KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX/377-7158

KA 187-00-09

October 23, 2000

Mr. Chris Kirts
Florida Department of
Environmental Protection
7825 Baymeadows Way, Suite B-200
Jacksonville, FL 32256-7590

Subject: Hydrocarbon Emission Measurements Report
Florida Rock Industries, Inc.
Newberry, Florida
Permit No. AC01-267311/PSD-FL-228

Dear Mr. Kirts:

Enclosed is a copy of our report describing the results of hydrocarbon emission measurements conducted at the Thompson S. Baker Cement Plant on October 11, 2000.

If you have any questions regarding this report, please do not hesitate to contact me at 352-377-5822.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler

John B. Koogler, Ph.D., P.E.

JBK:wa
Enc.

c: Mr. Martin Costello, FDEP, Tallahassee
Mr. Lalit Lalwani, FDEP, Gainesville
Mr. George Townsend, FRI
Mr. Cary Cohrs, FRI
Mr. Fred Cohrs, FRI
Mr. Segundo Fernandez

TOTAL HYDROCARBON EMISSION MEASUREMENTS

FLORIDA ROCK INDUSTRIES
THOMPSON S. BAKER CEMENT PLANT
NEWBERRY, FLORIDA

PERMIT NO. AC01-267311/PSD-FL-228

OCTOBER 11, 2000

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OCTOBER 11, 2000

KOOGLER & ASSOCIATES
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4014 NW 13TH STREET
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KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

To the best of my knowledge, all applicable field and analytical procedures comply with the Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

John B. Koogler, Ph.D., P.E.

State of Florida
Registration No. 12925

10/23/00
Date

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

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KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

1.0 INTRODUCTION

Florida Rock Industries owns and operates a 2300 ton per day (clinker) dry process precalciner Portland cement plant on CR 235, two miles north of the city center of Newberry, Florida. On October 11, 2000, Ambient Air Services, Inc. as a subcontractor to Koogler & Associates Environmental Services of Gainesville, Florida, conducted total hydrocarbon emission measurements on the kiln/raw mill stack in accordance with EPA Test Method 25A (40 CFR 60, Appendix A). It should be noted that Permit No. AC01-267311/PSD-FL-228 allows the use of either EPA Method 25A (a measure of total hydrocarbons) or Method 25 (a measure of total gaseous non-methane organic compounds - VOCs) to demonstrate compliance with the VOC emission limiting standard for the kiln/raw mill. EPA Method 25A was selected for this compliance testing. The purpose of the testing was to demonstrate compliance with the VOC emission limiting standard of Permit No. AC01-267311/PSD-FL-228 while the plant was producing Type II Portland cement clinker.

The Northeast District Branch Office of the Florida Department of Environmental Protection (FDEP) in Gainesville, Florida; the Northeast District Office in Jacksonville, Florida; and FDEP in Tallahassee were notified of the intent to conduct the emission measurements.

During the test period, the kiln was operating at an average preheater feed rate of 140.0 tons per hour (approximately 89.5 tph clinker) or within 10 percent of the permitted feed rate of 149.9 tons per hour. Mill scale (a source of iron) was present in the raw feed at a concentration of about 1.2 percent. The plant was operating in the compound mode; i.e., with both the kiln and raw mill operating.

The coal feed rate to the kiln during the test period averaged 9.8 tons per hour (nominally 12, 900 Btu/lb). Heat input to the kiln for the test period was 253 MMBtu/hr. The permit limits the coal feed rate to 14.0 tons per hour and the heat input rate to 364 MMBtu per hour.

The permit for the plant limits volatile organic compound (VOC) emissions from the kiln/precalciner system to 11.6 pounds per hour or to 0.12 pounds per ton of clinker. The measured total hydrocarbon emission rate (Method 25A) averaged 8.51 pounds per hour or 0.095 pounds per ton of clinker.

Based upon the data presented herein, it can be concluded that while operating under representative conditions, the plant meets the VOC emission limiting standard of Permit AC01-267311/PSD-FL-228.

2.0 SAMPLING POINT LOCATIONS

Four sample ports are located in the 112-inch diameter, 241-foot high stack exhausting the kiln/raw mill. The ports are 50.6 feet (5.4 stack diameters) below the top of the stack and 146.8 feet (15.7 diameters) above the point where the kiln/raw mill gases enter the stack. Based on the requirements of EPA Method 1 (40 CFR 60, Appendix A), 12 sample points were selected for the velocity traverse; three points through each of the four ports. Gas samples were collected at a single point near the center of the stack.

3.0 FIELD AND ANALYTICAL PROCEDURES

Total hydrocarbon emission measurements were conducted using EPA Test Method 25A. Samples were collected at a single point near the mid-point of the stack.

The total hydrocarbon concentrations were measured as propane (v/v, wet basis) with a TEI Model 51 Total Hydrocarbon Analyzer (0-30 ppm C_3H_8 range). The analyzer's analog voltage responses to the stack gas were compared to those of certified calibration gases. All responses were digitized at the rate of once per second, averaged by the minute, scaled as ppm C_3H_8 and recorded with a Telog Data Logger Model 3307.

One moisture run and three velocity determinations were conducted in accordance with EPA Reference Method Nos. 1-4 to obtain wet volumetric flow rates. These values were used in conjunction with the VOC concentrations to calculate total hydrocarbon mass emission rates.

All EPA tests methods are described in 40 CFR 60, Appendix A and have been adopted by reference by FDEP by Rule 62-297.401, F.A.C.

4.0 SUMMARY OF RESULTS

The total hydrocarbon emission measurements made on October 11, 2000, are summarized in Table 1. The total hydrocarbon emission rate ranged from 8.21 to 8.85 pounds per hour and averaged 8.51 pounds per hour or 0.095 pounds per ton of clinker. This is equivalent to a total hydrocarbon concentration of 8.53 ppm (v/v, wet) as propane. The stack gas flow rate averaged 145,594 standard cubic feet per minute, wet (121,211 scfmd). The stack gas temperature averaged 195°F and the moisture content averaged 16.7 percent.

The permitted VOC emission limit for the plant is 11.6 pounds per hour or 0.12 pounds per ton of clinker.

Calculations, field and analytical data sheets, plant operating information, equipment calibration sheets and a list of project participants are included in the Appendix of this report.

