


Memorandum

Florida Department of Environmental Protection

TO: Joseph Kahn, Director DARM
Through: Trina L. Vielhauer, Chief BAR
From: A.A. Linero/Cindy Mulkey 
DATE: October 9, 2006
SUBJECT: Florida Rock Industries, Inc. – Newberry
Selective Non-Catalytic Reduction (SNCR) – Kiln 1
DEP File No. 0010087-021-AC

Attached is the Final Permit for Florida Rock Industries authorizing the installation of a selective non-catalytic reduction (SNCR) system for the control of NO_x on Kiln No. 1 at the existing Florida Rock Industries Cement Plant in Newberry.

The project will allow them to run the calciner in an oxidizing environment and without burning tires if they wish while meeting the same relatively recent (2002) BACT determination. It will allow them to operate more smoothly and with less startups and shutdowns from flushing of blockages presently caused by the maintenance of a reducing environment in the calciner.

The NO_x reduction systems (SNCR or Staged Combustion or Tire Burning or combinations) will be used at all times to comply with the 2002 BACT of 2.45 lb NO_x/ton of clinker.

We recommend your approval of the attached Final Notice and Permit.

AAL/cem

Attachments

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the Matter of an
Application for Permit by:

Mr. Chris Horner, Plant Manager
Florida Rock Industries, Inc.
4000 NW CR 235
Post Office Box 459
Newberry, Florida 32669

DEP File No. 0010087-021-AC
Thompson S. Baker Cement Plant
Alachua County

Enclosed is the Final Permit Number 0010087-021-AC authorizing the installation of a selective non-catalytic reduction system (SNCR) at the existing Thompson S. Baker Cement Plant near Newberry in Alachua County. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.



Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

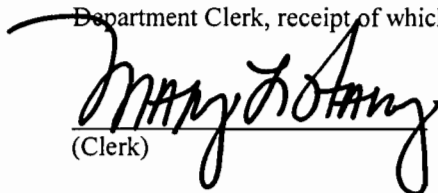
The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail to the Responsible Official (*) and copies were sent by U.S. Mail or electronic mail, return receipt requested, before the close of business on 10/11/06 to the person(s) listed:

Chris Horner, FRI*
Henry Gotsch, FRI
John Koogler, P.E. Koogler & Associates
Chair, Alachua County Commission
Chris Bird, Alachua County EMD
Jim Little, EPA
Chris Kirts, DEP NED

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date,
pursuant to §120.52, Florida Statutes, with the designated
Department Clerk, receipt of which is hereby acknowledged.

(Clerk)



(Date)

10/11/06

FINAL DETERMINATION

Florida Rock Industries, Inc.

Brooksville Cement Plant

DEP File No. 0010087-021-AC

On September 18, 2006 the Florida Department of Environmental Protection (Department) distributed an "Intent to Issue Air Construction Permit" authorizing the installation of a selective non-catalytic reduction (SNCR) system on Kiln No. 1 at the existing Thompson S. Baker Cement Plant located on County Road 235 approximately 2.5 miles northeast of Newberry, in Alachua County.

The package included the Department's Draft Air Construction Permit, the "Intent to Issue Air Construction Permit," the "Technical Evaluation and Preliminary Determination," and the "Public Notice of Intent to Issue Air Construction Permit." The Department sent copies of the package to various individuals and agencies. Florida Rock Industries, Inc. (FRI) published the Public Notice in *The Gainesville Sun* on September 24, 2006 and provided to the Department the required proof of publication.

The Department received no comments from agencies or the public regarding the Draft Air Construction Permit. A single comment was received from FRI, which is listed below (*italics*) followed by the Department's response.

Any additions to permit conditions are double underlined and deletions are indicated by double strike-through notation.

Comment

Specific Condition 5 of this permit states that the concentration by weight of stored ammonia solutions shall be between 9 and 19%. Among the vendors we are considering is one who offers a solution of 19.5%, which would be outside of the range requested by our application. To accommodate this and future vendor's offers, we request that a minor change in the language of the draft permit be made that allows either solutions of "9 to 19.8%" or solutions of "not more than 19.8%".

Response

It is not the Department's intention to limit FRI's scope of possible vendors, by limiting the concentration of the stored ammonia solution. The permit limits the amount of ammonia injected into the calciner in terms of pure ammonia. This can be controlled by the injection rate of the ammonia solution into the calciner regardless of the concentration of the stored solution.

However, ammonia concentrations (20 % or greater) appears on the List of Regulated Toxic Substances (40 CFR 68.130) requiring a Risk Management Plan (RMP) pursuant to Section 112r of the Clean Air Act. The solution offered by the vendor of 19.5% is clearly designed to avoid applicability of 112r, whereas the request by the applicant to use solutions up to 19.8% can be interpreted by some to mean 20%.

The following change will be made to Section III. Emission Unit Specific Conditions, EU 003, specific condition 5:

5. The concentration of stored ammonia solutions shall be less than ~~between 9 and 19~~ 20 percent (%) by weight. [Applicant Request]

{Note: ~~The~~ This limitation ~~to 19%~~ avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity.}

The final decision by the Department is to issue the permit with the changes noted.



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

PERMITTEE

Florida Rock Industries
4000 NW CR 235
Post Office Box 459
Newberry, Florida 32669

DEP File No. 0010087-021-AC
Expires: June 30, 2007
Thompson S. Baker Cement Plant
Selective Non-Catalytic Reduction System

PROJECT AND LOCATION

This permit authorizes Florida Rock Industries, Inc. to install a Selective Non-Catalytic Reduction (SNCR) system on Kiln No. 1 at the existing Thompson S. Baker Cement Plant in Alachua County. The facility is on County Road 235 approximately 2.5 miles northeast of Newberry, Florida. The map coordinates are: UTM Zone 17, 346.8 km East and 3287.0 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. This permit supplements all other air construction and operation permits for the subject emissions unit and does not alter any requirements from such previously issued air permits.

APPENDICES

The following appendices are attached as part of this permit.

