

**FLORIDA ROCK INDUSTRIES INC**

CEMENT GROUP / 4000 N.W. CR 235 / P.O. Box 459 / Newberry, FL 32669 / (352) 472-4722



RECEIVED

OCT 25 2006

BUREAU OF AIR REGULATION

October 20, 2006

Ms. Cindy Mulkey  
Bureau of Air Regulation  
Department of Environmental Protection  
2600 Blair Stone Road, MS #5505  
Tallahassee, FL 32399-2400

RE: Application for construction permit  
Facility 0010087, Permit No. 0010087-009-AV  
Florida Rock Industries, Inc.—Thompson S. Baker Cement Plant

Dear Ms. Mulkey:


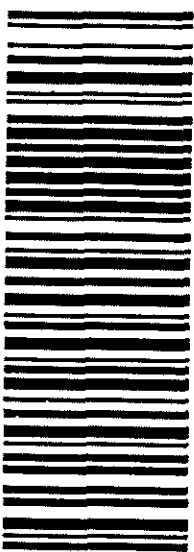

Enclosed are four copies of an application for construction permit allow limited 30-day SO2 averaging and to increase heat input to kiln.

If you have any questions, please call me at 352-472-4722, ext. 121.

Sincerely,  
FLORIDA ROCK INDUSTRIES, INC.

A handwritten signature in cursive script that reads "Henry Gotsch".

Henry Gotsch  
Environmental Manager

		<b>2ND</b>		Pieces: <b>1/1</b>
FM: DEP AIR RESOURCE MGMT P. Adams DIRECTOR OFFICE STE 23 111 S MAONOUADR TALLAHASSEE, FL 32301 UNITED STATES Phone: 850-921-9505		ORIGIN: <b>TLH</b> Sender's ref: <b>37550201000 A7 AY235</b>		POSTCODE: <b>32256</b>
To: DEP NORTHEAST DISTRICT OFFICE MR. CHRIS KIRTS 7825 BAYMEADOWS WAY AIR SECTION, SUITE 200B JACKSONVILLE, FL 32256 UNITED STATES		TEL: 904-807-3235		Day <b>13MIO</b>
Description: 0010087-025-AC application 0310045-017-AC applica Weight: 1 lbs for 1 pos Date: 2006-11-09 DHL standard terms and conditions apply.				
		<b>ASHX 7D</b> <b>FSC</b>		
(2L)JUS32256				
WAYBILL: 18678343456 (Non-Negotiable)				

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SENDER'S RECEIPT  
 Waybill #: 18678343456

To (Company):  
 DEP Northeast District Office  
 Air Section, Suite 200B  
 7825 Baymeadows Way

Jacksonville, FL 32256  
 UNITED STATES

Attention To: Mr. Chris Kirts  
 Phone#: 904-807-3235

Sent By: P. Adams  
 Phone#: 850-921-9505

Rate Estimate: 3.52  
 Protection: Not Required  
 Description: 0010087-025-AC application  
 0310045-017-AC applica

Weight (lbs.): 1  
 Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AY235  
 Service Level: 2nd Day (2nd  
 business day by 5 PM)

Special Svc:  
 Date Printed: 11/9/2006  
 Bill Shipment To: Sender  
 Bill To Acct: 778941286

DHL Signature (optional) \_\_\_\_\_ Route \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

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# Department of Environmental Protection

RECEIVED

Division of Air Resource Management

OCT 25 2006

## APPLICATION FOR AIR PERMIT - LONG FORM

BUREAU OF AIR REGULATION

### I. APPLICATION INFORMATION

**Air Construction Permit** – Use this form to apply for any air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes to establish, revise, or renew a plantwide applicability limit (PAL).

**Air Operation Permit** – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial/revise/renewal Title V air operation permit.

**Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option)** – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

#### Identification of Facility

1. Facility Owner/Company Name: <b>Florida Rock Industries, Inc.</b>	
2. Site Name: <b>Thompson S. Baker Cement Plant – Newberry</b>	
3. Facility Identification Number: <b>0010087</b>	
4. Facility Location... Street Address or Other Locator: <b>4000 NW CR 235</b> City: <b>Newberry</b> County: <b>Alachua</b> Zip Code: <b>32669</b>	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

#### Application Contact

1. Application Contact Name: <b>John B. Koogler, Ph. D., P.E.</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>Koogler &amp; Associates, Inc.</b> Street Address: <b>4014 NW 13<sup>th</sup> Street</b> City: <b>Gainesville</b> State: <b>Florida</b> Zip Code: <b>32609</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(352) 377-5822</b> ext. Fax: <b>(352) 377-7158</b>	
4. Application Contact Email Address: <b>jkoogler@kooglerassociates.com</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application: <b>10/25/2006</b>	3. PSD Number (if applicable):
2. Project Number(s): <b>0010087-025-AA</b>	4. Siting Number (if applicable):

## APPLICATION INFORMATION

### Purpose of Application

This application for air permit is submitted to obtain: (Check one)

#### Air Construction Permit

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

#### Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

#### Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

**Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:**

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

### Application Comment

**Application to change the short-term SO<sub>2</sub> emission limiting standard and increase the heat input rate to Kiln No. 1 with no production rate change and no emission rate change. Future actual emissions will not exceed past actual emissions adjusted for a demand increase and a less than PSD significant increase. Details are provided in the attached Project Description.**

# APPLICATION INFORMATION

## Scope of Application

<b>Emissions Unit ID Number</b>	<b>Description of Emissions Unit</b>	<b>Air Permit Type</b>	<b>Air Permit Proc. Fee</b>
003	No. 1 Kiln System	AC1F	NA

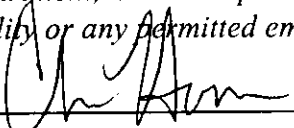
## Application Processing Fee

Check one:  Attached - Amount: \$ \_\_\_\_\_  Not Applicable

**APPLICATION INFORMATION**

**Owner/Authorized Representative Statement**

**Complete if applying for an air construction permit or an initial FESOP.**

1. Owner/Authorized Representative Name : <b>Chris Horner, Plant Manager</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>Florida Rock Industries, Inc.</b> Street Address: <b>4000 NW CR 235</b> City: <b>Newberry</b> State: <b>Florida</b> Zip Code: <b>32669</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: <b>353-474-4722 Ext 130</b> Fax: <b>352-472-2449</b>
4. Owner/Authorized Representative Email Address: <u>chrish@flarock.com</u>
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.</i>   _____ Signature  <u>10/20/06</u> _____ Date

## APPLICATION INFORMATION

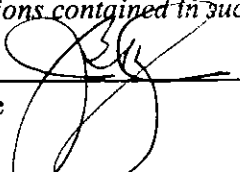
### Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: <b>Not Applicable</b>
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone:
5. Application Responsible Official Email Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i>  _____ Signature  _____ Date

# APPLICATION INFORMATION

## Professional Engineer Certification

1. Professional Engineer Name: <b>John B. Koogler</b> Registration Number: <b>12925</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Koogler &amp; Associates, Inc.</b> Street Address: <b>4014 NW 13<sup>th</sup> Street</b> City: <b>Gainesville</b> State: <b>Florida</b> Zip Code: <b>32609</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 377-5822</b> ext. Fax: <b>(352) 377-7158</b>
4. Professional Engineer Email Address: <b>jkoo@kooglerassociates.com</b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been <del>designed</del> or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>  Signature  Date <u>10/20/2006</u> (seal)

\* Attach any exception to certification statement.



## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates... Zone 17      East (km) <b>346.4</b> North (km) <b>3285.7</b>		2. Facility Latitude/Longitude Latitude (DD/MM/SS) <b>29/41/37</b> Longitude (DD/MM/SS) <b>82/35/11</b>	
3. Governmental Facility Code: <b>0</b>	4. Facility Status Code: <b>A</b>	5. Facility Major Group SIC Code: <b>32</b>	6. Facility SIC(s): <b>3241</b>
7. Facility Comment:			

#### Facility Contact

1. Facility Contact Name: <b>Henry Gotsch, Environmental Manager</b>
2. Facility Contact Mailing Address... Organization/Firm: <b>Florida Rock Industries, Inc.</b> Street Address: <b>4000 NW County Road 235 / P.O. Box 459</b> City: <b>Newberry</b> State: <b>Florida</b> Zip Code: <b>32669</b>
3. Facility Contact Telephone Numbers: Telephone: <b>(352) 472-4722 Ext 121.</b> Fax: <b>(352) 472-2449</b>
4. Facility Contact Email Address: <b>hgotsch@flarock.com</b>

#### Facility Primary Responsible Official

**Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."**

1. Facility Primary Responsible Official Name: <b>Not applicable</b>
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City:                                      State:                                      Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) -      ext.      Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

**FACILITY INFORMATION**

**Facility Regulatory Classifications**

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1. <input type="checkbox"/> Small Business Stationary Source	<input checked="" type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	
<p><b>Field 6: Presumed major for HAPs.</b></p> <p><b>Field 8: NSPS Subpart F has generally been superseded by NESHAP Subpart LLL. NSPS Subpart OOO and NSPS Subpart Y apply to certain affected facilities; but not to Kiln No. 1 which is the subject of this application.</b></p> <p><b>Field 10: Subject to applicable provisions of NESHAP Subpart LLL.</b></p>	

**FACILITY INFORMATION**

**List of Pollutants Emitted by Facility**

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM	A	N
PM10	A	N
NOX	A	N
SO2	A	N
CO	A	N
VOC	A	N
DIOX	B	N
H114	B	N
SAM	B	N

**FACILITY INFORMATION**

**B. EMISSIONS CAPS**

**Facility-Wide or Multi-Unit Emissions Caps**

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
<b>Not applicable</b>					
7. Facility-Wide or Multi-Unit Emissions Cap Comment:					

## FACILITY INFORMATION

### C. FACILITY ADDITIONAL INFORMATION

#### Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>11/2004</u>
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>11/2004</u>
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>11/2004</u>

#### Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plant wide Applicability Limit (PAL): <input type="checkbox"/> Attached, Document ID: <u>Attach 1</u>
3. Rule Applicability Analysis: <input type="checkbox"/> Attached, Document ID: <u>NA</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

## FACILITY INFORMATION

### Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):  
 Attached, Document ID: \_\_\_\_\_  Not Applicable (no exempt units at facility)

### Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):  
 Attached, Document ID: \_\_\_\_\_  Not Applicable (revision application)
2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):  
 Attached, Document ID: \_\_\_\_\_  
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan (Required for all initial/revision/renewal applications):  
 Attached, Document ID: NA  
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):  
 Attached, Document ID: \_\_\_\_\_  
 Equipment/Activities On site but Not Required to be Individually Listed  
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :  
 Attached, Document ID: \_\_\_\_\_  Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:  
 Attached, Document ID: \_\_\_\_\_  Not Applicable

### Additional Requirements Comment

## EMISSIONS UNIT INFORMATION

Section [1] of [1] Kiln No. 1 EU-003

### III. EMISSIONS UNIT INFORMATION

**Title V Air Operation Permit Application** - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

**Air Construction Permit or FESOP Application** - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application** - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

**EMISSIONS UNIT INFORMATION**

Section [1] of [1] Kiln No. 1 EU-003

**A. GENERAL EMISSIONS UNIT INFORMATION****Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

**Emissions Unit Description and Status**

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **Existing 2650 tpd (clinker) Kiln No. 1 that includes a 156 foot rotary kiln, a 25,300 cu. foot multi-stage combustion (MSC) calciner and a four-stage preheater. Fuels include coal, petroleum coke, WTDF, propane, natural gas, No. 2 fuel oil and flyash. The presently permitted maximum heat input rate is 364 mmBTU/hr. This application is for a permit to increase the maximum heat input rate to 408 mmBTU/hr. PM emissions are controlled by an ESP and NOx by SNCR.**

3. Emissions Unit Identification Number: **EU-003**

4. Emissions Unit Status Code: A	5. Commence Construction Date: N/A	6. Initial Startup Date: 12/1999	7. Emissions Unit Major Group SIC Code: 32	8. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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9. Package Unit:

Manufacturer: N/A

Model Number:

10. Generator Nameplate Rating: MW



11. Emissions Unit Comment: **Application is to increase the permitted heat input rate to Kiln No. 1 to be consistent with a 12/2002 production rate increase that was permitted with no increase in the heat input rate. The kiln feed rate and clinker production rate are not affected nor are the fuel types. The heat input rate will increase from 364 to 408 mmBTU/hr. There are no emission rate changes associated with the heat rate increase, however the application also includes an independent request to change the averaging time for the short-term SO2 emission limiting standard (See attached Project Description). This application therefore addresses only matters related to increased fuel use rates and the SO2 emission limiting standard.**

**EMISSIONS UNIT INFORMATION**

Section [1] of [1] Kiln No. 1 EU-003

**Emissions Unit Control Equipment**

1. Control Equipment/Method(s) Description:  
**Electrostatic Precipitator – High Efficiency**  
**Selective Non-Catalytic Reduction (SNCR)**

2. Control Device or Method Code(s): **010, 107**

**EMISSIONS UNIT INFORMATION**

Section [1] of [1] Kiln No. 1 EU-003

**B. EMISSIONS UNIT CAPACITY INFORMATION**

(Optional for unregulated emissions units.)

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate: <b>191.4 tph, peak hourly preheater feed rate</b>		
2. Maximum Production Rate: <b>115.0 tph, peak hourly clinker production rate</b>		
3. Maximum Heat Input Rate: million Btu/hr <b>408.0 mmBTU/hr</b>		
4. Maximum Incineration Rate: pounds/hr <b>N/A</b> tons/day		
5. Requested Maximum Operating Schedule:		
hours/day	<b>24</b>	days/week <b>7</b>
weeks/year	<b>52</b>	hours/year <b>8760</b>
6. Operating Capacity/Schedule Comment:		
<b>Clinker Production: 115.0 tph, max hourly, 110.3 tph, 24-hr rolling average and 800,000 tpy</b>		
<b>Preheater Feed: 191.4 tph, max hourly, 183.4 tph, 24-hr rolling average and 1,331,000 tpy</b>		
<b>Clinker production is empirically determined from preheater feed.</b>		

**EMISSIONS UNIT INFORMATION**

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**C. EMISSION POINT (STACK/VENT) INFORMATION**  
 (Optional for unregulated emissions units.)

**Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: <b>E-21</b>		2. Emission Point Type Code: <b>1</b>	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:  <b>E-21 Kiln No. 1/Raw Mill Stack</b>			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: <b>EU-002; Raw Mill and Raw Mill Auxiliary Heater discharge through E-21</b>			
5. Discharge Type Code: <b>V</b>	6. Stack Height: Feet <b>250</b>	7. Exit Diameter: Feet <b>9.42</b>	
8. Exit Temperature: °F <b>220*</b>	9. Actual Volumetric Flow Rate: Acfm <b>250,000*</b>	10. Water Vapor: % <b>12*</b>	
11. Maximum Dry Standard Flow Rate: Dscfm <b>170,000*</b>		12. Nonstack Emission Point Height: Feet <b>N/A</b>	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: <b>* - typical for when raw mill operates; or about 90% of the time. When the raw mill does not operate (about 10% of the time), the actual flow is typically 194,000 acfm, the temperature is ~260°F, the moisture is ~12% and the standard flow is ~125,000 dscfm.</b>			

**EMISSIONS UNIT INFORMATION**

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**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate:** Segment \_\_ of \_\_

1. Segment Description (Process/Fuel Type):		
Note: All Process Segments are unchanged; only FUEL Segments change.		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

**Segment Description and Rate:** Segment 1 of 7

1. Segment Description (Process/Fuel Type):		
In-process Fuel Use: Coal		
2. Source Classification Code (SCC): <b>3-90-002-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>16.3 tph</b>	5. Maximum Annual Rate: <b>142,963 tpy</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>1.75%</b>	8. Maximum % Ash: <b>No limit</b>	9. Million Btu per SCC Unit: <b>25.0</b>
10. Segment Comment: <b>Coal Heating Value: 12,500 BTU/lb = 25.0 mmBTU/ton</b> <b>(408 mmBTU/hr)/(25.0 mmBTU/ton) = 16.3 tph</b> <b>@ 8760 hr/yr = 142,963 tpy</b>		