TABLE 1
TOTAL HYDROCARBON EMISSION TEST DATA

FLORIDA ROCK INDUSTRIES, INC
NEWBERRY, FLORIDA

SOURCE: Kiln/Raw Mill Stack

DATE: October 11, 2000

Run No.	Stack Flow Rate		Temp (°F)	Moist (%)	Total Hydrocarbons	
	(SCFMD)	(SCFMW)			Conc. (1) (ppm, v/v wet)	Emission Rate (lb/hr)
1	121,146	145,515	193	16.7	8.87	8.85
2	120,915	145,238	195	16.7	8.52	8.48
3	121,573	146,028	196	16.7	8.20	8.21
Avg	121,211	145,594	195	16.7	8.53	8.51

(1) as propane

APPENDIX

METHOD 25A

CALCULATIONS

Ambient Air Services, Inc.
Environmental Consultants

106 Ambient Air Way
Starke, Florida 32091

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(904) 964 - 6675 fax
aasi@atlantic.net

Volumetric Air-Flow Rates

Plant	Florida Rock Industries, Inc.		
Location	Newberry, FL		
Stack	Cement Kiln ESP Outlet Stack		
Run Date	10/11/00		
Run Number	1	**Volume Metered**	28.147
Start Time	1802	**Meter Temp (Deg R)**	547.6
Finish Time	1815	**Fyrite CO_2 %**	15.5
Barometric Pressure	29.6	**Plant Meter O_2 %**	13.85
Stack Diameter (in.)	112	**(N/A) CO %**	0
Stack Area sq. ft.	68.417	**(Difference) N_2 %**	70.65
Number of Points	12	**Condensate Volume**	115.2
Avg of SQRT of V.H.	0.7065	**Delta H (inches H_2O)**	1.5
Meter Correction (Y)	1	**Stack Pressure**	29.56
Pitot Correction Factor	0.84	**Stack Temp (Deg R)**	652.5

==========

Moisture in stack gas, volume fraction	**0.167**
Dry Stack Gas, volume fraction	**0.833**
Molecular Weight of Stack Gas (Dry Basis)	**31.03**
Molecular Weight of Stack Gas (Stack conditions)	**28.85**
Specific gravity of Stack Gas Relative to Air	**0.995**
Excess Air (%)	**(N/A)**
Average Stack Velocity, FPM	**2660.4**
Actual Stack Gas Flow Rate, ACFM	**182017**
Actual Stack Gas Flow Rate, (Dry) ACFMD	**151535**
Stack Gas Flow Rate (Standard conditions), SCFMD	**121146**
Stack Gas Flow Rate (Standard conditions), SCFMW	**145515**

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Volumetric Air-Flow Rates

Plant	Florida Rock Industries, Inc.		
Location	Newberry, FL		
Stack	Cement Kiln ESP Outlet Stack		
Run Date	10/11/00		
Run Number	2	**Volume Metered**	28.147
Start Time	1916	**Meter Temp (Deg R)**	547.6
Finish Time	1930	**Fyrite CO_2 %**	15.5
Barometric Pressure	29.6	**Plant Meter O_2 %**	15.8
Stack Diameter (in.)	112	**(N/A) CO %**	0
Stack Area sq. ft.	68.417	**(Difference) N_2 %**	68.7
Number of Points	12	**Condensate Volume**	115.2
Avg of SQRT of V.H.	0.7074	**Delta H (inches H_2O)**	1.5
Meter Correction (Y)	1	**Stack Pressure**	29.56
Pitot Correction Factor	0.84	**Stack Temp (Deg R)**	654.7

==========

Moisture in stack gas, volume fraction	**0.167**
Dry Stack Gas, volume fraction	**0.833**
Molecular Weight of Stack Gas (Dry Basis)	**31.11**
Molecular Weight of Stack Gas (Stack conditions)	**28.92**
Specific gravity of Stack Gas Relative to Air	**0.998**
Excess Air (%)	**(N/A)**
Average Stack Velocity, FPM	**2664.3**
Actual Stack Gas Flow Rate, ACFM	**182283**
Actual Stack Gas Flow Rate, (Dry) ACFMD	**151756**
Stack Gas Flow Rate (Standard conditions), SCFMD	**120915**
Stack Gas Flow Rate (Standard conditions), SCFMW	**145238**

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Volumetric Air-Flow Rates

Plant	Florida Rock Industries, Inc.		
Location	Newberry, FL		
Stack	Cement Kiln ESP Outlet Stack		
Run Date	10/11/00		
Run Number	3	**Volume Metered**	28.147
Start Time	2031	**Meter Temp (Deg R)**	547.6
Finish Time	2044	**Fyrite CO_2 %**	16
Barometric Pressure	29.6	**Plant Meter O_2 %**	13.71
Stack Diameter (in.)	112	**(N/A) CO %**	0
Stack Area sq. ft.	68.417	**(Difference) N_2 %**	70.29
Number of Points	12	**Condensate Volume**	115.2
Avg of SQRT of V.H.	0.7115	**Delta H (inches H_2O)**	1.5
Meter Correction (Y)	1	**Stack Pressure**	29.56
Pitot Correction Factor	0.84	**Stack Temp (Deg R)**	655.8

==========

Moisture in stack gas, volume fraction	**0.167**
Dry Stack Gas, volume fraction	**0.833**
Molecular Weight of Stack Gas (Dry Basis)	**31.11**
Molecular Weight of Stack Gas (Stack conditions)	**28.91**
Specific gravity of Stack Gas Relative to Air	**0.997**
Excess Air (%)	**(N/A)**
Average Stack Velocity, FPM	**2683.3**
Actual Stack Gas Flow Rate, ACFM	**183583**
Actual Stack Gas Flow Rate, (Dry) ACFMD	**152838**
Stack Gas Flow Rate (Standard conditions), SCFMD	**121573**
Stack Gas Flow Rate (Standard conditions), SCFMW	**146028**

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EXAMPLE CALCULATIONS

Plant	Florida Rock Industries
Location	Newberry, Florida
Stack	Cement Kiln
Run Date	10-11-00
Run Number	1

1. Stack Pressure, PS

$$PS = PB + (PG \div 13.6)$$

PB= 29.6
PG= -0.5

PS= 29.56

Where:
PB = Barometric Pressure, inches Hg
PG = Static Pressure, stack, inches H2O

2. Meter Pressure, PM

$$PM = PB + (DH \div 13.6)$$

DH= 1.5

PM= 29.71

Where:
DH = Average meter orifice pressure differential, inches H2O

3. Volume Water Vapor, VWV

$$VWV = 0.04707 \times VC$$

VWV= 5.422

Where:
VC = Volume condensate, liquid volume plus gain in silica gel weight, grams