Appendix GC - Construction Permit General Conditions

Joseph Kahn, Director
Division of Air Resource Management

"More Protection, Less Process"

Printed on recycled paper.

SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION

Florida Rock Industries, Inc. (FRI) owns and operates the Thompson S. Baker Cement Plant in Newberry, Alachua County. The facility consists of raw material handling and storage, a raw mill system, kiln system, clinker handling, finish grinding operations, cement handling, loading, and bagging operations, and coal handling and grinding operations.

Kiln No. 1 is presently permitted to produce 2,650 tons per day of clinker, 800,000 tons per year, with a peak hourly clinker production limit of 115.2 tons per hour (0010087-006-AC). A second line (Kiln No. 2) is presently under construction.

PROJECT

The project is to install a Selective Non-Catalytic Reduction (SNCR) system on Kiln No. 1. SNCR is a nitrogen oxides control technology. The purpose of the project is to provide an alternate/backup/additional control technology at the facility to achieve compliance with the best available control technology (BACT). This can be used in conjunction with or in lieu of the strategy of staged combustion in the calciner and tire introduction at the kiln inlet.

The process utilizes injection of ammonia solutions near the lowest preheater cyclone. The equipment consists of a storage tank, piping, pumps, compressed air and one or more injectors. No increases in previously-permitted production rates or emissions limitations are requested with this application.

REGULATORY CLASSIFICATION

Title I, Section 111, Clean Air Act (CAA): This facility is subject to certain Standards of Performance for New Stationary Sources. They are adopted and incorporated by reference in Rule 62-204.800, F.A.C. These include:

- 40 CFR 60, Subpart A - Standards of Performance for New Stationary Sources – General Provisions.
- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants. Certain requirements from Subpart F are replaced by requirements from 40 CFR 63, Subpart LLL listed below.
- 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants.
- 40 CFR 60, Subpart OOO - New Source Performance Standards For Nonmetallic Mineral Processing Plants.

Title I, Section 112 CAA: The facility has the potential to emit 10 tons per year or more of any one hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. This facility is subject to the Major Source provisions of:

- 40 CFR 63, Subpart A - National Emission Standards for Hazardous Air Pollutants – General Provisions.
- 40 CFR 63, Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

Title I, Part C (PSD): The facility is located in an area designated as “attainment”, “maintenance”, or “unclassifiable” for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a “portland cement plant”, which is one of the 28 Prevention of Significant Deterioration (PSD) source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400 F.A.C., Prevention of Significant Deterioration.

Title IV, CAA: The facility does not operate any units subject to the Acid Rain provisions of the Clean Air Act.

SECTION I. FACILITY INFORMATION

Title V, CAA: The facility is a Title V or "Major Source" of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a major source of HAPS. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

RELEVANT DOCUMENTS

- Original Air Construction Permit AC01-267311 (renumbered 0010087-001-AC) issued in December 1996 (as amended in August 2001). Also known as PSD-FL-228.
- Construction permit modification (PSD-FL-228B and 0010087-004-AC) issued on August 20, 2001, to extend the permit expiration date to December 31, 2001, install VOC monitor, and install multi-stage combustion (MSC) calciner.
- Current Title V Operation Permit 0010087-002-AV issued January 11, 2002.
- Construction Permit modification (PSD -FL-228C and 0010087-006-AC) issued on December 11, 2002.
- Selective Non-Catalytic Reduction Test Report dated February 2, 2005.
- Application submitted by Florida Rock and received by the Department on May 24, 2006.
- Technical Evaluation and Preliminary Determination issued on September 14, 2006.

SECTION II. ADMINISTRATIVE REQUIREMENTS

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify or operate this emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection ("Department"), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114. Copies of these documents shall be submitted to the Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the Northeast District Office at 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590. The phone number is 904/807-3300 and the fax number is 904/448-4363.
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403, F.S. [Rule 62-4.160, F.A.C.]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested; the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Permit: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. Upon completion of construction of this project, a Title V operation permit revision is required for regular operation of the new equipment. The permittee shall apply for a revised Title V operation permit prior to expiration of this permit. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

EU 003. KILN SYSTEM

This section of the permit addresses the following emissions unit:

ID No.	Emission Unit Description
003	Kiln system. The kiln system (or pyroprocessing system) includes the 156.5 foot kiln (Kiln No. 1), a four-stage preheater tower, a 25,300 cubic foot multi-stage combustion (MSC) calciner, a tire feed system, a selective non-catalytic reduction (SNCR) system, two coal burners and ancillary equipment. Particulate emissions are controlled by an electrostatic precipitator.

ADMINISTRATIVE REQUIREMENTS

Previous Permit Conditions: The following conditions are in addition to those of the previous air construction permits and the facility Title V Operation Permit. Unless otherwise specified, the emissions unit remains subject to all applicable conditions from previous air construction permits. [Rule 62-4.070(3), F.A.C.]

SPECIFIC CONDITIONS

1. The owner or operator may install and operate a selective non-catalytic reduction (SNCR) system, including an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Aqueous ammonia solution will be injected at a location(s) in the preheater/calciner with an appropriate temperature profile to support the SNCR process. [Applicant Design]
2. The SNCR system shall be designed, constructed and capable of achieving the previously permitted limit of for NO_x emissions from the pyroprocessing system. [62-4.070, F.A.C.]
3. The SNCR system may be operated in conjunction with or in lieu of operation of the existing MSC calciner in a reducing atmosphere or tire injection system for the purposes of meeting the applicable NO_x limit. [Applicant Request, Rule 62-210.650, F.A.C.]
4. Upon malfunction or unavailability of the SNCR system, the operator shall, as soon as practicable, effect a reducing atmosphere in the calciner or inject tires as needed to maintain NO_x control. [Rule 62-210.650, F.A.C.]
5. The concentration of stored ammonia solutions shall be less than 20 percent (%) by weight. [Applicant Request]

{Permitting Note: This limitation avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity.}

6. The ammonia injection rate shall not exceed 150 pounds per hour (1-hour block as 100% ammonia) in order to minimize ammonia emissions (slip). To demonstrate compliance, the owner or operator shall continuously monitor and record the ammonia injection rate. The injection rate of ammonia solution measured in terms of volumetric flow rate shall be converted to pounds per hour as 100% ammonia.

