08252	69.086586	6.49064493
07-Feb-06 09:56:00	191.5470581	7307.62891	69.2405777	6.49026299
07-Feb-06 09:57:00	191.7560425	7302.99023	69.2354507	6.48988152
07-Feb-06 09:58:00	191.9650269	7277.59766	69.0814514	6.48950005
07-Feb-06 09:59:00	191.6876678	7285.26465	69.2948151	6.48911858
07-Feb-06 10:00:00	191.7206726	7275.18066	69.6826248	6.48873711
07-Feb-06 10:01:00	191.9111786	7272.55713	69.8037109	6.48835564
07-Feb-06 10:02:00	191.7337494	7278.2251	69.9247971	6.48797417
07-Feb-06 10:03:00	192.0595093	7277.48535	70.0458832	6.4875927
07-Feb-06 10:04:00	192.0592651	7273.79639	70.1669693	6.48721123
07-Feb-06 10:05:00	191.7153625	7265.36279	69.8368835	6.48682976
07-Feb-06 10:06:00	191.9688568	7256.9292	69.7047348	6.48644829
07-Feb-06 10:07:00	191.6097412	7252.78271	69.9345245	6.48606682
07-Feb-06 10:08:00	191.7392578	7255.5332	70.1643143	6.48568535
07-Feb-06 10:09:00	191.8681488	7252.44971	70.3941116	6.48530388
07-Feb-06 10:10:00	191.996521	7247.854	70.4729385	6.48492241
07-Feb-06 10:11:00	192.1248932	7248.75244	70.3996658	6.48454094
07-Feb-06 10:12:00	192.1385651	7245.2168	71.1160431	6.48415947
07-Feb-06 10:13:00	192.0296021	7253.10059	70.902565	6.483778
07-Feb-06 10:14:00	191.4155579	7251.1875	71.0339432	6.48339653
07-Feb-06 10:15:00	191.5024567	7265.42627	71.1653214	6.48301506
07-Feb-06 10:16:00	191.2958221	7311.85205	71.2966995	6.48263359
07-Feb-06 10:17:00	191.5341339	7304.51855	71.4280853	6.48225212
07-Feb-06 10:18:00	191.9154663	7282.88818	71.5594635	6.48187065
07-Feb-06 10:19:00	191.7777557	7281.91064	71.6908417	6.48148918
07-Feb-06 10:20:00	192.0355835	7280.93262	71.5049973	6.48110771
07-Feb-06 10:21:00	191.7624207	7276.39404	71.6076584	6.48072624
07-Feb-06 10:22:00	192.0516052	7271.88965	71.7103195	6.48034477
07-Feb-06 10:23:00	191.4102325	7276.65674	71.806221	6.4799633
07-Feb-06 10:24:00	191.4327393	7272.84912	71.5032043	6.47958183
07-Feb-06 10:25:00	192.0529938	7267.33691	71.8010025	6.47920036

PI Ops Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
07-Feb-06 10:26:00	192.1385345	7281.27051	71.6611786	6.47881889
07-Feb-06 10:27:00	191.7378082	7283.95996	71.5059204	6.47843742
07-Feb-06 10:28:00	191.4309845	7278.11768	71.523819	6.47805595
07-Feb-06 10:29:00	191.59375	7284.27783	71.1850357	6.47767448
07-Feb-06 10:30:00	191.7565155	7285.01074	71.2759399	6.47729301
07-Feb-06 10:31:00	191.919281	7281.80811	71.3595581	6.47691154
07-Feb-06 10:32:00	192.2622223	7280.21631	71.5648804	6.47653008
07-Feb-06 10:33:00	192.3158722	7291.40039	71.7702103	6.47614813
07-Feb-06 10:34:00	191.4996796	7289.72266	71.5648804	6.47576666
07-Feb-06 10:35:00	192.4039459	7297.85645	71.7394104	6.47538519
07-Feb-06 10:36:00	191.2481995	7404.49316	71.6941681	6.47500372
07-Feb-06 10:37:00	192.3108521	7348.31201	71.5414276	6.47462225
07-Feb-06 10:38:00	191.3013458	7349.7417	71.6737061	6.47424078
07-Feb-06 10:39:00	190.992157	7434.78955	71.918663	6.4740715
07-Feb-06 10:40:00	191.3721161	7500.07666	72.16362	6.47623158
07-Feb-06 10:41:00	192.4888611	7421.54688	72.408577	6.47839165
07-Feb-06 10:42:00	192.2049561	7318.70654	72.2843781	6.4805522
07-Feb-06 10:43:00	191.4058075	7304.4082	71.9464417	6.48271227
07-Feb-06 10:44:00	192.1710968	7297.07471	71.9122391	6.48487234
07-Feb-06 10:45:00	192.083725	7318.31152	72.080513	6.48703289
07-Feb-06 10:46:00	191.8710785	7309.0376	72.2487869	6.48919296
07-Feb-06 10:47:00	191.9635773	7296.75342	72.4170609	6.49135303
07-Feb-06 10:48:00	191.8784637	7327.17773	72.4033661	6.49351358
07-Feb-06 10:49:00	192.2067566	7310.27734	72.2194214	6.49567366
07-Feb-06 10:50:00	192.3373413	7326.04248	72.4983978	6.49783373
07-Feb-06 10:51:00	191.1014099	7379.39453	72.7770081	6.49999428
07-Feb-06 10:52:00	192.0639496	7402.92285	72.700325	6.50215435
07-Feb-06 10:53:00	192.5269318	7402.92529	72.623642	6.50431442
07-Feb-06 10:54:00	192.1761169	7320.42822	72.5469666	6.50647497
07-Feb-06 10:55:00	191.6178589	7332.61816	72.3612595	6.50863504
07-Feb-06 10:56:00	191.782135	7390.04053	72.2142105	6.51079559
07-Feb-06 10:57:00	191.8125458	7350.43896	72.4591675	6.51295567
07-Feb-06 10:58:00	192.0511932	7313.7793	72.7041245	6.51511574
07-Feb-06 10:59:00	191.723999	7303.59717	72.9490814	6.51727629
07-Feb-06 11:00:00	192.0197296	7295.82227	73.1246338	6.51943636
07-Feb-06 11:01:00	191.6981659	7312.7998	73.1246338	6.52159643
07-Feb-06 11:02:00	191.5386047	7310.8335	73.1246338	6.52375698
07-Feb-06 11:03:00	191.5522308	7308.86719	73.1246338	6.52579355
07-Feb-06 11:04:00	191.965744	7308.97266	73.1246338	6.5261035
07-Feb-06 11:05:00	191.6070862	7325.55322	73.1246338	6.52641392

