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BUREAU OF AIR REGULATION

TO Al Linero
From: Mort Benjamin
Date : November 5, 2001
Subject: Berylium Tests at Florida Rock Cement Plant – Newberry

Four tests have been conducted at the Florida Rock Cement Plant at Newberry.

The results are:

Date	Pounds/Hour
7/00	0.000062
2/01	0.000046
6/01	0. 000015
9/01	0.000081
Standard Deviation	0.0000279
Mean	0.000051

Enclosed are four test summaries for your review . The results are close enough to be a basis for an emission limit

COPY

BERYLLIUM EMISSION MEASUREMENTS

KILN/RAW MILL

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

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

TEST DATE: July 24, 2000 (Corrected Data)
and
TEST DATE: February 6 & 7, 2001

REPORT DATE: March 14, 2001

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STATE OF FLORIDA
DEPT. OF ENV. PROTECTION
NORTHEAST DISTRICT-JAX

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW 13TH STREET
GAINESVILLE, FLORIDA
352-377-5822

original
187-00-09

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. This report presents a correction of beryllium emission test data collected on July 24, 2000, previously reported to the Department, and beryllium emission test data collected on February 6 and 7, 2001.

On July 24, 2000, beryllium emission measurements were conducted and a beryllium emission rate of 0.062 pounds per hour was reported. As a result of this anomalously high emission rate, the Department required additional beryllium emission testing. The second set of emission measurements was conducted on February 6 and 7, 2001. These results, reported herein, showed a beryllium emission rate of 0.000046 pounds per hour; about 1000 times lower than the emission rate measured in July, 2000. As a result of the February, 2001 measurements, the laboratory that analyzed both sets of beryllium samples (Flowers Chemical Laboratories, Altamonte Springs, Florida) was asked to review both sets of analytical data. Flowers reported that the July, 2000 beryllium sample weights were erroneously reported as <u>milligrams</u> of sample rather than <u>micrograms</u> of sample (see Appendix). Correcting the July, 2000 beryllium sample weights results in a beryllium emission rate for the July, 2000 period of 0.000062 pounds per hour.

On February 6 & 7, 2001, Koogler & Associates Environmental Services of Gainesville, Florida, conducted a second set of beryllium emission measurements on the kiln/raw mill stack in accordance with EPA Test Method 104 (40 CFR 61, Appendix B). The purpose of the testing was to develop additional data to be used for establishing a beryllium emission limit for the plant, as required by Permit AC01-267311/PSD-FL-228.

The Northeast District Office of the Florida Department of Environmental Protection (FDEP) in Jacksonville, and the FDEP Northeast District Branch Office in Gainesville, Florida, were notified of the February, 2001 emission measurements and testing protocol.

During the February, 2001 test period, the kiln was operating at a preheater feed rate of 133.4 tons per hour. Permit AC01-267311 limits the preheater feed rate to 149.9 tons per hour, which corresponds to a clinker production rate of about 95.8 tons per hour.

The permit for the plant limits beryllium emissions from the kiln/raw mill to a rate established by Best Available Control Technology and specifies that the emission limit for this pollutant be established based on "future stack tests". The February, 2001 emission measurements reported herein represent the second set of emission

measurements on the plant for beryllium. The initial beryllium emission measurements were conducted on July 24, 2000.

The emissions from the kiln/raw mill are controlled by electrostatic precipitators (ESPs). The measured mass emission rate of beryllium averaged 0.000046 pounds per hour on February 6 and 7, 2001. The corrected beryllium emission rate measured on July 24, 2000 was 0.000062 pounds per hour. Statistically, (40 CFR 60, Appendix C) there is no difference in these emission rates.

3.0 FIELD AND ANALYTICAL PROCEDURES

Beryllium emission measurements were conducted using EPA Method 104. The sampling point locations for the Method 104 were established in accordance with EPA Method 1. Stack gas velocity measurements and stack gas moisture measurements were made in conjunction with the EPA Method 104 tests in accordance with EPA Methods 2 and 4. Measurements to determine the dry molecular weight of the stack gas were made in accordance with EPA Method 3. All EPA tests methods are described in 40 CFR 60, Appendix A or 40 CFR 61, Appendix B and have been adopted by reference by FDEP by Rule 62-297.401, F.A.C. There were no variations or exceptions to any of the referenced test methods.

4.0 SUMMARY OF RESULTS

The beryllium emission rate from the kiln/raw mill, measured on February 6 and 7, 2001, ranged from 0.000031 to 0.000056 pounds per hour and averaged 0.000046 pounds per hour. These data are summarized in Table 1. The stack gas flow rate from the kiln/raw mill during the beryllium tests averaged 126,299 dry standard cubic feet per minute (186,073 acfm), the stack gas temperature averaged 227°F and the stack gas moisture averaged 12.7 percent.

The corrected beryllium emission data from July 24, 2000 are summarized in Table 2. These data show beryllium emission rates ranging from 0.000009 to 0.000116 pounds per hour. Statistically, (40 CFR 60, Appendix, C), there is no difference between this emission rate and the beryllium emission rate measured on February 6 and 7, 2001.

These two sets of emission measurements provide a reasonable representation of beryllium emissions from the kiln/raw mill as required by Permit AC01-267311.