{Note: the maximum ammonia injection rate is equivalent to an NH₃/NO_x molar ratio of 1.0 presuming baseline uncontrolled NO_x emissions of 4 lb/ton of clinker.}

SECTION IV. GENERAL CONDITIONS

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

SECTION IV. GENERAL CONDITIONS

The permittee shall be responsible for any and all damages, which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (not applicable to project);
 - (b) Determination of Prevention of Significant Deterioration (not applicable to project)
 - (c) Compliance with National Emission Standards for Hazardous Air Pollutants (not applicable to this project); and
 - (d) Compliance with New Source Performance Standards (not applicable to project).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery Denise Suggs 10/18/04</p>
<p>1. Article Addressed to:</p> <p>Mr. Chris Horner Florida Rock Industries, Inc. 4000 NW CR 235 Newberry, Florida 32669</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type <input type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label) 7000 1670 0013 3110 0888</p>	

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

U.S. Postal Service CERTIFIED MAIL RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
OFFICIAL USE	
Postage \$	Postmark Here
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
<p>Mr. Chris Horner Florida Rock Industries, Inc. 4000 NW CR 235 Newberry, Florida 32669</p>	
<p>PS Form 3800, May 2000 See Reverse for Instructions</p>	

7000 1670 0013 3110 0888

Harvey, Mary

From: Mulkey, Cindy
Sent: Tuesday, October 10, 2006 1:39 PM
To: Harvey, Mary
Cc: Adams, Patty
Subject: Florida Rock Final Permit
Follow Up Flag: Follow up
Flag Status: Red
Attachments: FPermit.doc; FNOTICE021.doc; 021FDETERM.doc

Mary,

You can email this one to the ones I have email addresses for and mail the rest.

Henry Gotsch, FRI
HGotsch@Flarock.com

John Koogler, P.E. Koogler & Associates
jkoogler@kooglerassociates.com

Jim Little, EPA
Little.James@epamail.epa.gov

Chris Kirts, DEP NED
Christopher.Kirts@dep.state.fl.us

Cindy Mulkey
Engineering Specialist
Bureau of Air Regulation
South Permitting Section
(850) 921-8968
FAX (850)921-9533
SC 291-8968

Harvey, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Wednesday, October 11, 2006 5:01 PM
To: Harvey, Mary
Subject: Delivery Notification: Message successfully forwarded

Attachments: ATT179007.txt; ATT179007.txt



ATT179007.txt (804 B) ATT179007.txt (2 KB)

This report relates to a message you sent with the following header fields:

Message-id: <19B6D66EAAA71D479AE9408FB93EDDDD1C1C59@tlhexsmb1.floridadep.net>
Date: Wed, 11 Oct 2006 16:41:13 -0400
From: "Harvey, Mary" <Mary.Harvey@dep.state.fl.us>
To: HGotsch@Flarock.com, jkoogler@kooglerassociates.com, Little.James@epamail.epa.gov, "Kirts, Christopher" <Christopher.Kirts@dep.state.fl.us>
Subject: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Your message has been successfully relayed to the recipients ..

Recipient address: little.james@mseive.epa.gov
Original address: Little.James@epamail.epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive02.rtp.epa.gov (TCP|134.67.208.99|2820|134.67.221.150|25)
(mseive02.rtp.epa.gov ESMTF Postfix) smtp;250 Ok
Remote system: dns;mseive02.rtp.epa.gov (TCP|134.67.208.99|2820|134.67.221.150|25)
(mseive02.rtp.epa.gov ESMTF Postfix)

on a remote system that does not support the generation of successful delivery receipts. This does NOT mean that your message has actually been placed in the recipients' mailboxes; merely that it has passed through a part of the message transport infrastructure. In the event of a nondelivery you should expect to receive a nondelivery notification; in the event of successful delivery, however, you are unlikely to receive a positive confirmation of delivery.

Harvey, Mary

From: Exchange Administrator
Sent: Wednesday, October 11, 2006 4:41 PM
To: Harvey, Mary
Subject: Delivery Status Notification (Relay)

Attachments: ATT179003.txt; Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.



ATT179003.txt
(472 B)



Final
Permit-#0010087-021-AC

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients, but the requested delivery status notifications may not be generated by the destination.

HGotsch@Flarock.com

Harvey, Mary

From: Henry Gotsch [HGotsch@Flarock.com]
Sent: Wednesday, October 11, 2006 4:57 PM
To: Harvey, Mary
Subject: RE: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Dear Ms. Harvey:

Thank you for the electronic copy of the permit that we received today.

Henry Gotsch
Florida Rock Industries, Inc.

-----Original Message-----

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Wednesday, October 11, 2006 4:41 PM
To: Henry Gotsch; jkoogler@kooglerassociates.com; Little.James@epamail.epa.gov; Kirts, Christopher
Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Distribution email standard language:

As set forth below, the following standard email language will accompany each electronic distribution of permit documents:

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

10/12/2006

Harvey, Mary

From: John Koogler [jkoogler@kooglerassociates.com]
Sent: Wednesday, October 11, 2006 5:05 PM
To: Harvey, Mary
Subject: RE: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Thank you

John B Koogler
Koogler & Associates, Inc
4014 NW 13th St
Gainesville, FL 32609
352/377-5822
jkoogler@kooglerassociates.com

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Wednesday, October 11, 2006 4:41 PM
To: HGotsch@Flarock.com; jkoogler@kooglerassociates.com; Little.James@epamail.epa.gov; Kirts, Christopher
Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Distribution email standard language:

As set forth below, the following standard email language will accompany each electronic distribution of permit documents:

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

10/12/2006

Harvey, Mary

From: Little.James@epamail.epa.gov
Sent: Wednesday, October 11, 2006 5:09 PM
To: Harvey, Mary
Cc: Danois.Gracy@epamail.epa.gov
Subject: Re: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

The e-mail system of the Region 4 office of the U.S. Environmental Protection Agency is set up to reject all files with a .zip extension. For us to receive zipped files, you will have to give the files a name with an extension other than .zip. Alternatively, you can e-mail the original unzipped files.

