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November 1, 1995

Via Hand Delivery

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BUREAU OF
AIR REGULATION

Mr. Al Linero, Administrator
New Source Review
Department of Environmental
Protection
Bureau of Air Regulation MS 5605
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Linero:

The undersigned represents Florida Rock Industries, Inc., the permit applicant in this case. We have been working with Mr. Fred Cohrs of FRI and Mr. Steve Cullen of John Koogler & Associates in reviewing the draft permit, Technical Evaluation and Preliminary Determination, and proposed BACT determination. We have completed our review, and are pleased to submit these comments and suggested modifications and additions.

The public comment period of 30 days runs from the date of publication of notice, which occurred on October 3, 1995. These comments are timely filed. Our comments are as follows:

Applicant: Florida Rock Industries, Inc
Newberry Cement Plant, Alachua County, Florida
DEP File PSD-FL-228, AC01-267311

Proposed additions are underlined.
Proposed deletions are indicated by ~~strike-through~~.

I. Comments regarding "Notice of Intent to Issue":

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Comment:

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Florida Rock Industries, Inc. (FRI), 155 East 21st Street in Jacksonville, Florida, for a 2300 ton (clinker) per day cement plant. The plant will be located at the site of FRI's existing quarry, 2.5 miles northeast of Newberry by County Road 235 in Alachua County, Florida. The project includes a single dry process tire and coal-fired kiln with a preheater/precalciner, clinker cooler, crushers, raw mill, finish mill, material and fuel handling equipment, silos, and shipping facilities.

A Best Available Control Technology (BACT) determination was required for emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM/PM₁₀), and carbon monoxide (CO), volatile organic compounds (VOC), and beryllium (Be), pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD).

Emissions of these pollutants will not exceed the following limits:

<u>Pollutant</u>	<u>Maximum Emissions (Tons Per Year)</u>
NO _x	946 <u>1022</u>

An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not cause a violation of any state or federal ambient air quality standards. The maximum percent of allowable PSD Class II increment consumed from this project, along with all other sources in the area, will be as follows:

<u>PSD Class II Increments</u>	<u>Allowable Increment</u>	<u>Percent Increment Consumed</u>
<u>(ug/m3)</u>	<u>(ug/m3)</u>	
<u>SO₂</u>		
Three-hour 148	512	29
24-hour 45	91	49
Annual 7	20	35

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PM10

24-hour	40 <u>28</u>	30	33 <u>93</u>
Annual	4 <u>4</u>	17	6 <u>24</u>

ii. Comments regarding “Technical Evaluation and Preliminary Determination”:

Page 2 of 17:

Comment: [C. FACILITY CATEGORY]

The proposed plant is classified as a major air emitting facility. Since it will generate approximately ~~267.6~~ 268.7 tons per year (TPY) of particulate matter (PM) ~~227.4~~ 222.0 TPY of PM10, 108.6 TPY of sulfur dioxide (SO2), 5 tpy of sulfuric acid mist (H2SO4), ~~915.6~~ 1022.4 tons per year of nitrogen oxides (NOx), 1289 tons per year of carbon monoxide (CO), 42.7 TPY of volatile organic compounds (VOC), 0.0006 TPY of beryllium (Be), 0.26 TPY of lead (Pb), and 0.29 TPY of fluorides (F) if operated 8760 hours per year.

Comment: [III. Project Description]

The proposed cement plant will be designed to produce up to 2300 TPD of clinker. The plant will operate continuously, but at a lower average production rate. Thus annual production will be limited to 712,500 TPY of clinker which, after addition of gypsum and limestone for masonry cement, corresponds to 772,400 TPY of cement.

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Comment: [Section IV]

The product of the rotary kiln is known as clinker which enters a vessel where it is cooled by air. Hot air from the clinker cooler is recovered and returned to the pyroprocessing system as combustion air. The cooled clinker is mixed with a form of calcium sulfate, usually gypsum, (and limestone, for the production of masonry cement), and ground in ball or tube mills in the finish mill department to produce portland cement or masonry cement.

Portland and masonry cements are is shipped from the packhouse or shipping department in bulk or in paper bags by truck or rail.

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Comment: [Section IV]

The raw mill will be equipped with a high efficiency separator and a reject recirculating bucket elevator. The product will be collected in four (4) cyclones, and conveyed with airslides to an airlift. Draft will be provided by a fan which discharges the gases and fine product to an electrostatic precipitator (ESP). The ESP is kept under slight negative pressure with an induced draft fan discharging into a stack. Heat for raw material drying will be provided by the preheater exhaust gases and by a 40MMBtu/hour air heater.

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Comment: [Section IV, 6.CEMENT HANDLING]

Finished cement will be stored in four concrete silos of 7000 tons capacity each, with a 2,000 ton interstitial silo. The ~~four~~ five silos will be vented by three fabric filters.

Page 7 of 17:

[C. FUEL CONSUMPTION]

Comment:

The fuels to be used in the combustion sources (raw mill heater and kiln main and calciner burners) at this facility are No. 2 fuel oil (0.05% S, by weight), ~~low-sulfur coal (0.75% S)~~ and tires (up to 30% of total heat input).

Rationale:

A coal sulfur limit in addition to the SO₂ emission limit is unnecessary and unduly limiting.

Page 8 of 17:

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Comment: [Section V]

The cement plant will be a major emitting facility for PM, PM10, SO₂, NO_x, and CO. The proposed facility will be located in an area (Alachua County) designated attainment for all criteria pollutants (Rule 62-275.400 F.A.C.). The proposed facility is subject to the Prevention of Significant Deterioration (PSD) regulations because the potential emissions of each of these pollutants exceed 100 TPY and the facility is a major source category as listed in Table 62-212.400-1 (List of 28) (Rule 62-212.200, F.A.C.). PSD review consists of a determination of best available control technology (BACT) and an air quality impact analysis for each of these regulated pollutants and other pollutants with potential emissions greater than the significant emission rates listed in Table 62-212.400-2.

Comment: [Section VI]

The raw materials are processed with an average surface moisture content of 8-12%. The quarrying activities and material storage piles will involve moist or wet raw materials with negligible unconfined emissions. Haul roads will be sprayed by a water truck is as deemed necessary.

Page 9 of 17:

Comment:

If any CKD is not returned to the process, FRI will be required to comply with solid waste (CKD) provisions of the air permit and stormwater permit as well as any Subtitle C regulations promulgated by EPA to address CKD. ~~A covered coal conveyor and baghouse~~ Baghouses will be used to limit fugitive particulate emissions from the coal mill and pulverized coal bin. ~~and coal handling system.~~

Rationale:

Coal will be received wet, resulting in negligible fugitive emissions.

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Comment:

A sulfur dioxide emission limit of 0.28 pounds/ton of clinker produced will be achieved by firing low sulfur oil (0.05% S by weight) and ~~low sulfur content coal (0.75% S).~~

Rationale:

A coal sulfur limit in addition to the SO₂ emission limit is unnecessary and unduly limiting.

Comment:

A nitrogen oxides emission limit of ~~2.5~~ 2.8 pounds per ton of clinker produced will be met through process control and secondary combustion of fuel. If this method is insufficient, then FRI must examine additional options ~~such as limited Selective Non-Catalytic Reduction~~ to achieve the target BACT limit.

Rationale:

The kiln with the 2.5 lb/ton emission limit (RMC, Monterey Bay, California) is burning western coal with a lower average heat input and higher volatility than eastern coal (See Appendix A). The NO_x BACT emission limit was revised to 2.8 lb/ton clinker with a 30 day rolling average at a meeting on October 24, 1995 between the Department and FRI.

SNCR was properly addressed in the application and supporting documents, and was rejected as BACT. SNCR is not considered to be an "available" technology for NO_x control from cement kilns.

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Comment: [EMISSION LIMITATIONS]

The proposed facility will emit the following PSD pollutants (Table 212.400-2): particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon

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monoxide, sulfuric acid mist, fluorides, beryllium, mercury and lead. The ~~permitted~~ proposed emissions for this facility are summarized in Tables A and B.

Comment: [AIR TOXICS ASSESSMENT]

~~The very high temperatures in the kiln and precalciner insure destruction of furans and dioxins.~~

Rationale:

The operating conditions at this plant will preclude the formation of dioxins/furans; hence, no destruction is necessary.

Comments regarding "Draft Permit, AC01-267311":

Page 1 of 10:

Comment:

For the construction of a Portland and masonry cement manufacturing plant to be located approximately 2.5 miles Northeast of ~~Newborn~~ Newberry on Alachua County Road 235 in Alachua County, Florida. The latitude and longitude are ~~29 24' 21"~~ 29 42' 21" and ~~82 35' 00"~~, respectively.

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Comment: [Specific Condition #3]

3. The kiln clinker production rate shall not exceed 95.8 tons per hour (TPH) and 2300 tons per day (TPD). On an annual basis, the clinker production rate ~~shall not exceed 81.3 TPH, 1.952 TPD, and 712,500 tons per year (TPY).~~ The clinker production rate will be determined as a function of the preheater dry feed rate. The preheater dry feed rate is limited to 149.9 tons per hour (TPH) and 1.114,350 tons per year (TPY). Continuous operation is allowed (8,760 hours per year) as long as the 712,500 TPY of clinker limit is not exceeded. [Rule 62.212.200(58), F.A.C.]

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Rationale:

Clinker production rate will not be specifically monitored, it will be determined from the preheater dry feed rate which will be monitored. The preheater dry feed rate is necessary because it will be used to determine compliance with the particulate limitations of NSPS Subpart F.

Comment: [Specific Condition #4]

~~a. The maximum sulfur content of the coal fired in the pyroprocessing system shall not exceed 0.75% sulfur, by weight. The coal usage rate shall not exceed 14.0 TPH. The coal sulfur content shall be determined using ASTM Method D 2234, D 3173, D 3176, D 3177 or D 4239.~~

Rationale:

A coal sulfur limit in addition to the SO₂ emission limit is unnecessary and unduly limiting. A coal usage limit in addition to the limit on total heat input is unnecessary and unduly limiting.

Page 6 of 10:

Comment: [Specific Condition #4]

b. Whole tires may be fed continuously through an air lock near ~~to~~ the kiln calciner burner at a rate not to exceed 109.2 MMBtu/hr (30% of total kiln fuel input) or 4.2 TPH and 36,792 TPY.

Comment: [Specific Condition #5]

After a two-year period following start-up, ~~E~~missions from the facility shall comply with the pollutant limits specified in attached Tables I and II. Following completion of the performance tests required herein, the interim SO₂ emission limit may be revised based on the test results and CEM data generated during the two-year process optimization period ~~(and alkali/sulfur materials ratios)~~ such that overall control attained for all air pollutants including, SO₂, NO_x, VOC, and CO, is optimized.

The Department shall issue the final SO₂ emission limits within 120 days following receipt of all test results required by this permit and the CEM data generated during the two-year process optimization period.
Any changes will be publicly noticed.

Rationale:

The BACT emission limits for NO_x are extremely stringent when compared to permitted and tested emission rates from operating kilns. Compliance with these limits will require an extended period to allow for process optimization. A two-year "burn-in" period will allow evaluation of differing combustion scenarios (i.e. varying excess air, etc.) and allow the kiln to reach steady-state operation after the process is optimized.

Comment: [Specific Condition #6]

EPA-reference methods for sampling pollutants shall consist of 3 consecutive test runs, each of one hour duration, ~~shall be performed on the kiln and cooler stacks for each pollutant specified in Tables I and II; and for particulate matter from the clinker cooler stack and the coal mill baghouse [S-17].~~

Rationale:

Gaseous pollutants are only expected from the kiln/raw mill stack. The kiln ESP, the clinker cooler ESP, and the coal mill baghouse must demonstrate compliance with NSPS emission limits.

Comment: [Specific Condition #6]

Continuous monitoring equipment shall be installed, operated, and used to determine compliance with the emission limits for NO_x and SO₂ from the kiln. Since the emission limits are on a mass basis, a continuous flow monitor shall be installed.

Comment: [Specific Condition #6]

Continuous opacity monitors shall be installed, operated, and maintained at ~~both stacks~~ the kiln/raw mill ESP stack and the clinker cooler ESP stack pursuant to 40 CFR

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60.63. A continuous monitor for temperature shall be installed, operated, and maintained at the coal mill baghouse exhaust [S-17] pursuant to 40 CFR 60.253.

Comment: [Specific Condition #6]

Continuous monitors shall be installed for CO and/or O₂ for use in determining plant operating parameters to optimize emissions of CO, NO_x, and SO₂ and to set a final SO₂ limit. These monitors are process monitors and are not subject to 40 CFR 60, Appendix B.

Comment: [Specific Condition #6]

Performance tests to demonstrate compliance with the applicable NSPS Subparts shall begin within 60 days after achieving and maintaining the permitted production rate, but not later than 180 days after initial operation at that rate. Compliance tests to demonstrate compliance with the BACT emission limits shall begin within two years after maintaining the permitted production rate. Compliance will be demonstrated using the following EPA reference methods:

Rationale:

The quarrying operation is subject to opacity limitations under Subpart OOO, the kiln and clinker cooler are subject to particulate and opacity limitations under Subpart F, and the coal mill baghouse is subject to particulate grain loading and opacity limitations under Subpart Y. Initial compliance testing to demonstrate compliance is required within 180 days of maintaining the permitted production rate.

Performance testing to demonstrate compliance with the BACT emission limits (including opacity limits) will be performed within two years of achieving and maintaining the permitted production rate.

Comment: [Specific Condition #6]

Will Method 5 be used to demonstrate compliance for PM10 as well as PM?

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Comment: [Specific Condition #6]

~~**Method 22** Visual Determination of Fugitive Emissions from Material — Sources~~

Rationale:

Method 22 is used on fugitive emission sources to determine only frequency of emissions, not opacity of emissions.

Comment: [Specific Condition #6]

Method 25A Determination of Volatile Organic Compound Emissions from Stationary Sources

Rationale:

Method 25A (instead of Method 25) for VOC is allowed by BACT.

Comment: [Insert new Specific Condition between #6 and #7]

The maximum allowable emission rate from the twenty (20) process baghouses is limited to 0.01 grains/dscf. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, and because baghouse control devices are utilized, the Department, pursuant to the authority granted under Rule 62-297.620(4), F.A.C., hereby allows a visible emission limitation not to exceed an opacity of 5% in lieu of the particulate stack test.

Should the Department have reason to believe the particulate emission standard is not being met, the Department may require that compliance with the particulate emission standard be demonstrated by testing in accordance with Rule 62-297, F.A.C.

[Rule 62-297.620(4), F.A.C.]

Rationale:

The Department's BACT Determination (page 13 of 13) states that BACT for the process baghouses is 10% opacity. Florida Rock requests an opacity limitation of 5% in lieu of stack testing for the twenty (20) baghouses.