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
SUMMARY OF BERYLLIUM EMISSION TEST DATA

Florida Rock Industries
Cement Kiln
February 6 & 7, 2001

Run No.	Process Weight Rate (Tons/hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (F)	Stack Gas Moisture (%)	Total Beryllium Conc. (gr/dscf)	Total Beryllium Emission Rate (Lbs/Hr)
1	120.2	134,728	225	12.6	4.88E-08	5.63E-05
2	140.0	129,656	229	13.0	2.76E-08	3.07E-05
3	140.0	114,513	227	12.6	5.04E-08	4.94E-05
Average	133.4	126,299	227	12.7	4.23E-08	4.55E-05

TABLE 2
SUMMARY OF CORRECTED BERYLLIUM EMISSION TEST DATA

Florida Rock Industries
Cement Kiln
July 24, 2000

Run No.	Process Weight Rate (Tons/hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (F)	Stack Gas Moisture (%)	Particulate Matter Conc. (gr/dscf)	Particulate Matter Emission Rate (Lbs/Hr)
1	135.0	93,275	246	17.0	7.65E-08	6.12E-05
2	140.0	98,460	248	16.0	1.38E-07	1.16E-04
3	140.0	129,779	200	15.9	8.30E-09	9.23E-06
Average	138.3	107,171	231	16.3	7.41E-08	6.22E-05

A. FIELD DATA SUMMARY

PLANT : Florida Rock Industries
Cement Kiln
DATE : February 6 & 7, 2001
1

	RUN 1	RUN 2	RUN 3
Vlc = Vol water collected in train, ml	351.0	357.0	297.0
Vm = Sample gas vol, meter cond., acf	112.335	109.382	97.454
Y = Meter calibration factor	1.0020	1.0020	1.0020
Pbar = Barometric pressure, in. Hg	30.28	30.30	30.30
Pstatic = Stack static pressure, in. H2O	-0.38	-0.36	-0.36
dH = Avg meter pressure diff, in. H2O	2.94	2.63	2.12
Tm = Absolute meter temp., degrees R	529.2	522.4	542.2
Vm(std) = Sample gas vol, Std. cond., dscf	114.474	112.894	96.801
Bws = Water vapor in gas stream, fraction	0.126	0.130	0.126
MF = Moisture factor (1 - Bws)	0.874	0.870	0.874
CO2 = Carbon Dioxide, dry, volume %	14.80	14.00	16.70
O2 = Oxygen, dry, volume %	13.60	12.20	10.10
N2 = Nitrogen, dry volume %	71.60	73.80	73.20
Md = Molecular weight of stack gas, dry	30.91	30.73	31.08
Ms = Molecular weight of stack gas, wet	29.28	29.08	29.43
Cp = Pitot tube coefficient	0.84	0.84	0.84
Sq.Rt. dP = Avg. square root of each dP	0.7629	0.7365	0.6509
Ts = Absolute stack temp., degrees R	684.5	688.8	686.9
A = Area of stack, ft2	68.42	68.42	68.42
Qstd = Volumetric flowrate, dscfm	134,728	129,656	114,513
An = Nozzle area, ft2	4.88E-04	4.88E-04	4.88E-04
θ = Sample time, minutes	120.00	120.00	120.00
%I = Isokinetic variation, percent	99.36	101.82	98.85

B. PARTICULATE DATA SUMMARY

PLANT : Florida Rock Industries
Cement Kiln
DATE : February 6 & 7, 2001
1

	RUN 1	RUN 2	RUN 3
Sample Weight (FHW + MF + BHW), mg	0.00	0.00	0.00
Meter Volume, standard cond., Vm(std)	114.474	112.894	96.801
Carbon Dioxide, percent	14.80	14.00	16.70
Oxygen, percent	13.60	12.20	10.10
Sample Concentration :			
gr/scf	0.0000	0.0000	0.0000
gr/dscf	0.0000	0.0000	0.0000
gr/dscf @ 0 % CO2	0.0000	0.0000	0.0000
gr/dscf @ 0 % O2	0.0000	0.0000	0.0000
ppm * MW (dry gas).....	0.0	0.0	0.0
ppm * MW @ 0% CO2	0.0	0.0	0.0
ppm * MW @ 0% O2	0.0	0.0	0.0

FLOWERS
CHEMICAL
LABORATORIES
INCORPORATED

Received From:
Koogler Assoc.
4014 NW 13th St.
Gainsvile,FL 32609

Date Reported : Feb19 2001
Project Number : 187-00-09
PO Number : Fla. Rock Ind.
FLDOH Number : E83018
NYSDOH Number : 11595
CTDPH Number : 0173
NCDEHNR Number : 296
SCDHEC Number : 96019

For: Bomb Be
Date Sampled:Feb 7 2001 Date Received:Feb12 2001 Lab Numbers: 32041-32048

REPORT OF ANALYSIS

	Beryllium mg
Accuracy:	77.8
Precision:	5.88
Det.Limit:	.00010
Client ID	
Lab Number	
RUN11	
32041	0.000347
RUN12	
32042	0.000115
RUN21	
32043	0.000200
RUN22	
32044	0.000102
RUN31	
32045	0.000317
RUN32	
32046	0.000106
BLK1	
32047	<0.000100
BLK2	
32048	0.000256

Certificate of Results
Sample integrity certified prior to analysis. Test results meet all requirments of the NELAC Standards, except as noted in the QA Report Section 4. This Report may not be reproduced in part, results relate only to items tested.