PI Ops Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
07-Feb-06 11:06:00	191.908905	7318.21973	73.1246338	6.52672386
07-Feb-06 11:07:00	192.0616455	7311.66553	73.1246338	6.52703381
07-Feb-06 11:08:00	191.9385681	7313.68213	73.4377594	6.52734375
07-Feb-06 11:09:00	191.8154907	7315.04199	73.4377594	6.52765369
07-Feb-06 11:10:00	191.9438019	7313.03809	73.7457657	6.52796364
07-Feb-06 11:11:00	191.7696228	7353.52686	73.6690826	6.52827358
07-Feb-06 11:12:00	191.7493134	7386.33008	73.5923996	6.528584
07-Feb-06 11:13:00	192.5530243	7349.96533	73.5157166	6.52889395
07-Feb-06 11:14:00	192.4085236	7316.25781	73.4390411	6.52920389
07-Feb-06 11:15:00	192.0245972	7319.30029	73.5134735	6.52951384
07-Feb-06 11:16:00	191.179657	7381.8999	73.5904694	6.52982378
07-Feb-06 11:17:00	191.7066498	7355.49902	73.6674652	6.53013372
07-Feb-06 11:18:00	192.1019287	7330.39697	73.7444611	6.53044367
07-Feb-06 11:19:00	191.8305054	7321.19189	74.0013733	6.53075361
07-Feb-06 11:20:00	191.4325256	7326.46484	74.022934	6.53106403
07-Feb-06 11:21:00	191.9137726	7330.71533	73.801384	6.53137398
07-Feb-06 11:22:00	191.7647095	7323.71924	74.0162354	6.53168392
07-Feb-06 11:23:00	192.1398621	7316.72314	73.7508774	6.53199387
07-Feb-06 11:24:00	192.4851074	7309.72705	74.1882095	6.53230381
07-Feb-06 11:25:00	191.9763031	7303.63232	74.343483	6.53261375
07-Feb-06 11:26:00	192.2644806	7305.64893	74.2574692	6.5329237
07-Feb-06 11:27:00	191.7315063	7306.49023	74.1047287	6.53323364
07-Feb-06 11:28:00	192.0646973	7298.65088	74.0921707	6.53354406
07-Feb-06 11:29:00	191.7025757	7308.4541	74.1305923	6.53385401
07-Feb-06 11:30:00	192.1233826	7293.41602	74.1690063	6.53416395
07-Feb-06 11:31:00	191.1346741	7328.8457	74.207428	6.5344739
07-Feb-06 11:32:00	192.0785217	7380.8623	74.2458496	6.53478384
07-Feb-06 11:33:00	192.4195251	7348.30811	74.2842712	6.53509378
07-Feb-06 11:34:00	191.7227631	7323.82764	74.3226852	6.53540373
07-Feb-06 11:35:00	192.2797852	7321.32422	74.3611069	6.53571367
07-Feb-06 11:36:00	191.8362274	7357.11816	74.3995285	6.53602409
07-Feb-06 11:37:00	191.5427094	7366.62158	74.4379501	6.53633404
07-Feb-06 11:38:00	191.8920441	7337.2876	74.4763718	6.53664398
07-Feb-06 11:39:00	191.7332916	7322.31006	74.5147858	6.53695393
07-Feb-06 11:40:00	191.8720551	7322.67969	74.5532074	6.53726387
07-Feb-06 11:41:00	192.2187805	7326.34766	74.591629	6.53757381
07-Feb-06 11:42:00	192.2468262	7333.31494	74.6300507	6.53788376
07-Feb-06 11:43:00	192.1272125	7335.94531	74.6684647	6.53819418
07-Feb-06 11:44:00	191.8057556	7334.23877	74.5054474	6.53850412
07-Feb-06 11:45:00	191.6240387	7332.53223	74.4971466	6.53881407