Comment: [Specific Condition #7]

7. An operating log shall be established and maintained for the weight of tires fired. The log shall include the daily tire usage, a monthly running total of the tire usage, and a cumulative annual running total to ensure that the annual limit is not exceeded. The log shall be maintained on file for at least ~~five (5)~~ two (2) years and shall be made available to the Department upon request. Records of the quantity and analysis of coal and fuel oil consumed and invoices for all fuel purchases along with logs for all raw materials and products shall be kept for a minimum of ~~5~~ 2 years.

Rationale:

The recordkeeping provisions of 40 CFR 60.7 require that records be maintained for at least two (2) years.

Comment: [Specific Condition #9]

9. ~~All measurements, records, and other data required to be maintained by the permittee~~ An excess emissions report shall be reported supplied to the Northeast District office on a quarterly basis with the start of commercial operation in accordance with 40 CFR 60.7. All measurements, records and other data required to be maintained by the permittee shall be retained for at least ~~5~~ 2 years following the date on which such measurements, records, or data are recorded. The data shall be available to Department staff as requested. [40 CFR 60.7]

Rationale:

40 CFR 60.7 requires the quarterly submittal of only an excess emissions report. 40 CFR 60.7 requires that records be maintained for at least two (2) years.

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Comment: [Specific Condition #10]

10. Unconfined particulate matter emissions shall be minimized by dust suppressing techniques, such as covering storing materials under cover and/or application of water or chemicals to the affected areas.

Comment: [Specific Condition #11]

11. Particulate emissions from coal handling facilities shall be minimized by following the procedures listed below: [Rule 62-296.310(3)]

- a. ~~All conveyors and transfer points shall be enclosed to preclude particulate emissions (except those directly associated with coal stacking/reclaiming).~~
- a. Coal shall be received in a moist condition and stored under cover or in an enclosed bin to limit particulate emissions.
- c. Water sprays or chemical wetting agents and stabilizers shall be applied to storage piles, handling equipment, etc. ~~during dry periods and as necessary to all facilities to maintain an opacity of less than 5 percent, except when adding, moving or removing coal from the coal pile, during which the opacity shall be no more than 20 percent.~~

Rationale:

Coal is shipped and received wet, and no other precautions are necessary to limit unconfined particulate emissions (UPM). The 5% opacity limit is unnecessarily stringent when compared to the allowable opacity (20%) under NSPS Subpart Y.

Comment: [Specific Condition #12]

~~12. In the event of any malfunction resulting in failure of emission control equipment or any malfunction of process equipment resulting in kiln emissions exceeding limits set forth in Tables I and II, the operator shall immediately stop the feeding of tires into the kiln and shall not resume the firing of tires until the emission control equipment has been put into proper working order.~~

Rationale:

There is no justification for this condition. There is no link established between excess emissions (VE or mass) and tires as fuel.

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Comment: [Specific Condition #18]

18. Storage of ~~solid waste~~ recyclable materials at the facility shall not be in violation of the prohibitions of FAC Rule 62-701.300. In addition, ~~all solid waste materials~~ gypsum, coal ash, and iron oxides to be used in cement production shall be stored under cover, on compacted clay, to prevent the generation of runoff or leachate.

Rationale:

The gypsum, coal ash and other types of iron oxide intended for use as raw materials are defined as recyclable materials under FAC Rule 62-701.

Comment: [Specific Condition #19]

Request: Please provide details on what will be required in the CMP.

Comment: [Specific Condition #20]

~~In the event that baghouse or ESP catches come in contact with the soil, the waste shall be collected and a hazardous waste determination performed for metals in accordance with 40 CFR 262.11 and FAC Rule 62-730.160. If the material is not hazardous, it shall be reused, sold or disposed a permitted lined landfill. If the material is hazardous, it shall be disposed of in a permitted hazardous waste disposal facility.~~

Rationale:

There is no justification to treat baghouse or clinker cooler ESP catch as CKD or hazardous material. There is not documentation that CKD from a conventional fuel kiln is hazardous.

III. Comments regarding **"BACT Determination"**:

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Comment:

The BACT emission levels are established by the Department as follows:

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<u>Source</u>	<u>Pollutant Emission Limit</u>
Kiln (SO ₂)	0.28 lbs/ton clinker (interim) 24 hr rolling average. Coal (0.75% sulfur by weight), No. 2 fuel oil (0.05% sulfur by weight), and tires (up to 30% of heat input) are the only fuels allowed
Kiln (NO _x)	2.5 lbs/ton clinker - 24 hr rolling average <u>2.8 lbs/ton clinker - 30 day rolling average</u>

Rationale:

The SO₂ emission limit is sufficient without restricting coal sulfur content. The NO_x emission limit was revised at an October 24, 1995 meeting between FRI and the Department.

Thank you again for your cooperation in these matters. Please do not hesitate to call us to discuss our comments further.

Sincerely,



Segundo J. Fernandez

c: Mr. Fred Cohrs, Florida Rock Industries, Inc.
Mr. Steve Cullen, Koogler & Associates

CC: EPA
NPS
a. Saarinen
NED
NEDB
M. Sullivan, Atachua Co.
J. Braswell

TERESA Heron
Cleve Holladay

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OCT 20 1995
BUREAU OF
AIR REGULATION

October 20, 1995

Via Hand Delivery

Mr. Al Linero
Division of Air Resources Management
111 South Magnolia
Tallahassee, Florida 32301

Dear Mr. Linero:

Attached is an analysis of the comparability of the BACT determination in California versus the proposed Florida Rock facility. This is being provided for discussion purposes at the meeting on Tuesday, October 24 at 1:00 p.m. with Florida Rock.

We look forward to further discussing this with you at that time.

Sincerely,

Terry Cole for
Segundo J. Fernandez

SJF:nhg

Attachment

cc: Mr. Clair Fancy (w/attachment)

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OCT 17 '95 06:32PM POLYSIUS CORP

P.2/4

Florida Rock

NOx emission

The emission level of NOx in the exhaust gas is primarily influenced by the volatility of the fuel and the chemical composition of fuel and raw material.

The total amount of NOx emission is obviously a function of the fuel consumption.

The higher the necessary consumption of BTU/LB of clinker the more NOx emissions.

Also the specific fuel consumption (kcal/kg cl. or btu/lb clinker) is the function of the selected system. In Florida Rock case it is 780 kcal/kg cl. This is most economical solution for this application.

As per attached data it is shown that the NOx formation in calciner as a function of the volatile content in the fuel.

In this case the difference between 40% volatile and 32 % is 0.5 g NOx /kg clinker or 1.1 Lb. NOx /ST. Clinker

If the emission of 2.5 lb/st clinker is used as a base for comparison, than the new level for Florida Rock must be 3.5 lb/st clinker. by considering only lower volatile matter in the fuel.

In addition this level should be increased to 3.81 lb/st due to the higher fuel consumption compared to California Calaveras Plant as calculated in the attached.

Best Regards,

Oleg Geshin
Oleg Geshin

10/18/95

OCT 17 '95 26:32PM POLYSIUS CORP

P. 3/4

Sheet1

Florida Rock 10/17/95

NOx normalize calculations

The following calculations to normalize the NOx emission for Florida Rock Plant.

Basic emission lb/st 2.5

1 Fuel Consumption

		Florida Rock	Calaveras
Production rate,	stph	2300	3000
System exit temperature	Deg. C.	350	297
Specific heat value,	kcal/kg. cl	780	690
Higher specific fuel consumption	kcal/kg. cl	90	0
Production rate	kg/hr	67121	113036
Additional specific fuel required	kg/hr.	1176	0
Total fuel required	kg/hr	10180	11755
Additional specific fuel required	%	11.5	0.0
NOx emission increased	lb/st	0.28	0.00
Normalized Emission level (considering volatile matter.)	lb/st	3.78	

**2. Burnability difference assumed 20 kcal/kg clinker.
Only 5% changes considered.**

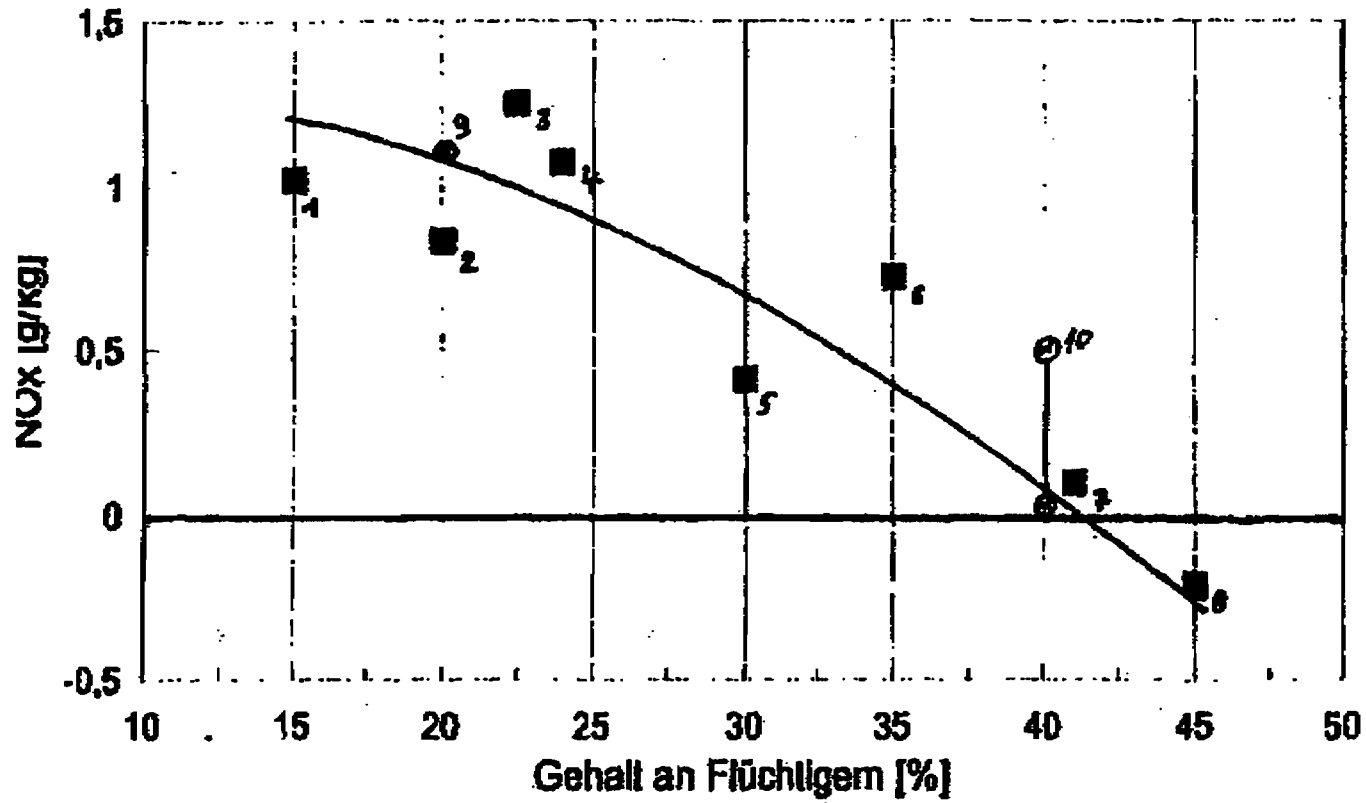
Additional fuel required	kg/hr	251.2
Percent increased	%	0.08
NOx emission increased	lb/st	3.81

By O.G.

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NOx in Calciner as a function of
the Volatiles Content of the Fuel

NOx im Calcinator als Funktion vom Gehalt an Flüchtigem im Brennstoff



Volatiles Content

TOTAL P.04



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 187-94-02

October 19, 1995

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BUREAU OF
AIR REGULATION

Ms. Anne Barkdoll
Alachua County Environmental
Advisory Committee
2308 S.E. 41st Ave.
Gainesville, FL 32601

Subject: Alachua County Environmental Protection
Advisory Committee Meeting
October 5, 1995
Florida Rock Industries

Dear Ms. Barkdoll:

I would like to express my appreciation and the appreciation of Florida Rock Industries for the opportunity to make a presentation describing the proposed Florida Rock cement plant project during the October 5, 1995, Alachua County Environmental Protection Advisory Committee meeting. We appreciate any opportunity to provide factual information regarding the project.

When you contacted our office on September 25, 1995, regarding the meeting and in subsequent telephone conversations, you requested a presentation describing the Florida Rock project and an opportunity to question Florida Rock personnel about the project. It became evident from the questions that followed our presentation that the major concern of certain committee members was the emission estimates that we presented to the Alachua County Commission during the hearing for Florida Rock's request for a Special Use Permit in November 1994 and the emission rates requested in our permit application to the Florida Department of Environmental Protection (FDEP). This was evident from the prepared memo, dated July 19, 1995, to you and others from Dave Newport (an EPAC member) to which we were asked to respond. While we were able to respond to these questions in qualitative and quantitative terms, we feel that your committee's purposes would have been better served and our response could have been more specific if you had been more forthright in detailing the subject matter you intended us to address.

As we stated in response to questions from Committee members, the emissions rates presented in the Alachua County Commission were our best estimates at the time of average emission rates from the proposed plant based on actual emissions measured from other operating dry process cement plants in Florida.

It should also be recognized, as we stated during the Committee meeting, that at the time of the November 1994 Alachua County Commission hearing, the cement plant proposed by Florida Rock was in the conceptual planning stage. The equipment supplier for the plant had not been selected and the details of the plant design had not been finalized.

Since the November 1994 hearing, the Polysius Corporation has been selected to prepare plans for the plant and to provide specific emission estimates for air pollutants based on the specific plant design they are proposing and site specific raw materials. These emission estimates were reduced as deemed necessary by Koogler & Associates to conform to Best Available Control Technology (BACT) demonstrated by other cement plants, taking into consideration site specific parameters. These emission rates were presented in the permit application to FDEP as emission rates not to be exceeded (as opposed to average emission rates).

During the review of the permit application, FDEP further reduced some of the emission rates proposed by Florida Rock based on information available to that agency. The emission rates appearing in the draft permit issued by FDEP on September 28, 1995, are a result of these reductions.

In the attached table, I have summarized the average measured emission rates of air pollutants from operating dry process cement plants in Florida (the emission rates I used for the estimates presented to the County Commission), the emission rate estimates presented to the Alachua County Commission in November 1994, the emission rates presented in our permit application to FDEP and the emission rates contained in the draft FDEP permit. For your information, we have specific test data documenting the variability of emissions from cement plants operating in Florida and the average of these emissions rates. These data support the estimated average emission rates that we presented to the County Commission in November 1994. The difference between the average emission rates and the permitted not to exceed emission rates are due to normal day-to-day fluctuations in emissions from modern cement plants throughout the U.S. as recognized by the U. S. Environmental Protection Agency, FDEP, Polysius and Florida Rock.