Jefferson S. Flowers, Ph.D
President/Technical Director

Jefferson L. Flowers, Ph.D
Jefferson S. Flowers, Ph.D
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FLOWERS
CHEMICAL
LABORATORIES
INCORPORATED

Received From:
Koogler Assoc.
4014 NW 13th St.
Gainsvile,FL 32609

Date Reported : Feb19 2001
Project Number : 187-00-09
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FLDOH Number : E83018
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NCDEHNR Number : 296
SCDHEC Number : 96019

For: Bomb Be
Date Sampled:Feb 7 2001 Date Received:Feb12 2001 Lab Numbers: 32041-32048

REPORT OF INFORMATION

Parameter	Unit	Limit	Expected	Value	Range	Correlation
				32041		
Beryllium	mg	0.625	0.0249	.00035		
				32042		
Beryllium	mg	0.625	0.0249	.00011		
				32043		
Beryllium	mg	0.625	0.0249	.00020		
				32044		
Beryllium	mg	0.625	0.0249	.00010		
				32045		
Beryllium	mg	0.625	0.0249	.00032		
				32046		
Beryllium	mg	0.625	0.0249	.00011		
				32047		

The above information is intended to highlight exceptional data as compared to the upper control limits (Limit) established for each of the parameters. Range exceedances are flagged by integer values in the Range column. The Expected values are derived from historical data. Expected is computed as either the mean or computed directly from another parameter using linear regression. All known correlation rule exceedances are listed as enumerated rule numbers in the Correlation column. Correlation pair rules are defined on the last page.

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Serving Your Analytical and Environmental Needs Since 1957

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

Process Weight Rate Sheet

Source: Kiln/Raw Mill Stack

Test Date: February 6 & 7, 2001

Permit No.: AC01-267311

Permitted Rate: 149.9 TPH

Test Parameter(s): Beryllium

	Run Times		Process Input Rate	
	1425	1536		
Run No. 1	0753	- 0850	120.17	TPH
Run No. 2	0906	- 1112	140	TPH
Run No. 3	1138	- 1346	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

February 8, 2001
Date

Environmental & Safety Manager
Title

File: Process Rate.pub

Kiln/Calciner Coal Feed Rate

Beryllium Test

Test Date: February 6, 2001 February 7, 2001

Time	Dry Basis Coal Coal Feed Rate TPH			Process Coal Feeder Rates (%)	
	Kiln	Calciner	Total	Kiln	Calciner
February 6, 2001					
1400	1.6	2.4	4.0	6.0	9.0
1500	1.6	2.9	4.5	6.0	11.0
1600	2.0	3.7	5.7	7.5	14.0
		Avg.	4.0		
February 7, 2001					
700	2.7	4.3	7.0	10.0	16.3
800	2.9	5.3	8.2	10.9	20.0
900	3.0	5.6	8.6	11.3	21.0
1000	2.5	5.2	7.7	9.5	19.6
1100	2.2	5.1	7.3	8.4	19.0
1200	2.3	4.8	7.1	8.8	18.0
1300	3.0	4.4	7.4	11.3	16.5
1400	2.4	4.3	6.7	9.0	16.0
		Avg.	7.7		

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

File: Coal Feed Rate.xls

CORRECTED LABORATORY REPORT

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

CHEMICAL
LABORATORIES
INCORPORATED

Jefferson L. Flowers, Ph.D
Jefferson S. Flowers, Ph.D
481 NEWBURYPORT Av.
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FLORIDA 32715 - 0597
BUS: (407) 339-5984
FAX: (407) 260-6110

To: Koogler Assoc./Glenn

Date: Thu Feb 22 10:07:47 GMT-0500 2001

Pages (including cover): 3

From: Kathy Dorris

Comments:

Jud researched the August report and determined it was calculated in micro grams not miligrams, here is the edited report. The report from 2/19/01 is correct. The compute was edited to report mg but the calculation did not reflect that, sorry for any inconvenience.

Thanks

Kathy

CHEMICAL
LABORATORIES
INCORPORATED

d From:
Koogler Assoc.
4014 NW 13th St.
Gainsvile,FL 32609

Date Reported : Aug29 2000
Project Number : FL Rock Ind.
PO Number : 187-00-09
FLDOH Number : E83018
NYSDOH Number : 11595
CTDPH Number : 0173
NCDEHNR Number : 296
SCDHEC Number : 96019

Be
Sampled:Jul25 2000 Date Received:Aug 9 2000 Lab Numbers: 31688-31697A
REPORT OF ANALYSIS Edited: 2-21-01 kd

	Beryllium mg
curacy:	91.8
ecision:	.620
t.Limit:	.00010
lient ID / ab Number	
CONT1R1 31688	0.000359
CONT2R1 31689	<0.00010
CONT3R1 31690	<0.00010
CONT1R2 31691	0.000212
CONT2R2 31692	<0.00010
CONT3R2 31693	0.000444
CONT1R3 31694	0.0000472
CONT2R3 31695	<0.00010

Certificate of Results
Sample integrity certified prior to analysis. Test results meet all requirments of the NELAC Standards, except as noted in the QA Report Section 4. This Report may not be reproduced in part, results relate only to items tested.

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Received From:
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4014 NW 13th St.
Gainsvile,FL 32609

Date Reported : Aug29 2000
Project Number : FL Rock Ind.
PO Number : 187-00-09
FLDOH Number : E83018
NYSDOH Number : 11595
CTDPH Number : 0173
NCDEHNR Number : 296
SCDHEC Number : 96019

For: Be
Date Sampled:Jul25 2000 Date Received:Aug 9 2000 Lab Numbers: 31688-31697A
REPORT OF ANALYSIS Edited: 2-21-01 kd

	Beryllium mg
Accuracy:	91.8
Precision:	.620
Det.Limit:	.00010
Client ID / Lab Number	
CONT3R3	
31696	<0.00010
FILTDIBLANKS	
31697	<0.00010

Certificate of Results
Sample integrity certified prior to analysis. Test results meet all requirments of the NELAC Standards, except as noted in the QA Report Section 4. This Report may not be reproduced in part, results relate only to items tested.