**EMISSIONS UNIT INFORMATION**

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**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate:** Segment 2 of 7

1. Segment Description (Process/Fuel Type):  <b>In-process Fuel Use: Petroleum Coke</b>  <b>Note: Heat input from petcoke is limited to 25% of the total heat input</b>		
2. Source Classification Code (SCC): <b>3-90-008-99</b>	3. SCC Units: <b>Tons Burned</b>	
4. Maximum Hourly Rate: <b>3.84 tph</b>	5. Maximum Annual Rate: <b>33,591 tpy</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>No limit</b>	8. Maximum % Ash: <b>No limit</b>	9. Million Btu per SCC Unit: <b>26.6</b>
10. Segment Comment: <b>Coke Heating Value: 13,300 BTU/lb = 26.6 mmBTU/ton</b> <b>(408 mmBTU/hr x 0.25)/(26.6 mmBTU/ton) = 3.84 tph</b> <b>@ 8760 hr/yr = 33,591 tpy</b>		

**Segment Description and Rate:** Segment 3 of 7

1. Segment Description (Process/Fuel Type):  <b>In-process Fuel Use: Natural Gas</b>		
2. Source Classification Code (SCC): <b>3-90-006-02</b>	3. SCC Units: <b>Million Cubic Feet Burned</b>	
4. Maximum Hourly Rate: <b>0.389 mmCF/hr</b>	5. Maximum Annual Rate: <b>3403 mmCF/yr</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>No limit</b>	8. Maximum % Ash: <b>No limit</b>	9. Million Btu per SCC Unit: <b>1050</b>
10. Segment Comment: <b>Gas Heating Value: 1050 BTU/cu. ft. = 1050 mmBTU/mmCF</b> <b>(408 mmBTU/hr)/(1050 mmBTU/mmCF) = 0.389 mmCF/hr</b> <b>@ 8760 hr/yr = 3403 mmCF/yr</b>		

**EMISSIONS UNIT INFORMATION**

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**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate:** Segment 4 of 7

1. Segment Description (Process/Fuel Type):  <b>In-process Fuel Use: Distillate Oil</b>		
2. Source Classification Code (SCC): <b>3-90-005-02</b>		3. SCC Units: <b>Thousand Gallons Burned</b>
4. Maximum Hourly Rate: <b>2.91 mGal/hr</b>	5. Maximum Annual Rate: <b>25,529 mGal/yr</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>0.05%</b>	8. Maximum % Ash: <b>No limit</b>	9. Million Btu per SCC Unit: <b>140.0</b>
10. Segment Comment: <b>No. 2 Fuel Oil</b>  <b>Oil Heating Value: 140,000 BTU/gal = 140 mmBTU/1000 gal</b> <b>(408 mmBTU/hr)/(140 mmBTU/mGal) = 2.91 x 1000 gal/hr</b> <b>@ 8760 hr/yr = 25,529 mGal/yr</b>		

**Segment Description and Rate:** Segment 5 of 7

1. Segment Description (Process/Fuel Type):  <b>In-process Fuel Use: Propane</b>		
2. Source Classification Code (SCC): <b>3-90-010-99</b>		3. SCC Units: <b>Thousand Gallons Burned</b>
4. Maximum Hourly Rate: <b>4.34 mGal/hr</b>	5. Maximum Annual Rate: <b>38,022 mGal/yr</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>No limit</b>	8. Maximum % Ash: <b>No limit</b>	9. Million Btu per SCC Unit: <b>94.0</b>
10. Segment Comment: <b>Propane Heating Value: 94,000 BTU/gal = 94.0 mmBTU/1000 gal</b> <b>(408 mmBTU/hr)/(94.0 mmBTU/mGal) = 4.34 x 1000 gal/hr</b> <b>@ 8760 hr/yr = 38,022 mGal/yr</b>		

**EMISSIONS UNIT INFORMATION**

Section [1] of [1] Kiln No. 1 EU-003

**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate:** Segment 6 of 7

1. Segment Description (Process/Fuel Type):  <b>In-process Fuel Use: Tires</b>  <b>WTDF @ up to 30% of Total Heat Input; or 122.4 mmBTU/hr</b>		
2. Source Classification Code (SCC): <b>3-90-012-99008-99</b>	3. SCC Units: <b>Tons Burned</b>	
4. Maximum Hourly Rate: <b>5.10 tph</b>	5. Maximum Annual Rate: <b>44,676 tpy</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>No limit</b>	8. Maximum % Ash: <b>No limit</b>	9. Million Btu per SCC Unit: <b>24.0</b>
10. Segment Comment: <b>WTDF Heating Value: 12,000 BTU/lb = 24.0 mmBTU/ton</b> <b>(122.4 mmBTU/hr)/(24.0 mmBTU/ton) = 5.10 tph</b> <b>@ 8760 hr/yr = 44,676 tpy</b>		

**Segment Description and Rate:** Segment 7 of 7

1. Segment Description (Process/Fuel Type):  <b>In-process Fuel Use: High carbon Flyash</b>  <b>Flyash @ up to 5% of total heat input; or 20.4 mmBTU/hr</b>		
2. Source Classification Code (SCC): <b>3-90-012-99</b>	3. SCC Units: <b>Tons Burned</b>	
4. Maximum Hourly Rate: <b>1.9 tph</b>	5. Maximum Annual Rate: <b>16,547 tpy</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>No limit</b>	8. Maximum % Ash: <b>No limit</b>	9. Million Btu per SCC Unit: <b>~10.8</b>
10. Segment Comment: <b>Flyash Heating Value (@ 40%LOI): ~5,400 BTU/lb = 10.8 mmBTU/ton</b> <b>(20.4 mmBTU/hr)/(10.8 mmBTU/ton) = 1.9 tph</b> <b>@ 8760 hr/yr = 16,547 tpy</b>		



**EMISSIONS UNIT INFORMATION**

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**E. EMISSIONS UNIT POLLUTANTS**

**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	010	None	EL
PM10	010	None	EL
SO2	None	None	EL
NOx	107	None	EL
CO	None	None	EL
VOC	None	None	EL
SAM	None	None	EL
DIOX	None	None	EL
H114	None	None	EL