In reviewing the attached table, the following should be recognized or noted:

- * In all cases, the estimated average emission rates that we presented to the County Commission in November 1994 are higher than the average emission rates measured at existing cement plants in Florida. This was a conscious attempt on our part to be conservative in our estimates so as to not mislead the Commissioners.



Ms. Anne Barkdoll
Alachua County Environmental
Advisory Committee

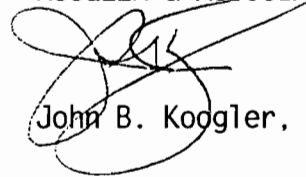
October 19, 1995
Page 3

- * The emission rates not to be exceeded that were presented in the Florida Rock permit application represented the joint experience of Polysius, Florida Rock and Koogler & Associates and site specific considerations.
- * The emission rates not to be exceeded in the draft FDEP permit were based on the best demonstrated control at operating cement plants in the U.S. regardless of site specific conditions.
- * CO and NOx emissions are interdependent (as one increases, the other decreases). FDEP elected to require the maximum control on NOx emissions (reduced to 250.8 lb/hr) and to allow some flexibility in CO emissions.

Again, we appreciated the opportunity to appear before your committee and will be happy to answer any additional questions that you may have.

Very truly yours,

KOOGLER & ASSOCIATES



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

JBK:wa

c: Mr. Charles Chestnut III, County Commission
Ms. Margaret Eppes, County Commission
Ms. Kate Barnes, County Commission
Ms. Leveda Brown, County Commission
Mr. Robert Summers, County Commission
Mr. Chris Bird, ACDEP
Mr. A. Linero, FDEP
Mr. Fred Cohrs, Florida Rock



ESTIMATED AVERAGE AND PERMITTED (NOT TO EXCEED)
EMISSION RATES FOR PROPOSED
FLORIDA ROCK INDUSTRIES CEMENT PLANT
(95.8 TPH CLINKER)

ALACHUA COUNTY, FLORIDA

	Measured Average Emission Rate from Operating Florida Cement Plants (lb/hr)	Estimated Average Emission Rate from Proposed Florida Rock Plant Presented to County Commission (lb/hr)	Maximum Not to Exceed Emission Rate in Florida Rock Permit Application to FDEP (lb/hr)	Maximum Not to Exceed Emission Rate in FDEP Draft Permit (lb/hr)
Total PM	21.7	50	78.4	63.4
SO ₂	2.6	15	53.7	30.8
NOx	181.2	450	446.4	250.8
CO	54.4	60	356.0	347.8





KOUGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

K&A 187-94-02

August 24, 1995

Mr. A. A. Linero, P.E.
Administrator
New Source Review Section
FDEP-DARM-BAR

RECEIVED

AUG 28 1995

Bureau of
Air Regulation

SUBJECT: Florida Rock Industries, Inc.
Newberry Cement Plant
Permits Nos. AC01-267311 and PSD-FL-228

Dear Mr. Linero:

I am writing to thank you for meeting with us yesterday, and to confirm the status of the air construction permit application for the Florida Rock cement plant. You stated that the Department considered the application complete as of July 3, 1995; which was the date of receipt of the additional information requested on June 16, 1995. Your determination of completeness confirmed the same information received yesterday from Jeff Braswell (FDEP-OGC).

We expect that further permit processing will proceed under the 90 day time clock, and that the Department will issue a *Notice of Intent* before October 2, 1995.

As the timing of other project elements is dependent on construction permit issuance, we request that the *Notice of Intent* be issued prior to October 2, 1995. We are prepared to provide clerical or other resources to facilitate faster processing.

If further information is required, please do not hesitate to call me.

Sincerely,

Steven C. Cullen, P.E.
Koogler & Associates

copies to: Fred Cohrs, FRI
Jeff Braswell, FDEP-OGC



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

August 21, 1995

Mr. William Schaad
Knoxville Department of Air Pollution Control
City County Building
400 Main Avenue
Knoxville, Tennessee 37902

RE: Cement Kiln Stack Test Results

Dear Mr. Schaad:

As per our telephone conversation last week, I am hereby requesting information regarding air emission data/permit limits (PM, PM₁₀, SO₂, NO₂, CO, HAPS, VOC) for the cement plant facility in your area. We are in the process of evaluating an application to construct two cement plant facilities in Florida. Any information you can supply us will be of great help.

If you have any questions about this request, please call me at (904) 488-1344.

Sincerely,

Teresa Heron
Permitting Engineer
New Source Review Section
Bureau of Air Regulation

TH/kt



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
 4014 NW THIRTEENTH STREET
 GAINESVILLE, FLORIDA 32609
 904/377-5822 • FAX 377-7158

August 15, 1995

Mr. A. A. Linero, P.E.
 Administrator
 New Source Review Section
 FDEP-DARM-BAR

SUBJECT: K&A 187-94-02
 Florida Rock Industries, Inc.
 Newberry Cement Plant
 Permits Nos. AC01-267311 and PSD-FL-228
 Response to Request for Additional Information, dated 01-AUG-1995

Dear Mr. Linero:

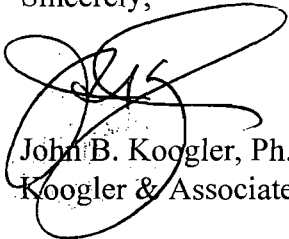
Enclosed please find the requested information for the referenced project. The format of this response is as follows:

1. All questions have been reproduced, preserving original numbering.
2. Responses follow each question.

Florida Rock Industries, Inc. hereby requests that the Air Construction Permit application be deemed complete as of August 3, 1995; which was 30 days after Department receipt of the additional information requested on 16-JUN-1995. Permit processing should proceed as the information request of 01-AUG-1995 does not involve substantial new technical information.

If further information is required, please do not hesitate to call me or Steve Cullen (Project Engineer) at (904) 377-5822.

Sincerely,



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

RECEIVED

AUG 16 1995

Bureau of
 Air Regulation

copy to: Fred Cohrs, FRI

cc: T. Heron
 C. Holladay
 P. Reynolds, NEDB
 * a. Saarinen
 * P. Walthers

NED
 EPA
 NPS
 M. Costello

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
Florida Rock Industries, Inc. - Newberry Cement Plant
Permits Nos. AC01-267311 and PSD-FL-228

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Question 12	6
APPENDIX A:	Analyses of Typical Raw Materials
APPENDIX B:	Typical Cement Analyses
APPENDIX C:	Personnel Training Program

- 1. Please provide some details regarding the control of unconfined emissions during the handling of the coal ash (bottom and fly ash).**

RESPONSE:

The ash will be loaded into dump trucks at either the Gainesville Regional Utilities power plant or the Seminole (Palatka) power plant. The ash will be loaded either from open stockpiles or directly from nodulizing mixers. Both power plants add 6-8% water to the ash.

At the cement plant the dump trucks will empty the ash into the covered storage hall, from where it will be conveyed into the raw mill for drying and grinding. The ash will be combined in the raw mill with limestone and overburden from the Newberry quarry.

The moisture content of the ash will limit the generation of uncontrolled particulate matter (UPM) emissions.

- 2. Iron oxide storage is shown as a pile under in a covered area. How will it be stored and fugitive emissions controlled if the final iron source chosen contains dusty components and impurities? Is slag from metal smelting under consideration?**

RESPONSE:

Florida Rock plans to use iron ore only if the power plant ash has a low iron content. Water sprays will be used on iron ore stockpiles, if necessary, to limit the generation of UPM.

Slag from metal smelting is not under consideration as an iron source, because its iron content is too low.

- 3. Submit a projected chemical analysis of the raw materials and additives likely to be used at this plant.**

RESPONSE:

Appendix A contains analyses of the projected raw materials (overburden, limestone, coal ash and iron oxide). The gypsum will be nearly pure calcium sulfate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).

- 4. Submit a projected analysis of the cement kiln dust (CKD) based on the likely raw material sources and the process to be used at the planned facility. Indicate if and why this CKD composition may differ from CKD from other plants.**

RESPONSE:

CKD (Cement Kiln Dust) is defined in the EPA's *Report to Congress on CKD* (December 1993), as follows:

CKD is a fine-grained solid material generated as the primary by-product of the production of cement. CKD generation results directly from [the smokestack] control of particulate matter that would otherwise be discharged. In contrast to many other residues of industrial production, CKD is essentially an off-specification product: it much more closely resembles the raw material entering and product leaving the operation than many other industrial wastes.

This definition identifies CKD as the particulate matter captured by the ESP at the Florida Rock cement plant; and further describes the CKD as resembling the raw material and product streams. The projected analysis of the CKD at this plant is therefore the projected analyses of the raw materials used (Appendix A) and cement produced (Appendix B).

At many cement plants the CKD is a waste material which is not returned to the process for various process or product quality reasons, such as:

- Raw materials high in alkalis results in CKD high in alkalis, reintroduction to the process would result in off-specification product
- Raw materials high in chlorides results in CKD high in chlorides, reintroduction to the process tends to clog the ducts in the preheater
- Most wet-process kilns are unable to reintroduce the collected dust, as it is difficult to mix the hot dust with the cold slurry

The raw materials to be used at the Florida Rock cement plant are low in alkalis and chlorides, and reintroduction of the CKD into the process precludes the generation of CKD as a waste material.

5. **Storage tanks facilities meeting the applicability requirements under 40 CFR 60, NSPS Subpart Kb are subject to this regulation. Please evaluate the proposed storage tanks (capacity and emissions) at this facility to determine if they will comply with this regulation.**

RESPONSE:

NSPS Subpart Kb applies to “each storage vessel with a capacity greater than or equal to 40 cubic meters (m³) that is used to store volatile organic liquids”.

$$40 \text{ m}^3 \times 264.17 \text{ gallons/m}^3 = 10,567 \text{ gallons}$$

However, storage vessels with capacities:

1. Less than 75 m³ (19,813 gallons), or
2. Greater than 151 m³ (39,890 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kPa (0.5 psi), or
3. Greater than 75 m³ (19,813 gallons) but less than 151 m³ (39,890 gallons) storing a liquid with a maximum true vapor pressure less than 15.0 kPa (2.2 psi),

are subject only to 40CFR60.116b paragraphs (a) and (b). These paragraphs require that the owner or operator “keep readily accessible records (for the life of the source) showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel”.

The only volatile organic liquid which will be stored in vessels with capacities greater than 40 m³ will be No. 2 fuel oil with a maximum true vapor pressure of less than 0.2 kPa (0.022 psi). The No. 2 fuel oil will most likely be stored in two 12,000 gallon tanks. Any existing and proposed fuel oil storage tanks will only need readily accessible records detailing tank dimensions and capacities. The storage tanks at this plant will comply with the requirements of 40 CFR 60, NSPS Subpart Kb, if applicable.

6. **Has Florida Rock Industries applied to the Department for any other required permits (stormwater, solid waste, industrial waste, etc)? What other environment-related federal or local permits does this facility already have or need (e.g. NPDES, dredge and fill, etc.)? Is the existing mining operation in compliance with its existing permits?**

RESPONSE:

Florida Rock has identified the need for two other required permits: a water withdrawal permit and a stormwater management permit. Application has not been made for either of these permits, at this time.

The existing mining operation is in compliance with applicable regulations.

- 7. Please describe your program (such as enhanced or continuous monitoring, pollution control equipment maintenance) to insure that emissions limits will be met on a continuous basis.**

RESPONSE:

Continuous Emissions Monitors (CEM) measuring stack gas opacity are required for both the clinker cooler stack and the kiln stack by 40CFR60, NSPS Subpart F. These CEMs will be installed and operated as required.

The gas which exits through the kiln/raw mill stack will also be continuously monitored for oxygen and combustibles, including carbon monoxide, for process control.

A minimum of two plant personnel will be trained in the determination of opacity of emissions, to monitor visible emissions from all dust collectors in the plant.

The dust collectors are compartmentalized to allow taking any portion of the collector out of service at any time for inspection and maintenance. During scheduled plant downtime, all of the baghouses will be inspected using ultraviolet light and dye to locate worn or broken bags. Prior to the end of the expected service life of the bags, entire compartments of bags will be replaced.

The electrostatic precipitators (ESPs) operate with automatic voltage control, which keeps the collection capacity at its peak at all times. During scheduled plant downtime, the ESPs are entered for inspection and replacement of suspect electrodes. The ESPs can also be maintained by reducing production rates and isolating single compartments for inspection and maintenance.

Process uniformity is necessary to produce consistent product quality. This process uniformity will limit emissions variability.

- 8. Submit the design specification and the operating and maintenance manual for the equipment (kiln, baghouses, ESP) used at this facility.**

RESPONSE:

Design specifications were submitted for the kiln, both ESPs, and the baghouses, as part of the original application. Additional information on the baghouses was submitted on 16-May-1995, 25-July-1995, and 2-August-1995.

Operation and maintenance manuals will not be available until vendors are selected and construction has commenced. Copies of these manuals will be submitted when available, if required.

- 9. Has Florida Rock Industries, or its parent company had any violations of Department regulations at any of their facilities? Please provide all documentation in relation to these violations.**

RESPONSE:

This information is not necessary for processing the Application to Construct.

- 10. What will be the qualifications with respect to pollution control of personnel who will operate the Company's Newberry facility? Are any training programs planned for plant personnel in the area of pollution prevention?**

RESPONSE:

The operators will be trained by the equipment suppliers and by experienced plant operating supervisors. The contractual commitment regarding training is included as Appendix C. Personnel training will address all aspects of cement manufacturing and all equipment at the plant, including operation and maintenance of pollution control equipment.

- 11. Is there potential for post combustion formation of dioxins and furans? If so, how will this be minimized?**

RESPONSE:

The BIF Rule (Burning of Hazardous Wastes in Boilers and Industrial Furnaces) discusses the post-combustion formation of chlorinated dibenzodioxins and dibenzofurans(CDD/CDF), in Part Three of the Preamble: Standards for Boilers and Industrial Furnaces Burning Hazardous Waste. The following information is excerpted from Section II - Controls for Emissions of Toxic Organic Compounds, Part E - Control of Dioxin and Furan Emissions.

The Agency considers a facility to have the potential for significant CDD/CDF emissions if it is equipped with a dry particulate control device (e.g., fabric filter or electrostatic precipitator) with an inlet gas temperature within the range of 450 to 750°F.

At the Florida Rock cement plant, the typical inlet gas temperature to the ESP, under compound operation, will be approximately 230°F. When the kiln is in direct operation, the typical inlet gas temperature to the ESP will be approximately 430°F.

The proposed plant will not have significant potential for the post-combustion formation of dioxins or furans, based on the inlet gas temperatures to the ESP. The potential for formation of dioxins and furans will also be minimized by chlorine capture in the clinker, and by the use of a gas-conditioning spray tower when the kiln is in direct operation.