4. Metered Volume corrected to standard condition, Vstpd

$$Vstpd = \frac{17.65 \times VM \times PM \times Y}{TM}$$

Vstpd = 26.954

Where:
VM = Metered volume, meter conditions
PM = See equation 2
TM = Temperature of meter, degrees Rankin
Y = Meter correction factor

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EXAMPLE CALCULATIONS - CONTINUED

Plant	Florida Rock Industries
Location	Newberry, Florida
Stack	Cement Kiln
Run Date	10-11-00
Run Number	1

5. Total Volume of sample, VT

Where: VWV = See equation 3
Vstpd = See equation 4

VT = VWV + Vstpd

VT = 32.376

6. Fraction water vapor in gas stream, W

Where: VWV = See equation 3
VT = See equation 5

W= VWV ÷ VT

W= 0.167

7. Fraction Dry Air, FDA

Where: W = See equation 6

FDA= 1.0 - W

FDA= 0.833

8. Molecular Weight of stack gas, dry, MD

MD= (0.44 x %CO2) + (0.32 x %O2) + (0.28 x %N2) + (0.28 x %CO)

CO2=	15.5
O2=	13.9
N2=	70.7
CO=	0.0

MD= 31.03

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EXAMPLE CALCULATIONS - CONTINUED

Plant	Florida Rock Industries
Location	Newberry, Florida
Stack	Cement Kiln
Run Date	10-11-00
Run Number	1

9. Molecular weight of stack gas, stack conditions, MS

Where: MD = See equation 8
W = See equation 6
FDA = See equation 7

MS= (MD × FDA) + (18 × W)

MD= 31.03

FDA= 0.833

W= 0.167

MS= 28.85

10. Specific Gravity of Gas, relative to air, GS

Where: MS = See equation 9

GS= MS ÷ 28.99

GS= 0.995

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EXAMPLE CALCULATIONS - CONTINUED

Plant	Florida Rock Industries
Location	Newberry, Florida
Stack	Cement Kiln
Run Date	10-11-00
Run Number	1

11. Velocity of stack gas, feet per minute, U

$$U = 174 \times CP \times \sqrt{H} \times \sqrt{\frac{TS \times 29.92}{GS \times PS}}$$

U= 2660.4 FPM

44 fps

Where:

CP = Pitot Coefficient
$\sqrt{H}$ = Average of the square roots of the velocity heads, in. H2O
TS = Temperature of the stack, degrees Rankin
PS = See equation 1
GS = See equation 10

12. Stack Gas Flow Rate, Stack conditions, cfm, QS

$$QS = U \times AS$$

QS= 182017 ACFM

Where:

AS = Cross sectional area of stack at sampling location, sq.ft.
U = See equation 11

13. Stack Gas Flow Rate, dry, QD

$$QD = QS \times FDA$$

QD= 151535 ACFMD

Where:

QS = See equation 12
FDA = See equation 7

14. Stack Gas Flow Rate, SCFMD

$$SCFMD = \frac{528 \times QD \times PS}{TS \times 29.92}$$

121146 SCFMD

Where:

QD = See equation 13
PS = See equation 1
TS = Temperature of stack, degrees Rankin

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EXAMPLE CALCULATIONS - CONTINUED

Plant	Florida Rock Industries
Location	Newberry, Florida
Stack	Cement Kiln
Run Date	10-11-00
Run Number	1

15. Stack Gas Flow Rate, SCFMW

SCFMW= SCFMD / FDA

SCFMW= 145515

16. Pounds per hour

$$Lbs/hr = \frac{MW \times ppm \times SCFMW \times 60}{385.1E6}$$

Lbs/hr= 8.85

MW =	Mol. weight, propane	44
ppm =	Parts per million	8.87
SCFMW =	Flow rate, wet basis	Equation 15
60=	Minutes per hour	60
385.1E6=	Constant	385100000

METHOD 25A

FIELD DATA SHEETS

Florida Rock Industries
Newberry, FL
Raw Telog Data Dump
0-30 ppm Range

Telog TimeStamp	VOC, ppmvw as C3H8	NOTES
10/11/00 17:00	30.3468	
10/11/00 17:01	30.2903	
10/11/00 17:02	14.3387	
10/11/00 17:03	7.9194	
10/11/00 17:04	17.9597	
10/11/00 17:05	30.1855	
10/11/00 17:06	30.2016	
10/11/00 17:07	30.3871	
10/11/00 17:08	19.4839	
10/11/00 17:09	0.0645	
10/11/00 17:10	0	
10/11/00 17:11	0	
10/11/00 17:12	17.5645	
10/11/00 17:13	30.4194	
10/11/00 17:14	30.4355	
10/11/00 17:15	30.4032	
10/11/00 17:16	19.9758	
10/11/00 17:17	7.9435	
10/11/00 17:18	7.8629	
10/11/00 17:19	7.8387	
10/11/00 17:20	10.7177	
10/11/00 17:21	11.3226	
10/11/00 17:22	11.3548	
10/11/00 17:23	11.3548	
10/11/00 17:24	11.3548	
10/11/00 17:25	11.371	
10/11/00 17:26	11.3548	
10/11/00 17:27	11.3548	
10/11/00 17:28	11.3548	
10/11/00 17:29	11.3468	
10/11/00 17:30	11.3306	
10/11/00 17:31	11.0887	INITIAL MULTI-POINT CURVE:
10/11/00 17:32	0.1129	**ZERO**
10/11/00 17:33	0	**ZERO**

10/11/00 17:34	14.9032	
10/11/00 17:35	30.3306	**29.0 ppm**
10/11/00 17:36	30.4274	**29.0 ppm**
10/11/00 17:37	30.371	**29.0 ppm**
10/11/00 17:38	21.2258	
10/11/00 17:39	11.5081	**11.7 ppm**
10/11/00 17:40	11.4677	**11.7 ppm**
10/11/00 17:41	11.4355	**11.7 ppm**
10/11/00 17:42	9.8226	
10/11/00 17:43	7.7742	**8.13 ppm**
10/11/00 17:44	7.7742	**8.13 ppm**
10/11/00 17:45	9.4194	
10/11/00 17:46	10.2742	*sample on-line*
10/11/00 17:47	10.1613	
10/11/00 17:48	9.8387	
10/11/00 17:49	9.8952	
10/11/00 17:50	9.6935	
10/11/00 17:51	9.6532	**START RUN #1**
10/11/00 17:52	9.6048	
10/11/00 17:53	9.5887	
10/11/00 17:54	9.5081	
10/11/00 17:55	9.3871	
10/11/00 17:56	9.3226	
10/11/00 17:57	9.3871	
10/11/00 17:58	9.2984	
10/11/00 17:59	9.4032	
10/11/00 18:00	9.2177	
10/11/00 18:01	9.1613	
10/11/00 18:02	9.1774	
10/11/00 18:03	9.3629	
10/11/00 18:04	9.3548	
10/11/00 18:05	9.3629	
10/11/00 18:06	9.379	
10/11/00 18:07	9.3226	
10/11/00 18:08	9.4032	
10/11/00 18:09	9.2097	
10/11/00 18:10	9.1613	
10/11/00 18:11	9.1371	
10/11/00 18:12	9.4355	
10/11/00 18:13	9.3468	
10/11/00 18:14	9.3065	
10/11/00 18:15	9.1532	
10/11/00 18:16	8.6694	