PI Ops Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
07-Feb-06 11:46:00	192.0630493	7330.82568	74.9818649	6.53912401
07-Feb-06 11:47:00	191.6002045	7329.11914	74.9204712	6.53943396
07-Feb-06 11:48:00	191.9951782	7327.41309	74.8590775	6.5397439
07-Feb-06 11:49:00	191.5269318	7314.09521	74.7976837	6.54005384
07-Feb-06 11:50:00	191.6515045	7297.26318	74.7362823	6.54036379
07-Feb-06 11:51:00	191.1468964	7337.10303	74.7288971	6.54067421
07-Feb-06 11:52:00	191.6325989	7360.55762	74.883522	6.54098415
07-Feb-06 11:53:00	192.360321	7339.04297	75.038147	6.5412941
07-Feb-06 11:54:00	192.0806122	7317.52832	75.1927719	6.54160404
07-Feb-06 11:55:00	191.392868	7323.35547	75.0221786	6.54191399
07-Feb-06 11:56:00	191.2852783	7397.20459	75.1248398	6.54222393
07-Feb-06 11:57:00	191.5014038	7370.89941	75.2275009	6.54253387
07-Feb-06 11:58:00	191.6573944	7338.79297	75.0509338	6.54284382
07-Feb-06 11:59:00	191.3853912	7330.11621	75.4587326	6.54315424
07-Feb-06 12:00:00	191.0116577	7324.84326	75.8665314	6.54346418
07-Feb-06 12:01:00	190.8314056	7328.62598	76.239006	6.54377413
07-Feb-06 12:02:00	191.6056671	7320.26758	76.117012	6.54408407
07-Feb-06 12:03:00	191.4607849	7318.15869	75.995018	6.53987885
07-Feb-06 12:04:00	191.315918	7317.79199	75.8730164	6.5356741
07-Feb-06 12:05:00	191.7461548	7307.3418	75.7510223	6.53146887
07-Feb-06 12:06:00	191.0330505	7318.25049	75.6290283	6.52726412
07-Feb-06 12:07:00	191.7238464	7333.83447	75.7658157	6.52305889
07-Feb-06 12:08:00	191.4428711	7365.95215	75.9210815	6.51885366
07-Feb-06 12:09:00	191.7355499	7375.31787	75.7127914	6.51464891
07-Feb-06 12:10:00	192.1906433	7380.08496	75.8148956	6.50690222
07-Feb-06 12:11:00	191.0988617	7427.39844	75.9169998	6.29022074
07-Feb-06 12:12:00	191.7406464	7437.77832	76.4647293	6.07688808
07-Feb-06 12:13:00	191.9567871	7410.71777	76.3110428	6.06112003
07-Feb-06 12:14:00	192.1729126	7346.94727	76.3877258	6.04535246
07-Feb-06 12:15:00	191.5245209	7322.94287	76.4644012	6.02958441
07-Feb-06 12:16:00	191.6937714	7390.21582	76.5410843	6.01381636
07-Feb-06 12:17:00	191.8768921	7307.39551	76.6177673	5.99804878
07-Feb-06 12:18:00	190.974762	7263.29736	76.6944504	5.98228073
07-Feb-06 12:19:00	191.0355225	7279.49219	76.7711334	5.96651268
07-Feb-06 12:20:00	191.1706085	7254.96143	76.8478165	5.95074511
07-Feb-06 12:21:00	190.9497833	7255.3584	76.560257	5.93497705
07-Feb-06 12:22:00	190.1144257	7239.95801	76.9709091	5.919209
07-Feb-06 12:23:00	190.5642395	7232.979	77.1249008	5.90344143
07-Feb-06 12:24:00	190.6993256	7251.75928	77.0046844	5.88767338
07-Feb-06 12:25:00	190.8344116	7256.8501	77.0508118	5.87190533

PI Ops Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
07-Feb-06 12:26:00	190.9241333	7265.85156	77.0427704	5.85613775
07-Feb-06 12:27:00	191.0013123	7249.88477	77.0222397	5.8403697
07-Feb-06 12:28:00	191.0080719	7246.45361	77.1864929	5.82460165
07-Feb-06 12:29:00	190.9363251	7272.2002	77.4996185	5.80883408
07-Feb-06 12:30:00	190.6751556	7261.42432	77.6697922	5.79337025
07-Feb-06 12:31:00	191.0834045	7305.67676	77.3634796	5.79585981
07-Feb-06 12:32:00	190.6339569	7332.99512	77.0571594	5.79834938
07-Feb-06 12:33:00	190.7735443	7286.14844	76.9986267	5.80083942
07-Feb-06 12:34:00	190.3050385	7251.93994	77.5581665	5.80332899
07-Feb-06 12:35:00	190.8195953	7260.54102	77.710907	5.80581856
07-Feb-06 12:36:00	191.0744019	7350.4375	77.6039886	5.80830812
07-Feb-06 12:37:00	191.4274139	7341.58984	77.1355896	5.81079769
07-Feb-06 12:38:00	191.3181	7300.87598	76.9828415	5.81328773
07-Feb-06 12:39:00	190.9672394	7303.53613	76.6988525	5.8157773
07-Feb-06 12:40:00	191.5496063	7313.23926	76.3986511	5.81826687
07-Feb-06 12:41:00	191.1195679	7296.1748	75.934021	5.82075644
07-Feb-06 12:42:00	191.0581512	7290.65869	75.934021	5.82324648
07-Feb-06 12:43:00	191.0864563	7265.82471	76.1006775	5.82573605
07-Feb-06 12:44:00	191.0505066	7269.40625	76.8498917	5.82822561
07-Feb-06 12:45:00	190.6607513	7272.98779	76.6933289	5.83071518
07-Feb-06 12:46:00	191.1077881	7276.56934	76.2060776	5.83320475
07-Feb-06 12:47:00	190.9682159	7280.15088	75.9699554	5.83569479
07-Feb-06 12:48:00	191.1983032	7288.2041	76.2063599	5.83818436
07-Feb-06 12:49:00	191.8518677	7300.30469	75.7985611	5.84067392
07-Feb-06 12:50:00	191.6623077	7289.97363	75.3907623	5.84316349
07-Feb-06 12:51:00	191.0696716	7322.00684	75.3214264	5.84565306
07-Feb-06 12:52:00	190.6565552	7364.08887	75.4699249	5.8481431
07-Feb-06 12:53:00	191.576767	7323.49854	75.6184235	5.85063267
07-Feb-06 12:54:00	191.5561676	7283.83984	76.5294571	5.85312223
07-Feb-06 12:55:00	191.0885468	7293.39355	76.560257	5.8556118
07-Feb-06 12:56:00	191.5198669	7345.68896	75.9750824	5.85810137
07-Feb-06 12:57:00	192.5502777	7351.36768	75.934021	5.86059141
07-Feb-06 12:58:00	191.5783997	7314.38184	75.691597	5.86308098
07-Feb-06 12:59:00	191.8723145	7317.31543	75.8952026	5.86557055
07-Feb-06 13:00:00	190.9351196	7324.26318	76.2057343	5.86806011
07-Feb-06 13:01:00	191.9304047	7338.55371	76.1958084	5.87055016
07-Feb-06 13:02:00	191.4748688	7329.22021	76.1876221	5.87303972
07-Feb-06 13:03:00	191.0193176	7307.30078	76.4981537	5.87552929
07-Feb-06 13:04:00	191.2298889	7309.74512	77.23526	5.87801886
07-Feb-06 13:05:00	190.7212982	7312.18994	77.6972427	5.88050842