Jim Little - EPA Region 4
(404) 562-9118

"Harvey, Mary"
<Mary.Harvey@dep
.state.fl.us>

10/11/2006 04:41
PM

To
HGotsch@Flarock.com,
jkoogler@kooglerassociates.com,
James Little/R4/USEPA/US@EPA,
"Kirts, Christopher"
<Christopher.Kirts@dep.state.fl.us>

cc

"Mulkey, Cindy"
<Cindy.Mulkey@dep.state.fl.us>,
"Adams, Patty"
<Patty.Adams@dep.state.fl.us>;
"Gibson, Victoria"
<Victoria.Gibson@dep.state.fl.us>

Subject

Final Permit-#0010087-021-AC -
Florida Rock Industries, Inc.

Distribution email standard language:

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<http://www.adobe.com/products/acrobat/readstep.html>.

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Thank you,
DEP, Bureau of Air Regulation

***** ATTACHMENT NOT DELIVERED

This E-Mail message contained an attachment which is a computer program.

This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. We are deleting all computer program attachments sent from the Internet into the agency via E-Mail.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the E-Mail with the renamed attachment. After receiving the revised E-Mail, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

***** ATTACHMENT NOT DELIVERED

[Attachment 0010087.021.AC.F_pdf.zip removed]

Harvey, Mary

From: System Administrator
To: jkoogler@kooglerassociates.com
Sent: Wednesday, October 11, 2006 4:42 PM
Subject: Delivered:Mail System Delivery Report

Your message

To: HGotsch@Flarock.com; jkoogler@kooglerassociates.com; Little.James@epamail.epa.gov; Kirts, Christopher
Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.
Sent: 10/11/2006 4:41 PM

was delivered to the following recipient(s):

jkoogler@kooglerassociates.com on 10/11/2006 4:42 PM

Harvey, Mary

From: System Administrator
To: Mulkey, Cindy
Sent: Wednesday, October 11, 2006 4:41 PM
Subject: Delivered:Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Your message

To: HGotsch@Flarock.com; jkoogler@kooglerassociates.com; Little.James@epamail.epa.gov; Kirts, Christopher
Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.
Sent: 10/11/2006 4:41 PM

was delivered to the following recipient(s):

Mulkey, Cindy on 10/11/2006 4:41 PM

Harvey, Mary

From: System Administrator
To: Kirts, Christopher
Sent: Wednesday, October 11, 2006 4:41 PM
Subject: Delivered:Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Your message

To: HGotsch@Flarock.com; jkoogler@kooglerassociates.com; Little.James@epamail.epa.gov; Kirts, Christopher
Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.
Sent: 10/11/2006 4:41 PM

was delivered to the following recipient(s):

Kirts, Christopher on 10/11/2006 4:41 PM

Harvey, Mary

From: System Administrator
To: Adams, Patty; Gibson, Victoria
Sent: Wednesday, October 11, 2006 4:41 PM
Subject: Delivered:Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.

Your message

To: HGotsch@Flarock.com; jkoogler@kooglerassociates.com; Little.James@epamail.epa.gov; Kirts, Christopher
Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: Final Permit-#0010087-021-AC - Florida Rock Industries, Inc.
Sent: 10/11/2006 4:41 PM

was delivered to the following recipient(s):

Adams, Patty on 10/11/2006 4:41 PM
Gibson, Victoria on 10/11/2006 4:41 PM

FLORIDA ROCK INDUSTRIES INC

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



RECEIVED

SEP 28 2006

BUREAU OF AIR REGULATION

September 26, 2006

Mr. Robert Hodges
Division of Air Resources
Department of Environmental Protection
2600 Blair Stone Road, MS #5505
Tallahassee, FL 32399-2400

RE: Proof of publication of public notice; Facility 0010087, Permit No. 0010087-021-AC
Florida Rock Industries, Inc.—Thompson S. Baker Cement Plant

Dear Mr. Hodges:

Enclosed is an affidavit providing proof of publication; the legal notice appeared in the newspaper on Sunday. If you have any questions, please call me at 352-472-4722, ext. 121.

Sincerely,
FLORIDA ROCK INDUSTRIES, INC.

A handwritten signature in black ink that reads "Henry Gotsch". The signature is written in a cursive style.

Henry Gotsch
Environmental Manager

AFFIDAVIT OF PUBLICATION

RECEIVED

SEP 28 2006

BUREAU OF AIR REGULATION

The Gainesville Sun
Published - Daily
Gainesville, Alachua County, Florida

STATE OF FLORIDA
COUNTY OF ALACHUA


Before the undersigned, a Notary Public of Said County and State, Ernest Blake, III, who on oath says that he is Legal Advertising Coordinator of THE GAINESVILLE SUN, a daily newspaper published at Gainesville, in Alachua County, Florida; that the attached copy of advertisement, being a notice in the matter of

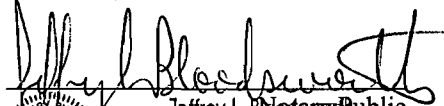
PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT Florida Department of Environmental Protection Florida Rock Industries, Inc. Selective Non-Catalytic Reduction System Thompson S. Baker Cement Plant - Newberry Alachua County DEP File No.: 001008

was published in said newspaper in the issues of:

9/24 1x

Affiant further says that the said THE GAINESVILLE SUN is a daily newspaper published at Gainesville, in said Alachua County, Florida, and that the said newspaper has heretofore been continuously published in said Alachua County, Florida, daily, and has been entered as second class mail matter at the post office in Gainesville in said Alachua County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the person of securing this advertisement for publication in the said newspaper.