10/11/00 18:17	8.4435	
10/11/00 18:18	8.3629	
10/11/00 18:19	8.2581	
10/11/00 18:20	8.2903	
10/11/00 18:21	8.2903	
10/11/00 18:22	8.371	
10/11/00 18:23	8.4839	
10/11/00 18:24	8.4355	
10/11/00 18:25	8.2984	
10/11/00 18:26	8.2742	
10/11/00 18:27	8.0968	
10/11/00 18:28	8.1452	
10/11/00 18:29	8.2339	
10/11/00 18:30	8.3387	
10/11/00 18:31	8.2903	
10/11/00 18:32	8.5081	
10/11/00 18:33	8.4032	
10/11/00 18:34	8.2339	
10/11/00 18:35	8.2177	
10/11/00 18:36	8.25	
10/11/00 18:37	8.4032	
10/11/00 18:38	8.4839	
10/11/00 18:39	8.379	
10/11/00 18:40	8.6452	
10/11/00 18:41	8.8226	
10/11/00 18:42	8.9355	
10/11/00 18:43	8.8548	
10/11/00 18:44	8.7903	
10/11/00 18:45	8.8145	
10/11/00 18:46	8.9919	
10/11/00 18:47	8.9274	
10/11/00 18:48	9.2419	
10/11/00 18:49	9.1452	
10/11/00 18:50	9.1774	**END RUN #1**
10/11/00 18:51	8.8871	*sample off-line*
10/11/00 18:52	0.1532	**ZERO**
10/11/00 18:53	0	**ZERO**
10/11/00 18:54	2.4355	
10/11/00 18:55	11.0081	
10/11/00 18:56	11.0726	**11.70 ppm**
10/11/00 18:57	11.0968	**11.70 ppm**
10/11/00 18:58	9.9758	
10/11/00 18:59	9.629	*sample on-line*

10/11/00 19:00	9.8629
10/11/00 19:01	9.5645
10/11/00 19:02	9.2742
10/11/00 19:03	9.1452
10/11/00 19:04	9.0484
10/11/00 19:05	8.7097
10/11/00 19:06	8.7016
10/11/00 19:07	8.9113
10/11/00 19:08	8.9758
10/11/00 19:09	8.9113
10/11/00 19:10	8.8306
10/11/00 19:11	8.621
10/11/00 19:12	8.5565
10/11/00 19:13	8.7903
10/11/00 19:14	8.879
10/11/00 19:15	9.0081
10/11/00 19:16	9.1371
10/11/00 19:17	9.1613
10/11/00 19:18	9.0887
10/11/00 19:19	9.0565
10/11/00 19:20	8.6855
10/11/00 19:21	8.7419
10/11/00 19:22	8.5
10/11/00 19:23	8.7177
10/11/00 19:24	8.5403
10/11/00 19:25	8.2581
10/11/00 19:26	8.3548
10/11/00 19:27	8.3629
10/11/00 19:28	8.3065
10/11/00 19:29	8.0887
10/11/00 19:30	8.0081
10/11/00 19:31	8.0081
10/11/00 19:32	8.2258
10/11/00 19:33	8.2258
10/11/00 19:34	8.5726
10/11/00 19:35	8.4355
10/11/00 19:36	8.2984
10/11/00 19:37	7.9355
10/11/00 19:38	7.8145
10/11/00 19:39	7.7258
10/11/00 19:40	7.8306
10/11/00 19:41	7.9677
10/11/00 19:42	7.9758

START RUN #2

10/11/00 19:43	8.0726	
10/11/00 19:44	8.2097	
10/11/00 19:45	8.1532	
10/11/00 19:46	8.3226	
10/11/00 19:47	8.2097	
10/11/00 19:48	8.3548	
10/11/00 19:49	8.4919	
10/11/00 19:50	8.3065	
10/11/00 19:51	8.3952	
10/11/00 19:52	8.4597	
10/11/00 19:53	8.5645	
10/11/00 19:54	8.5242	
10/11/00 19:55	8.5806	
10/11/00 19:56	8.6129	
10/11/00 19:57	8.7419	
10/11/00 19:58	8.6855	
10/11/00 19:59	8.6371	
10/11/00 20:00	8.6935	
10/11/00 20:01	8.6129	**END RUN #2**
10/11/00 20:02	8.6855	
10/11/00 20:03	8.9839	*sample off-line*
10/11/00 20:04	3.8306	
10/11/00 20:05	0	**ZERO**
10/11/00 20:06	0	**ZERO**
10/11/00 20:07	8.2258	
10/11/00 20:08	11.1613	**11.70 ppm**
10/11/00 20:09	11.1532	**11.70 ppm**
10/11/00 20:10	11.0323	
10/11/00 20:11	9.3871	*sample on-line*
10/11/00 20:12	8.8548	
10/11/00 20:13	8.5403	**START RUN #3**
10/11/00 20:14	8.4758	
10/11/00 20:15	8.3871	
10/11/00 20:16	8.3306	
10/11/00 20:17	8.3387	
10/11/00 20:18	8.3871	
10/11/00 20:19	8.3952	
10/11/00 20:20	8.3952	
10/11/00 20:21	8.6532	
10/11/00 20:22	8.5403	
10/11/00 20:23	8	
10/11/00 20:24	7.6532	
10/11/00 20:25	7.5565	