PI Ops Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
07-Feb-06 13:06:00	191.6824188	7317.82861	77.8127365	5.88299847
07-Feb-06 13:07:00	190.9794922	7327.16064	77.1612473	5.88548803
07-Feb-06 13:08:00	191.2124176	7314.14355	77.3013077	5.887918
07-Feb-06 13:09:00	191.1034546	7296.46338	77.3969574	5.88684082
07-Feb-06 13:10:00	191.149292	7281.42969	77.7049408	5.88576412
07-Feb-06 13:11:00	190.1622925	7345.82666	77.5642853	5.88468695
07-Feb-06 13:12:00	190.9564667	7373.06104	77.6663895	5.88360977
07-Feb-06 13:13:00	190.4791412	7335.5376	77.7684937	5.8825326
07-Feb-06 13:14:00	191.0767517	7298.01416	77.6963882	5.88145542
07-Feb-06 13:15:00	191.3264465	7290.86523	77.491066	5.88037825
07-Feb-06 13:16:00	190.9606476	7372.64893	77.2857437	5.87930107
07-Feb-06 13:17:00	190.8740845	7324.62451	77.3456268	5.8782239
07-Feb-06 13:18:00	190.7875061	7296.02344	77.6536102	5.8771472
07-Feb-06 13:19:00	190.8662262	7270.41699	77.4996185	5.87607002
07-Feb-06 13:20:00	190.3953857	7286.73438	77.4996185	5.87499285
07-Feb-06 13:21:00	190.8666687	7299.71484	77.1865005	5.87391567
07-Feb-06 13:22:00	190.7293396	7268.11914	77.6248627	5.8728385
07-Feb-06 13:23:00	190.8137665	7266.46924	77.5468445	5.87176132
07-Feb-06 13:24:00	190.9866333	7266.54492	77.6700363	5.87068415
07-Feb-06 13:25:00	190.9321594	7289.11475	77.7932358	5.86961651
07-Feb-06 13:26:00	190.2860565	7293.33154	77.9164276	5.86908865
07-Feb-06 13:27:00	190.3977051	7300.35254	78.0396271	5.86856127
07-Feb-06 13:28:00	190.9952698	7336.04053	77.9014587	5.86803389
07-Feb-06 13:29:00	190.6485138	7341.17383	77.8319855	5.86750603
07-Feb-06 13:30:00	191.2536774	7347.57861	77.9089813	5.86697865
07-Feb-06 13:31:00	191.0563965	7382.68945	77.9859848	5.86645126
07-Feb-06 13:32:00	191.6238861	7428.4248	78.0629807	5.8659234
07-Feb-06 13:33:00	190.9552307	7382.74316	77.9256668	5.86539602
07-Feb-06 13:34:00	191.3014984	7321.41602	78.1027603	5.86486864
07-Feb-06 13:35:00	190.6795349	7294.59375	77.9487686	5.86434078
07-Feb-06 13:36:00	191.2492676	7370.85107	77.8308487	5.8638134
07-Feb-06 13:37:00	190.8860626	7308.66699	77.9861221	5.86328602
07-Feb-06 13:38:00	190.2096558	7251.43506	78.4326172	5.86275864
07-Feb-06 13:39:00	190.6796722	7263.53564	78.3562469	5.86223078
07-Feb-06 13:40:00	190.0146484	7275.63574	78.2798767	5.8617034
07-Feb-06 13:41:00	190.5704651	7285.75635	78.2035065	5.86117601
07-Feb-06 13:42:00	190.8991699	7268.15576	78.1271362	5.86064816
07-Feb-06 13:43:00	191.129776	7251.26416	78.7416611	5.86012077
07-Feb-06 13:44:00	190.8372955	7245.23389	78.7418289	5.85959339
07-Feb-06 13:45:00	190.4442291	7250.85693	78.4389801	5.85906553

PI Ops Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
07-Feb-06 13:46:00	190.1539307	7242.58643	78.4389801	5.85853815
07-Feb-06 13:47:00	189.9719238	7260.48096	78.4389801	5.85801077
07-Feb-06 13:48:00	189.7588654	7231.14551	78.2165451	5.85748291
07-Feb-06 13:49:00	190.5630493	7230.41211	78.3192062	5.85695553

APPENDIX C

FUEL ANALYSIS

TECO TAMPA ELECTRIC

Polk Power Station
Laboratory

9995 SR 37 South * Mulberry, Florida 33860 * Ph (813)228-1111 * Fax (863)428-5927

Report For: Ray McDarby

Report Date: 2/15/2006

Laboratory ID: PK41934

Sample Information

Location Code: G-9
Location Description: Clean Syngas
Project Account Code:

Sampled By: BRET NICHOLAS
Date Sampled: 2/7/2006
Time Sampled: 12:05:00 PM

Laboratory Results

Parameter	Result	Units	MDL
Carbon Dioxide	15.49	%	
Carbon Monoxide	45.05	%	
Hydrogen (Mass Balance)	35.83	%	
Methane	0.0563	%	
Nitrogen	2.60	%	
Oxygen/Argon	0.977	%	

Comments:

Average results for two samples taken at 1205 on 02/07/06.