12. **Identify and address the air quality impacts on any sensitive areas in the vicinity of the cement plant (i.e., sources of drinking water, farm crops, fish ponds, livestock, etc.) that may be more susceptible to atmospheric deposition caused by the project's proposed air emissions.**

RESPONSE:

The air quality impacts from the cement plant have already been adequately addressed in the submittal of 16-May-1995. Air emissions were modeled, and projected ambient air concentrations were compared with ambient air quality standards. All modeled concentrations are less than applicable Ambient Air Quality Standards (Federal primary and secondary, and State). Further, modeled concentrations are below the Class II area PSD increments, designed to prevent significant deterioration of the air quality in a given area.

The primary air quality standards are established to protect human health, while the secondary standards are defined as follows:

40CFR50.2: National secondary ambient air quality standards define levels of air quality which the Administrator judges necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

62-275.200(3)(c), FAC: "Secondary standard" means an ambient standard established to protect the public welfare including the protection of animal and plant life, property, visibility and atmospheric clarity, and the enjoyment of life and property.

The Florida Ambient Air Quality Standards (FAAQS) are more restrictive than the National secondary ambient air quality standards, and are established to protect human health and public welfare as defined by 62-275.200(3)(c).

Table 12-1 shows the maximum modeled ambient air concentrations of the air emissions (including the 20-D inventory and background concentrations where appropriate) as compared to the applicable FAAQS.

**TABLE 12-1
MAXIMUM AMBIENT CONCENTRATIONS VERSUS FAAQS**

**FLORIDA ROCK INDUSTRIES, INC.
NEWBERRY CEMENT PLANT
ALACHUA COUNTY, FLORIDA**

POLLUTANT	AVG. PERIOD	CONCENTRATION, ug/m³	FAAQS, ug/m³	%/FAAQS
PM10	24-HOUR	55	150	37%
PM10	ANNUAL	31	50	62%
SO2	3-HOUR	205	1300	16%
SO2	24-HOUR	65	260	25%
SO2	ANNUAL	15	60	25%
NOx	ANNUAL	37	100	37%
CO	1-HOUR	142	40,000	0.4%
CO	8-HOUR	99	10,000	1%
LEAD	QUARTERLY	<0.01	1.5	1%

APPENDIX A

ANALYSES OF TYPICAL RAW MATERIALS

5420 Old Orchard Road, Skokie, Illinois 60077-1030
708/965-7500 800/522-2CTL Fax: 708/965-6541

Client: **Cohrs Company, Inc.**
Project: **Chemical analysis**
Submitter: **Mr. Fred Cohrs**
Date: **9/16/94**

CTL Project No.: **000035**
CTL Proj. Mgr.: **Dr. John Fraczek**
Analyst: **Don Broton**
Approved: **Ella Shkolnik**

REPORT OF CHEMICAL ANALYSIS

Client's Sample ID: **N2 Overburden Pile**
CTL Sample ID: **912597**

<u>Analyte</u>	<u>Weight %</u>
SiO ₂	54.09
Al ₂ O ₃	20.19
Fe ₂ O ₃	2.96
CaO	6.09
MgO	0.43
SO ₃	0.09
Na ₂ O	0.05
K ₂ O	0.10
TiO ₂	0.80
P ₂ O ₅	1.63
Mn ₂ O ₃	0.02
SrO	0.17
LOI	12.44
<u>Total</u>	<u>99.05</u>
Alkalies as Na ₂ O	0.11
Ca as CaCO ₃	10.87

Notes:

1. This analysis represents specifically the sample submitted.
2. Results reported on an oven dry (105C) basis.
3. Oxide analysis by X-ray fluorescence spectrometry. Samples fused at 1000C with Li₂B₄O₇.
4. Elemental sulfur and sulfide sulfur may be lost during high temperature fusion.

5420 Old Orchard Road, Skokie, Illinois 60077-1030
708/965-7500 800/522-2CTL Fax: 708/965-6541

Client: **Cohrs Company, Inc.**

Project: **Chemical analysis**

Submitter: **Mr. Fred Cohrs**

Date: **9/16/94**

CTL Project No.: **000035**

CTL Proj. Mgr.: **Dr. John Fraczek**

Analyst: **Don Broton**

Approved: **Ella Shkolnik**

REPORT OF CHEMICAL ANALYSIS

Client's Sample ID: **N3 Grey Brown Clay- Pipe Filling. North Pit, North Face**
CTL Sample ID: **912598**

<u>Analyte</u>	<u>Weight %</u>
SiO ₂	74.08
Al ₂ O ₃	14.95
Fe ₂ O ₃	1.61
CaO	1.21
MgO	0.28
SO ₃	0.06
Na ₂ O	<.02
K ₂ O	0.06
TiO ₂	0.58
P ₂ O ₅	1.12
Mn ₂ O ₃	0.02
SrO	0.11
LOI	6.10
<u>Total</u>	<u>100.19</u>
Alkalies as Na ₂ O	0.04
Ca as CaCO ₃	2.17

Notes:

1. This analysis represents specifically the sample submitted.
2. Results reported on an oven dry (105C) basis.
3. Oxide analysis by X-ray fluorescence spectrometry. Samples fused at 1000C with Li₂B₄O₇.
4. Elemental sulfur and sulfide sulfur may be lost during high temperature fusion.

5420 Old Orchard Road, Skokie, Illinois 60077-1030
708/965-7500 800/522-2CTL Fax: 708/965-6541

Client: **Cohrs Company, Inc.**
Project: **Chemical analysis**
Submitter: **Mr. Fred Cohrs**
Date: **9/16/94**

CTL Project No.: **000035**
CTL Proj. Mgr.: **Dr. John Fraczek**
Analyst: **Don Broton**
Approved: **Ella Shkolnik**

REPORT OF CHEMICAL ANALYSIS

Client's Sample ID: **N4 Sand- Pipe Filling, North Pit, North Face**
CTL Sample ID: **912599**

<u>Analyte</u>	<u>Weight %</u>
SiO ₂	95.26
Al ₂ O ₃	2.92
Fe ₂ O ₃	0.44
CaO	0.14
MgO	<.01
SO ₃	0.04
Na ₂ O	<.02
K ₂ O	0.02
TiO ₂	0.22
P ₂ O ₅	0.13
Mn ₂ O ₃	0.01
SrO	0.03
LOI	0.91
<u>Total</u>	<u>100.14</u>
Alkalies as Na ₂ O	0.01
Ca as CaCO ₃	0.26

Notes:

1. This analysis represents specifically the sample submitted.
2. Results reported on an oven dry (105C) basis.
3. Oxide analysis by X-ray fluorescence spectrometry. Samples fused at 1000C with Li₂B₄O₇.
4. Elemental sulfur and sulfide sulfur may be lost during high temperature fusion.

Client: **Cohrs Company, Inc.**
Project: **Chemical analysis**
Submitter: **Mr. Fred Cohrs**
Date: **9/16/94**

CTL Project No.: **000035**
CTL Proj. Mgr.: **Dr. John Fraczek**
Analyst: **Don Broton**
Approved: **Ella Shkolnik**

REPORT OF CHEMICAL ANALYSIS

Client's Sample ID: **N5 Limestone - South Pit, Below Floor Level**
CTL Sample ID: **912600**

<u>Analyte</u>	<u>Weight %</u>
SiO ₂	1.80
Al ₂ O ₃	0.34
Fe ₂ O ₃	0.23
CaO	53.71
MgO	0.27
SO ₃	0.04
Na ₂ O	0.04
K ₂ O	0.01
TiO ₂	0.01
P ₂ O ₅	0.14
Mn ₂ O ₃	0.01
SrO	0.02
<u>LOI</u>	<u>42.94</u>
Total	99.57
Alkalies as Na ₂ O	0.05
Ca as CaCO ₃	95.85

Notes:

1. This analysis represents specifically the sample submitted.
2. Results reported on an oven dry (105C) basis.
3. Oxide analysis by X-ray fluorescence spectrometry. Samples fused at 1000C with Li₂B₄O₇.
4. Elemental sulfur and sulfide sulfur may be lost during high temperature fusion.

FROM: OMNIFAX(1)

TO:

703

OCT 3, 1994 10:02AM #413 P.02



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306

SINCE 1908

Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
216 OXMOOR CIRCLE, BIRMINGHAM, AL 35209
TEL: (205) 942-3120
FAX: (205) 942-0914

May 31, 1994

Gainesville Regional Utilities
P.O. Box 147117
Gainesville Florida 32614

Sample identification by
Gainesville Regional Utilities

Kind of sample reported to us Bottom Ash - Unit 2 Boiler
Sample taken at Deerhaven Generating Station
Sample taken by Gainesville Regional Utilities
Date sampled -----
Date received May 24, 1994

Analysis Report No. 73-47377

<u>ANALYSIS OF ASH</u>	<u>WEIGHT %, IGNITED BASIS</u>
Silicon dioxide	54.77
Aluminum oxide	28.88
Titanium dioxide	1.45
Iron oxide	8.28
Calcium oxide	2.16
Magnesium oxide	0.93
Potassium oxide	2.38
Sodium oxide	0.40
Sulfur trioxide	0.17
Phosphorus pentoxide	0.26
Strontium oxide	0.15
Barium oxide	0.08
Manganese oxide	0.09
Undetermined	<u>0.00</u>
	100.00

Silica Value = 82.81
Base:Acid Ratio = 0.17
T250 Temperature = 2813 °F
Loss On Ignition = 13.50

Type of Ash = BITUMINOUS
Fouling Index = 0.07
Slagging Index = xxxxx

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO

John T. [Signature]



RESOURCE MATERIALS TESTING, INC.

"Specialists in Fly Ash Testing"

RECEIVED
AUG - 9 1994

REPORT OF FLY ASH ANALYSIS

JTM INDUSTRIES

TO: JTM Industries
Attn: Mr. Larry Perryman
1000 Cobb Place Blvd., Bldg. 400
Kennesaw, GA 30144

PROJECT NO.: RMT-169
SAMPLE NO.: 5472
DATE REC.: 7-6-94
DATE REP.: 8-8-94

PROJECT NAME: Palatka Plant Fly Ash Quality Assurance Program
SAMPLE ID: Class F Fly Ash Jun '94

CHEMICAL ANALYSES		
PARAMETER	RESULTS	ASTM C618 SPEC. F/C
Silicon Dioxide, SiO ₂ , %	48.78	---
Aluminum Oxide, Al ₂ O ₃ , %	22.26	---
Iron Oxide, Fe ₂ O ₃ , %	19.89	---
Sum of SiO ₂ , Al ₂ O ₃ and Fe ₂ O ₃ , %	90.93	70/50 min
Calcium Oxide, CaO, %	4.19	---
Magnesium Oxide, MgO, %	0.72	---
Sodium Oxide, Na ₂ O, %	---	---
Potassium Oxide, K ₂ O, %	---	---
Sulfur Trioxide, SO ₃ , %	0.72	5.0 max
Moisture Content, %	0.30	3.0 max
Loss on Ignition, %	4.73	6.0 max
Available Alkalies as Na ₂ O, %*	0.76	1.5 max
PHYSICAL ANALYSES		
Amount Retained on No. 325 Sieve, %	14.3	34 max
Strength Activity Index		
Portland Cement at 7 days, % of Control	94	75 min
Portland Cement at 28 days, % of Control	100	75 min
Water Requirement, % of Control	98	105 max
Autoclave Expansion, %	-0.02	0.8 max
Specific Gravity	2.48	---
Increase of Drying Shrinkage, %*	---	0.03 max
Reactivity with Cement Alkalies, %*	---	---
Reduction of Mortar Expansion, %	---	---
Mortar Expansion, %	---	0.020 max
Air Entrainment of Mortar, %	---	---

*Optional requirements applicable only when requested by purchaser.
This material meets the requirements of ASTM C618 for the parameters tested, and FL DOT 929.

By Robert L. Smith
Robert L. Smith, Ph.D.

JTM

To	Fred Coors	From	David Marshall
Co.		Co.	JTM
Dept.		Phone #	
Fax #	703-772-9468	Fax #	

LACE BOULEVARD
DING 400
GEORGIA 30144
(404) 424-1900
FAX (404) 424-9290

IRON CALCINE

(Label Name)

Iron Oxide Dust

(Common Name)

Prepared: May 29, 1992

Material Safety Data Sheet

(404) 424-1900

Information Phone Number

(800) 241-7799

Emergency Phone Number

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS - Common Name & Chemical Name (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	%	OSHA PEL* (mg/m ³)	ACGIH TLV* (mg/m ³)
Iron Oxide (Fe ₂ O ₃ and Fe ₃ O ₄)	> 85	10	10

* These are atmospheric concentrations based on time weighed averages.

** Non-Hazardous Ingredients: Moisture < 15%.

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	N/A ⁺	Specific Gravity (H ₂ O = 1)	5.1 - 5.3
Vapor Pressure (mm Hg and Temperature)	N/A	Melting Point	1600°C
Vapor Density (Air = 1)	N/A	Evaporation Rate	N/A
Solubility in Water	Insoluble	Water Reactive	Not Reactive

Appearance and Odor - Dark red - black powder, no odor.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used: N/A

Auto-Ignition Temperature: N/A

Flammability Limits in Air % by Volume: N/A

LEL: N/A UEL: N/A

Extinguisher Media: No special media required.

Special Fire Fighting Procedures: No special procedures required.

Unusual Fire and Explosion Hazards: None, this material is considered non-flammable and non-combustible.

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: Not known, considered stable.

HAZARDOUS DECOMPOSITION PRODUCTS: Not known, none expected.

HAZARDOUS POLYMERIZATION: Not known, none expected.

+ Not Applicable

Prepared by: KBK Enterprises, Inc., 1000 Cobb Place Boulevard, Building 400, Kennesaw, Georgia 30144



A Union Pacific Company

APPENDIX B

TYPICAL CEMENT ANALYSES

BEST AVAILABLE COPY



**FLORIDA CRUSHED STONE COMPANY
CEMENT PLANT**

Consigner:
Destination:

Date: August 8, 1995
Silo # 1

%Silicon Dioxide (SiO ₂)	21.3	20.0	-
%Aluminum Oxide (Al ₂ O ₃)	4.9	-	6.0
%Ferric Oxide (Fe ₂ O ₃)	3.4	-	6.0
%Calcium Oxide (CaO)	64.3	-	-
%Magnesium Oxide (MgO)	0.8	-	6.0
%Tricalcium Silicate (C ₃ S)	54	-	55
%Tricalcium Aluminate (C ₃ A)	7.1	-	8
When (C ₃ A) is 8% or less:	2.8	-	3.0
When (C ₃ A) is 8% or more:	-	-	3.5
%Alkalis (Na ₂ O+0.658 K ₂ O)	0.38	-	0.60
%Insoluble Residue	0.27	-	0.75
%Loss of Ignition	1.6	-	3.0
Blaine Fineness M ² /KG	373	280	400
Autoclave Expansion	0.01	-	0.80
Initial (minutes):	118	60	-
Final (minutes):	215	-	800
1 Day PSI	2080	-	-
3 Day PSI	3600	1800	-
7 Day PSI	4990	2800	-
Heat of Hydration (Cal/g)	78.5	-	80
% Air Content	8.0	-	12

The data shown above is typical of the cement currently being shipped from this silo.
This cement complies with current ASTM-C150 specifications for TYPE I/II Cement, AASHTO M 85 specifications for TYPE I and TYPE II Cement.
Cement represented by this certification was furnished to the State.