10/11/00 20:26	7.5242
10/11/00 20:27	7.5806
10/11/00 20:28	7.6532
10/11/00 20:29	7.6855
10/11/00 20:30	7.871
10/11/00 20:31	7.5968
10/11/00 20:32	7.5484
10/11/00 20:33	7.6048
10/11/00 20:34	7.75
10/11/00 20:35	7.7581
10/11/00 20:36	7.6371
10/11/00 20:37	7.75
10/11/00 20:38	7.7258
10/11/00 20:39	7.7984
10/11/00 20:40	7.8387
10/11/00 20:41	7.8548
10/11/00 20:42	7.9113
10/11/00 20:43	7.8306
10/11/00 20:44	8.0081
10/11/00 20:45	7.9839
10/11/00 20:46	7.9516
10/11/00 20:47	7.7903
10/11/00 20:48	7.9113
10/11/00 20:49	8
10/11/00 20:50	8.0081
10/11/00 20:51	8.0403
10/11/00 20:52	8.2581
10/11/00 20:53	8.4516
10/11/00 20:54	8.5161
10/11/00 20:55	8.4355
10/11/00 20:56	8.629
10/11/00 20:57	8.6613
10/11/00 20:58	9.1452
10/11/00 20:59	9.0645
10/11/00 21:00	8.9194
10/11/00 21:01	8.7984
10/11/00 21:02	8.9839
10/11/00 21:03	9.0726
10/11/00 21:04	8.8871
10/11/00 21:05	8.9194
10/11/00 21:06	8.9355
10/11/00 21:07	8.9677
10/11/00 21:08	8.621

10/11/00 21:09	8.5	
10/11/00 21:10	8.121	
10/11/00 21:11	7.9274	
10/11/00 21:12	8.0323	**END RUN #3**
10/11/00 21:13	8.1048	
10/11/00 21:14	8.2581	*sample off-line*
10/11/00 21:15	8.4435	
10/11/00 21:16	3.6613	
10/11/00 21:17	0	**ZERO**
10/11/00 21:18	3.1532	
10/11/00 21:19	11.0806	
10/11/00 21:20	11.1613	**11.70 ppm**
10/11/00 21:21	11.1694	**11.70 ppm**
10/11/00 21:22	9.0081	
10/11/00 21:23	8.6452	
10/11/00 21:24	8.5323	

(0-30ppm Range)

FLORIDA ROCK - Newberry Plant - Cement Kiln
METHOD 25A - Field Data - Date: 10-11-00 - Page: 2

TIME	STD CONC	RESPONSE	NOTES
(use	Response test from morning test)		
	-Multipoint Calibration-		
1711	Ø	Ø	ERROR (±5% conc.)
1715	29.00	30.51	+5.2% ←
1723	11.70	11.39	-2.6%
1720	8.13	7.92	-2.6%
	-ADJUSTMENT MADE-		
		(No Curve fitting)	
1733	Ø	Ø	← New Multi-point
1737	29.00	30.40	+4.83%
1740	11.70	11.45	-2.18%
1744	8.13	7.78	-4.31%
1746	-Sample ONLINE-		
1751	Start Run ①		
1851	- OFFLINE -		
1854	Ø	Ø	BIAS Check (±3% Span)
1858	11.70	11.08	
	Start Run ②		
1902			
2002	- OFFLINE -		
2006	Ø	Ø	BIAS Check
2009	11.70	11.18	
2013	-Sample ONLINE-		RUN ③
2115	- OFFLINE -		
2118	Ø	Ø	BIAS Check
2122	11.70	11.19	

COMPLIANCE TEST 0-30ppm ↓

Zero 500 Span = 550psi

Final Tank Pressures:
802 = 950 psi
101 = 1800 psi
[illegible] = 200

[illegible] = 750
[illegible] = 500
24 = 500
[illegible] = 1800

AASInc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

EPA METHOD 4
MOISTURE RUN DATA SHEET

TEST ID _____ PAGE ____ OF ____

Plant Flg. Rock Source Cement Kiln
Plant Location Newberry FL
Type of Sampling Train method 4 moisture
Type of Samples _____
Date 10-11-00 Run No. 1
Time Start 1103 Time End 1143
Sample Time _____ min/pf 40 Total Min
Bar. Pressure 29.6 "Hg Stack Pressure _____ "Hg
Assumed Moisture _____ % FDA _____
Weather clear Temperature 80 °F
Meter Box No. 2 ΔH 1.54 Y 1.00
Stack Dimensions 112"
Stack Area _____ (Effective _____ ft²)
Stack Height ~175 ft
Stack Diameter: Upstream _____ Downstream _____
Port Size _____ in Nipple Length _____
U.Cord Length _____

Mat'l Processing Rate _____
Gas Meter Readings: Final 038.034 ft³
Initial 009.887 ft³
Net 28.147 ft³
Impingers Vol. Gain 107 ml
Silica Gel No. FLRKMR-1 Wt. Gain 8.2 g
Total Condensate 115.2 ml

Leak Checks: Meter Box/Pump OK
Pre-Test 0.000 CFM 1.5 "Hg Post-Test 0.000 CFM 7 "Hg
Box Operator AL/DS Probe Holder DS
Pyrometer No. _____ Thermocouple No. _____
Comments:
Pitot No. PT6-5
Pyrometer/thermocouple No. T6-5
No. 396K-3 (Atkins)

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL (IN)	CLOCK TIME	GAS METER READING (FT³)	METER ORIFICE PRESS. DIFF		LAST IMPINGER TEMP. (°F)	DRY GAS METER TEMP. (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
				CALC.	ACTUAL			
		00:00	~~DNE~~	N/A	1.5	46	74	6.0
		00:05	014.5	"	"	54	79	6
		00:10	18.3	"	"	54	83	6
		00:15	21.5	"	"	54	86	6
		00:20	25.6	"	"	53	90	6
		00 25	28.1	"	"	53	96	6
		30	31.6	"	"	53	94	6
		35	34.6	"	"	53	93	6
		40	38.0	"	"	53	93	6

AASI FORM 213
REVISION 0 - 6/1/00

AAS Inc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

PRELIMINARY VELOCITY TRAVERSE

PLANT FL Rock Ind. Newberry FL
DATE 10-11-00
LOCATION Cement Kiln ESP Outlet
STACK I.D. 112"
BAROMETRIC PRESSURE, in.Hg 29.60
STACK GAUGE PRESSURE, in.H_2O -0.5
OPERATORS AL/DS
Pitot # PT6-5

FYRITE:

	CO_2	O_2	Plant O_2 meter
Run 1	15.5%	5.5%	13.85
Run 2	15.5%	5.5% Air	15.80

SCHEMATIC OF TRAVERSE POINT LAYOUT

Run 1 Time: 1802 - 1815

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in.H_2O (0-3" Magnehelic)	STACK TEMPERATURE (T_s), °F
1-1	0.55	194
-2	0.53	193
-3	0.45	191
2-1	0.52	194
-2	0.51	193
-3	0.43	190
3-1	0.54	194
-2	0.54	193
-3	0.47	191
4-1	0.50	194
-2	0.52	193
-3	0.44	190