TECO TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk GC**

Facility: Polk Power Station **Analysis Date: 2/7/2006**

Source: Unit 1

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density * (lb/ft^3)	% volume x Density	weight %	Component Gross Btu/lb	Weight Fract. Btu	Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
Hydrogen	35.8300	2.016	0.0053	0.00190	3.3695	61100	2058.77	325.0	116.4475
Oxygen	0.0000	32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Argon	0.9770	39.948	0.1065	0.00104	1.8462	0	0.00	0.0	0
Nitrogen	2.6000	28.016	0.0744	0.00193	3.4323	0	0.00	0.0	0
CO2	15.4900	44.010	0.1170	0.01812	32.1574	0	0.00	0.0	0
CO	45.0500	28.010	0.0740	0.03334	59.1521	4347	2571.34	322.0	145.061
COS	0.0000	60.070	0.1602	0.00000	0.0000	0	0.00	0.0	0
Methane	0.0563	16.041	0.0424	0.00002	0.0424	23879	10.11	1013.0	0.570319
Ethane	0.000	30.067	0.0803	0.00000	0.0000	22320	0.00	1792.0	0
Ethylene	0.000	28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.000	44.092	0.1196	0.00000	0.0000	21661	0.00	2590.0	0
propylene	0.000	42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.000	58.118	0.1582	0.00000	0.0000	21257	0.00	3363.0	0
n-butane	0.000	58.118	0.1582	0.00000	0.0000	21308	0.00	3370.0	0
Isobutene	0.000	56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.000	72.144	0.1904	0.00000	0.0000	21052	0.00	4008.0	0
n-pentane		72.144	0.1904	0.00000	0.0000	21091	0.00	4016.0	0
n-hexane		86.169	0.2274	0.00000	0.0000	20940	0.00	4762.0	0
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
Total:	100.00				100.0000				

Average Density	0.05636
Specific Gravity	0.73671

Gross Heating Value			
Btu/lb	**4640**	**Btu/SCF**	**262.08**
Net Heating Values			
Btu/lb	**4327**	**Btu/SCF**	**244**

* Density (lb/ft^3) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Hanbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H_2 x 8.94)

TECO
TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk GC**

Facility: Polk Power Station **Analysis Date: 2/7/2006**

Source: Unit 1

CALCULATION OF F FACTORS

						Weight Percents			
Component	**Mol. Wt.**	**C Factor**	**H Factor**	**% volume**	**Fract. Wt.**	**Carbon**	**Hydrogen**	**Nitrogen**	**Oxygen**
Hydrogen	2.016	0	1	35.830	72.2333		3.393508		
Oxygen	32.000	0	0	0.000	0.0000				0
Argon	39.948	0	0	0.977	39.0292				
Nitrogen	28.016	0	0	2.600	72.8416			3.422086733	
CO2	44.010	0.272273	0	15.490	681.7149	8.72004847			23.283525
CO	28.010	0.42587	0	45.050	1261.8505	25.2462273			34.069098
COS	60.070	0.1998	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	0.056	0.9031	0.03182091	0.010607		
Ethane	30.067	0.8	0.2	0.000	0.0000	0	0		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.000	0.0000	0	0		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
n-butane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-pentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-hexane	86.169	0.83721	0.16279	0.000	0.0000	0	0		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00330	2128.5726	33.9980967	3.40	3.422086733	57.352623

CALCULATED VALUES		
O2 F Factor (dry), Fd	**8298**	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O2 F Factor (wet), Fw	**9714**	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	**1416**	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	**14.58**	volume % water in flue gas @ 0% excess air
CO2 F Factor, Fc	**2352**	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	**28.34**	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	**0.74**	EPA Method 3a Fo value

APPENDIX D

CEMS DATA

CEMS Data

Record#	DATE	TIME	SO211	NOX12	CO213	OXY14
1	2/7/2006	91200	42.09	17.1	8.8	10.5
2	2/7/2006	91300	41.26	17.2	8.8	10.5
3	2/7/2006	91400	41.91	17.2	8.8	10.5
4	2/7/2006	91500	42.39	17.2	8.8	10.5
5	2/7/2006	91600	43.11	17.2	8.8	10.5
6	2/7/2006	91700	44.21	17.3	8.8	10.5
7	2/7/2006	91800	44.63	17.4	8.8	10.5
8	2/7/2006	91900	45.45	17.4	8.8	10.5
9	2/7/2006	92000	45.78	17.4	8.8	10.5
10	2/7/2006	92100	45.92	17.2	8.8	10.5
11	2/7/2006	92200	43.6	16.3	8.7	10.5
12	2/7/2006	92300	41.16	17.2	8.8	10.5
13	2/7/2006	92400	41.69	17.5	8.8	10.5
14	2/7/2006	92500	41.64	17.6	8.8	10.5
15	2/7/2006	92600	41.6	17.6	8.8	10.5
16	2/7/2006	92700	42.34	17.5	8.8	10.5
17	2/7/2006	92800	42.65	17.4	8.8	10.5
18	2/7/2006	92900	43.42	17.6	8.8	10.5
19	2/7/2006	93000	44.4	17.8	8.8	10.5
20	2/7/2006	93100	45.02	17.6	8.8	10.4
21	2/7/2006	93200	44.37	17.4	8.8	10.4
22	2/7/2006	93300	43.52	17.1	8.8	10.4
23	2/7/2006	93400	42.84	17	8.8	10.4
24	2/7/2006	93500	42.63	17	8.8	10.4
25	2/7/2006	93600	43.39	17.1	8.8	10.4
26	2/7/2006	93700	44.45	17.1	8.8	10.4
27	2/7/2006	93800	45.37	17.1	8.8	10.4
28	2/7/2006	93900	45.35	17	8.8	10.4
29	2/7/2006	94000	45.61	17	8.8	10.4
30	2/7/2006	94100	46.6	16.7	8.8	10.4
31	2/7/2006	94200	46.18	15.9	8.7	10.4
32	2/7/2006	94300	44.93	16.6	8.8	10.4
33	2/7/2006	94400	46.19	16.9	8.8	10.4
34	2/7/2006	94500	46.78	17	8.8	10.4
35	2/7/2006	94600	46.46	17.1	8.8	10.4
36	2/7/2006	94700	46.35	17.3	8.8	10.4
37	2/7/2006	94800	47.62	17.5	8.8	10.4
38	2/7/2006	94900	48.22	17.5	8.8	10.4
39	2/7/2006	95000	47.24	17.5	8.8	10.5
40	2/7/2006	95100	46.29	17.6	8.8	10.4
41	2/7/2006	95200	46.31	17.7	8.8	10.4
42	2/7/2006	95300	45.69	17.8	8.8	10.5