Sworn to and subscribed before me this 25th day of September, A.D., 2006


Jeffrey L. Blackwell
Notary Public
MY COMMISSION # DD159430 EXPIRES
October 20, 2006
BONDED TRILLOY FAIN INSURANCE, INC.
(Print, Type or Stamp Name of Notary Public)

My commission expires 20 day of Oct, 2006

Ad #: A00228081

0001

LEGALS

0001

LEGALS

**PUBLIC NOTICE OF INTENT TO ISSUE
AIR CONSTRUCTION PERMIT**

Florida Department of Environmental Protection

Florida Rock Industries, Inc.
Selective Non-Catalytic Reduction System
Thompson S. Baker Cement Plant - Newberry
Alachua County

DEP File No.: 0010087-021-AC

The Florida Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to Florida Rock Industries, Inc. (FRI) to install a selective non-catalytic reduction (SNCR) system to control nitrogen oxides (NOX) emissions at the Thompson S. Baker Cement Plant located on 4000 NW CR 235 in Newberry, Florida. The permittee's name and address are: Florida Rock Industries, Inc., 4000 NW CR 235, Newberry, Florida 32669.

FRI controls NOX emissions through staged fuel combustion in the calciner in a reducing atmosphere and by introduction of tires at the kiln inlet. FRI will add an SNCR system to inject aqueous ammonia solutions (9-19.8 percent NH3) between the calciner and the lowest preheater cyclone when operating the calciner in an oxidizing atmosphere or when tires are not introduced. The SNCR system may also be used in combination with the existing controls.

The plant complies with a NOX emission limit of 2.45 pounds per ton clinker that was determined to be best available control technology (BACT) in 2002. FRI tested the SNCR technology at the plant in December 2004 under a permit issued by the Department and was able to meet the permitted limits. No changes in emissions are expected due to the new installation.

The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed permit action for a period of fourteen (14) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the Permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions must be filed within fourteen (14) days of publication of this Public Notice of Intent to Issue Air Construction Permit. Under Section 120.60(3), F.S., however, petitions submitted by person(s) who asked the Department for notice of agency action must be filed within fourteen (14) days of receipt of that notice or the date of publication of the public notice whichever occurs first. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition, to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:


Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: (850) 488-0114
Fax: (850) 921-9533

Department of Environmental Protection
Northeast District Office
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32556-7590
Telephone: (904) 807-3233
Fax: (904) 448-4363

The complete project file includes the Draft Air Construction Permit, Technical Evaluation and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Program Administrator for the South Permitting Section, Bureau of Air Regulation, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call Rob Hodges at 850/414-7268 for additional information. The draft permit as well as original permit and BACT determinations and any other permitting actions to-date can be viewed at: www.dep.state.fl.us/Air/permitting/construction/flrock.htm
#A000228081

Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer
THROUGH: Al Linero 
FROM: Robert Hodges
DATE: September 11, 2006
SUBJECT: Florida Rock Industries (FRI) - Newberry
Selective Non-Catalytic Reduction (SNCR) – Kiln 1
DEP File No. 0010087-021-AC

Attached is the Intent to Issue package for the installation of a selective non-catalytic reduction (SNCR) system for the control of NO_x on Kiln No. 1 at the existing Florida Rock Industries Cement Plant in Newberry. The project as proposed requests no change in either production rates or emission limits. The key production limit is 110.2 TPH of clinker on a daily basis. On an annual basis, this equates to 963,600 TPY.

The plant has an annual production cap of 800,000 TPY, therefore they operate and will continue to operate at annual production rates that are significantly less than what they could theoretically produce if they did not have this cap.

According to the company they do not expect to realize NO_x emission increases or increases in collateral emissions. This will allow them run the calciner in an oxidizing environment and without burning tires if they wish while meeting the same relatively recent (2002) BACT determination. It will allow them to operate more smoothly and with less startups and shutdowns from flushing of blockages presently caused by the maintenance of a reducing environment in the calciner.

The more oxygen used to support combustion in the calciner, the less CO formation. On the other hand, the SNCR system may tend to create some CO. The reasonable expectation is that CO and NO_x emissions will remain unchanged. However a permit is still required in accordance with our most recent rules at Paragraph 62-210.300, F.A.C (Permits Required).

“Unless exempted from permitting pursuant to paragraph 62-210.300(3)(a) or (b), F.A.C., or Rule 62-4.040, F.A.C., or unless specifically authorized by provision of Rule 62-210.300(4), F.A.C., or Rule 62-213.300, F.A.C., the owner or operator of any facility or emissions unit which emits or can reasonably be expected to emit any air pollutant shall obtain an appropriate permit from the Department prior to beginning construction, reconstruction pursuant to 40 CFR 60.15 or 63.2, modification, or the addition of pollution control equipment; etc.”

The NO_x reduction systems (SNCR or Staged Combustion or Tire Burning or combinations) will be used at all times to comply with the 2002 BACT of 2.45 lb NO_x/ton of clinker. The purpose of the SNCR system is not, e.g., to intermittently lower emissions for the purpose of generating or avoiding the purchase of NO_x allowances.

We recommend your approval of the attached Intent to Issue.

AAL/rh

Attachments



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: (850) 488-0114 FAX: (850) 922-6979

Colleen M. Castille
Secretary

September 14, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Chris Horner, Plant Manager
Florida Rock Industries, Inc.
4000 NW CR 235
Post Office Box 45
Newberry, Florida 32399

RE: DEP File No.: 0010087-021-AC
Selective Non-Catalytic Reduction (SNCR)
Thompson S. Baker Cement Plant Kiln 1

Dear Mr. Horner:

Enclosed is one copy of the Draft Air Construction Permit to install a selective non-catalytic reduction (SNCR) system at the Thompson S. Baker Cement Plant on County Road 235, in Newberry, Alachua County. The Department's Intent to Issue Air Construction Permit, the "Public Notice of Intent to Issue Air Construction Permit", and the Technical Evaluation and Preliminary Determination are also included.

The "Public Notice" must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of Publication, i.e. newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in denial of the permit modification.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A.A. Linero, Program Administrator, at the letterhead address. If you have any questions regarding this matter, please call Robert Hodges at 850/414-7268 or Mr. Linero at 850/921-9523.