Jefferson S. Flowers, Ph.D.
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ENVIRONMENTAL SERVICES

BERYLLIUM
EMISSION MEASUREMENTS

Kiln/Raw Mill

FLORIDA ROCK INDUSTRIES
THOMPSON S. BAKER CEMENT PLANT
Newberry, Florida

Permit No. 0010087-003-AC/PSD-FL-228A

Test Date: September 18 & 20, 2001
Report Date: October 29, 2001

RECEIVED
OCT 31 2001
STATE OF FLORIDA
DEPT. OF ENV. PROTECTION
NORTHEAST DISTRICT-JAX

Koogler & Associates
Environmental Services
4014 N.W. 13th Street
Gainesville, Florida
352-377-5822

187-01-19

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. The plant is permitted by Permit No. 0010087-003-AC/PSD-FL-228A. This report presents beryllium emission test data collected on September 18 & 20, 2001on the kiln/raw mill stack.

On September 18 & 20, 2001, Koogler & Associates Environmental Services of Gainesville, Florida, conducted a fourth set of beryllium emission measurements on the kiln/raw mill stack as required by the above referenced permit. The tests were conducted in accordance with EPA Test Method 104 (40 CFR 61, Appendix B). The purpose of the testing was to develop additional data demonstrating compliance with the beryllium emission limiting standard of Permit No. 0010087-003-AC/PSD-FL-228A.

The Northeast District Office of the Florida Department of Environmental Protection (FDEP) in Jacksonville was notified of the emission measurements schedule and testing protocol.

During the September 18 & 20, 2001 test period, the kiln was operating at a preheater feed rate of 136.7 tons per hour and a clinker production rate of 80.6 tons

per hour. The coal feed rate to the kiln system averaged 9.21 tons per hour; corresponding to a heat input rate of about 230 mmBTU per hour. During test Run No. 1, the raw mill was not operating (direct plant operating mode) and during Run Nos. 2 and 3 the raw mill operated at an average throughput rate of 227 tons per hour (the compound plant operating mode).

Permit No. 0010087-003-AC/PSD-FL-228A. limits the preheater feed rate to 149.9 tons per hour; corresponding to a clinker production rate of about 95.8 tons per hour and the kiln system heat input rate is limited to 364 mmBTU per hour.

The permit for the plant limits beryllium emissions from the kiln/raw mill to a rate established by Best Available Control Technology and specifies that the emission limit for this pollutant be established based on "future stack tests". The September 2001 emission measurements reported herein represent the fourth set of emission measurements on the kiln/raw mill for beryllium. The previous beryllium emission measurements were conducted in July 2000, February 2001 and June 2001.

The emissions from the kiln/raw mill are controlled by an electrostatic precipitator (ESP). The measured mass emission rate of beryllium averaged 0.000081 pounds per hour during the September, 2001 tests. The beryllium emission rates measured in July 2000 and February and June 2001 were 0.000062, 0.000046, and 0.000015 pounds per hour respectively.

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; three points through each of the four ports.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

3.0 FIELD AND ANALYTICAL PROCEDURES

Beryllium emission measurements were conducted using EPA Method 104. Sampling times for each test run were two hours in duration. The sampling point locations for the Method 104 were established in accordance with EPA Method 1. Stack gas velocity measurements and stack gas moisture measurements were made in conjunction with the EPA Method 104 tests in accordance with EPA Methods 2 and 4. Measurements to determine the dry molecular weight of the stack gas were made in accordance with EPA Method 3. All EPA tests methods are described in 40 CFR 60, Appendix A or 40 CFR 61, Appendix B and have been adopted by reference by FDEP by Rule 62-297.401, F.A.C. There were no variations or exceptions to any of the referenced test methods.

4.0 SUMMARY OF RESULTS

The beryllium emission rate from the kiln/raw mill, measured on September 18 and 20, 2001, ranged from 0.000031 to 0.000129 pounds per hour and averaged 0.000081 pounds per hour. These data are summarized in Table 1. The stack gas flow rate from the kiln/raw mill during the beryllium tests averaged 122,814 dry standard cubic feet per minute (188,584 acfm), the stack gas temperature averaged 221°F and the stack gas moisture averaged 17.0 percent.

These three sets of beryllium emission measurements provide a reasonable representation of beryllium emissions from the kiln/raw mill as required by Permit No. 0010087-003-AC/PSD-FL-228A.

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

Summary of Beryllium - Kiln/Raw Mill Test Data

Florida Rock Industries
Cement Kiln/Raw Mill
SEPT. 18&20, 2001

Run No.	Process Weight Rate (Tons/hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (F)	Stack Gas Moisture (%)	Beryllium Conc. (gr/dscf)	Beryllium Emission Rate (Lbs/Hr)
1	115.3	99,894	255	16.6	3.59E-08	3.07E-05
2	134.7	134,476	202	16.8	7.26E-08	8.37E-05
3	160.0	134,071	205	17.6	1.12E-07	1.29E-04
Average	136.7	122,814	221	17.0	7.35E-08	8.11E-05