CEMS Data

Record#	DATE	TIME	SO211	NOX12	CO213	OXY14
43	2/7/2006	95400	44.74	17.6	8.8	10.5
44	2/7/2006	95500	44.35	17.5	8.8	10.5
45	2/7/2006	95600	44.27	17.6	8.8	10.5
46	2/7/2006	95700	45.22	17.6	8.8	10.5
47	2/7/2006	95800	46.29	17.7	8.8	10.5
48	2/7/2006	95900	46.69	17.9	8.8	10.5
49	2/7/2006	100000	46.94	18	8.7	10.5
50	2/7/2006	100100	47.52	17.8	8.7	10.4
51	2/7/2006	100200	47	17.2	8.7	10.5
52	2/7/2006	100300	44.91	18	8.7	10.5
53	2/7/2006	100400	44.31	18.1	8.7	10.5
54	2/7/2006	100500	43.63	18	8.7	10.5
55	2/7/2006	100600	42.94	17.9	8.7	10.5
56	2/7/2006	100700	43.96	17.8	8.7	10.5
57	2/7/2006	100800	45.48	17.8	8.7	10.5
58	2/7/2006	100900	47.36	17.9	8.7	10.5
59	2/7/2006	101000	47.98	18	8.7	10.5
60	2/7/2006	101100	48.12	18.1	8.7	10.5
61	2/7/2006	101200	47.64	18.2	8.7	10.5
62	2/7/2006	101300	47.05	18.3	8.7	10.5
63	2/7/2006	101400	44.9	18.4	8.7	10.5
64	2/7/2006	101500	42.96	18.3	8.7	10.5
65	2/7/2006	101600	42.64	18.3	8.7	10.5
66	2/7/2006	101700	42.37	18.3	8.7	10.5
67	2/7/2006	101800	43.35	18.3	8.7	10.5
68	2/7/2006	101900	44.77	18.4	8.7	10.5
69	2/7/2006	102000	45.14	18.4	8.7	10.5
70	2/7/2006	102100	46.73	18.3	8.7	10.5
71	2/7/2006	102200	47.69	17.1	8.7	10.5
72	2/7/2006	102300	46.51	17.8	8.8	10.5
73	2/7/2006	102400	46.49	18	8.8	10.5
74	2/7/2006	102500	46.28	18.2	8.7	10.5
75	2/7/2006	102600	46.03	18.3	8.8	10.5
76	2/7/2006	102700	44.27	18.3	8.8	10.5
77	2/7/2006	102800	43.39	18.5	8.7	10.5
78	2/7/2006	102900	43.93	18.6	8.7	10.5
79	2/7/2006	103000	45.33	18.5	8.7	10.5
80	2/7/2006	103100	45.33	18.5	8.7	10.5
81	2/7/2006	103200	45.51	18.3	8.8	10.5
82	2/7/2006	103300	44.41	18.2	8.8	10.5
83	2/7/2006	103400	43.87	18.2	8.7	10.5
84	2/7/2006	103500	43.57	18.2	8.7	10.5

CEMS Data

Record#	DATE	TIME	SO211	NOX12	CO213	OXY14
85	2/7/2006	103600	43.5	18.1	8.8	10.5
86	2/7/2006	103700	43.41	18	8.8	10.5
87	2/7/2006	103800	44.43	18	8.8	10.5
88	2/7/2006	103900	45.67	18.1	8.7	10.5
89	2/7/2006	104000	45.92	18.1	8.7	10.5
90	2/7/2006	104100	46.83	18	8.8	10.5
91	2/7/2006	104200	46.27	17.2	8.8	10.5
92	2/7/2006	104300	45.69	18	8.8	10.5
93	2/7/2006	104400	46.14	17.4	8.7	10.5
94	2/7/2006	104500	45.23	16.4	8.7	10.4
95	2/7/2006	104600	42.63	15.9	8.7	10.4
96	2/7/2006	104700	41.21	17.1	8.8	10.5
97	2/7/2006	104800	42.22	18.2	8.8	10.5
98	2/7/2006	104900	44.1	18.2	8.8	10.4
99	2/7/2006	105000	44.08	17.8	8.8	10.4
100	2/7/2006	105100	44.6	17.5	8.8	10.4
101	2/7/2006	105200	45.39	17.3	8.8	10.4
102	2/7/2006	105300	45.73	17.3	8.8	10.4
103	2/7/2006	105400	45.86	17.2	8.8	10.4
104	2/7/2006	105500	45.21	17.4	8.8	10.4
105	2/7/2006	105600	45.07	17.3	8.8	10.4
106	2/7/2006	105700	45.28	16.6	8.7	10.4
107	2/7/2006	105800	43.83	16.7	8.8	10.4
108	2/7/2006	105900	44.25	17.3	8.8	10.4
109	2/7/2006	110000	46.21	17.4	8.8	10.4
110	2/7/2006	110100	47.7	17.1	8.8	10.4
111	2/7/2006	110200	46.43	16.4	8.7	10.4
112	2/7/2006	110300	45.23	17.1	8.8	10.4
113	2/7/2006	110400	45.84	17.5	8.8	10.4
114	2/7/2006	110500	45.99	17.5	8.8	10.4
115	2/7/2006	110600	46.52	17.6	8.8	10.4
116	2/7/2006	110700	45.55	17.6	8.8	10.4
117	2/7/2006	110800	44.28	17.7	8.8	10.4
118	2/7/2006	110900	43.51	17.6	8.8	10.5
119	2/7/2006	111000	43.97	17.7	8.8	10.5
120	2/7/2006	111100	44.29	17.8	8.8	10.4
121	2/7/2006	111200	45.04	17.7	8.8	10.4
122	2/7/2006	111300	45.35	17.6	8.8	10.4
123	2/7/2006	111400	44.87	17.6	8.8	10.4
124	2/7/2006	111500	44.92	17.6	8.8	10.4
125	2/7/2006	111600	44.77	17.6	8.8	10.4
126	2/7/2006	111700	45.09	16.9	8.8	10.4