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

**Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.**

1. Pollutant Emitted: <b>SO2</b>		2. Total Percent Efficiency of Control: <b>N/A</b>	
3. Potential Emissions: <b>17.7 lb/hour, 24-hr avg.                                  64.0 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>N/A</b> tons/year			
6. Emission Factor: <b>0.16 lb/ton clinker, 24-hr avg.* and 0.16 lb/ton clinker, 30-day avg.**</b> Reference: <b>BACT/ Proposed by Applicant</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year <b>50.9 tpy***</b>		8.b. Baseline 24-month Period: From: <b>2001</b> To: <b>2002</b>	
9.a. Projected Actual Emissions (if required): <b>50.9 tons/year</b>		9.b. Projected Monitoring Period: <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  <ul style="list-style-type: none"> <li>* - All hours when Raw Mill is Operating</li> <li>** - All hours when Plant is Operating (Raw Mill on-line and off-line)</li> <li>*** - Includes a demand increase and a 39 tpy increase</li> </ul> <p><b>24-hr average: 0.16 lb/ton x 110.4 tph clinker = 17.7 lb/hr</b>  <b>30-day average: 0.16 lb/ton x 110.4 tph clinker = 17.7 lb/hr</b>  <b>Annual:            0.16 lb/ton x 800,000 tpy/2000 lb/ton = 64.0 tpy</b></p>			
11. Potential, Fugitive, and Actual Emissions Comment <b>Note: Future Actual SO2 Emissions are not to exceed 50.9 tpy to stay below Past Actual Emissions</b> <b>Note: The numeric SO2 Emission Limit did not change. Only the Averaging Time changed for <u>all</u> plant operating hours.</b>			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>NOx</b>		2. Total Percent Efficiency of Control: <b>0-50%</b>	
3. Potential Emissions: <b>271 lb/hour</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		<b>980 tons/year</b>	
5. Range of Estimated Fugitive Emissions (as applicable): <b>N/A</b> to tons/year			
6. Emission Factor: <b>2.45 lb/ton clinker</b>  Reference: <b>BACT</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): <b>942 tons/year</b>		8.b. Baseline 24-month Period: <b>N/A</b> From: <b>2000</b> To: <b>2001</b>	
9.a. Projected Actual Emissions (if required): <b>942 tons/year</b>		9.b. Projected Monitoring Period: <b>N/A</b> <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  <b>Hourly: 2.45 lb/ton x 110.3 tph = 271 lb/hr NOx</b> <b>Annual: 2.45 lb/ton x 800,000 tpy/2000 lb/ton = 980 tpy</b>			
11. Potential, Fugitive, and Actual Emissions Comment: <b>Note: Future Actual NOx Emissions are not to exceed 942 tpy to stay below Past Actual Emissions</b>			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>PM/PM10</b>		2. Total Percent Efficiency of Control: <b>99%</b>	
3. Potential Emissions: <b>25.4/22.1 lb/hour</b> <b>92.0/80.0 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>N/A</b> to tons/year			
6. Emission Factor: <b>0.23/0.20 lb/ton clinker</b>  Reference: <b>BACT</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): <b>38.8 tons/year</b>		8.b. Baseline 24-month Period: <b>N/A</b> From: <b>2001</b> To: <b>2002</b>	
9.a. Projected Actual Emissions (if required): <b>38.8 tons/year</b>		9.b. Projected Monitoring Period: <b>N/A</b> <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  <b>Hourly: 0.23/0.20 lb/ton x 110.4 tph = 25.4/22.1 lb/hr NOx</b> <b>Annual: 0.23/0.20 lb/ton x 800,000 tpy/2000 lb/ton = 92.0/80.0 tpy</b>			
11. Potential, Fugitive, and Actual Emissions Comment: <b>Note: Future Actual PM10 Emissions are not to exceed 38.8 tpy to stay below Past Actual Emissions</b>			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control: NA	
3. Potential Emissions: 12.2 lb/hour 43.0 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): N/A to tons/year			
6. Emission Factor: 0.11 lb/ton clinker  Reference: BACT		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): 43.0 tons/year		8.b. Baseline 24-month Period: N/A From: 2004 To: 2005	
9.a. Projected Actual Emissions (if required): 43.0 tons/year		9.b. Projected Monitoring Period: N/A <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  Hourly: 0.11 lb/ton x 110.3 tph = 12.2 lb/hr NOx Annual: 0.11 lb/ton x 800,000 tpy/2000 lb/ton = 43.0 tpy			
11. Potential, Fugitive, and Actual Emissions Comment: <b>Note: Future Actual VOC Emissions are not to exceed 43.0 tpy to stay below Past Actual Emissions and the Permit Limit.</b>			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>CO</b>		2. Total Percent Efficiency of Control: <b>NA</b>	
3. Potential Emissions: <b>276 lb/hour</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		<b>1000 tons/year</b>	
5. Range of Estimated Fugitive Emissions (as applicable): <b>N/A</b> to tons/year			
6. Emission Factor: <b>2.50 lb/ton clinker</b>  Reference: <b>BACT</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): <b>1000 tons/year</b>		8.b. Baseline 24-month Period: <b>N/A</b> From: <b>2003</b> To: <b>2004</b>	
9.a. Projected Actual Emissions (if required): <b>1000 tons/year</b>		9.b. Projected Monitoring Period: <b>N/A</b> <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  <b>Hourly: 2.50 lb/ton x 110.3 tph = 276 lb/hr NOx</b> <b>Annual: 2.50 lb/ton x 800,000 tpy/2000 lb/ton = 1000 tpy</b>			
11. Potential, Fugitive, and Actual Emissions Comment: <b>Note: Future Actual CO Emissions are not to exceed 1000 tpy to stay below Past Actual Emissions and the Permit Limit.</b>			

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>All other Regulated Pollutants (See Comment Section)</b>	2. Total Percent Efficiency of Control:
3. Potential Emissions:	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor:  Reference:	7. Emissions Method Code:
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: N/A From:                                  To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: N/A <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years
10. Calculation of Emissions:	
11. Potential, Fugitive, and Actual Emissions Comment: <b>Emission Rates and Emission Limits of all other regulated Pollutants are not affected by the actions requested in this Application.</b>	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
ALLOWABLE EMISSIONS**

**Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.**

**Allowable Emissions** Allowable Emissions \_\_\_ of \_\_\_

1. Basis for Allowable Emissions Code: <b>All regulated Pollutants (See Comment Section)</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions:
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): <b>Allowable Emissions and Methods of Compliance for all Regulated Pollutants remain unchanged</b>	

**Allowable Emissions** Allowable Emissions \_\_\_ of \_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions:
5. Method of Compliance: <b>CEMS</b>	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions \_\_\_ of \_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	



**EMISSIONS UNIT INFORMATION**

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**H. CONTINUOUS MONITOR INFORMATION**

Complete if this emissions unit is or would be subject to continuous monitoring.

**Continuous Monitoring System:** Continuous Monitor \_\_\_ of \_\_\_

1. Parameter Code: (See Comment Section)	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:  <b>The Continuous Monitoring of no pollutant or parameter will be affected by the requested action.</b>	

**Continuous Monitoring System:** Continuous Monitor \_\_\_ of \_\_\_

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

**EMISSIONS UNIT INFORMATION**

Section [1] of [1] Kiln No. 1 EU-003

**I. EMISSIONS UNIT ADDITIONAL INFORMATION**

**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>11/2004</u>
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>11/2004</u>
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable  Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

**EMISSIONS UNIT INFORMATION**

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**Additional Requirements for Air Construction Permit Applications**

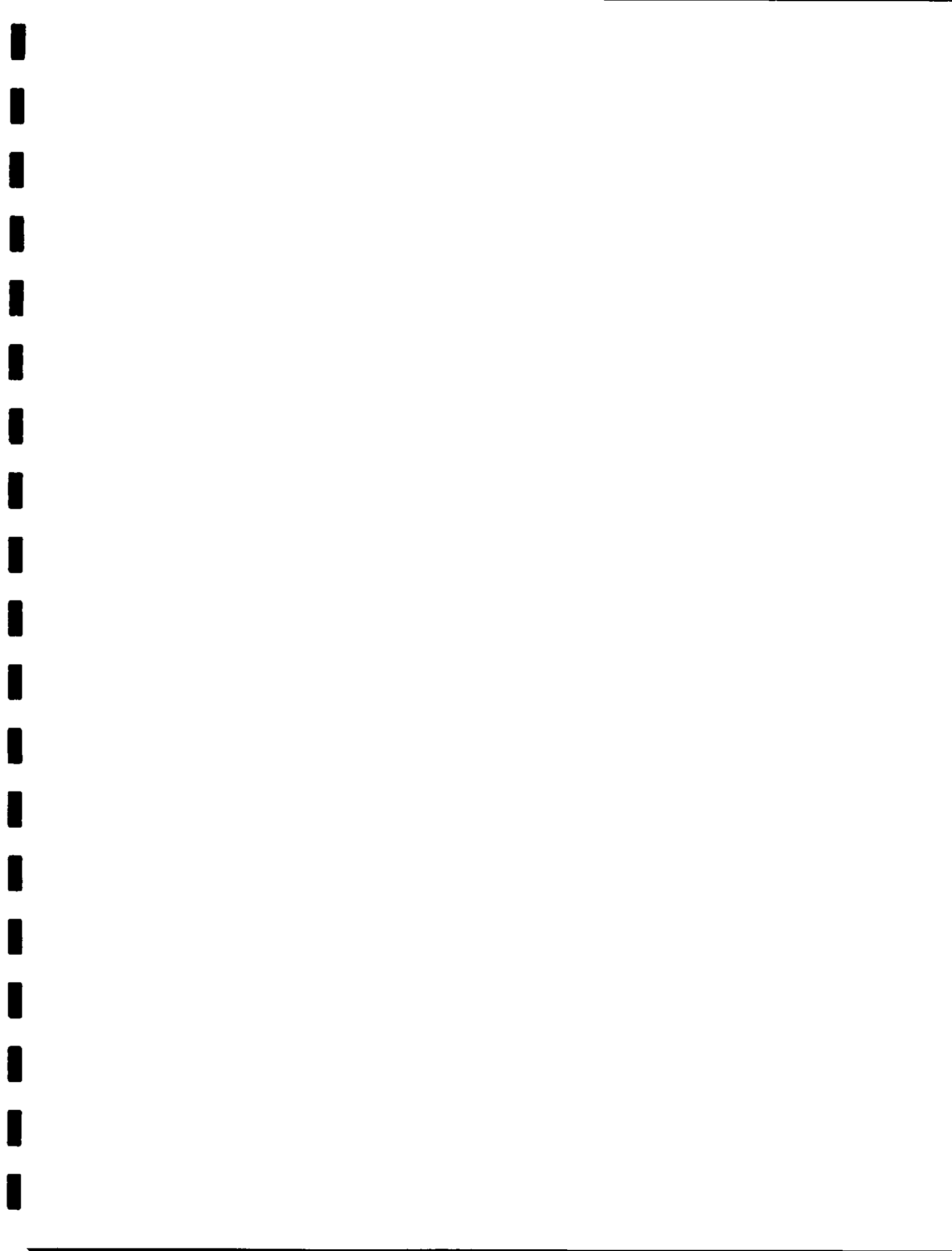
1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