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

A. FIELD DATA SUMMARY

PLANT : Florida Rock Industries
Cement Kiln/Raw Mill
DATE : SEPT. 18&20, 2001

	RUN 1	RUN 2	RUN 3
Vlc = Vol water collected in train, ml	392.0	509.0	550.0
Vm = Sample gas vol, meter cond., acf	94.618	121.000	126.210
Y = Meter calibration factor	1.0020	1.0020	1.0020
Pbar = Barometric pressure, in. Hg	30.16	30.08	30.08
Pstatic = Stack static pressure, in. H2O	0.40	0.40	0.40
dH = Avg meter pressure diff, in. H2O	1.99	3.22	3.55
Tm = Absolute meter temp., degrees R	547.2	545.7	560.1
Vm(std) = Sample gas vol, Std. cond., dscf	92.667	118.872	120.895
Bws = Water vapor in gas stream, fraction	0.166	0.168	0.176
MF = Moisture factor (1 - Bws)	0.834	0.832	0.824
CO2 = Carbon Dioxide, dry, volume %	19.50	18.00	16.00
O2 = Oxygen, dry, volume %	10.00	8.80	9.50
N2 = Nitrogen, dry volume %	70.50	73.20	74.50
Md = Molecular weight of stack gas, dry	31.52	31.23	30.94
Ms = Molecular weight of stack gas, wet	29.27	29.01	28.66
Cp = Pitot tube coefficient	0.84	0.84	0.84
Sq.Rt. dP = Avg. square root of each dP	0.6063	0.7845	0.7871
Ts = Absolute stack temp., degrees R	715.0	662.0	664.8
A = Area of stack, ft2	68.42	68.42	68.42
Qstd = Volumetric flowrate, dscfm	99,894	134,476	134,071
An = Nozzle area, ft2	5.17E-04	5.17E-04	5.17E-04
O = Sample time, minutes	120.00	120.00	120.00
%I = Isokinetic variation, percent	102.23	97.42	99.37

B. PARTICULATE DATA SUMMARY

PLANT : Florida Rock Industries
Cement Kiln/Raw Mill
DATE : SEPT. 18&20, 2001

	RUN 1	RUN 2	RUN 3
Sample Weight (FHW + MF + BHW), mg	0.00	0.00	0.00
Meter Volume, standard cond., Vm(std)	92.667	118.872	120.895
Carbon Dioxide, percent	19.50	18.00	16.00
Oxygen, percent	10.00	8.80	9.50
Sample Concentration :			
gr/scf	0.0000	0.0000	0.0000
gr/dscf	0.0000	0.0000	0.0000
gr/dscf @ 0 % CO2	0.0000	0.0000	0.0000
gr/dscf @ 0 % O2	0.0000	0.0000	0.0000
ppm * MW (dry gas).....	0.0	0.0	0.0
ppm * MW @ 0% CO2	0.0	0.0	0.0
ppm * MW @ 0% O2	0.0	0.0	0.0

FLOWERS
CHEMICAL
LABORATORIES
INCORPORATED

Received From:
Koogler Assoc.
4014 NW 13th St.
Gainsvile,FL 32609

Date Reported : Oct26 2001
Project Number : 187-01
PO Number : Fla. Rock Ind.
FLDOH Number : E83018
NYSDOH Number : 11595
CTDPH Number : 0173
NCDEHNR Number : 296
NJDEP Number : 49015

For: Be-W Bomb
Date Received: Oct 2 2001 Lab Numbers: 32459-32466

REPORT OF ANALYSIS

	Beryllium ug	Blank Corrected Wts (ug)	Total Sample Wt (ug)
Accuracy:			
Precision:			
Det.Limit:	.00100		
Client ID			
Lab Number			
C1R1			
32459	0.613	0.215	0.216
C1R2			
32460	0.957	0.559	0.560
C1R3			
32461	0.776	0.378	0.379
C2R1			
32462	<0.00100	0.0005	
C2R2			
32463	<0.00100	0.0005	
C2R3			
32464	<0.00100	0.0005	
FILTBLK			
32465	0.797	0.399/filter	
ACEBLK			
32466	<0.00100	0.0005	

Certificate of Results
Sample integrity certified prior to analysis.Test results meet all requirements of the NELAC Standards, except as noted in the QA Report Section 4.
This Report may not be reproduced in part, results relate only to items tested.

Certified by: Flowers Chemical Laboratories, Inc.

481 NEWBURYPORT AVE.
ALTAMONTE SPRINGS.
FLORIDA 32701
P.O BOX 150597
ALTAMONTE SPRINGS.
FLORIDA 32715-0597
BUS: (407) 339-5984
FAX. (407) 260-6110

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

Process Weight Rate Sheet

Source: Kiln/Raw Mill Stack - EU003 & EU002 Test Date: September 18 & 20, 2001

Permit No.: 0010087-002-AV Permitted Rate: 149.9 TPH Input

Test Parameter(s): Beryllium Process Parameter: Kiln Feed Rate

	Run Times		Process Input Rate	
Run No. 1	08:25 -	10:30	115.33	TPH
Run No. 2	07:40 -	13:11	134.67	TPH
Run No. 3	13:27 -	15:43	160.00	TPH
		Avg.	136.67	TPH

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

George Townsend
Name (Print)

George Townsend
Signature

September 21, 2001
Date

Environmental & Safety Manager
Title

File: Process Rate.—Berylliumpub

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

Process Weight Rate Sheet

Source: Raw (Roller) Mill EU002 Test Date: September 18 & 20, 2001

Permit No.: 0010087-002-AV Permitted Rate: 212.0 TPH

Process Parameter(s): Beryllium Process Parameter: Raw Mill Feed Rate

	Run Times		Process Input Rate	
Run No. 1	08:25	10:30	0.0	TPH
Run No. 2	07:40	13:11	221.93	TPH
Run No. 3	13:27	15:43	231.2	TPH
		Avg.	226.57	TPH

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

George Townsend
Name (Print)

George Townsend
Signature

September 21, 2001
Date

Environmental & Safety Manager
Title

File: Process Rate.- Berylliumpub

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

Process Weight Rate Sheet

Source: Kiln/Raw Mill Stack - EU003 & EU002 Test Date: September 18 & 20, 2001

Permit No.: 0010087-002-AV Permitted Rate: 14.0 TPH

Process Parameter(s): Beryllium Process Parameter: Coal Firing Rate

	Run Times		Process Input Rate	
Run No. 1	08:25	10:30	7.87	TPH
Run No. 2	07:40	13:11	9.37	TPH
Run No. 3	13:27	15:43	10.4	TPH
		Avg.	9.21	TPH