Sincerely,

Trina L. Vielhauer, Chief
Bureau of Air Regulation

TLV/aal/rh

Enclosures

In the Matter of:

Florida Rock Industries, Inc.
4000 NW CR 235
Newberry, Florida 32669

DEP File No. 0010087-021-AC
Selective Non-Catalytic Reduction System
Thompson S. Baker Cement Plant
Alachua County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit enclosed) for the proposed action, detailed in the referenced application and the enclosed Technical Evaluation and Preliminary Determination, for the reasons stated below.

The permittee, Florida Rock Industries, Inc. (FRI), applied on May 24, 2006, to install a Selective Non-Catalytic Reduction system for the purpose of controlling nitrogen oxides emissions at the Thompson S. Baker Cement Plant in Newberry, Alachua County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.): The proposed changes are not exempt from permitting procedures. The Department has determined that an air construction permit is necessary for the described project.

The Department intends to issue this air construction permit based on the belief that the permittee has provided reasonable assurances to indicate that operation of these emission units as indicated herein will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1, F.A.C, you (the permittee) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Construction Permit. The notice shall be published as soon as possible one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the permittee cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The permittee shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/921-9533). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in Section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit action for a period of 14 (fourteen) days from the date of publication of Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57, F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permittee or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3), F.S., must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), F.S., however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the permittee at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

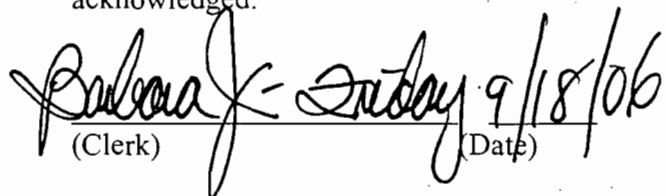
The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction permit (including the Public Notice, Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by certified mail (*) and copies were mailed by electronic mail before the close of business on 9/18/06 to the person(s) listed:

Chris Horner, FRI*
Chair, Alachua County BCC*
Mayor, Newberry*
Director, Alachua County EMD*
Rob Brinkman, Suwannee-St. John's Sierra Club

Lowell Garret, City of Newberry*
Henry Gotsch, FRI (e-mail)
John Koogler, P.E. (e-mail)
Jim Little, EPA Region 4 (e-mail)
Chris Kirts, DEP NED (e-mail)

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52,
Florida Statutes, with the designated
Department Clerk, receipt of which is hereby
acknowledged.


(Clerk) Sunday 9/18/06 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

Florida Department of Environmental Protection

Florida Rock Industries, Inc.
Selective Non-Catalytic Reduction System
Thompson S. Baker Cement Plant - Newberry
Alachua County

DEP File No.: 0010087-021-AC

The Florida Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to Florida Rock Industries, Inc. (FRI) to install a selective non-catalytic reduction (SNCR) system to control nitrogen oxides (NO_x) emissions at the Thompson S. Baker Cement Plant located on 4000 NW CR 235 in Newberry, Florida. The permittee's name and address are: Florida Rock Industries, Inc., 4000 NW CR 235, Newberry, Florida 32669.

FRI controls NO_x emissions through staged fuel combustion in the calciner in a reducing atmosphere and by introduction of tires at the kiln inlet. FRI will add an SNCR system to inject aqueous ammonia solutions (9-19 percent NH₃) between the calciner and the lowest preheater cyclone when operating the calciner in an oxidizing atmosphere or when tires are not introduced. The SNCR system may also be used in combination with the existing controls.

The plant complies with a NO_x emission limit of 2.45 pounds per ton clinker that was determined to be best available control technology (BACT) in 2002. FRI tested the SNCR technology at the plant in December 2004 under a permit issued by the Department and was able to meet the permitted limits. No changes in emissions are expected due to the new installation.

The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed permit action for a period of fourteen (14) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the Permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions must be filed within fourteen (14) days of publication of this Public Notice of Intent to Issue Air Construction Permit. Under Section 120.60(3), F.S., however, petitions submitted by person(s) who asked the Department for notice of agency action must be filed within fourteen (14) days of receipt of that notice or the date of

publication of the public notice whichever occurs first. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: (850) 488-0114
Fax: (850) 921-9533

Department of Environmental Protection
Northeast District Office
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256-7590
Telephone: (904) 807-3233
Fax: (904) 448-4363

The complete project file includes the Draft Air Construction Permit, Technical Evaluation and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Program Administrator for the South Permitting Section, Bureau of Air Regulation, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call Rob Hodges at 850/414-7268 for additional information. The draft permit as well as original permit and BACT determinations and any other permitting actions to-date can be viewed at: www.dep.state.fl.us/Air/permitting/construction/flrock.htm

**TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION**

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

Portland Cement Manufacturing Facility

Selective Non-Catalytic Reduction Installation on Kiln 1

Alachua County

DEP File No. 0010087-021-AC



Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation

September 14, 2006

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

I. APPLICATION INFORMATION

APPLICANT NAME AND ADDRESS

Florida Rock Industries, Inc
4000 NW CR 235
Newberry, Florida 32669
Authorized Representative: Chris Horner, Plant Manager

PROCESSING SCHEDULE

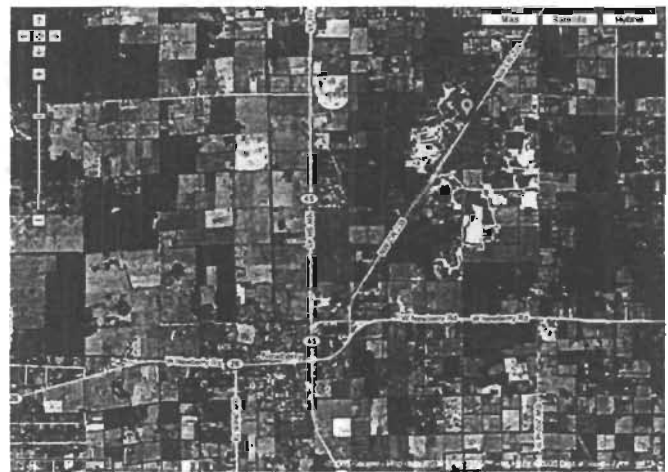
- Received Air Construction Permit Application on May 24, 2006
- Received letter waiving 90 day permit processing clock on August 14, 2006
- Intent to Issue Air Construction Permit distributed September 13, 2006