**Additional Requirements for Title V Air Operation Permit Applications - NA**

1. Identification of Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input type="checkbox"/> Copy Attached, Document ID: _____ <input type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

**Additional Requirements Comment**

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## SCOPE OF APPLICATION

Florida Rock Industries (FRI) operates the Thompson S. Baker Portland Cement Plant in Newberry, Alachua County, Florida. The plant is on County Road 235, approximately 2.5 miles northeast of the city center of Newberry, Florida. FRI has one operating Portland cement production line (Line No. 1) at the site and was recently permitted to construct a second line (Line No. 2). This permit application addresses only Line No. 1.

The purpose of this application is to request an amendment to the SO<sub>2</sub> emission limiting standard for Line No. 1 and to request an increase in the heat input rate for Line No. 1. Neither of these changes are expected to result in any measurable increase in emissions. However, to comply with Department rules, it is being stated that the changes can be accomplished without future actual emissions of PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC or CO exceeding past actual emissions plus a reasonable demand increase plus less than PSD significant emission increases. The past actual emissions and future actual emissions have been calculated in accordance with Rule 62-210.200(34) and 62-210.370, F.A.C. Documentation of these calculations is provided in subsequent sections and the calculations are summarized in Attachment B. Emission rates of other regulated pollutants will not be affected by the requested action.

Currently, Line No. 1 has an SO<sub>2</sub> emission limit of 0.16 pounds per ton of clinker, 24-hour average. Annual SO<sub>2</sub> emissions are limited to 64 tons per year based on a permitted clinker production rate of 800,000 tons per year. The SO<sub>2</sub> emission limit (pounds per ton of clinker) is the lowest emission limit for any Portland cement plant operating and/or

permitted in Florida and is one of the lowest, if not the lowest, SO<sub>2</sub> emission limit for any Portland cement plant in the United States. The SO<sub>2</sub> emission limit is achieved due to the inherently low sulfur content of raw materials that constitute the raw meal fed to the kiln coupled with plant operating practices.

This application requests a change in the averaging time of the current SO<sub>2</sub> emission limiting standard only for periods when the raw mill is not operating. No change is requested in the numeric SO<sub>2</sub> emission limit.

Regarding the heat input rate to the pyroprocessing system (the kiln and calciner), the current rate is limited by Permit 0010087-006-AC to 364 mmBTU per hour. This is equivalent to 3.30 mmBTU per ton of clinker at a clinker production rate of 110.2 tons per hour, 24-hour average. The original permit for Line No. 1 also limited the heat input rate to 364 million BTU per hour, but at a clinker production rate of 95.8 tons per hour. The heat rate input rate in the original permit was equivalent to 3.80 mmBTU per ton of clinker. This application requests an increase in the heat input rate to 408 mmBTU per hour; or to 3.70 mmBTU per ton of clinker at the permitted clinker production rate of 110.2 tons per hour.

#### **SO<sub>2</sub> EMISSION LIMIT**

The current SO<sub>2</sub> emission limit of 0.16 pounds per ton of clinker is for a 24-hour rolling average. FRI can readily meet this limit on a one-hour average basis during periods when the raw mill is running (approximately 90 percent of the time) and during most periods

when the raw mill is not operating. There are times, however, when the raw mill is not operating that short term SO<sub>2</sub> emission rates spike. During such times, SO<sub>2</sub> emissions (on an hourly basis) can be as high as 0.5-0.7 pounds per ton of clinker (see Attachment A for examples). When averaged over a 24-hour period, however, FRI has maintained SO<sub>2</sub> emissions at or below the currently permitted limit of 0.16 pounds per ton of clinker. The occurrences of these SO<sub>2</sub> emission spikes are infrequent, but they are a cause for concern.

During the period January 2005-January 2006, there was one 24-hour period when the SO<sub>2</sub> emission rate averaged near the permit limit of 0.16 pounds per ton of clinker. The next highest 24-hour emission rates during this period were on the order of 0.10 pounds per ton of clinker (two events). For the six years the plant has been operating (2000-2005), the annual SO<sub>2</sub> emission rate has averaged around 0.02 pounds per ton of clinker.

The SO<sub>2</sub> emission rate spikes are related to the sulfur cycle in the pyroprocessing system and short-term plant operating conditions that result in more sulfur being present as SO<sub>2</sub>. When these short-term, transient conditions are coupled with periods of time when the raw mill is not operating, the SO<sub>2</sub> emission spikes just described can occur.

As background, Line No.1 was originally permitted in December 1996 by FDEP Permit 0010087-001-AC. This permit authorized a production rate of 2300 tons per day of clinker with an SO<sub>2</sub> emission limiting standard of 0.28 pounds per ton of clinker, 24-hour rolling average. On December 9, 2002, FDEP issued Permit 0010087-006-AC

authorizing a production rate increase to 2650 tons of clinker per day with an SO<sub>2</sub> emission limiting standard of 0.16 pounds per ton of clinker, 24-hour rolling average.

The purpose for the reduction in the SO<sub>2</sub> emission limiting standard was two-fold. First, the SO<sub>2</sub> emissions were reduced to avoid a PSD review for the production rate increase. It should be noted that a reduction in the SO<sub>2</sub> emission limit to 0.23 pounds per ton of clinker would have satisfied this requirement. The second part of the reduction (to 0.16 pounds per ton of clinker) referenced a condition in the original permit that stated SO<sub>2</sub> emissions could be reduced below the originally permitted limit if plant operating experience deemed such a reduction reasonable. The plant operating records reviewed at that time (late 2002) presumably justified reducing the SO<sub>2</sub> emission limit to 0.16 pounds per ton of clinker, 24-hour average.