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

George Townsend
Name (Print)

George Townsend
Signature

September 21, 2001
Date

Environmental & Safety Manager
Title

File: Process Rate.— Berylliumpub

Jeb Bush
Governor

Department of
Environmental Protection

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

(904)807-3300 OR Suncom 804-3300
FAX: (904)448-4363 or SunCom 880-4363

David B. Struhs
Secretary

AIR PROGRAM
FACSIMILE TRANSMITTAL

TO: AL Linero

FAX: 292 6979 **DATE:** 30 Oct 01

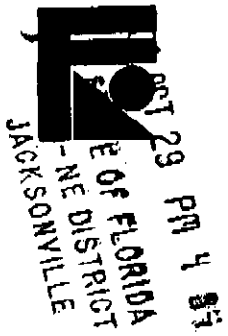
FROM: Leslie Mayban **PAGES:** 4 including this cover
Extension: 3242

SUBJECT: FDI response

___URGENT ✓FOR REVIEW ___PLEASE COMMENT ___PLEASE REPLY

COMMENTS: AL, the temperature is okay, but the analysis isn't there for mercury.

GENERAL OFFICE: 155 East 21st Street / P.O. Box 4667 / Jacksonville, Florida 32201 / (904) 355-1781
FLORIDA ROCK INDUSTRIES INC Mining, Ready Mix Concrete, and Construction Products



October 26, 2001

Mr. Chris Kirts
Department of Environmental Protection
Northeast District – Air Program
7825 Baymeadows Way
Suite 200B
Jacksonville FL 32256-7577

Re: Objection by U.S. EPA Region 4, dated October 12, 2001
Thompson S. Baker Cement Plant – Newberry Florida

Dear Mr. Kirts,

Attached are the protocols Florida Rock Industries Inc. plans to follow to comply with the conditions shown in the application for its Title V Operating Permit.

I trust these procedures are acceptable to FDEP and the U.S. EPA.

Sincerely
FLORIDA ROCK INDUSTRIES, INC.

Fred W. Cohrs

Fred W. Cohrs
Vice president

FWC/bc
Attachments

Answers to U.S. EPA Region 4 Objections

1.b. Monitoring Requirements

Kiln Temperature: "The kiln temperature is monitored at the inlet to the kiln, the calciner and several stages of the preheater and in several stages of the preheater. Stage 1 exit temperature, which is measured downstream of the kiln inlet with respect to the temperature gradient in the pyro-processing system, must reach 1500 degrees F, before the tire feed system interlock allows the tire transport and the tire feed system to operate. Conversely, if the stage 1 preheater exit temperature drops below 1500 degrees F, the tire feed system is deactivated through the same interlocking control concept."

1.d. Monitoring Requirements

Sampling and Testing Requirements-Mercury: "Daily samples are taken of the kiln feed consumed and the coal burnt and analyzed as part of the cement quality control program.
A portion of these samples is retained for a monthly composite sample. These composite samples are sent to a commercial laboratory for testing, including the quantitative determination of mercury.
The test reports are stored by the company with other environmental records for a period of 5 years."

Enclosure

U.S. EPA Region 4 Objection
Proposed Part 70 Operating Permit
Florida Rock Industries, Inc.
Thompson S. Baker Cement Plant
Permit no. 0010087-002-AV

I **EPA Objection Issues**

a. Kiln Temperature: Section III, condition C.3 of the permit requires the following: "Prior to initiating tire firing, gases exiting the kiln ahead of the calciner burner shall be maintained at a minimum of 1400 °F for at least one hour." The permit does not contain any monitoring conditions associated with this requirement. In order to ensure that the monitoring requirements of 40 C.F.R. 70.6(a)(3) are adequately addressed, the permit must contain monitoring and recordkeeping requirements to assure that the temperature of the exit gases is in the adequate range for the specified amount of time prior to using tires as fuel for the kiln.

e. Sampling and Testing Requirements - Mercury: Condition C.38 of the permit requires the source to conduct monthly sampling and analysis for mercury. However, the permit does not specify any sampling requirements or test methods to assure compliance with the mercury limit contained in condition C.5. As required by 40 C.F.R. 70.6(c)(1), all title V permits must contain ". . . testing, monitoring, reporting and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit." In order to resolve this objection item, the appropriate sampling and testing requirements for mercury must be added to the permit.

Al, Li
These don't appear to be major issues here.
S.

October 12, 2001

4APT-APB

Howard L. Rhodes, Director
Department of Environmental Protection
Division of Air Resources Management
Mail Station 5500
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Rhodes:

The purpose of this letter is to notify the Florida Department of Environmental Protection (FDEP) that the U.S. Environmental Protection Agency (EPA) formally objects to the issuance of the proposed title V operating permit for Florida Rock Industries, Inc., Thompson S. Baker Cement Plant, located in Alachua County, Florida, which was received by EPA, via e-mail notification and FDEP's web site, on August 30, 2001. This letter also provides our general comments on the proposed permit.

Based on EPA's review of the proposed permit and the supporting information received for this facility, EPA objects, under the authority of Section 505(b) of the Clean Air Act ("the Act") and 40 C.F.R. 70.8(c) (see also Florida Regulation 62-213.450), to the issuance of the proposed title V permit for this facility. The basis for EPA's objection is that the permit does not fully meet the periodic monitoring requirements of 40 C.F.R. 70.6(a)(3)(i) and (c)(1), and does not contain conditions that assure compliance with all applicable requirements, as required by
40 C.F.R. 70.6(a). Pursuant to 40 C.F.R. 70.8(c), this letter and its enclosure contain a detailed explanation of the objection issues and the changes necessary to make the permit consistent with the requirements of 40 C.F.R. Part 70 and assure compliance with applicable requirements of the Clean Air Act. The enclosure also contains general comments applicable to the permit.