CEMS Data

Record#	DATE	TIME	SO211	NOX12	CO213	OXY14
127	2/7/2006	111800	43.85	17	8.8	10.4
128	2/7/2006	111900	43.63	17.7	8.8	10.5
129	2/7/2006	112000	44.57	17.8	8.8	10.5
130	2/7/2006	112100	45.45	17.9	8.8	10.4
131	2/7/2006	112200	45.37	16.9	8.8	10.4
132	2/7/2006	112300	45.06	17.4	8.8	10.5
133	2/7/2006	112400	45.08	17.5	8.8	10.4
134	2/7/2006	112500	45.01	17.4	8.8	10.5
135	2/7/2006	112600	44	17.5	8.8	10.4
136	2/7/2006	112700	43.42	17.6	8.8	10.5
137	2/7/2006	112800	43.48	17.8	8.8	10.5
138	2/7/2006	112900	44.72	17.9	8.8	10.5
139	2/7/2006	113000	45.78	18.1	8.8	10.5
140	2/7/2006	113100	46.81	18.1	8.8	10.5
141	2/7/2006	113200	47.94	17.9	8.8	10.5
142	2/7/2006	113300	48.32	18	8.8	10.5
143	2/7/2006	113400	48.03	17.9	8.8	10.5
144	2/7/2006	113500	46.89	17.8	8.8	10.5
145	2/7/2006	113600	44.93	17.8	8.8	10.4
146	2/7/2006	113700	44.25	17.1	8.8	10.4
147	2/7/2006	113800	41.86	17	8.8	10.4
148	2/7/2006	113900	40.98	17.7	8.8	10.5
149	2/7/2006	114000	42.68	17.8	8.8	10.5
150	2/7/2006	114100	44.14	17.9	8.8	10.4
151	2/7/2006	114200	45.92	17	8.8	10.5
152	2/7/2006	114300	45.7	17.6	8.8	10.5
153	2/7/2006	114400	44.91	17.9	8.8	10.5
154	2/7/2006	114500	44.36	17.8	8.8	10.5
155	2/7/2006	114600	43.88	17.8	8.8	10.5
156	2/7/2006	114700	43.54	17.7	8.8	10.5
157	2/7/2006	114800	42.86	17.7	8.8	10.5
158	2/7/2006	114900	41.22	17.7	8.8	10.5
159	2/7/2006	115000	41.1	17.8	8.8	10.4
160	2/7/2006	115100	42.43	17.7	8.8	10.4
161	2/7/2006	115200	43.09	17.7	8.8	10.5
162	2/7/2006	115300	44.28	17.8	8.8	10.5
163	2/7/2006	115400	45.03	18	8.8	10.5
164	2/7/2006	115500	45.17	18	8.8	10.5
165	2/7/2006	115600	44.98	18	8.8	10.5
166	2/7/2006	115700	45.15	17.3	8.8	10.4
167	2/7/2006	115800	43.07	17.2	8.8	10.5
168	2/7/2006	115900	41.27	17.7	8.8	10.5

CEMS Data

Record#	DATE	TIME	SO211	NOX12	CO213	OXY14
169	2/7/2006	120000	41.33	17.9	8.8	10.5
170	2/7/2006	120100	43.42	17.9	8.8	10.4
171	2/7/2006	120200	43.48	17	8.8	10.5
172	2/7/2006	120300	42.28	17.7	8.8	10.5
173	2/7/2006	120400	43.19	17.9	8.8	10.5
174	2/7/2006	120500	43.47	18	8.8	10.5
175	2/7/2006	120600	43.01	18	8.8	10.5
176	2/7/2006	120700	43.78	17.8	8.8	10.5
177	2/7/2006	120800	42.85	17.7	8.8	10.4
178	2/7/2006	120900	42.95	17.5	8.8	10.4
179	2/7/2006	121000	44.34	17.3	8.8	10.4
180	2/7/2006	121100	45.29	17.3	8.8	10.4
181	2/7/2006	121200	46.22	17.2	8.7	10.4
182	2/7/2006	121300	46.22	17.2	8.8	10.4
183	2/7/2006	121400	45.62	17.2	8.8	10.4
184	2/7/2006	121500	44.67	17.1	8.8	10.4
185	2/7/2006	121600	44.22	16.9	8.8	10.4
186	2/7/2006	121700	44.86	16.6	8.8	10.4
187	2/7/2006	121800	44.04	16.9	8.8	10.4
188	2/7/2006	121900	45.16	17.5	8.8	10.4
189	2/7/2006	122000	47.08	17.7	8.8	10.4
190	2/7/2006	122100	49.18	17.7	8.8	10.4
191	2/7/2006	122200	48.88	17.2	8.8	10.4
192	2/7/2006	122300	47.67	17.7	8.8	10.5
193	2/7/2006	122400	49.29	17.9	8.7	10.5
194	2/7/2006	122500	49.94	18.2	8.8	10.5
195	2/7/2006	122600	40.08	12.3	3.8	10.5
196	2/7/2006	122700	3.99	0.4	0.1	10.5
197	2/7/2006	122800	16.92	10.9	6.3	10.5
198	2/7/2006	122900	43.15	18.3	8.6	10.5
199	2/7/2006	123000	44.83	18.4	8.7	10.5
200	2/7/2006	123100	44.64	18.4	8.7	10.5
201	2/7/2006	123200	44.51	18.4	8.7	10.5
202	2/7/2006	123300	44.22	18.4	8.7	10.5
203	2/7/2006	123400	44.39	18.4	8.7	10.5
204	2/7/2006	123500	43.66	18.4	8.7	10.5
205	2/7/2006	123600	44.24	18.5	8.7	10.5
206	2/7/2006	123700	44.39	18.1	8.7	10.5
207	2/7/2006	123800	42.95	18.1	8.8	10.5
208	2/7/2006	123900	41.77	18.7	8.8	10.5
209	2/7/2006	124000	42.5	18.8	8.8	10.5
210	2/7/2006	124100	44.3	18.6	8.8	10.5