The resulting SO<sub>2</sub> emission rate of 0.16 pounds per ton of clinker, 24-hour rolling average (64.0 tons per year) is the lowest of any operating and/or permitted Portland cement plant in Florida and is among the lowest, if not the lowest, SO<sub>2</sub> emission rate for any modern Portland cement plant in the U.S. As points of reference, the following are permitted SO<sub>2</sub> emission limits for recently permitted cement plants in the State of Florida:



<b>Plant</b>	<b>Permit Date</b>	<b>SO<sub>2</sub> (lbs/ton of clinker)</b>	<b>Averaging Time (rolling average)</b>
American Cement	February 2006	0.20	24-hour
Sumter Cement	February 2006	0.20	24-hour
Suwannee American Cement, Line 2	February 2006	0.20	24-hour
Rinker/FCS, Line 2	July 2005	0.23	24-hour
FRI, Line 2	July 2005	0.28	24-hour
Suwannee American Cement, Line 1	March 2005	0.20	3-hour
FRI, Line 1	Dec. 2002	0.16	24-hour

Even though the FRI Line No. 1 has the lowest permitted SO<sub>2</sub> emission limit for permitted and/or operating cement plants in Florida, the company has demonstrated that the limit is generally achievable. And, on an annual average basis, a six year operating record has shown that the actual annual emission rate is about 0.02 pounds per ton of clinker.

It is only under limited conditions and at times when the raw mill is not operating that the 24-hour emission limit is approached. To more specifically demonstrate the short-term transient nature of the higher SO<sub>2</sub> emission rates, hourly average emission rates are presented for January 24, 2006; a day when the raw mill was not operating and some hourly SO<sub>2</sub> emission rates were high (Attachment A). Data from this date show that even though the raw mill was down for the day, SO<sub>2</sub> emissions were high for only a limited number of hours during one discreet event. And, even though the one-hour average SO<sub>2</sub>

emission rates were as high as 0.76 pounds per ton of clinker, there was no time when the 24-hour SO<sub>2</sub> emission limit was exceeded.

Because of the infrequent occurrence of these higher SO<sub>2</sub> emission rates, FRI is requesting a change in the SO<sub>2</sub> emission limiting standard rather than proposing an add-on control such as hydrated lime injection. The reason for this approach is economics.

A review of operating records for a one year period (January 2005-January 2006) showed that there was one event when the 24-hour SO<sub>2</sub> emission rate was near 0.16 pounds per ton of clinker, two events when the emission rate was about 0.1 pounds per ton of clinker, two events when the emission rate was between 0.06 and 0.08 pounds per ton of clinker; and four events when the emission rate was between 0.04 and 0.06 pounds per ton of clinker. Based on this one year record of emission data, only one event approached the 24-hour SO<sub>2</sub> emission limit and only 2.5 percent of the 24-hour average SO<sub>2</sub> emission rates exceeded one-quarter of the standard.

For an event where the 24-hour average SO<sub>2</sub> emission average is approached, the total daily SO<sub>2</sub> emissions would be in the range of 425-450 pounds per day (2650 tons per day clinker at 0.16+ pounds SO<sub>2</sub> per ton). Assuming a 50 percent SO<sub>2</sub> reduction by lime injection, the SO<sub>2</sub> emissions reduction would be just over 200 pounds per day. Taking the period January 2005-January 2006 as an example, there was only one event when such an event occurred. The required annual SO<sub>2</sub> emissions reduction for that year would therefore have been about 200 pounds (per year).

If it is estimated that the total installed cost of a lime injection systems is on the order of \$250,000, the annual cost of the system, including capital recovery, will be on the order of \$30,000 per year. Based on this rough estimate, the cost of removing approximately 200 pounds of SO<sub>2</sub> (one SO<sub>2</sub> excursion event) would be on the order of \$300,000 per ton; a cost that is certainly not justifiable. Even with 10 such events per year (which has never been observed), the actual cost of SO<sub>2</sub> removal would be on the order of \$30,000 per ton; again a cost that is not justified.

As an alternative to an add-on control system, FRI is proposing a change in the SO<sub>2</sub> limiting standard. The proposed standard will have no measurable effect on annual SO<sub>2</sub> emissions and will provide FRI with the flexibility of meeting the SO<sub>2</sub> emission limiting standard under all operating conditions. The proposed SO<sub>2</sub> emission limiting standard is:

- **For all kiln operating hours when the raw mill is operating (approximately 90 percent of the time), the SO<sub>2</sub> emission limit will remain as currently permitted; or 0.16 pounds of SO<sub>2</sub> per ton of clinker, 24-hour rolling average. The 24-hour rolling average periods defined herein will exclude all hours when the raw mill is not operating;**
- **For all kiln operating hours, both hours when the raw mill is operating and hours when the raw mill is not operating, the SO<sub>2</sub> emission limiting standard will be 0.16 pounds per ton of clinker, 30-day rolling average.**

Note, that for future actual SO<sub>2</sub> emissions not to exceed past actual emissions, the effective permitted SO<sub>2</sub> emission limit will be 0.127 pounds per ton of clinker (annual average) and actual SO<sub>2</sub> emissions based on a six-year operating record will continue to average around 0.02 pounds per ton of clinker.

### **HEAT INPUT RATE**

When Line No. 1 was originally permitted in December 1996, it was permitted at a production rate of 2300 tons per day of clinker and a heat input rate of 364 mmBTU per hour. This heat input rate is equivalent to a specific heat of production of 3.80 mmBTU per hour per ton of clinker. On December 9, 2002, FDEP issued Permit 0010087-006-AC which increased the clinker production rate to 2650 tons per day but left the heat input rate of 364 mmBTU per hour. Under these new permit conditions, the specific heat of production is 3.30 mmBTU per ton of clinker. These are the conditions under which FRI currently operates Line No. 1.

By this application, FRI is requesting an increase in the heat input rate to Line No. 1 to 408 mmBTU per hour; or to 3.70 mmBTU per ton of clinker.

Preheater/precalciner plants with indirect firing, the design incorporated in Line No. 1, represent the most energy efficient design available for Portland cement plants. Plants of this design can operate in a range of 2.6-3.0 mmBTU per hour per ton of clinker; depending on the burnability of the raw meal, the moisture content of the raw materials fed to the plant, and plant operating conditions.

A review of a four year operating record for FRI Line No. 1 (2002-2005) shows that the plant operated in this heat input range approximately 46 percent of the time and operated with a heat input rate of less than 3.5 mmBTU per ton of clinker approximately 92 percent of the time. There were four months where the specific heat of production exceeded 3.5 mmBTU per ton of clinker, including one month when the heat input rate averaged 4.3 mmBTU per hour per ton of clinker. This caused FRI to limit production to stay within the permitted heat input limit for the kiln. It should be noted that this particular month occurred in calendar year 2002; prior to the permitted increase in production rate.

The operating data for the past four years demonstrate that for the majority of the time (92 percent), Line No. 1 operates with a specific heat of production in the range 2.5-3.5 mmBTU per ton of clinker. There are times, however, when raw materials normally occurring in the quarry result in a mix that is hard to burn. During these times, a specific heat of production of up to 4.3 mmBTU per ton of clinker has been observed.

Based on these operating data, it is apparent that the specific heat of production varies considerably. To account for this variability without sacrificing production to stay below the presently permitted heat input rate of 364 mmBTU per hour, FRI is requesting that the heat input rate to Line No. 1 be increased to 408 mmBTU per hour; or to 3.70 mmBTU per ton of clinker. This specific heat of production is in line with that originally permitted for Line No. 1 (3.80 mmBTU per ton of clinker). The specific heat of production is also consistent with that recently permitted for Suwannee American

Cement Line No. 1 by Permit 1210465-001-AC. That permit increased the production rate of the SAC Line No. 1 to 120 tons of clinker per hour with a corresponding heat input rate increase to 458 mmBTU per hour. This heat input rate is equivalent to a specific heat of production of 3.81 mmBTU per ton of clinker. It should be noted that the SAC Line No. 1 is a plant of almost identical design and vintage as the FRI Line No. 1.

Regarding the requested heat input rate, it should be recognized that the heat input rate does not have a significant effect on the emission rate of any regulated air pollutant at a given production rate. And, as the production rate of FRI Line No. 1 will not increase beyond the currently permitted 2650 ton per day and 800,000 tons per year of clinker, emissions are not expected to be significantly affected by the requested increase in heat input. To provide assurance of this, FRI is committed to assuring the Department that future actual emissions will not exceed past actual emissions.