Run 2 Time: 1916 - 1930

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in.H_2O	STACK TEMPERATURE (T_s), °F
1-1	0.52	195
-2	0.50	195
-3	0.46	193
2-1	0.51	196
-2	0.52	195
-3	0.46	193
3-1	0.53	195
-2	0.52	196
-3	0.47	193
4-1	0.52	196
-2	0.53	196
-3	0.47	193

Pre: Pitot lk. check 0.00 @ 3"

AAS Inc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

PRELIMINARY VELOCITY TRAVERSE

PLANT FL Rock (Newberry FL)
DATE 10-11-00
LOCATION Cement Kiln ESP OUTLET
STACK I.D. 112"
BAROMETRIC PRESSURE, in.Hg 29.60
STACK GAUGE PRESSURE, in.H_2O -.05
OPERATORS AL/DS

Run 3 Time: 2031 - 2044

	CO_2	O_2	Plant O_2 meter
Run 3	16%	~~4.5~~ 4.2%	13.71

SCHEMATIC OF TRAVERSE POINT LAYOUT

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in.H_2O	STACK TEMPERATURE (T_s), °F
1-1	0.52	197
-2	0.50	196
-3	0.47	194
2-1	0.52	196
-2	0.53	196
-3	0.46	194
3-1	0.52	198
-2	0.56	197
-3	0.47	194
4-1	0.52	196
-2	0.52	197
-3	0.49	194

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in.H_2O	STACK TEMPERATURE (T_s), °F

Post: Pitot leak check 0.0 @ -.5"

AMBIENT AIR SERVICES, INC.
LABORATORY DATA SHEET

PARTICULATE WEIGHT DETERMINATION

PLANT & LOCATION: Florida Rock Industries Newberry FL

STACK: KILN ESP OUTLET STACK DATE 10-10-00

	RUN 1	RUN 2	RUN 3	RUN 4	INITIALS
FILTERS:					
Sample No.					
Filter No.					
Beaker & Filter Wt.					
Beaker Tare Wt.					
Gross Gain					
Filter Tare Wt.					
Net Gain (gm)					
PREFILTER:					
Sample No.					
Sample Volume					
Aliquot					
Factor					
Final Wt.					
Tare Wt.					
Net Gain					
Net Gain x Factor = Total (gm)					
Blank Correction Factor					
Particulate Wt. (grams)					
SOLVENT BLANK:					
Solvent					
Solvent Volume, ml					
Beaker Final Wt., grams					
Beaker Tare Wt., grams					
Net Gain, grams					
Net Gain/100 ml solvent (gram)					
SILCA GEL:					
Sample No.	FLRK MR-1				
Final Wt., grams	246.7				
Tare Wt., grams	238.5				
Net Gain, grams	8.2				
EXTRACTABLE MATTER:					
Sample No.					
Final Wt., grams					
Tare Wt., grams					
Net Gain, grams					

AASI.02

Balance Checks

0.500 gm _____ 10.000 gm _____

2.000 gm _____ 50.000 gm _____

5.000 gm _____ 100.000 gm _____

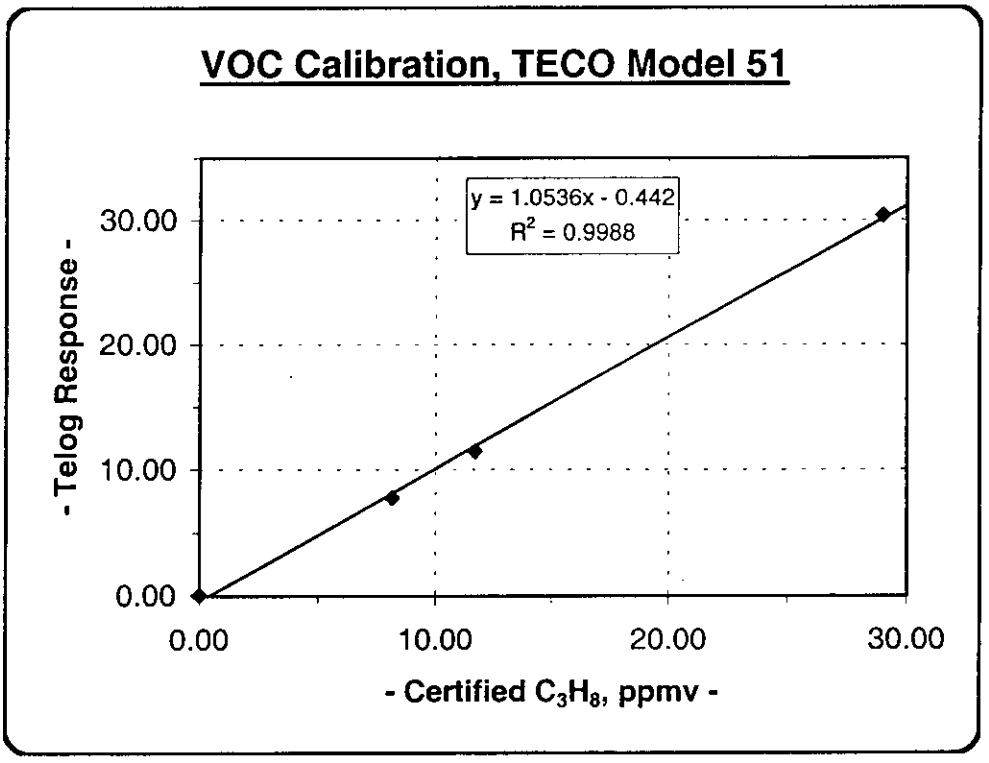
INSTRUMENT CALIBRATIONS
AND
CALIBRATION GAS CERTIFICATIONS

VOC - Initial Multi-point Calibration

Florida Rock Industries, Inc. - Newberry, FL

10/11/00: 1732-1744

certified std. C_3H_8, ppmv	inject time	response ppmv C_3H_8	Cal. Error[1]
0.00	1732-1733	0.06	
29.00	1735-1737	30.38	4.75%
11.70	1739-1741	11.47	-1.96%
8.13	1743-1744	7.77	-4.38%



1) within +- 5% of individual calibration gas concentrations

VOC - Response Test

Florida Rock Industries, Inc. - Newberry, FL

10/11/00: performed through sample interface

Run No. / Time	C_3H_8, ppmv	Telog response ppmv C_3H_8	Seconds[1]
1 / 0711-0713	0.00	0.00	120
	46.13	45.98	
2 / 0716-0718	0.00	0.00	120
	46.13	45.98	
3 / 0720-0723	0.00	0.00	120
	46.13	45.98	