FACILITY DESCRIPTION AND LOCATION

Florida Rock Industries, Inc. (FRI) owns and operates the Thompson S. Baker Cement Plant on Alachua County Road 235, 2.5 miles northeast of Newberry, Alachua County. The plant has a current capacity of 2,650 tons of clinker per day on Kiln 1. A second kiln was approved in June 2005. The location of the Thompson S. Baker Cement Plant is shown in the figures below. The UTM coordinates of the Florida Rock facility are Zone 17, 346.8 km East and 3287.0 km North.



Figure 1. Location of Newberry



Location of Thompson S. Baker Cement Plant

FACILITY CLASSIFICATION CODE (SIC)

Major Group No. 32, Clay, Glass, and Concrete Products
Industry Group No. 324 Cement, Hydraulic
Industry No. 3241 Cement, Hydraulic

REGULATORY CATEGORIES

The following regulatory classifications apply to the subject facility:

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Title I, Section 111, Clean Air Act (CAA): This facility is subject to certain Standards of Performance for New Stationary Sources. They are adopted and incorporated by reference in Rule 62-204.800, F.A.C. These include:

- 40 CFR 60, Subpart A - General Provisions.
- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants. Certain requirements from Subpart F are replaced by requirements from 40 CFR 63, Subpart LLL listed below.
- 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants.
- 40 CFR 60, Subpart OOO - New Source Performance Standards For Nonmetallic Mineral Processing Plants.

Title I, Section 112 CAA: The facility has the potential to emit 10 tons per year or more of any one hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. This facility is subject to the Major Source provisions of:

- 40 CFR 63 Subparts A - National Emission Standards for Hazardous Air Pollutants – General Provisions.
- 40 CFR, Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

Title I, Part C (PSD): The facility is located in an area designated as “attainment”, “maintenance”, or “unclassifiable” for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a “portland cement plant”, which is one of the 28 Prevention of Significant Deterioration (PSD) source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration.

Title IV, CAA: The facility does not operate any units subject to the Acid Rain provisions of the Clean Air Act.

Title V, CAA: The facility is a Title V or “Major Source” of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a major source of HAPS. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

II. EXISTING FACILITY

The Florida Department of Environmental Protection ("Department") issued a permit to FRI in December 1996 to construct a Portland cement plant. The plant employs the modern dry process technology including a preheater and calciner along with indirect firing. The dry process preheater/calciner (PH/C) kiln is the most fuel-efficient cement pyroprocessing technology currently in use in the United States.

FRI completed construction of the basic plant in late Fall of 1999. The permit was modified in 2001 and 2002 to incorporate the final NO_x control plan, a VOC continuous emission monitoring system (CEMS), final emission limits and final production limits. The plant is presently permitted to make 2650 tons per day (TPD) of clinker with an hourly production rate of 110.2 TPH (115 TPH peak) and an annual production limit of 800,000 TPY.

The major equipment at the plant includes the PH/C kiln, a clinker cooler, raw mill, finish mill, silos, conveyers, and particulate control/dust collection and recycling equipment. The cement product is stored in silos and is shipped in bags or in bulk by rail or truck.

The following Figure is of a PH/C kiln that, with the exception of the calciner, approximates the one installed at FRI. The calciner arrangement at Florida Rock is shown separately as a diagram within the large diagram. Tires (mechanism not shown) are also introduced at the kiln inlet.