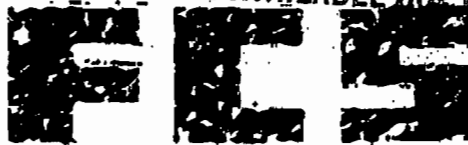
O.N. Wheeler

O.N. Wheeler
Manager, Quality Control

Company:

Project #:

Signed:



FLORIDA CRUSHED STONE COMPANY
CEMENT PLANT

Consignee:
 Destination:

Date: August 8, 1995
 Silo # 2

%Silicon Dioxide (SiO ₂)	21.2	20.0	-
%Aluminum Oxide (Al ₂ O ₃)	4.9	-	6.0
%Ferric Oxide (Fe ₂ O ₃)	3.4	-	6.0
%Calcium Oxide (CaO)	64.2	-	-
%Magnesium Oxide (MgO)	0.8	-	6.0
%Tricalcium Silicate (C ₃ S)	54	-	65
%Tricalcium Aluminate (C ₃ A)	7.2	-	8
When (C ₃ A) is 8% or less:	2.8	-	3.0
When (C ₃ A) is 8% or more:	-	-	3.5
%Alkalis (Na ₂ O+0.658 K ₂ O)	0.38	-	0.80
%Insoluble Residue	0.27	-	0.75
%Loss of Ignition	1.6	-	3.0
Blaine Fineness M ₂ /KG	391	280	400
Autoclave Expansion	0.01	-	0.80
Initial (minutes):	118	60	-
Final (minutes):	216	-	600
1 Day PSI	2250	-	-
3 Day PSI	3820	1800	-
7 Day PSI	5260	2800	-
Heat of Hydration (Cal/g)	78.6	-	80
%Air Content	7.9	-	12

The data shown above is typical of the cement currently being shipped from this silo.
 This cement complies with current ASTM-C150 specifications for TYPE III Cement, AASTO M45 specifications for TYPE I and TYPE II Cement.
 Cement represented by this certification was furnished in the Silo.

O.N. Wheeler
 O.N. Wheeler
 Manager, Quality Control

Company:

Project #:

Signed:

APPENDIX C

PERSONNEL TRAINING PROGRAM

8.7 Operator Training

Polysius will provide lecturers and appropriate instruction materials to support and complement the Owner's operator training program. Instruction will be given in operation of equipment and process and in the proper maintenance procedures of the equipment, including safety precautions. The following is a description of the proposed training.

8.7.1 Equipment Included

The program will cover the following equipment:

- A. The Polysius Raw Material Roller Mill System with Integrated SEPOL® Separator.
- B. The Polysius kiln and burner system.
- C. The Polysius Cement Ball Mill and SEPOL® Separator.
- D. Auxiliary equipment.

8.7.2 Duration

Polysius will provide five (5) days (40 classroom hours) of instruction in operation of the equipment and maintenance procedures. Included is the cost of Polysius in-house preparation of the program.

8.7.3 Location

The training program will take place at the Florida Rock Plant site. Owner will furnish suitable classroom space.

8.7.4 Owner's Personnel

A. Quantity

In order to optimize the instructor/student ratio and to provide for the most efficient use of the available classroom time it is recommended that the number of personnel be limited to:

- a. Five (5) operating personnel
- b. Five (5) maintenance personnel

B. Qualifications

The program will cover the theoretical, technical and practical aspects of the equipment. In selecting personnel, we assume that you will assign people who have the required education and background to qualify them for the theoretical and practical aspects of operating and maintaining the subject equipment.

POLYSIUS CORPORATION

Division of Krupp USA, Inc.

Florida Rock
Project No. 6823-2200A
May 15, 1995

C. Pre-Program Preparation

It is recommended that all personnel thoroughly familiarize themselves with the flowsheets, plot plan, layout and arrangement drawings prior to attending the program. It is also assumed that all personnel will have read and studied the operation and maintenance manuals for the equipment and auxiliary equipment, prior to classroom date.

8.7.5 Training Aids

The following training aids will be utilized in the program:

- A. Owner's copies of operation and maintenance manuals.
- B. Handout materials
- C. Slides
- D. Transparencies for overhead (opaque) projector
- E. Examination of equipment in the field

8.7.6 Subject Material

The following subject material will be covered in the program.

A. Familiarization

- a. Review of flowsheets
- b. Review of plot plan
- c. Equipment location and description
- d. Material flow
 - Solids
 - Gases

B. Instruments and Control Equipment

- a. Review of instrumentation furnished
- b. Instrument identification
 - Purpose of instruments (local and central)
 - Location
 - Interpreting read-out devices
 - Calibration techniques

POLYSIUS CORPORATION

Division of Krupp USA, Inc.

Florida Rock
Project No. 6823-2200A
May 15, 1995

C. Control Concepts

- a. Object of control loop
 - Primary goal
 - Effect on process
 - Alternatives
- b. Operation
- c. Control methods used to accomplish goals
- d. Operating problems eliminated by use of control concept employed

D. Mechanical

- a. Start-up characteristics
 - Start-up procedures
 - Interlocks
 - Pre-start checklist
- b. Operating nomenclature and criteria
 - Equipment description
 - Purpose
- c. Lubrication, cooling and control features
 - Type of lubrication system
 - Type of cooling system
 - Instrument controls
 - 1. Local
 - 2. Central panel

POLYSIUS CORPORATION

Division of Krupp USA, Inc.

Florida Rock
Project No. 6823-2200A
May 15, 1995

E. Electrical Interlocks

- a. Prime function for each piece
- b. Physical location of equipment
- c. Interlock sequence within each system
- d. Normal start-up and shutdown sequence
- e. Emergency shutdown sequence
- f. Troubleshooting

F. Theory of Operations

- a. Overview of cement technology
- b. Definition of terms
- c. Process discussions

G. Panel Practice

- a. Organization of panel
- b. Function of panel instruments
- c. How to read instruments
- d. Normal operating procedures
- e. Abnormal operating procedures

H. Mechanical Maintenance

- a. Elements of mechanics
- b. Lubrication
- c. Drive components
- d. Bearings

- e. Piping systems
- f. Basic hydraulics
- g. Pumps

8.7.7 Summary

Exclusions

- A. Set-up of maintenance standards (target times, crew size, etc.)
- B. Furnishing of slide projector, overhead (opaque) projector and screen.
- C. Additional operation and maintenance manuals to those listed in the equipment supply contract.
- D. Instructors from subsuppliers.

8.7.8 Owner's Responsibilities

- A. Furnish suitable classroom space and facilities
- B. Furnish blackboard, chalk and eraser
- C. Furnish slide projector and overhead (opaque) projector to Polysius specifications
- D. Furnish screen for projectors
- E. Furnish all supplies (paper, pencils, blueprints, etc.) for use by Owner's personnel
- F. Make available Owner's copies of operation and maintenance manuals for use by Owner's personnel

8.8 Meetings and Reports

Regular progress meeting shall be held every four (4) weeks during the engineering installation phase of the project. Monthly progress reports shall be issued to show compliance with the various schedules, identify bottlenecks and describe overall progress.

8.9 Suppliers and Subsuppliers Personnel

Polysius will submit to Owner a list of its own and of subsuppliers personnel anticipated to be on site during the project.

MEMORANDUM

RECEIVED
JUL 26 1995

DATE: July 25, 1995

TO: Teresa Heron, FDEP-DARM-BAR, New Source Review, Tallahassee
FROM: Steve Cullen - Koogler & Associates *SC*

Bureau of
Air Regulation

SUBJECT: K&A 187-94-02
Florida Rock Industries, Inc.
Newberry Cement Plant
Permits Nos. AC01-267311 and PSD-FL-228
Additional Information Requested by Telephone, 21-JUL-1995

ITEM 1: Baghouse Grain Loading

Florida Rock has agreed to accept a baghouse exhaust grain loading of 0.01 grains per dry standard cubic foot (0.01 gr/dscf) as BACT for the twenty (20) process control baghouses. The attached emissions summaries have been updated to reflect this change.

ITEM 2: Emission Levels @ Calaveras Cement Company, Kern County, California

On July 21, 1995 I spoke with Mary Flynn at the Kern County (California) Air Pollution Control District. In response to my queries, she faxed me a copy of the Calaveras Cement kiln operating permit and a copy of recent stack test results. These documents are attached to this memorandum as Attachment A.

It is inappropriate to compare stack test results with proposed maximum permitted emission levels. Similarly, it is inappropriate to compare proposed maximum permitted emission levels with permitted average emission levels.

The Calaveras Cement permitted emission levels of SO₂, NO_x, VOC and CO represent 24-hour average emission levels, while the proposed Florida Rock emission levels represent maximum hourly emission levels.

ITEM 3: Kiln Emission Levels in lb/mmBtu

Per your request, the hourly kiln criteria pollutant emissions (only) are presented in lb/mmBtu of heat input to the kiln. The heat input to the kiln is estimated at 364 mmBtu/hour.

PM = 44.96 lb/hr = 0.12 lb/mmBtu
PM10 = 38.22 lb/hr = 0.11 lb/mmBtu
SO₂ = 51.75 lb/hr = 0.14 lb/mmBtu
NO_x = 440.82 lb/hr = 1.21 lb/mmBtu
CO = 354.57 lb/hr = 0.97 lb/mmBtu
VOC = 11.5 lb/hr = 0.03 lb/mmBtu



MEMO: T. Heron, 25-JUL-1995
Florida Rock Cement Plant

ITEM 3: Kiln Emission Levels in lb/mmBtu (continued)

Conversion of the emission rates to units of parts per million (ppm) would be cumbersome. It appears that emission rates presented in ppm are less illustrative than rates presented in lb/ton clinker or lb/mmBtu.

ITEM 4: Baghouse Table

Per your request, I prepared a Microsoft EXCEL table for the cement plant baghouses. This table is provided as Attachment B. If you are using Microsoft EXCEL, I can provide this file on disk.

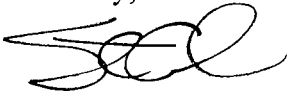
ITEM 5: Table 2-1, Original Application

Per your request, Table 2-1 has been expanded to show the basis for the total emission rates, and to update the baghouse emissions using 0.01 gr/dscf. This table (now Table 2-1R) and an associated table (Table 2-1Rb) are provided as Attachment C.

SUMMARY:

This memorandum provides the additional information you requested in a telephone call on 21-JUL-1995. If you have any questions, or need further information, please do not hesitate to call me.

Sincerely,



Steven C. Cullen, P.E.
Koogler & Associates

enclosures: Attachments A-C



ATTACHMENT A

CALAVERAS CEMENT COMPANY

**KILN OPERATING PERMIT
STACK TEST RESULTS**



KERN COUNTY AIR POLLUTION CONTROL DISTRICT

PERMIT TO OPERATE

PERMIT NUMBER: 1147017(C)

2700 'M' STREET, SUITE 290
BAKERSFIELD, CA. 93301-2323
BAKERSFIELD: (805) 851-2593
MOJAVE: (805) 824-4631, Ext. 237

PERMIT TO OPERATE IS HEREBY GRANTED TO:

CALAVERAS PORTLAND CEMENT
COMPANY

FOR EQUIPMENT LOCATED AT:

SEC. 20, T32S, R34E, MONOLITH

EQUIPMENT OR PROCESS DESCRIPTION:

PREHEATER/PRECALCINER PORTLAND
CEMENT KILN

OPERATIONAL CONDITIONS LISTED BELOW.

THIS PERMIT BECOMES VOID UPON ANY CHANGE OF OWNERSHIP OR LOCATION, OR ANY ALTERATION. EQUIPMENT MODIFICATION REQUIRES AN APPLICATION FOR NEW PERMIT.

TESTING: Permittee may be required to provide adequate sampling and testing facilities.

THOMAS PAXSON, P.E.
AIR POLLUTION CONTROL OFFICER

By: 

REVOCABLE: This permit does not authorize emission of air contaminants in excess of those allowed by the Rules and Regulations of the K.C.A.P.C.D.

For Period: 10-31-94 TO 10-31-95

CONDITIONS OF APPROVAL:

Compliance with all conditions of approval imposed by any applicable Authority to Construct is required for life of this equipment unless modified by application.

EQUIPMENT DESCRIPTION: Preheater/Procalciner Type Cement Kiln, including the following equipment:
Pyroprocessing equipment vented to ICA/Rees size 20-7200 senior 12, 20 compartment dust collector S3-160 and exhaust fan exhaust fan S3-187 (1500 hp) shared with Permit #1147014(A) consisting of:

Louver Damper
S3-186, 2 hp

Controls flow of process gas while gas circuit is in operation.

Tipping Valves (10)
S2-162 through S3-171, 0.5 hp ea.

Compartments 1 through 10 tipping valves for material flow to screw conveyor S3-183.

Tipping Valves (10)
S3-172 through S3-181, 0.5 hp ea.

Compartments 11 through 20 tipping valves for dust flow to screw conveyor S3-185.

Screw Conveyor (14")
S3-183, 110 hp

From compartments 1 through 10 to screw conveyor S3-183 and discharges to screw conveyor S4-130.

Screw Conveyor (14")
S3-184, 10 hp

From plenum chamber to screw conveyor S4-130.