1) time to traverse sample line + analyzer stabilization of 95%

VOC - Calibration Drift Analysis

Florida Rock Industries, Inc. - Newberry, FL

10/11/00: performed after each 1-hour run

Run No. / Time	certified std. C_3H_8, ppmv	Telog response ppmv C_3H_8	$Drift_1$
1 / 1852-1857	0.00	0.08	1.28%
	11.70	11.08	
2 / 2005-2009	0.00	0.00	1.04%
	11.70	11.16	
3 / 2117-2121	0.00	0.00	1.02%
	11.70	11.17	

1) less than or equal to +- 3% of span (30 ppm) = 0.9 Ppm

Run 1 Drift = $\frac{\Delta}{30} \times 100$ - 2.07%

AMBIENT AIR SERVICES, INC.
106 Ambient Air Way
Starke, Florida

THERMOCOUPLE CALIBRATION FORM

Date 10-16-00 Time 1420
Ambient Temperature 74 Source Lab
Barometric Pressure 29.89 Source Lab
Technician's Signature Earl Coggin

Standard Thermometer Type Mercury in glass
Manufacturer Ertco
Serial Number 64619
Pyrometer Manufacturer Omega Model 9414
Serial Number BB281-K-2 Meter Box 2

TEMPERATURE SOURCE (A)		ICE			Ambient			Boiling H_2O					
REFERENCE THERMOMETER	Actual Reading	32			74			212					
	Corrected Temperature												
CALIBRATED THERMOCOUPLE													
Serial Number	Location	Indicated Temp.	Difference (B)	Percent Diff. (C)	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.
T6-5	Stack	33	1		76	2		214	2				
NA	Filter	33	1		75	1		214	2				
TT7	Impinger	32	0		76	2		214	2				
2in	Meter In	32	0		76	2		213	1				
2out	Meter Out	32	0		75	1		213	1				

Comments: Thermocouple T6-5 was calibrated using hand held (thermocouple Thermometer) - Atkins series 396K-3

Calibration Tolerances Stack = 1.5% of value, Filter Box = ±5.4°F, Impinger = ±2°F, Meter = ±5.4°F (40CFR Pt 60, App. A Method 5, and QA Handbook Section 3.4, Method 5, page 13, Rev. O)

(A) Type of calibration system used (B) Reference - Indicated = Difference

(C) $\left[\frac{\text{(ref. temp. °F + 460) - (indicated temp. °F + 460)}}{\text{(reference temp. °F + 460)}}\right] \times 100$

AASI 68A

POSTTEST DRY GAS METER CALIBRATION DATA (ENGLISH UNITS)

Test numbers: All Date: 10-16-00 Meter Box number: 2

Barometric Pressure: 29.89 inches Hg. Dry Gas Meter Number: 2 Pretest Y: 1.00

Plant: Florida Rock Location: Newberry, Florida

DGM calibrated annually by a NIST

Orifice manomtr setting (DH), inches H20	Gas volume		Temperature				Time in minutes	Vacuum setting inches Hg	Yi
	Wet test meter (Vw), cu.ft.	Dry gas meter (Vd), cu.ft.	Wet test meter (Tw), deg F	Dry gas meter					
				Inlet (Tdi), deg F	Outlet (Tdo), deg F	Average (Td), deg F			
1.50	10.738	11.050	80.00	113.5	85.5	99.50	14.76	6.0	1.0032
1.50	10.321	10.600	81.75	105.0	85.0	95.00	14.16	6.0	0.9938
1.50	15.164	15.598	81.75	109.0	86.5	97.75	20.82	6.0	0.9972
			↳ Ambient Air			↳ Heated due to pump			0.9981

If there is only one thermometer on the dry gas meter, record the temperature under Td

Vw= Gas volume passing through the wet test meter, in cubic feet
Vd= Gas volume passing through the dry gas meter, in cubic feet
Tw= Temperature of the gas in the wet test meter, degrees farenheit
Tdi= Temperature of the inlet gas of the dry gas meter, degrees farenheit
Tdo= Temperature of the outlet gas of the dry gas meter, degrees farenheit
Td= Average temperature of the gas in the dry gs meter, obtained by the average of Tdi and Tdo, degrees farenheit
DH= Pressure differential across orifice, inches H2O
Yi= Ratio of accuracy of wet test meter to dry gas meter for each run.
Y= Average ratio of accuracy of wet test meter to dry gas meter for all three runs; tolerance = pretest Y plus/minus 0.05Y
Pb= Barometric pressure, inches Mercury
Time= Time of calibration run, in minutes.

Calibration by Earl Kosins per David Shelton by phone on 11/2/00

AAS Inc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

PITOT TUBE CALIBRATION MEASUREMENTS

DATE CALIBRATED 10.17.00 PITOT TUBE PT6-5

Pitot tube assembly level? ✓ Yes _____ No

Pitot tube openings damaged? _____ Yes (explain below) ✓ No

α_1 = 1.0 ° (<10°), α_2 = 1.0 ° (<10°), β_1 = 2.6 ° (<5°),
β_2 = 1.0 ° (<5°)

γ = 1.0 °, θ = 1.0 °, A = 1.066 in. = (Pa + Pb)

z = A sin γ = 0.019 in.; <0.32 / <1/8 in.

w = A sin θ = 0.019 in.; <0.08 / <1/32 in.

P_a 0.533 in. P_b 0.533 in. D_t = 0.375"

Calibration required? _____ Yes ✓ No

AMBIENT AIR SERVICES, INC.

MAGNEHELIC CALIBRATION FORM

MAGNEHELIC ID NO. A38

INCLINED MANOMETER ID NO. IN3

NAME OF PRIMARY USER AASI

DATE 10-17-00 CALIBRATOR E. COGGINS

RECAL. DATE NA

INCLINED MANOMETER (INCHES WATER)	MAGNEHELIC (INCHES WATER)	% DIFFERENCE
1.0	0.98	2.0
2.0	1.95	2.5
3.0	2.95	1.7

AVERAGE PERCENT DIFFERENCE 2.4

SIGNATURE Earl Coggins

SECTION 3

SPECIFICATIONS

MODEL 51 TOTAL HYDROCARBON ANALYZER

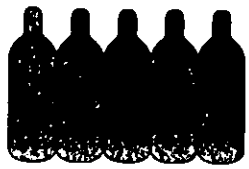
Detector

Type	Flame Ionization
Minimum Detectable	0.1 PPM (independent of gas)
Auto Igniter	Electronic, processor controlled
Flame Out Safety	Solenoid shuts off hydrogen fuel on flame out and alarms
Noise	Less than 1% F.S.
Drift	Less than 1% in 24 hours
Repeatability	2% of reading ± 0.1 ppm
Accuracy	2% of reading plus span gas accuracy ± 0.1 ppm
Range	0.1 ppm to 10,000 ppm (for propane)
Auto Ranging	Covers total instrument operating ranges automatically
Temperature	200 degrees C. Controlled by microprocessor with readout on screen