Section 70.8(c) requires EPA to object to the issuance of a proposed permit in writing within 45 days of receipt of the proposed permit (and all necessary supporting information) if EPA determines that the permit is not in compliance with the applicable requirements under the Act or the requirements of 40 C.F.R. Part 70. Section 70.8(c)(4) of the title V regulations and Section 505(c) of the Act further provide that if the State fails to revise and resubmit a proposed permit within 90 days to satisfy the objection, the authority to issue or deny the permit passes to EPA, and EPA will act accordingly. Because the objection issues must be fully addressed within the 90 days, we suggest that the revised permit be submitted in advance in order that any outstanding issues may be resolved prior to the expiration of the 90-day period.

Enclosure

U.S. EPA Region 4 Objection
Proposed Part 70 Operating Permit
Florida Rock Industries, Inc.
Thompson S. Baker Cement Plant
Permit no. 0010087-002-AV

I EPA Objection Issues

1. Monitoring Requirements

1. Visible Emissions: The permit requires that Method 9 tests be conducted annually for units 001 and 002. For units 004 (EP01 & EP02), 005, 006 and 007 (EP01 & EP02), the permit requires that Method 9 tests be conducted once every five years. For most of these units, compliance with the visible emissions limit will be used to establish compliance with the particulate matter limit for the unit if the visible emissions are not in excess of 5% opacity. In most cases, this infrequent testing does not constitute adequate monitoring to assure continuous compliance with the visible emissions standard, as required by 40 C.F.R. 70.6(c)(1). Since most of these units have control equipment, it may be assumed that under normal operating conditions, no opacity may be observed. If this is the case, the permit should require the source to conduct and record the results of visible emissions observations on a daily basis (Method 22), and that a Method 9 test be conducted within 24 hours of any abnormal qualitative survey. However, if the units normally operate under conditions where opacity can be observed, then the permit must require that Method 9 testing be conducted on a frequent basis.

   As an alternative to the approach described above, a technical demonstration can be included in the statement of basis explaining why the State has chosen not to require any additional visible emissions testing for these units. The demonstration needs to identify the rationale for basing the compliance certification on data from a short-term test performed once a year or once every five years.

2. Kiln Temperature: Section III, condition C.3 of the permit requires the following: "Prior to initiating tire firing, gases exiting the kiln ahead of the calciner burner shall be maintained at a minimum of 1400 °F for at least one hour." The permit does not contain any monitoring conditions associated with this requirement. In order to ensure that the monitoring requirements of 40 C.F.R. 70.6(a)(3) are adequately addressed, the permit must contain monitoring and recordkeeping requirements to assure that the temperature of the exit gases is in the adequate range for the specified amount of time prior to using tires as fuel for the kiln.

If you have any questions or wish to discuss this further, please contact Mr. Gregg M. Worley, Chief of the Air Permits Section, at (404) 562-9141. Should your staff need additional information, they may contact Ms. Gracy R. Danois, Florida Title V Contact, at (404) 562-9119 or Ms. Lynda Crum, Associate Regional Counsel, at (404) 562-9524.

Sincerely,

/s/ Jesse Baskerville for

Winston A. Smith
Director
Air, Pesticides and Toxics
Management Division

Enclosure

cc: Mr. Fred W. Cohrs, Florida Rock Industries
Mr. Scott Sheplak, P.E., FDEP (via e-mail)
Mr. Chris Kirts, FDEP Northeast District (via e:mail)

1. Capacity: Conditions B.1, C.1, C.2, D.1, E.1, F.1 and G.1 specify the maximum capacity for the units at this facility. In previous title V permits, FDEP has included a permitting note with these requirements clarifying that these conditions are not intended to be enforceable limits, but as a basis for determining the percent capacity of the units during source testing. If this is the case, please add a permitting note to each of the conditions to clarify this. Otherwise, as required by 40 C.F.R. 70.6(a)(3), monitoring requirements sufficient to assure compliance with these capacity limitations need to be included in the permit for all the conditions listed above.

2. Sampling and Testing Requirements - Mercury: Condition C.38 of the permit requires the source to conduct monthly sampling and analysis for mercury. However, the permit does not specify any sampling requirements or test methods to assure compliance with the mercury limit contained in condition C.5. As required by 40 C.F.R. 70.6(c)(1), all title V permits must contain ". . . testing, monitoring, reporting and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit." In order to resolve this objection item, the appropriate sampling and testing requirements for mercury must be added to the permit.

2. Applicable Requirements

New Source Performance Standards (NSPS), Subpart A: Florida Rock Industries is subject to the requirements of the NSPS Subparts A, F, Y and OOO. The permit addresses the applicable requirements from these subparts in the permit, with the exception of Subpart A. Although the permit contains the requirements of Subpart A in an attachment to the permit, the permit itself does not establish that the facility must comply with these requirements. A condition needs to be added to the permit addressing these requirements.

II General Comments

1. General Comment: Please note that EPA reserves the right to enforce any noncompliance, including any noncompliance related to issues that have not been specifically raised in these comments. After final issuance, this permit shall be reopened if EPA or the permitting authority determines that it must be revised or revoked to assure compliance with applicable requirements.

2. Annual Statement of Compliance: The permit for this facility does not contain a requirement addressing the source's obligation to submit a title V compliance certification to EPA annually. Although condition 51 of Appendix TV-3 contains the compliance certification requirements of 40 C.F.R. §70.6(c)(5)(iii), the permit itself does

not include a condition that cross-reference these requirements. Please add a condition to Section II of the permit to either contain all the compliance certification requirements or cross-reference the requirements already contained in Appendix TV-3.