To more specifically address the effect of heat input on pollutant emission rates, it is only NO<sub>x</sub> emissions that could potentially increase with an increase in heat input, but NO<sub>x</sub> emissions from Line No. 1 will be controlled by a recently permitted SNCR system. With SNCR it will be easy to maintain future actual emissions at, or below, past actual emissions. PM/PM<sub>10</sub> emissions from modern Portland cement plants are a function of the dust load generated by the raw mill and the recirculating kiln dust; SO<sub>2</sub> and VOC emissions are a function of organics, organic sulfur and/or pyritic sulfur in the feed material that can be converted to SO<sub>2</sub> or VOC and released in the preheater tower; and CO emissions are a function of burnout in the calciner and of organic carbon in the feed

material that can be converted to CO in the preheater tower. The other factor affecting the emission rates of these pollutants is plant operating conditions. Plant operating conditions are not expected to change.

In summary, FRI is requesting that the heat input rate to Line No. 1 be increased to 408 mmBTU per hour or to 3.70 mmBTU per ton of clinker (at a clinker production rate of 110.2 tons per hour). This is consistent with the originally permitted specific heat of production for Line No. 1 and it is consistent with the heat input rate recently re-permitted for a similar kiln in North Florida. The reason for requesting the increased heat input rate is to accommodate the variability in the burnability of raw materials quarried at the FRI site.

#### **FUTURE ACTUAL/PAST ACTUAL EMISSIONS**

As discussed in preceding sections, neither the change in the averaging time of the SO<sub>2</sub> emission limiting standard nor the increase in the heat input rate are expected to have any measurable effect on the emission rates of regulated air pollutants. To provide assurance of this, FRI will assure that future actual emissions from Line No. 1 do not exceed past actual emissions. For purposes of this application, past actual emissions are defined as past actual emissions of PM, SO<sub>2</sub>, NO<sub>x</sub>, VOC and CO reported to the Department during calendar years 2000-2005; plus a reasonable demand increase (9.2 percent); an increase that is not significant as defined by Department Rule 62-210.100(264), F.A.C. FRI will also provide assurance that the clinker production rate will not exceed the past actual clinker production rate plus a reasonable demand increase.

Annual operating reports for calendar years 2000-2005 submitted by FRI to the Department were reviewed. These records represent plant operations from the time the plant first began production through the last reporting year. The clinker production rates and the emission rates of the five major regulated air pollutants are summarized in Attachment B.

#### Clinker Production

For purposes of establishing the past actual clinker production rates, calendar years 2003 and 2004 were selected. The average clinker production rate for these two years was 732,421 tons per year. To this production rate, a demand increase of 9.2 percent was added resulting in a past actual plus demand increase production rate of 800,000 tons of clinker per year. This is equivalent to the presently permitted clinker production rate of the plant.

#### PM/PM<sub>10</sub> Emissions

PM/PM<sub>10</sub> emissions from FRI Line No. 1 are determined using EPA Method 5 during annual compliance tests. Additionally, PM/PM<sub>10</sub> tests conducted for other purposes and submitted to the Department have also been included in this analysis. For reporting purposes, PM/PM<sub>10</sub> measurements have been made using EPA Method 5 with all PM reported as PM<sub>10</sub>.



During the period 2000-2005, there were two emission limiting standards for PM<sub>10</sub>. During the period 2000-2002, the PM<sub>10</sub> emission limiting standard was 0.26 pounds per ton of clinker. In December 2002, the Department issued Permit 0010087-006-AC; limiting PM<sub>10</sub> emissions to 0.20 pounds per ton of clinker. Because of the two PM<sub>10</sub> emission limiting standards, one PM<sub>10</sub> emission factor (pounds of PM<sub>10</sub> per ton of clinker) was calculated for the period 2000-2002 and a second emission factor was calculated for the period 2003-2005. Actual annual PM<sub>10</sub> emission rates were calculated for each calendar year by multiplying the clinker production rate for that year by the appropriate PM<sub>10</sub> emission factor. These data are summarized in Attachment B.

The past actual PM<sub>10</sub> emission rate was determined using data for calendar years 2001 and 2002. The annual average PM<sub>10</sub> emission rate for this two year period was 21.9 tons per year. To this, a demand increase of 9.2 percent (2.0 tons per year) was added. Additionally, a less than PSD significant increase of 14.9 tons per year was added. This resulted in an annual emission rate of PM<sub>10</sub> of 38.8 tons per year that cannot be exceeded by future actual emissions. This effective emission limit compares with a presently permitted PM<sub>10</sub> emission limit of 80.0 tons per year.

#### NOx Emissions

NOx emissions from Line No. 1 have been determined by CEMS since the beginning of plant operation. From the CEMS data, the annual NOx emission rates have been calculated by effectively multiplying the annual average NOx emission rate (pounds per hour) by the number of hours per year the plant operated. In all cases, as summarized in

Attachment B, the annual NOx emission rates were less than the most restrictive annual NOx emission limit for the six year period; 980 tons per year as presently permitted.

The past actual NOx emissions were determined using data for calendar years 2000 and 2001. For this period, the annual NOx emissions averaged 826.5 tons per year (Attachment B). To this, a 9.2 percent demand increase (76.3 tons per year) was added and a less than PSD significant increase of 39 tons per year was added. This resulted in a total emission rate of 942 tons per year which cannot be exceeded by future actual emissions. This effective future actual NOx emission limit compares with the currently permitted NOx emission limit for Line No. 1 of 980 tons per year.

#### SO<sub>2</sub> Emissions

The SO<sub>2</sub> emissions from Line No. 1 have been determined by CEMS since the beginning of plant operation. The annual SO<sub>2</sub> emission rate for each calendar year during the period 2000-2005 was determined using the procedure described for calculating annual NOx emissions.

To determine past actual SO<sub>2</sub> emissions, data from calendar years 2001 and 2002 were used. Data from these two years resulted in a past actual annual SO<sub>2</sub> emission rate of 10.9 tons per year (Attachment B). To this, a 9.2 percent demand increase (1.0 tons per year) was added and a less than PSD significant increase of 39 tons per year was added. This resulted in an effective annual SO<sub>2</sub> emission limit not to be exceeded by future

actual emissions of 50.9 tons per year. This effective emission limit compares with the presently permitted annual SO<sub>2</sub> emission limit of 64.0 tons per year.

#### VOC Emissions

VOC emissions from Line No. 1 were determined using EPA Method 25A during calendar years 2000 and 2001 and by CEMS for calendar years 2000-2005. For calendar years 2000-2001, a VOC emission factor (pounds per ton of clinker) was calculated from compliance test data. This factor was multiplied by the clinker production for each of the two years to arrive at an annual VOC emission rate for each of those two years.

For calendar years 2002-2005, CEMS data were used to determine the annual VOC emissions. These data are summarized in Attachment B.

For determining past actual VOC emissions, data from calendar years 2004 and 2005 were used. The annual average VOC emission rate based on data for these two years was 35.3 tons per year. To this past actual emission rate, a 9.2 percent demand increase (3.3 tons per year) was added and a less than PSD significant increase of 4.4 tons per year was added. This results in an annual VOC emission rate that cannot be exceeded by future actual emissions of 43.0 tons per year. This effective VOC emission limit is equal to the presently permitted annual VOC emission limit of 43.0 tons per year.

### CO Emissions

CO emissions from Line No. 1 were determined using EPA Method 10 during required compliance tests. These data were used to calculate annual CO emission rates for calendar years 2000-2005 using the procedure described for calculating annual PM10 emissions. The CO data are summarized in Attachment B.

For determining past actual CO emissions, data from calendar years 2001 and 2002 were used. The annual average CO emission rate based on these data was 895 tons per year. To this, a 9.2 percent demand increase of 82.6 tons per year was added. Also, a less than PSD significant increase of 22.7 tons per year was added resulting in an emission rate not to be exceeded by future actual emissions of 1000 tons per year. This effective annual CO emission rate is equal to the presently permitted emission rate for Line No. 1.