Sample

Sampling Rate	Approximately 1.5 L/min
Detector Flow Rate	Approximately 30 mL/min
Response Factor	Front panel settable to report same as span gas or different compound
Response Time	90% within 5 seconds (on each range)

SPECTRA GASES
277 Coit St. • Irvington, NJ 07111 USA Tel.: (973) 372-2060 • (800) 932-0624 • Fax: (973) 372-8551
Shipped From: 80 Industrial Drive • Alpha, N.J. 08865



CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE
PROCEDURE # : G1

CUSTOMER: Ambient Air Services
SGI ORDER # : 134479
ITEM# : 1
P.O.# : 07079802

CYLINDER # : CC79910
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 350

CERTIFICATION DATE: 7/14/98
EXPIRATION DATE: 7/14/2001

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Propane	7/14/98	8.13 ppm	8.13 ppm	+/- 1%

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Propane	SRM-1666B	CAL011954	9.73 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Propane	H. Packard 6890	US00001434	GC - FID	7/14/98

THIS STANDARD WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: _____ **DATE:** 7/14/98
TED NEEME

For Technical Information Call
1-800-752-1597

AIR PRODUCTS

Air Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

ISO CERTIFICATION: 9002

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS STANDARD

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

Customer:
AIR PRODUCTS & CHEMICALS, INC.
5837 W. 5TH STREET
JACKSONVILLE FL 32254-1509

Order No: CSS-814080-01
Batch No: 861-42991
PO:
Release:

Cylinder No: SG9163670BAL
Bar Code No: DRG073
Cylinder Pressure*: 2000 psig
Certification Date: 11/12/97
Expiration Date: 11/12/00

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
PROPANE	11.7±0.56 PPM	SG9128479BAL	GMIS	100.7 PPM	Gow-Mac 750	59405U	11/03/97	GC-FID
NITROGEN	Balance Gas							

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst: Joseph Estafanous

Approved By: Richard Fry

(16921

Jo. 320-9702

For Technical Information Call
1-800-752-1597

AIR PRODUCTS

Air Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

ISO CERTIFICATION: 9002

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS STANDARD

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

Customer:
AIR PRODUCTS AND CHEMICALS, INC.
4822 INDUSTRY LANE
UDI BUSINESS PARK
DURHAM NC 27709

Order No: SRP-094752-01
Batch No: 861-51836
PO:
Release:

Cylinder No: SG9149220
Bar Code No: BLP626
Cylinder Pressure*: 2000 psig
Certification Date: 12/08/1998
Expiration Date: 12/08/2001

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
PROPANE	29.0 ±.81 PPM	SG9128479BAL	GMIS	100.7 PPM	Gow-Mac 750	59405U	12/04/98	GC-FID
AIR	Balance Gas							
Oxygen Concentration	20.3 %							

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst: JULIAN K. SEGBAWU

Approved By: James Laas

PLANT OPERATING DATA

Florida Rock Industries, Inc.
Cement Group
Thompson S. Baker Cement plant

Process Weight Rate Sheet

Source: Kiln/Raw Mill Stack Test Date: October 11, 2000

Permit No.: AC01-267311 Permitted Rate: 149.9 TPH

Test Parameter(s): Total Hydrocarbons (THC) Method 25A

	Run Times		Process Input Rate	
Run No. 1	1751	1851	140	TPH
Run No. 2	1902	2002	140	TPH
Run No. 3	2013	2113	140	TPH

I here by certify that to the best of my knowledge the above data is true and correct.

George Townsend
Name (Print)

George Townsend
Signature

October 13, 2000
Date

Environmental & Safety Manager
Title

File: Process Rate.pub

FLORIDA ROCK INDUSTRIES, INC.
CEMENT GROUP

4000 NW CR 235
Newberry, Florida 32669
Telephone: (352) 472-4722 / Fax (352) 472-2449

Fax

To: John Koogler **From:** George Townsend

Fax: 377-7158 **Pages:** Including Cover 1

Phone: **Date:** October 19, 2000

Re: **CC:**

☐ Urgent ☐ Please Comment ☐ Please Reply

☐ For Review ☐ As Requested ☐ For Your Information

o Comments:

The mill scale feed rates for the final compliance test were as follows:

Run No. 1 - 0.5 %

Run No. 2 - 0.7 %

Run No. 3 - 0.7 %

However, this material was going into the blend silo and we were probably not getting it as kiln feed during the compliance test. The material we got on the 11th as kiln feed may have been from the previous two or three days of raw mill output. The daily average mill scale feed rate for the previous three days and the 11th were as follows.

October 8, 2000 - 1.34 %
October 9, 2000 - 1.2 %
October 10, 2000 - 1.0 %
} Avg 1.27%

October 11, 2000 - 1.23

PROJECT PARTICIPANTS

PROJECT PARTICIPANTS

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.	Project Advisor

AMBIENT AIR SERVICES, INC.

David Sholtes	Field Test Crew
Alan Luther	Field Test Crew

FLORIDA ROCK INDUSTRIES, INC.

George Townsend	Environmental & Safety Manager

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

Calculations Verified 11/2/00
by Monte Cowlitz

Date = 10/17/2000
Meter ID = 2

Barometric Pressure, Pb = 29.89 {in. Hg}

Run	Orifice Manometer Setting {in. H_2O}	Referance Gas Volume Vw {ft^3}	Dry Gas Meter Volume Vm {ft^3}	Temperatures: Ref. Meter tw {F}	Dry Gas Meter: Inlet ti {F}	Dry Gas Meter: Outlet to {F}	Dry Gas Meter: Average tm {F}	Time θ {min}	Y	ΔH@
1	1.5	10.738	11.05	80	113.5	85.5	99.5	14.76	1.0032	1.6067
2	1.5	10.321	10.6	81.75	105	85	95	14.16	0.9938	1.6125
3	1.5	15.164	15.598	81.75	109	86.5	97.75	20.82	0.9972	1.6105
4										
5										
6										
7										
8										
9										
								Average =	0.9981	1.6099

* This Form is representative of Figure 5.6 of 40 CFR 60, Appendix A, Meth. 5.

** Delete Equations in runs not performed to get averages