Screw Conveyor (14"O S3-185, 10 hp	From compartments 11 through 20 to screw conveyor S4-130.
Reverse Air Fan S3-151, 125 hp	Provides reverse air flow during baghouse operation.
Dampers S3-188 and S3-189, Pneumatic	Controls air flow during dust collector S3-160 operation
Preheater/Precalciner equipment consists of:	
Rotary Feeders G1-153 & G1-155, 5 hp ea.	Receives feed from airslide F1-230 and discharges to preheater G2-100.
Shut-Off Gates G1-154 & G1-155, 5 hp ea.	Isolation Gates for rotary feeders G1-153 or G1-155.
Preheater G2-100, 6 stage	Receives kiln feed from rotary feeders G1-153 or G1-155. Discharges from stage 5 to precalciner G2-125.
Precalciner G2-125, Gas, Coal, Coke	Receives preheated kiln feed from stage 5 under flow. Precalcines kiln feed and feeds kiln G2-150 via preheater G2-100 stage 6.
Cooling Fan G2-130, 5 hp	Provides ambient air for cooling the precal coal burner.
Louver Dampers G6-105, G6-110, G6-155, 1 hp	control of process gas flow during kiln G2-150 operation.
Louver Damper G6-154, 2 hp	Bleed- in ambient air for kiln ID fan G6-150 protection of overheating.
Isolation Damper G6-153, Pneumatic	Isolates coal circuit form preheater exhaust gases.
Tertiary Air Duct G6-100	From cooler G2-200 to preheater G2-100.
Kiln ID Fan G6-150, 2500 hp	Provides draft for flow of gas through pyroprocessing circuit.
Kiln equipment consists of:	
Rotary Kiln G2-150, 350 hp	Receives hot meal from preheater G2-100 stage 6 and discharges to clinker cooler G2-100.
Variable Orifice G2-154, 2 - 1 hp	Provides restriction to flow of kiln G2-150 exit to preheater G2-100 as required.
Screw Conveyor (9") G2-165, 2 hp	From kiln G2-150 feed end to tote box.
Tipping Valve G2-166	Controls flow of material from screw conveyor G2-165 to tote box.
Tipping Valve G2-184	From kiln G2-150 discharge end to cooler drag chain G2-206.

Blower G2-177, 15 hp	Provides cooling air to kiln G2-150 feed end seal.
Blower G2-180, 20 hp	Provides cooling air to kiln G2-150 nose ring.
Blower G2-162	Pressurizing fan for kiln G2-150 discharge end seal.
Damper G2-183	Provides flow control to discharge end seal.
Blower G2-175, 40 hp	Provides primary air to kiln G2-150 burner.

OPERATIONAL CONDITIONS:

1. Kiln dust collector shall have exhaust gas temperature indicator. (Rule 210.1)
2. Each kiln dust collector compartment shall be equipped with operational differential pressure indicator. (Rule 210.1)
3. Conveyors handling kiln dust shall be totally enclosed. (Rule 210.1 BACT)
4. Kiln dust collector exhaust stack shall be equipped with permanent sampling ports, sampling platform and access ladder. (Rule 108.1)
5. Particulate emissions from sources other than kiln stack shall not exceed 0.1 gr/scf. (Rule 404.1)
6. Visible emissions from any single emission point shall not exceed 20% opacity. (Rule 422 Subpart F)
7. Particulate matter from kiln dust collector shall not exceed 0.30 lbm/ton of dry feed to the kiln. (Rule 422)
8. ~~Kiln may operate either with or without staged combustion to achieve emission limitations. (Rule 210.1)~~ (doesn't mean anything)
9. When kiln is not in operation, clinker may be handled to or from outside storage at rate not to exceed 1300 tons/day (387.08 lb-PM-10/day) in addition to quantities permitted in permits 1147018, Clinker Cooler, and 1147019, Clinker Storage and Reclaim. (Rule 210.1)

EMISSION LIMITS: (Rule 210.1)

(example 1300 tons/day with 2-2 drops)

Maximum emission rate from this emissions unit shall not exceed the following emission limitations:

Particulate (PM₁₀):	16.13 lbm/hr 387.08 lbm/day 0.01 gr/acfm	(Kiln Baghouse S3-160)
Sulfur Compounds:	295.25 lbm/hr (As SO ₂) (24 hr avg.) (includes coal mill exhaust) 7086.00 lbm/day	
	29.54 lbm/hr (As SO ₂) (24 hr avg.) (includes coal mill exhaust) 708.96 lbm/day	
Oxides of Nitrogen:	281.33 lbm/hr (As NO _x) (24 hr avg.) (includes coal mill exhaust) 6752.00 lbm/day 1232.24 tons/yr	
Volatile Organic Compounds:	45.08 lbm/hr 1082.00 lbm/day 197.47 tons/yr	(24hr avg)(includes coal mill exhaust)
Carbon Monoxide:	1282.00 lbm/hr 30768.00 lbm/day	(24 hr avg) (includes coal mill exhaust)

COMPLIANCE:

Compliance with daily emission limitations shall be verified by operator through maintenance of operational records/data which shall be made readily available to District personnel upon request. Such records shall be maintained for minimum of 12 months.

COMPLIANCE TESTING REQUIREMENTS:

Compliance with all hourly and concentration emission limits shall be demonstrated by District witnessed sample collection by independent testing laboratory annually within 60 days prior to permit anniversary date, and official test results and field data submitted within 30 days after collection. (Rule 108.1)

SPECIAL CONDITIONS:

- aa. Kiln fabric collector stack shall be equipped with continuously recording oxides of nitrogen, oxides of sulfur, carbon monoxide, oxygen, opacity, and temperature monitors. (Rules 210.1 & 422)
- bb. Reports of excess emissions shall be submitted semiannually for all opacity exceedances of 6 minutes or longer. Report shall comply with requirements of Code of Federal Regulations Section 40 Part 60.7c. (Rule 422)

STATE OF CALIFORNIA AIR TOXICS HOT SPOTS REQUIREMENTS:

Facility shall comply with California Health And Safety Code Sections 44300 through 44384. (Rule 208.1)

STATIONARY SOURCE CURTAILMENT PLAN AND TRAFFIC ABATEMENT PLANS:

Facilities expected to emit 100 tons per year or more of Carbon Monoxide, hydrocarbons, particulate matter or oxides of Nitrogen shall comply with KCAPCD Regulation 613.

TABLE 3-1. SUMMARY OF KILN STACK EMISSION TESTS (60°F)

Test Date	Test Parameter	Test Method	Emissions
08/31/94	Particulate	EPA Method 5	0.0034 gr/dscf 3.83 lb/hr
08/31/94	NO _x	EPA Method 7E	251.83 ppm 241.28 lb/hr
08/29-30/94	NO _x	EPA Method 7E EPA Performance Specification 2	7.04% RA
08/29-30/94	SO ₂	EPA Method 8 EPA Performance Specification 2	77.81% RA (ppm) 0.12% RA (lb/hr)
08/31/94	SO ₂	EPA Method 6C	1.18 ppm 1.54 lb/hr
08/31/94	CO	EPA Method 10	152.69 ppm 89.34 lb/hr
08/29-30/94	CO	EPA Method 10 EPA Performance Specification 4	6.34% RA (ppm)
08/29-30/94	O ₂	EPA Method 10 EPA Performance Specification 3	9.95% RA (%)
08/31/94	Hydrocarbon	EPA Method 18	6.76 ppm 2.27 lb/hr
08/31/94	PM ₁₀	CARB Method 501	0.0032 gr/dscf 3.56 lb/hr

TABLE 3-2. SUMMARY OF SOURCE EMISSION TEST DATA (60°F)

Unit Tested: Calaveras Cement
Kiln Stack

Date: August 31, 1994

Test Number	PM-1	PM-2	PM-3	Average
Test Condition				
Barometric Pressure (in. Hg)	26.42	26.55	26.42	26.46
Stack Pressure (in. Hg)	26.40	26.53	26.40	26.44
Stack Area (ft ²)	86.59	86.59	86.59	86.59
Elapsed Sampling Time (min.)	180.0	180.0	180.0	180.0
Volume Gas Sampled (dscf)	140.873	143.147	150.929	144.983
GAS DATA				
Average Gas Velocity (fps)	41.97	41.33	43.50	42.27
Average Gas Temperature (°F)	259.31	247.39	231.53	246.08
Gas Flowrate (dscfm)	127,139	129,425	138,842	131,802
Gas Analysis (Volume %)				
Carbon Dioxide, Dry	21.92	22.19	20.92	21.68
Oxygen, Dry	8.33	8.88	9.63	8.95
Water	8.59	7.51	7.39	7.83
EMISSION CONCENTRATION				
Filterable Particulate, gr/dscf	0.0036	0.0028	0.0035	0.0033
Total Particulate, gr/dscf	0.0037	0.0029	0.0036	0.0034
Total Sulfate, gr/dscf	0.0001	0.0001	0.0001	0.0001
CO, ppm	144.41	148.48	165.17	152.69
SO ₂ , ppm	1.73	1.45	0.35	1.18
NO _x , ppm	265.08	244.53	245.95	251.85
>C ₁ HC, ppm	2.99	10.16	7.13	6.76
EMISSION RATE - lb/hr				
Filterable Particulate	3.90	3.13	4.13	3.72
Total Particulate	4.02	3.23	4.23	3.83
Total Sulfate	0.11	0.10	0.10	0.10
CO	81.32	85.12	101.58	89.34
SO ₂	2.23	1.90	0.49	1.54
NO _x	245.18	230.24	248.43	241.28
>C ₁ HC	0.96	3.34	2.51	2.27
EMISSION CONCENTRATION - @ 3% O₂				
CO	205.64	221.11	262.34	229.70
SO ₂	2.46	2.16	0.56	1.73
NO _x	377.48	364.15	390.64	377.42
>C ₁ HC	4.25	15.13	11.32	10.32

TABLE 3-3. SUMMARY OF SOURCE EMISSION TEST DATA (60°F)

Unit Tested: Calaveras Cement
Kiln Stack

Date: August 31, 1994

Test Number	PM ₁₀ -1	PM ₁₀ -2	PM ₁₀ -3	Average
Test Condition				
Barometric Pressure (in. Hg)	26.42	26.55	26.42	26.46
Stack Pressure (in. Hg)	26.40	26.53	26.40	26.44
Stack Area (ft ²)	86.59	86.59	86.59	86.59
Elapsed Sampling Time (min.)	180.0	180.0	180.0	180.0
Volume Gas Sampled (dscf)	87.874	89.465	90.796	89.378

GAS DATA

Average Gas Velocity (fps)	42.05	41.42	43.59	42.36
Average Gas Temperature (°F)	259.31	247.39	231.53	246.08
Gas Flowrate (dscfm)	126,189	128,339	137,685	130,738
Gas Analysis (Volume %)				
Carbon Dioxide, Dry	21.92	22.19	20.92	21.68
Oxygen, Dry	8.33	8.88	9.63	8.95
Water	9.44	8.49	8.36	8.76

EMISSION CONCENTRATION - gr/dscf

Filterable Particulate	0.0042	0.0030	0.0022	0.0031
Filterable PM ₁₀	0.0022	0.0017	0.0005	0.0015
Total Particulate	0.0059	0.0044	0.0043	0.0049
Total PM ₁₀	0.0039	0.0031	0.0026	0.0032

EMISSION RATE - lb/hr

Filterable Particulate	4.51	3.35	2.55	3.47
Filterable PM ₁₀	2.41	1.91	0.55	1.62
Total Particulate	6.38	4.81	5.04	5.41
Total PM ₁₀	4.28	3.37	3.04	3.56

TABLE 3-4. SUMMARY OF KILN STACK PM₁₀ EMISSIONS

Test No.	% <10 μ m	Filterable PM ₁₀ (gr/dscf)	Filterable PM ₁₀ (lb/hr)	Total PM ₁₀ (gr/dscf)	Total PM ₁₀ (lb/hr)
1	53.5	0.0022	2.41	0.0039	4.28
2	57.0	0.0017	1.91	0.0031	3.37
3	21.5	0.0005	0.55	0.0026	3.04
Average	44.0	0.0015	1.62	0.0032	3.56

ATTACHMENT B

BAGHOUSE TABLE

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

#	Description	GRAIN LOADING	LB/HR	TPY	OPACITY
EMISSION UNIT 2: RAW MILL SYSTEM					
PROCESS RATE = 212 TPH RAW MATERIALS					
E-28	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	0.82	3.6	5%
E-29	Recycle dust to airlift	0.01 gr/dscf	0.05	0.2	5%
G-07	Recycle dust + raw meal into homogenization silo	0.01 gr/dscf	1.01	4.4	5%
H-08	Raw meal + recycle dust to preheater	0.01 gr/dscf	0.40	1.8	5%
EMISSION UNIT 4: CLINKER HANDLING					
PROCESS RATE = 95.83 TPH CLINKER					
L-03	Clinker cooler discharge and breaker	0.01 gr/dscf	0.18	0.8	5%
L-06	Clinker into clinker silos	0.01 gr/dscf	0.23	1.0	5%
EMISSION UNIT 5: FINISH GRINDING OPERATIONS					
PROCESS RATE = 136 TPH CEMENT OUTPUT					
M-07	Clinker to finish mill	0.01 gr/dscf	0.26	1.2	5%
M-08	Clinker to finish mill	0.01 gr/dscf	0.26	1.2	5%
N-09	Finish mill air separator	0.01 gr/dscf	0.66	2.9	5%
N-12	Finish mill	0.01 gr/dscf	1.99	8.7	5%
N-14	Cement handling in finish mill	0.01 gr/dscf	0.40	1.8	5%
Q-25	Cement storage silos	0.01 gr/dscf	0.87	3.8	5%
Q-26	Cement storage silos	0.01 gr/dscf	0.87	3.8	5%
Q-27	Cement storage silos	0.01 gr/dscf	0.87	3.8	5%
EMISSION UNIT 6: CEMENT HANDLING					
PROCESS RATE = 500 TPH CEMENT UNLOADING					
Q-14	Cement silo loadout	0.01 gr/dscf	0.22	1.0	5%
Q-17	Cement silo loadout	0.01 gr/dscf	0.22	1.0	5%
Q-21	Cement silo loadout	0.01 gr/dscf	0.22	1.0	5%
R-12	Cement bagging operation	0.01 gr/dscf	0.87	3.8	5%
EMISSION UNIT 7: COAL HANDLING AND GRINDING					
PROCESS RATE = 14 TPH PULVERIZED COAL					
S-17	Coal mill	0.01 gr/dscf	1.25	5.5	5%
S-21	Pulverized coal storage bin	0.01 gr/dscf	0.22	1.0	5%

ATTACHMENT C

**TABLE 2-1R
(REVISED TABLE 2-1)**

&

TABLE 2-1Rb

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

POLLUTANT	LB/HR	TPY	LB/YEAR
Particulate Matter (PM)	86.26	316.2	
Raw Mill, 212 tph & 1,211,250 tpy processed	14.42	41.2	
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	0.0006	0.002	
Kiln, 95.83 tph & 712,500 tpy of clinker	44.96	167.2	
Clinker Cooler, 95.83 tph & 712,500 tpy of clinker	14.99	55.7	
20 baghouses, 0.01 gr/dscf, 8760 hpy	11.89	52.1	
Particulate Matter (PM10)	74.93	276.1	
Raw Mill, 212 tph & 1,211,250 tpy processed	12.08	34.5	
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	0.0003	0.001	
Kiln, 95.83 tph & 712,500 tpy of clinker	38.22	142.1	
Clinker Cooler, 95.83 tph & 712,500 tpy of clinker	12.74	47.4	
20 baghouses, 0.01 gr/dscf, 8760 hpy	11.89	52.1	
Sulfur Dioxide (SO2)	53.74	201.2	
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	1.99	8.8	
Kiln, 95.83 tph & 712,500 tpy of clinker	51.75	192.4	
Nitrogen Oxides (NOx)	446.42	1663.7	
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	5.6	24.9	
Kiln, 95.83 tph & 712,500 tpy of clinker	440.82	1638.8	
Volatile Organic Compounds (VOC)	11.56	43.0	
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	0.06	0.2	
Kiln, 95.83 tph & 712,500 tpy of clinker	11.5	42.8	
Carbon Monoxide (CO)	355.97	1324.3	
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	1.4	6.2	
Kiln, 95.83 tph & 712,500 tpy of clinker	354.57	1318.1	
Beryllium (Be)	0.0002	0.0006	1.38
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	0.0001	0.0004	0.88
Kiln, 95.83 tph & 712,500 tpy of clinker	0.0001	0.0002	0.5
Lead (Pb)	0.07	0.3	509.12
Air Heater, 280 gal/hr & 2,485,000 gal/yr of #2 fuel oil	0.0004	0.002	3.12
Kiln, 95.83 tph & 712,500 tpy of clinker	0.07	0.3	506
Hydrogen Chloride (HCl)	4.7	17.5	
Kiln, 95.83 tph & 712,500 tpy of clinker	4.7	17.5	
Benzene	0.3	1.1	
Kiln, 95.83 tph & 712,500 tpy of clinker	0.3	1.1	