CEMS Data

Record#	DATE	TIME	SO211	NOX12	CO213	OXY14
211	2/7/2006	124200	44.7	17.7	8.8	10.5
212	2/7/2006	124300	43.92	18.2	8.8	10.5
213	2/7/2006	124400	44.8	18.4	8.8	10.5
214	2/7/2006	124500	45.58	18.5	8.8	10.5
215	2/7/2006	124600	45.97	18.8	8.8	10.5
216	2/7/2006	124700	45.88	18.5	8.8	10.5
217	2/7/2006	124800	43.8	18.6	8.8	10.5
218	2/7/2006	124900	43.88	18.7	8.8	10.5
219	2/7/2006	125000	45.51	18.7	8.8	10.5
220	2/7/2006	125100	46.37	18.7	8.8	10.5
221	2/7/2006	125200	45.69	18.6	8.8	10.5
222	2/7/2006	125300	45.6	18.6	8.8	10.5
223	2/7/2006	125400	46.12	18.6	8.8	10.5
224	2/7/2006	125500	47.71	18.6	8.7	10.5
225	2/7/2006	125600	49.45	18.5	8.7	10.5
226	2/7/2006	125700	49.88	18.1	8.8	10.5
227	2/7/2006	125800	48.62	17.8	8.8	10.5
228	2/7/2006	125900	47.1	18.3	8.8	10.5
229	2/7/2006	130000	47.06	18.5	8.8	10.5
230	2/7/2006	130100	47.92	18.5	8.8	10.5
231	2/7/2006	130200	48.29	17.7	8.8	10.5
232	2/7/2006	130300	47	18.1	8.8	10.5
233	2/7/2006	130400	46.87	18.5	8.8	10.5
234	2/7/2006	130500	45.02	18.5	8.8	10.5
235	2/7/2006	130600	42.29	18.3	8.8	10.5
236	2/7/2006	130700	39.62	18.2	8.8	10.5
237	2/7/2006	130800	36.15	18.2	8.8	10.5
238	2/7/2006	130900	34.34	18.1	8.8	10.5
239	2/7/2006	131000	32.94	18.1	8.8	10.5
240	2/7/2006	131100	32.03	17.8	8.8	10.4
241	2/7/2006	131200	30.57	17.8	8.8	10.5
242	2/7/2006	131300	30.35	18	8.8	10.5
243	2/7/2006	131400	31.17	18.1	8.8	10.5
244	2/7/2006	131500	33.94	18.2	8.7	10.5
245	2/7/2006	131600	36.17	18.2	8.8	10.5
246	2/7/2006	131700	35.49	17.8	8.8	10.4
247	2/7/2006	131800	31.64	17.4	8.8	10.5
248	2/7/2006	131900	29.96	17.9	8.8	10.5
249	2/7/2006	132000	30.51	18.1	8.8	10.5
250	2/7/2006	132100	32.84	18.2	8.8	10.4
251	2/7/2006	132200	35.24	17.5	8.7	10.4
252	2/7/2006	132300	35.16	17.8	8.8	10.5

CEMS Data

Record#	DATE	TIME	SO211	NOX12	CO213	OXY14
253	2/7/2006	132400	34.28	18.1	8.8	10.5
254	2/7/2006	132500	34.91	18.2	8.8	10.5
255	2/7/2006	132600	35.54	18.1	8.8	10.4
256	2/7/2006	132700	34.84	17.9	8.8	10.4
257	2/7/2006	132800	35.55	17.8	8.7	10.4
258	2/7/2006	132900	37.36	17.7	8.7	10.4
259	2/7/2006	133000	38.28	17.6	8.7	10.4
260	2/7/2006	133100	38.33	17.6	8.7	10.4
261	2/7/2006	133200	37.74	17.5	8.7	10.4
262	2/7/2006	133300	38.17	17.5	8.7	10.4
263	2/7/2006	133400	39.48	17.3	8.7	10.4
264	2/7/2006	133500	40.08	17.2	8.7	10.4
265	2/7/2006	133600	42.56	17.1	8.7	10.4
266	2/7/2006	133700	44.32	16.8	8.7	10.4
267	2/7/2006	133800	43.42	16.7	8.8	10.4
268	2/7/2006	133900	41.85	17.3	8.8	10.4
269	2/7/2006	134000	43.31	17.5	8.8	10.4
270	2/7/2006	134100	43.49	17.6	8.8	10.4
271	2/7/2006	134200	42.63	17.3	8.8	10.4
272	2/7/2006	134300	42.07	17.6	8.7	10.4
273	2/7/2006	134400	42.01	17.8	8.7	10.4
274	2/7/2006	134500	42.39	17.9	8.7	10.4
275	2/7/2006	134600	42.13	17.9	8.7	10.4
276	2/7/2006	134700	41.01	17.8	8.7	10.4
277	2/7/2006	134800	40.55	17.9	8.7	10.4
278	2/7/2006	134900	40.41	17.9	8.7	10.4
279	/ /					
280	/ /	AVE	43.467	17.619	8.716	10.462

□

APPENDIX F

TEST PARTICIPANTS

TEST PARTICIPANTS

AIR SERVICES GROUP
ENVIRONMENTAL SERVICES

Robert Barthelette	Environmental Technician
Charles Dufeny	Environmental Technician
Juan Ramirez	Environmental Technician
Jorge Varino	Technician

POLK POWER STATION

Michael Perkins	Environmental Coordinator