### **SUMMARY**

The purpose of this application is two-fold:

- To change the averaging time for the SO<sub>2</sub> emission limiting standard to cover periods of time when the raw mill is not operating with no change in the numeric SO<sub>2</sub> emission limiting standard; and
- To increase the heat input rate of the kiln so that it will be in-line with the design and originally permitted specific heat of production (mmBTU per ton of clinker).

As described in this application, neither of these requested actions is expected to have a major measurable effect on the emission rate of regulated pollutants from Line No. 1.

To provide assurance that there will be no change in future actual pollutant emission rates, FRI will provide the Department assurance that future actual emissions for none of the regulated or unregulated air pollutants will exceed past actual emissions, adjusted for a reasonable demand increase and a less than PSD significant increase.

The two proposed actions can be approved by the Department with assurance that the continued operation of Line No. 1, with these two permit modifications, will not cause air pollution emissions in contravention of any Department standard or rule.

Attachment A



**Florida Rock Industries Inc.  
Thompson S. Baker Cement Plant  
Kiln/Raw Mill Stack Mass Emissions Report**

**Daily Report for 01/24/2006**

Time	Clinker Prod. Tons/Hr. Avg.	Kiln SO2 SO2 Lbs./Hr. Avg.	Kiln SO2 Lbs/Ton of Clinker Avg.	Kiln NOx NOx Lbs./Hr. Avg.	Kiln NOx Lbs/Ton of Clinker Avg.	Kiln THC THC Lbs./Hr. Avg.	Kiln THC Lbs/Ton of Clinker Avg.
01:00	88.96	0.66	0.007	193.32	2.17	7.15	0.08
02:00	90.01	0.84	0.009	184.48	2.05	7.70	0.09
03:00	91.53	0.52	0.006	188.39	2.06	7.39	0.08
04:00	91.45	0.69	0.008	185.09	2.02	7.38	0.08
05:00	92.24	0.49	0.005	155.29	1.68	11.10	0.12
06:00	91.03	69.04X	0.759X	116.47	1.28	31.88X	0.35X
07:00	86.70	59.62X	0.688X	195.84	2.26	7.47	0.09
08:00	86.72	56.09X	0.647X	153.07	1.77	9.14	0.11
09:00	86.71	49.41X	0.570X	151.90	1.75	8.22	0.09
10:00	87.42	29.73X	0.340X	105.07	1.20	8.57	0.10
11:00	89.32	23.83X	0.267X	86.33	0.97	11.25	0.13
12:00	92.25	12.43	0.135	102.36	1.11	9.46	0.10
13:00	94.32	4.32	0.046	106.51	1.13	9.19	0.10
14:00	95.23	4.69	0.049	102.74	1.08	9.52	0.10
15:00	95.63	3.83	0.040	106.52	1.11	9.33	0.10
16:00	95.63	4.78	0.050	114.56	1.20	9.70	0.10
17:00	96.31	3.91	0.041	99.55	1.03	11.31	0.12
18:00	98.45	0.65	0.007	127.76	1.29	10.94	0.11
19:00	99.65	0.00	0.000	140.85	1.41	10.07	0.10
20:00	98.04	0.00	0.000	127.65	1.30	11.02	0.11
21:00	98.05	0.05	0.001	138.07	1.41	13.19	0.13
22:00	99.70	1.57	0.016	151.45	1.52	21.91X	0.22X
23:00	100.99	2.23	0.022	169.56	1.68	11.50	0.11
24:00	101.00	2.23	0.022	200.32	1.98	7.91	0.08
Total	2247.34	331.61	3.735	3403.15	36.46	262.30	2.80
Average	93.64	13.82	0.156	141.80	1.52	10.93	0.12
Maximum	101.00	69.04	0.759	200.32	2.26	31.88	0.35
Minimum	86.70	0.00	0.000	86.33	0.97	7.15	0.08
Rolling	96.99	2.71	0.029	202.78	2.12	10.36	0.11
Excess		6	6	0	0	2	2
Uptm %	100.00	100.00	100.00	100.00	100.00	100.00	100.00
# Per	24	24	24	24	24	24	24
MNR	0	0	0	0	0	0	0
ND	0	0	0	0	0	0	0
OC	0	0	0	0	0	0	0
CAL	0	0	0	0	0	0	0
Bad Per	0	0	0	0	0	0	0
MUT %	100.00	100.00	100.00	100.00	100.00	100.00	100.00
MDT Per	0	0	0	0	0	0	0

**Key:**

D, Data  
F, IF Instrument Failure  
N, ND No Data  
W, Warning Drift Warning

INS Insufficient Data  
C, Cal Calibration  
M, MNR Monitoring Not Required  
U, U User disable

U, UD User Disable  
R, OC Out of Control  
V, Valid Valid Data  
M, M Missing data

Attachment B





**PAST ACTUAL AND FUTURE POTENTIAL EMISSIONS AND PRODUCTION  
FLORIDA ROCK INDUSTRIES THOMPSON S. BAKER CEMENT PLANT**

Calendar Year	Hours Of Operation (hr/yr)	Clinker Prod. (tpy)	POLLUTANT/EMISSIONS					2-Yr Avg (tpy)	9.20% Demand Increase (tpy)	<PSD Increase (tpy)	Future Actual Limit (tpy)
			Actual (lb/ton cl)	Avg (lb/ton cl)	Permit (lb/ton cl)	Actual (tpy)	Permit (tpy)				
<b>PM10**</b>											
2000	6592	511946	0.070	0.068	0.260	17.5	93.9	21.9	2.0	14.9	38.8
2001	6972	613565	0.061	0.068	0.260	21.0	93.9				
2002	7481	669201	0.074	0.068	0.260	22.9	93.9				
2003	7690	751817	0.044	0.056	0.200	20.9	80.0				
2004	7510	713025	0.061	0.056	0.200	19.8	80.0				
2005	7433	730856	0.062	0.056	0.200	20.3	80.0				
<b>NOx*</b>											
2000	6592	511946	3.80	na	3.80	972	1382	826.5	76.3	39	942
2001	6972	613565	2.22	na	3.80	681	1383				
2002	7481	669201	2.24	na	2.80	750	1018				
2003	7690	751817	2.02	na	2.45	758	980				
2004	7510	713025	1.85	na	2.45	659	980				
2005	7433	730856	1.81	na	2.45	660	980				
<b>SO2*</b>											
2000	6592	511946	0.010	na	0.28	2.6	109	10.9	1.0	39	50.9
2001	6972	613565	0.044	na	0.28	13.6	109				
2002	7481	669201	0.025	na	0.28	8.3	109				
2003	7690	751817	0.006	na	0.16	2.4	64				
2004	7510	713025	0.020	na	0.16	7.1	64				
2005	7433	730856	0.007	na	0.16	2.6	64				
<b>VOC***</b>											
2000	6592	511946	0.091	0.103	0.12	26.4	43	35.3	3.3	4.4	43.0
2001	6972	613565	0.115	0.103	0.12	31.6	43				
2002	7481	669201	0.091	na	0.12	30.6	43				
2003	7690	751817	0.080	na	0.11	30.3	43				
2004	7510	713025	0.098	na	0.11	34.9	43				
2005	7433	730856	0.098	na	0.11	35.7	43				
<b>CO**</b>											
2000	6592	511946	2.973	2.79	3.60	714	1289	895	82.6	22.7	1000.0
2001	6972	613565	2.607	2.79	3.60	856	1289				
2002	7481	669201	nd	2.79	3.60	934	1289				
2003	7690	751817	2.033	2.20	2.50	827	1000				
2004	7510	713025	2.233	2.20	2.50	784	1000				
2005	7433	730856	2.333	2.20	2.50	804	1000				
<b>PRODUCTION</b>											
PRODUCTION	2-Yr Avg (tpy)										
	732421							732421	67579	na	800000

\* Emission Rate (tpy) from CEMS data. Emission Factor (lb/ton cl) calculated from Emission Rate and Clinker Production.

\*\* Emission Factor (lb/ton cl) from compliance test data. Emission Rate (tpy) calculated from Emission Factor and Clinker Production.

\*\*\* Emission data for 2000-2001 from compliance testing and data from 2002-2005 from CEMS, with calculations as described above.