NOTES:

Stack emissions only

PM10 emissions from baghouses are assumed as equal to PM

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

SEGMENT		STACK		PM _{FUG}	PM10 _{FUG}	VOC _{FUG}
#	Description	#	Description	TPY	TPY	TPY
EMISSION UNIT 1: RAW MATERIAL						
1/1/4	Material unloading	NONE	N/A	0.3	0.1	0
1/2/4	Unpaved roads	NONE	N/A	10.7	3.8	0
1/3/4	Paved roads	NONE	N/A	14.1	3.1	0
1/4/4	VOC Storage	NONE	N/A	0	0	0.4
Subtotal				25.1	7.0	0.4
EMISSION UNIT 2: RAW MILL						
2/1/6	Raw mill	E-19	Kiln/raw mill ESP	0	0	0
2/2/6	Recycle to airlift	E-29	Baghouse	0	0	0
2/3/6	Raw meal to silo	E-28	Baghouse	0	0	0
2/4/6	Raw meal into silo	G-07	Baghouse	0	0	0
2/5/6	Raw meal to preheater	H-08	Baghouse	0	0	0
2/6/6	Air heater	E-19	Kiln/raw mill ESP	0	0	0
Subtotal				0	0	0
EMISSION UNIT 3: KILN SYSTEM						
3/1/3	Kiln operations	E-19	Kiln/raw mill ESP	0	0	0
3/2/3	In-process fuel: coal	E-19	Kiln/raw mill ESP	0	0	0
3/3/3	In-process fuel: tires	E-19	Kiln/raw mill ESP	0	0	0
Subtotal				0	0	0
EMISSION UNIT 4: CLINKER HANDLING						
4/1/3	Clinker cooler	K-15	Clinker cooler ESP	0	0	0
4/2/3	Clinker to silos	L-03	Baghouse	0	0	0
4/3/3	Clinker into silos	L-06	Baghouse	0	0	0
Subtotal				0	0	0
EMISSION UNIT 5: FINISH GRINDING						
5/1/4	Finish mill belt	M-07, M-08	Baghouses	0	0	0
5/2/4	Finish mill	N-12	Baghouse	0	0	0
5/3/4	Finish mill air separator	N-09	Baghouse	0	0	0
5/4/4	Cement to silos	N-14, Q-25, Q-26, Q-27	Baghouses	0	0	0
Subtotal				0	0	0
EMISSION UNIT 6: CEMENT HANDLING						
6/1/2	Silo unloading	Q-14, Q-17, Q-21	Baghouses	0	0	0
6/2/2	Bagging of cement	R-12	Baghouse	0	0	0
Subtotal				0	0	0
EMISSION UNIT 7: COAL HANDLING						
7/1/2	Coal mill	S-17	Baghouse	0	0	0
7/2/2	Coal transfer	S-21	Baghouse	0	0	0
Subtotal				0	0	0
TOTAL				25.1	7.0	0.4

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

SEGMENT		STACK		PM		PM10	
#	Description	#	Description	PPH	TPY	PPH	TPY
EMISSION UNIT 1: RAW MATERIAL							
1/1/4	Material unloading	NONE	N/A	0	0	0	0
1/2/4	Unpaved roads	NONE	N/A	0	0	0	0
1/3/4	Paved roads	NONE	N/A	0	0	0	0
1/4/4	VOC Storage	NONE	N/A	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 2: RAW MILL							
2/1/6	Raw mill	E-19	Kiln/raw mill ESP	14.42	41.2	12.08	34.5
2/2/6	Recycle to airlift	E-29	Baghouse	0.05	0.2	0.05	0.2
2/3/6	Raw meal to silo	E-28	Baghouse	0.82	3.6	0.82	3.6
2/4/6	Raw meal into silo	G-07	Baghouse	1.01	4.4	1.01	4.4
2/5/6	Raw meal to preheater	H-08	Baghouse	0.40	1.8	0.40	1.8
2/6/6	Air heater	E-19	Kiln/raw mill ESP	0.0006	0.002	0.0003	0.001
Subtotal				16.71	51.2	14.37	44.5
EMISSION UNIT 3: KILN SYSTEM							
3/1/3	Kiln operations	E-19	Kiln/raw mill ESP	44.96	167.2	38.22	142.1
3/2/3	In-process fuel: coal	E-19	Kiln/raw mill ESP	0	0	0	0
3/3/3	In-process fuel: tires	E-19	Kiln/raw mill ESP	0	0	0	0
Subtotal				44.96	167.2	38.22	142.1
EMISSION UNIT 4: CLINKER HANDLING							
4/1/3	Clinker cooler	K-15	Clinker cooler ESP	14.99	55.7	12.74	47.4
4/2/3	Clinker to silos	L-03	Baghouse	0.18	0.8	0.18	0.8
4/3/3	Clinker into silos	L-06	Baghouse	0.23	1.0	0.23	1.0
Subtotal				15.40	57.5	13.15	49.2
EMISSION UNIT 5: FINISH GRINDING							
5/1/4	Finish mill belt	M-07, M-08	Baghouses	0.53	2.3	0.53	2.3
5/2/4	Finish mill	N-12	Baghouse	1.99	8.7	1.99	8.70
5/3/4	Finish mill air separator	N-09	Baghouse	0.66	2.9	0.66	2.9
5/4/4	Cement to silos	N-14, Q-25, Q-26, Q-27	Baghouses	3.02	13.2	3.02	13.2
Subtotal				6.20	27.1	6.20	27.1
EMISSION UNIT 6: CEMENT HANDLING							
6/1/2	Silo unloading	Q-14, Q-17, Q-21	Baghouses	0.65	2.9	0.65	2.9
6/2/2	Bagging of cement	R-12	Baghouse	0.87	3.8	0.87	3.8
Subtotal				1.53	6.7	1.53	6.7
EMISSION UNIT 7: COAL HANDLING							
7/1/2	Coal mill	S-17	Baghouse	1.25	5.5	1.25	5.5
7/2/2	Coal transfer	S-21	Baghouse	0.22	1.0	0.22	1.0
Subtotal				1.47	6.4	1.47	6.4
TOTAL				86.26	316.2	74.93	276.1

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

SEGMENT		STACK		SO2		NOX	
#	Description	#	Description	PPH	TPY	PPH	TPY
EMISSION UNIT 1: RAW MATERIAL							
1/1/4	Material unloading	NONE	N/A	0	0	0	0
1/2/4	Unpaved roads	NONE	N/A	0	0	0	0
1/3/4	Paved roads	NONE	N/A	0	0	0	0
1/4/4	VOC Storage	NONE	N/A	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 2: RAW MILL							
2/1/6	Raw mill	E-19	Kiln/raw mill ESP	0	0	0	0
2/2/6	Recycle to airlift	E-29	Baghouse	0	0	0	0
2/3/6	Raw meal to silo	E-28	Baghouse	0	0	0	0
2/4/6	Raw meal into silo	G-07	Baghouse	0	0	0	0
2/5/6	Raw meal to preheater	H-08	Baghouse	0	0	0	0
2/6/6	Air heater	E-19	Kiln/raw mill ESP	1.99	8.8	5.6	24.9
Subtotal				1.99	8.8	5.6	24.9
EMISSION UNIT 3: KILN SYSTEM							
3/1/3	Kiln operations	E-19	Kiln/raw mill ESP	51.75	192.4	440.82	1638.8
3/2/3	In-process fuel: coal	E-19	Kiln/raw mill ESP	0	0	0	0
3/3/3	In-process fuel: tires	E-19	Kiln/raw mill ESP	0	0	0	0
Subtotal				51.75	192.4	440.82	1638.8
EMISSION UNIT 4: CLINKER HANDLING							
4/1/3	Clinker cooler	K-15	Clinker cooler ESP	0	0	0	0
4/2/3	Clinker to silos	L-03	Baghouse	0	0	0	0
4/3/3	Clinker into silos	L-06	Baghouse	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 5: FINISH GRINDING							
5/1/4	Finish mill belt	M-07, M-08	Baghouses	0	0	0	0
5/2/4	Finish mill	N-12	Baghouse	0	0	0	0
5/3/4	Finish mill air separator	N-09	Baghouse	0	0	0	0
5/4/4	Cement to silos	N-14, Q-25, Q-26, Q-27	Baghouses	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 6: CEMENT HANDLING							
6/1/2	Silo unloading	Q-14, Q-17, Q-21	Baghouses	0	0	0	0
6/2/2	Bagging of cement	R-12	Baghouse	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 7: COAL HANDLING							
7/1/2	Coal mill	S-17	Baghouse	0	0	0	0
7/2/2	Coal transfer	S-21	Baghouse	0	0	0	0
Subtotal				0	0	0	0
TOTAL				53.74	201.2	446.42	1663.7

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

SEGMENT		STACK		CO		VOC	
#	Description	#	Description	PPH	TPY	PPH	TPY
EMISSION UNIT 1: RAW MATERIAL							
1/1/4	Material unloading	NONE	N/A	0	0	0	0
1/2/4	Unpaved roads	NONE	N/A	0	0	0	0
1/3/4	Paved roads	NONE	N/A	0	0	0	0
1/4/4	VOC Storage	NONE	N/A	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 2: RAW MILL							
2/1/6	Raw mill	E-19	Kiln/raw mill ESP	0	0	0	0
2/2/6	Recycle to airlift	E-29	Baghouse	0	0	0	0
2/3/6	Raw meal to silo	E-28	Baghouse	0	0	0	0
2/4/6	Raw meal into silo	G-07	Baghouse	0	0	0	0
2/5/6	Raw meal to preheater	H-08	Baghouse	0	0	0	0
2/6/6	Air heater	E-19	Kiln/raw mill ESP	1.4	6.2	0.06	0.2
Subtotal				1.4	6.2	0.06	0.2
EMISSION UNIT 3: KILN SYSTEM							
3/1/3	Kiln operations	E-19	Kiln/raw mill ESP	354.57	1318.1	11.5	42.8
3/2/3	In-process fuel: coal	E-19	Kiln/raw mill ESP	0	0	0	0
3/3/3	In-process fuel: tires	E-19	Kiln/raw mill ESP	0	0	0	0
Subtotal				354.57	1318.1	11.5	42.8
EMISSION UNIT 4: CLINKER HANDLING							
4/1/3	Clinker cooler	K-15	Clinker cooler ESP	0	0	0	0
4/2/3	Clinker to silos	L-03	Baghouse	0	0	0	0
4/3/3	Clinker into silos	L-06	Baghouse	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 5: FINISH GRINDING							
5/1/4	Finish mill belt	M-07, M-08	Baghouses	0	0	0	0
5/2/4	Finish mill	N-12	Baghouse	0	0	0	0
5/3/4	Finish mill air separator	N-09	Baghouse	0	0	0	0
5/4/4	Cement to silos	N-14, Q-25, Q-26, Q-27	Baghouses	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 6: CEMENT HANDLING							
6/1/2	Silo unloading	Q-14, Q-17, Q-21	Baghouses	0	0	0	0
6/2/2	Bagging of cement	R-12	Baghouse	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 7: COAL HANDLING							
7/1/2	Coal mill	S-17	Baghouse	0	0	0	0
7/2/2	Coal transfer	S-21	Baghouse	0	0	0	0
Subtotal				0	0	0	0
TOTAL				355.97	1324.3	11.56	43.0

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

SEGMENT		STACK		Beryllium (Be)			Lead (Pb)		
#	Description	#	Description	PPH	TPY	PPY	PPH	TPY	PPY
EMISSION UNIT 1: RAW MATERIAL									
1/1/4	Material unloading	NONE	N/A	0	0	0	0	0	0
1/2/4	Unpaved roads	NONE	N/A	0	0	0	0	0	0
1/3/4	Paved roads	NONE	N/A	0	0	0	0	0	0
1/4/4	VOC Storage	NONE	N/A	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0
EMISSION UNIT 2: RAW MILL									
2/1/6	Raw mill	E-19	Kiln/raw mill ESP	0	0	0	0	0	0
2/2/6	Recycle to airlift	E-29	Baghouse	0	0	0	0	0	0
2/3/6	Raw meal to silo	E-28	Baghouse	0	0	0	0	0	0
2/4/6	Raw meal into silo	G-07	Baghouse	0	0	0	0	0	0
2/5/6	Raw meal to preheater	H-08	Baghouse	0	0	0	0	0	0
2/6/6	Air heater	E-19	Kiln/raw mill ESP	0.0001	0.0004	0.88	0.0004	0.002	3.12
Subtotal				0.0001	0.0004	0.88	0.0004	0.002	3.12
EMISSION UNIT 3: KILN SYSTEM									
3/1/3	Kiln operations	E-19	Kiln/raw mill ESP	0.0001	0.0002	0.5	0.07	0.3	506
3/2/3	In-process fuel: coal	E-19	Kiln/raw mill ESP	0	0	0	0	0	0
3/3/3	In-process fuel: tires	E-19	Kiln/raw mill ESP	0	0	0	0	0	0
Subtotal				0.0001	0.0002	0.5	0.07	0.3	506
EMISSION UNIT 4: CLINKER HANDLING									
4/1/3	Clinker cooler	K-15	Clinker cooler ESP	0	0	0	0	0	0
4/2/3	Clinker to silos	L-03	Baghouse	0	0	0	0	0	0
4/3/3	Clinker into silos	L-06	Baghouse	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0
EMISSION UNIT 5: FINISH GRINDING									
5/1/4	Finish mill belt	M-07, M-08	Baghouses	0	0	0	0	0	0
5/2/4	Finish mill	N-12	Baghouse	0	0	0	0	0	0
5/3/4	Finish mill air separator	N-09	Baghouse	0	0	0	0	0	0
5/4/4	Cement to silos	N-14, Q-25, Q-26, Q-27	Baghouses	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0
EMISSION UNIT 6: CEMENT HANDLING									
6/1/2	Silo unloading	Q-14, Q-17, Q-21	Baghouses	0	0	0	0	0	0
6/2/2	Bagging of cement	R-12	Baghouse	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0
EMISSION UNIT 7: COAL HANDLING									
7/1/2	Coal mill	S-17	Baghouse	0	0	0	0	0	0
7/2/2	Coal transfer	S-21	Baghouse	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0
TOTAL				0.0002	0.001	1.38	0.07	0.3	509.12