3. Applicable Requirements - Section 112(r): Section II, condition 4 contains a general requirement to comply with 40 CFR Part 68 if the facility becomes subject to that part of the CAA. If Florida Rock Industries is indeed subject to the part 68 requirements, the permit requirements need to reflect the applicability of this part and to include the applicable certification update requirements from 40 CFR §68.190.

4. Subsumed Requirements: There are a number of instances where it appears that an applicable requirement (e.g., an emission limit) has been subsumed by a more stringent BACT limit. In such instances, for clarification purposes and to be in accordance with the streamlining guidance of White Paper No. 2, EPA suggests that a notation which identifies the subsumed requirement be added to the respective citation of authority for the more stringent limit. For example, the citation of authority for the visible emissions limit in condition A.2 may resemble the following:

[AC01-267311/PSD-FL-228, 40 CFR 60.622(c) and 60.672(a)(2) subsumed]

ALACHUA COUNTY
ENVIRONMENTAL PROTECTION DEPARTMENT

201 SE 2nd Avenue, Suite 201 • Gainesville, Florida 32601
Tel: (352) 264-6800 • Fax (352) 264-6852
Suncom: 651-6800
Home Page: www.co.alachua.fl.us

Board of County Commissioners

Chris Bird
Environmental Protection Director
cbird@co.alachua.fl.us

Ramesh P. Buch
Land Conservation Manager
rbuch@co.alachua.fl.us

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Pollution Prevention Manager
jmousa@co.alachua.fl.us

Robert L. Norton
Natural Resources Supervisor
rnorton@co.alachua.fl.us

Barbara J. Pierce
Administrative Assistant
bpierce@co.alachua.fl.us

RECEIVED

SEP 21 2001

BUREAU OF AIR REGULATION

September 18, 2001

Mr. Winston Smith, Director
Air, Pesticides & Toxics Management Division
U.S. Environmental Protection Agency Region 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104

Re: Florida Rock Industries, Inc., Thompson S. Baker Cement Plant
Proposed Title V Permit No. 0010087-002-AV

Dear Mr Smith:

The purpose of this letter is to provide Alachua County's comments regarding the Proposed Florida Department of Environmental Protection (FDEP) Title V permit for the Florida Rock Cement Plant in Newberry, FL. Alachua County Environmental Protection Department (ACEPD) wishes to express its specific concerns in hopes that they will be addressed in the final version of the Title V permit.

1) The Proposed Title V permit limits input of mercury compounds (as Hg) in all raw materials and fuel kiln system to 200 pounds per year. The County's position is that such limit is arbitrary and excessive, particularly in consideration of atmospheric deposition and existing mercury contamination in our waterways. These and other concerns were addressed in the enclosed letter from the Chair of the Alachua County Board of County Commissioners to State Senator Rod Smith. Alachua County requests that a condition be added to the Title V permit to require the use of coal with low-mercury content and to limit mercury emissions to a reduced level.

2) Based on past actions, Florida Rock has demonstrated that it cannot effectively control the quality of raw materials and fuels. Alachua County requests testing of mill scale and fly ash on regular basis to assure non-contamination, and thereby preventing excess VOC and metals emission.

3) The Proposed Title V permit states that 30-day rolling average Total Hydrocarbon (THC) emission rates reported by Continuous Emission Monitoring (CEM) systems shall be reported to the FDEP no later then the 15th day following each calendar quarter.

Alachua County requests that the CEM systems data for SO_2, NO_x, THC, the continuous opacity monitor (COM) data for opacity, the flow monitor data for volumetric flow, the process monitor for O_2 data and the clinker production data should be reported real-time to the FDEP and the ACEPD. Further, the hourly and the 30 day averages reported quarterly should not be limited to only THC emissions but should also include

the preheater feed rate, and the clinker production rates. ACEPD is concerned that these process parameters should also be included in the report.

Further, all times of the quarter shall be reported including times when the kiln is fed with only fuel (coal, whole tires, No.2 unused fuel oil, propane). ACEPD is concerned that there will be certain times when clinker production is not being produced yet some fuel is processed in the kiln and which may go unreported.

4) The Proposed Title V permit states that manual stack tests for particulate, carbon monoxide, VOC, beryllium and sulfuric acid mist should be performed while firing both fuels (70% to 100% coal and 0 to 30% tires) and while the continuous monitoring systems are functioning properly. Alachua County requests that CEM systems data for SO_2, NO_x, THC and COM data for opacity, the flow monitor data for volumetric flow, the process monitor for O_2 and the clinker production rates data should be reported for the same time period. ACEPD is concerned that certain parameters during the manual stack testing could be altered to achieve the desired test compliance for the manual test and which could change the emissions monitored by CEM systems.

5) The Proposed Title V permit does not address fine particulate matter (smaller than 2.5 microns in effective diameter). Alachua County requests that the permit provide a schedule requiring modification of the Operating Permit to impose EPA emission limits for fine particulate matter immediately upon the date of implementation.

6) The Proposed Title V permit states that prior to initiating tire firing, the gases exiting the kiln ahead of the calciner burner shall be maintained at a minimum 1400 degrees F for at least one hour. Alachua County requests that a condition be added to ensure that continuous temperature data be monitored and that these are available real-time to FDEP and ACEPD.

Should you have any questions or comments about this, please contact Mr. Lalit Lalwani at the above letterhead address or by phone at 352-264-6800.

Sincerely,

Chris Bird, Director
Alachua County Environmental Protection Department

enclosures (1)

cc. Al Linero, FDEP Tallahassee
Chris Kirts, FDEP NE District
David C. Schwartz, Esq.
Randall Reid, County Manager
Board of County Commissioners