ALACHUA COUNTY

NEWBERRY CEMENT PLANT

SEGMENT		STACK		Hydrogen Chloride		Benzene	
#	Description	#	Description	PPH	TPY	PPH	TPY
EMISSION UNIT 1: RAW MATERIAL							
1/1/4	Material unloading	NONE	N/A	0	0	0	0
1/2/4	Unpaved roads	NONE	N/A	0	0	0	0
1/3/4	Paved roads	NONE	N/A	0	0	0	0
1/4/4	VOC Storage	NONE	N/A	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 2: RAW MILL							
2/1/6	Raw mill	E-19	Kiln/raw mill ESP	0	0	0	0
2/2/6	Recycle to airlift	E-29	Baghouse	0	0	0	0
2/3/6	Raw meal to silo	E-28	Baghouse	0	0	0	0
2/4/6	Raw meal into silo	G-07	Baghouse	0	0	0	0
2/5/6	Raw meal to preheater	H-08	Baghouse	0	0	0	0
2/6/6	Air heater	E-19	Kiln/raw mill ESP	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 3: KILN SYSTEM							
3/1/3	Kiln operations	E-19	Kiln/raw mill ESP	4.7	17.5	0.3	1.1
3/2/3	In-process fuel: coal	E-19	Kiln/raw mill ESP	0	0	0	0
3/3/3	In-process fuel: tires	E-19	Kiln/raw mill ESP	0	0	0	0
Subtotal				4.7	17.5	0.3	1.1
EMISSION UNIT 4: CLINKER HANDLING							
4/1/3	Clinker cooler	K-15	Clinker cooler ESP	0	0	0	0
4/2/3	Clinker to silos	L-03	Baghouse	0	0	0	0
4/3/3	Clinker into silos	L-06	Baghouse	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 5: FINISH GRINDING							
5/1/4	Finish mill belt	M-07, M-08	Baghouses	0	0	0	0
5/2/4	Finish mill	N-12	Baghouse	0	0	0	0
5/3/4	Finish mill air separator	N-09	Baghouse	0	0	0	0
5/4/4	Cement to silos	N-14, Q-25, Q-26, Q-27	Baghouses	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 6: CEMENT HANDLING							
6/1/2	Silo unloading	Q-14, Q-17, Q-21	Baghouses	0	0	0	0
6/2/2	Bagging of cement	R-12	Baghouse	0	0	0	0
Subtotal				0	0	0	0
EMISSION UNIT 7: COAL HANDLING							
7/1/2	Coal mill	S-17	Baghouse	0	0	0	0
7/2/2	Coal transfer	S-21	Baghouse	0	0	0	0
Subtotal				0	0	0	0
TOTAL				4.7	17.5	0.3	1.1

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US Fish and Wildlife Service



facsimile

TRANSMITTAL

to: Mr. Clair H. Fancy
 fax #: (904) 522-6979
 re: Florida Rock Industries PSD application
 date: June 12, 1995
 pages: 4, incl. this cover sheet.

RECEIVED

JUN 12 1995

**Bureau of
Air Regulation**

Dear Mr. Fancy:

Technical review comments on the Florida Rock Industries PSD permit application are attached. A hard copy will be sent via U.S. Mail.

From the desk of

Cal Garnett
 Assistant District Manager
 U.S. Fish and Wildlife Service
 1875 Century Boulevard, N.E.
 Atlanta, GA 30345

(404) 678-7164
 fax (404) 678-7266

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

1875 Century Boulevard
Atlanta, Georgia 30345

JUN 00 1996

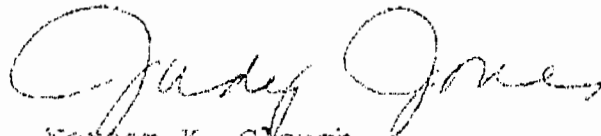
Mr. Clair H. Fancy
Chief, Bureau of Air Regulation
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399

Dear Mr. Fancy:

We have reviewed the Prevention of Significant Deterioration Application for the new cement plant proposed by Florida Rock Industries, Incorporated. Enclosed are the technical review comments from our Air Quality Branch.

Thank you for giving us the opportunity to comment on this permit application. We appreciate your cooperation in notifying us of proposed projects with the potential to impact the air quality and related resources of our Class I air quality areas. If you have questions, please contact Ms. Ellen Porter of our Air Quality Branch in Denver at telephone number 303/969-2617.

Sincerely yours,



Noleen K. Clough
Regional Director

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Technical Review of Prevention of Significant Deterioration
 Permit Application for Florida Rock Industries, Inc.'s
 Proposed Cement Plant, Alachua County, Florida

by

Air Quality Branch, Fish and Wildlife Service - Denver

Florida Rock Industries, Incorporated (FRI), is proposing to build a new Portland cement plant at their existing quarry in Alachua County, Newberry, Florida. The new plant would be located 95 km north of Chassahowitzka Wilderness Area (WA) and 105 km south of Okefenokee WA, Class I air quality areas administered by the U.S. Fish and Wildlife Service (FWS). The new plant would emit significant amounts of particulate matter, PM-10, sulfur dioxide (SO₂), nitrogen oxides (NO_x), volatile organic compounds (VOC), carbon monoxide, beryllium (Be), and hydrogen chloride (HCl).

Air Quality Modeling Analysis

The applicant used the EPA MESOPUFF II model to assess the impacts to Chassahowitzka and Okefenokee WAs from SO₂, NO_x, and PM-10. The modeling was performed for only one year (1986); our office was not consulted on this protocol. The applicant has subsequently stated that because of the effort required to run MESOPUFF II, the applicant felt that 1 year was acceptable rather than the 5 years recommended in the EPA document Interagency Workgroup on Air Quality Modeling (IWAQM) Phase I Report: Interim Recommendation on Modeling Long Range Transport and Impacts on Regional Visibility (EPA-454/R-93-015, April 1993). For this one year, the applicant's impact was below the FWS Class I significant levels. In addition, this modeled impact is most likely conservative because the applicant did not employ the chemistry option in the model. Thus, we will accept this analysis as indicating that impacts during the other four years are probably below the FWS Class I significant levels.

We have made note that future sources that contribute significantly to Class I increment consumption should follow our office on modeling protocol. These sources may be required to model multiple years.

Class I Area BACT Analysis

The BACT analysis regarding the BACT analysis on April 17. The BACT analysis now appears to

Class I Area AQRV Analysis

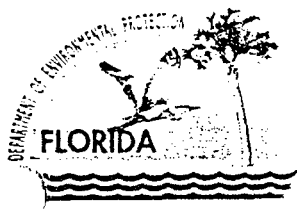
The Class I Area AQRV analysis is expected as a result of this project because the source is located within the Class I area. The modeled concentrations of PM-10, SO₂, and NO_x at the Class I areas are expected to be below the AQRV levels.

The Class I Area AQRV analysis is expected to be completed to Class I AQRV's. First, distance from the Class I Area AQRV's is expected to be determined. Further adverse impacts may occur. Such impacts may be determined by comparing the AQRV's significant impact levels are to be used only to assess a significant impact. The AQRV's significant impact levels are not to be used to determine individual source's impacts to the Class I area. The AQRV's significant impact levels are not to be used to determine the total impact on the Class I area. The AQRV's significant impact levels are not to be used to determine the total impact on the Class I area. The AQRV's significant impact levels are not to be used to determine the total impact on the Class I area.

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The applicant did not perform a regional haze analysis for either Class I area. The procedures for the regional haze analysis are found in Appendix B of the PWAQM document. An applicant should contact the office for updates on these procedures. A measured background visual range of 80 km found to occur in addition, the analysis should use the 24-hour concentrations of SO₂ and PM-10 such as to ion at the respective Class I areas.

If you have any questions, please call Ellen Pomeroy of our Air Quality Branch at (303) 957-1001.



R. File

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

July 14, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Arthur Saarinen, Jr., President
Haile Community Association, Inc.
3616 Northwest 186th Street
Newberry, Florida 32669

Re: Your Letter of May 11, 1995
Florida Rock Cement Plant Application

Dear Mr. Saarinen:

Thank you for your letter of May 12 regarding the Florida Rock project. We passed along our initial comments through Pam McVety's letter of June 19 which was in response to the letter you wrote her on June 5. At the time, she informed you that we had received the application and had advised the applicant that it was incomplete. She also described the air permit review and public notice process which we follow on our permitting actions.

I discussed the status of the application and some of the items in your letter with Peter Walther of the association. I told him I would write down some the main points that he and I discussed and send you an update.

We will send you copies of correspondence and submittals as you requested and will also make them available at our Gainesville office. Both the Gainesville and the Northeast District offices will have copies of key documents for public accessibility. Following our discussions with Mr. Walther, we sent him whatever correspondence he did not already have. Per his request, we sent him copies of emissions estimating techniques applicable to the cement industry from EPA Publication AP-42. He will also receive a diskette containing air dispersion modeling data.

The present status of the application is that it is still under completeness review following a reply received on July 3 to our letter of June 16. We have until August 2 to determine if the application is complete. Once it is complete, then we will conduct our technical evaluation and advise the applicant within 90 days that we intend to issue or deny a permit to construct the proposed facility. The applicant must publish a Public Notice of this intent in a local newspaper of general circulation in Alachua County.

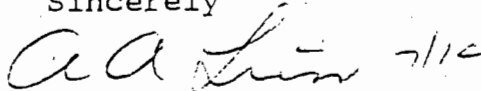
Mr. Arthur Saarinen
Page Two
July 14, 1995

The Public Notice will briefly advise the public of the project, the Department's intended action and where documents will be available for their review. It will also give the public the opportunity to submit written comments within 30 days, request a Public Information Hearing within 30 days or request an Administrative Hearing under Chapter 120 of the Florida Statutes within 14 days. We will mail you a copy of the Intent as well as the Public Notice and a copy of the draft permit and technical evaluation if our intent is to issue a permit.

We appreciate the information the association provided on Cement Kiln Dust as well as the information on the geology and water rescues. We will consult with other groups in the Department about these matters. Once the application is complete, we will conduct our technical review and address the items mentioned in your letter in accordance with applicable Department regulations.

If you or other members of the association have any questions about this matter, please contact me or Teresa Heron at (904)488-1344 or Dr. Pat Reynolds of our Gainesville office at (904)336-2095.

Sincerely



A. A. Linero, P.E.
New Source Review Section

AAL/al/t

cc: Pam McVety, DEP
Chris Kirts, NED
Pat Reynolds, Gainesville DEP
Mona Sullivan, Alachua County



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

RECEIVED

4APT-AEB

JUN 19 1995

JUN 27 1995

Mr. Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Bureau of
Air Regulation

SUBJ: Florida Rock Industries, Inc. (FRI), Newberry,
Alachua County, Florida (PSD-FL-228)

Dear Mr. Fancy:

This is to acknowledge receipt of an application for a Prevention of Significant Deterioration (PSD) permit for the proposed construction of a new Portland cement plant at the above referenced location by your letter dated March 21, 1995. FRI presently operates a quarry at their Newberry site. The proposed Portland cement manufacturing facility will consist of a dry process preheater/precalciner cement kiln as well as associated raw material, clinker, cement, and coal handling equipment. The new cement plant includes raw milling and finish milling operations in addition to kiln and material handling operations.

The production capacity of the proposed Portland cement manufacturing facility will be 2,300 tons per day (TPD) of clinker, and 772,400 tons per year (TPY) of cement. The new indirect fired kiln system will be preheated with No. 2 fuel oil, use pulverized coal as the primary fuel, and utilize tire derived fuel (TDF) as supplemental fuel. Fuels will not be blended. The maximum utilization rate for tires as supplemental fuel will not exceed thirty percent of the total heat input to the cement kiln preheater end calciner burner.

As discussed between Ms. Teresa Heron of your staff and Mr. Stan Kukier of my staff on June 12, 1995, we have reviewed the package as submitted and have no adverse comments at this time.

Process control may be considered representative of Best Available Control Technology (BACT) for control of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) emissions from the proposed FRI cement kiln and raw mill air heater. Process design as well as fuel sulfur content limitations may also be considered BACT for kiln and raw mill air heater sulfur dioxide (SO_2) emissions, respectively.

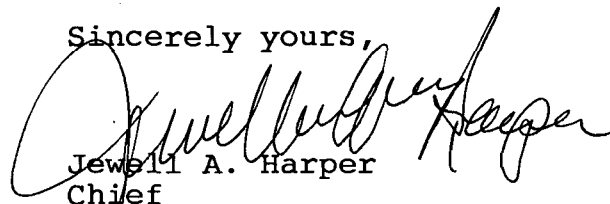
Inherent dry lime scrubbing of exhaust gases by both the Portland cement dry process and alkaline electrostatic precipitator (ESP) collection plate dust will minimize cement kiln SO₂ emissions. Since no other more stringent control alternatives exist for control of point source preheater/precalciner cement kiln, clinker cooler, raw mill air heater, and material handling particulate emissions, fabric filtration and ESP technology may also be considered BACT. FRI expects both baghouse and ESP design collection efficiencies to exceed 99.9 percent. ESP technology may be considered representative of BACT for control of cement kiln and raw mill air heater beryllium (Be) emissions.

All the dust captured by either the ESPs or fabric filters will be recycled to the production process as a raw material supplement. A combination of wet suppression methods, sweeping, and quarry mix moisture content (8 to 12 weight percent), will minimize fugitive particulate emissions from material unloading and vehicle traffic. The No. 2 fuel oil sulfur content will be limited to 0.05 weight percent. The FRI indirect fired kiln burner system design will use staged combustion air methods to reduce NO_x formation.

The new FRI Portland cement plant will be subject to the requirements of 40 CFR Part 60, Subpart F - Standards of Performance for Portland Cement Plants, 40 CFR Part 60, Subpart Y - Standards of Performance for Coal Preparation Plants, and 40 CFR Part 60, Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants.

Thank you for the opportunity to review and comment on this application. If you have any questions, please contact Mr. Stan Kukier of my staff at (404) 347-3555, voice mail box extension 4143.

Sincerely yours,



Jewell A. Harper
Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

CC: T. Heon
C. Holladay
Pat. Reynolds NEDB
A. Saarinen
NED
NPS