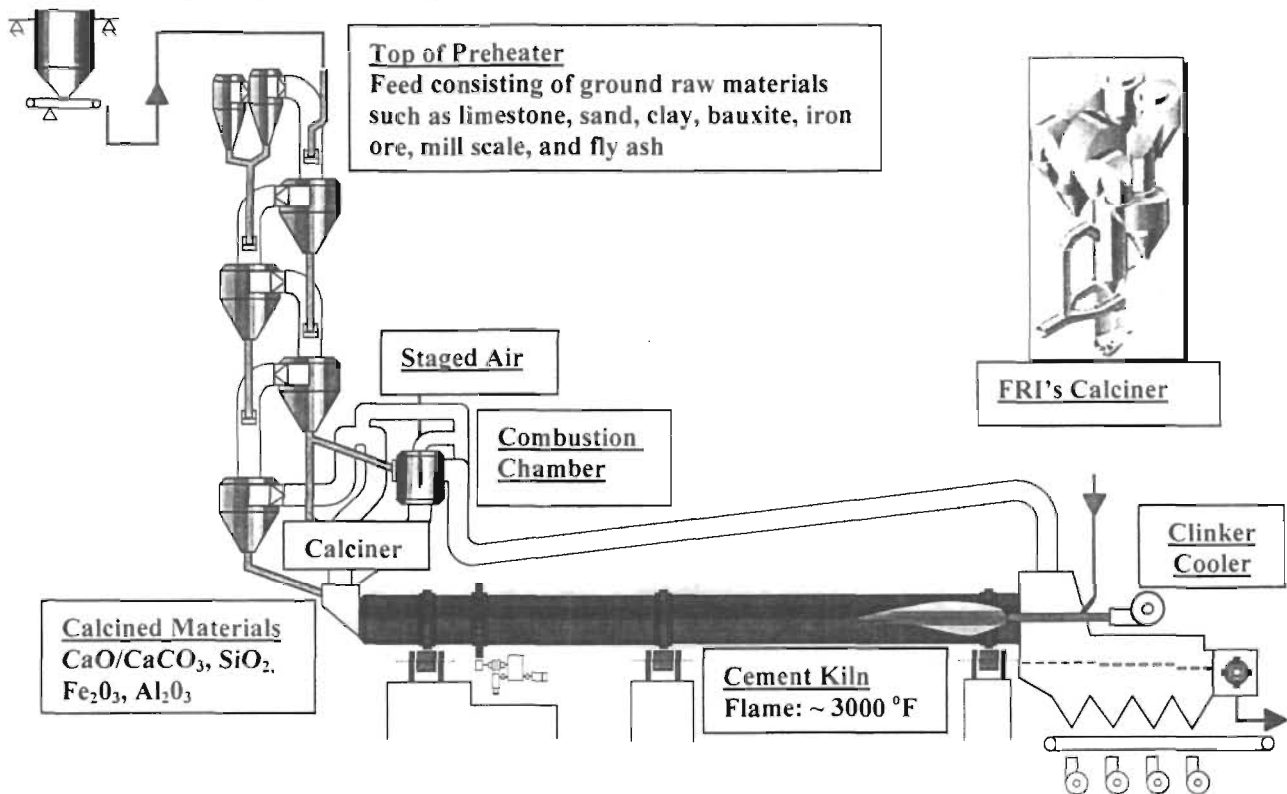


Figure 2. Diagram of Dry Process Cement Kiln with Preheater and Staged Air Calciner

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Raw meal is finely divided dried material that includes sources of calcium, silica, iron and aluminum. These sources can include limestone, sand, clay, bauxite, iron ore, mill scale, and fly ash. It is continuously weighed on feed scales and introduced at the top of the preheater tower as shown in the diagram. As it falls through the preheater it is contacted and progressively heated by exhaust gases from the calciner and kiln.

The calciner has a separate horizontally mounted burner that provides the necessary heat to drive off carbon dioxide from the limestone converting it to free lime ($\text{CaCO}_3 = \text{CaO} + \text{CO}_2$). The calciner operates at a temperature in the range of 900 to 1000 degrees Celsius ($^{\circ}\text{C}$) and burns coal. Tires are burned near the kiln inlet and reduce the load on the kiln and calciner burners.

The calcined materials enter the kiln where they are further heated and transformed into nodules of clinker. These exit the kiln near the main kiln coal burner that operates at the temperature necessary to make good clinker. This could be on the order of approximately $1,650^{\circ}\text{C}$. The clinker falls into the cooler where it is cooled by ambient air.

The heated air from the clinker cooler is used as secondary air to support combustion at the kiln burner and is also conveyed along a tertiary air duct to support combustion in the calciner.

Cooled exhaust gases leaving the preheater go through the raw mill (not shown) where the remaining heat is used to dry incoming coarse raw materials. As the raw materials are ground they are lifted by the exhaust gas flow and conveyed to the main electrostatic precipitator (ESP - not shown) that also serves the purpose of a particulate control device. The finely divided dry material in the baghouse is conveyed to storage silos and then weighed and introduced into the process at the top of the preheater as discussed above.

Following is a photograph of the constructed plant taken in 2001.

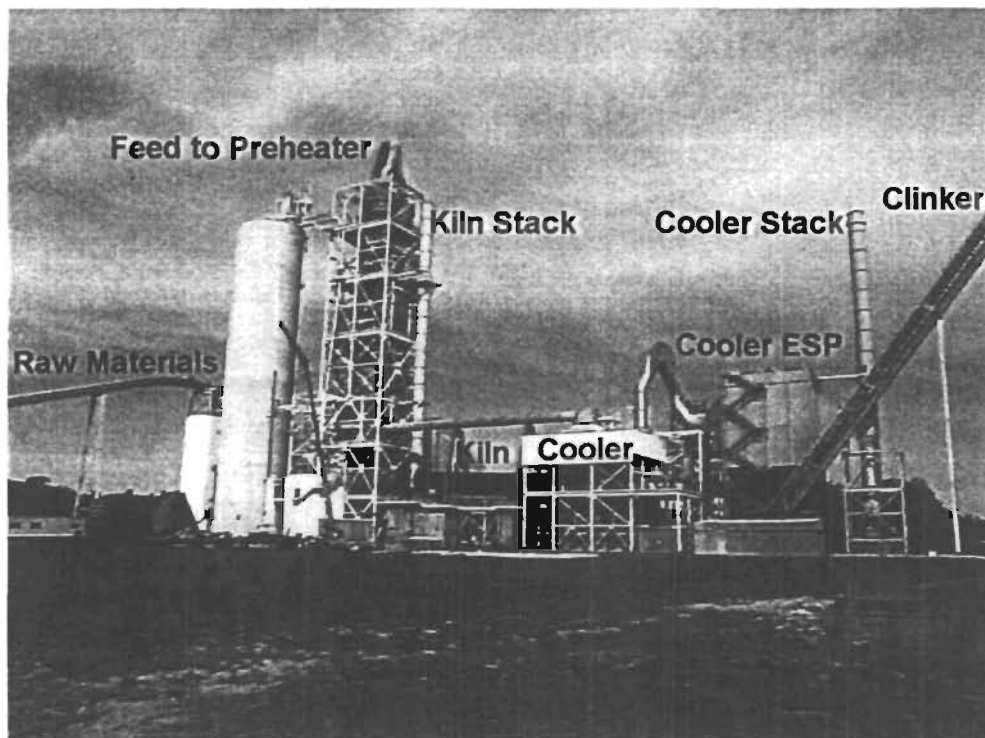


Figure 3. Florida Rock Industries' Cement Plant in Newberry, Florida

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

III. APPLICATION PROPOSAL

FRI requested an air construction permit to install a Selective Non-Catalytic Reduction (SNCR) system on Kiln 1 as a means to provide greater control in kiln NO_x formation and emissions and flexibility in kiln operating parameters. The process utilizes injection of ammonia near the lowest preheater cyclone. The equipment consists of a storage tank, piping, pumps, compressed air and one or more injectors.

The following diagram illustrates the typical equipment needed for permanent ammonia (NH₃) solution storage and piping at a power plant. The cement plant requirements are similar. Initially, FRI will use tanker trucks for storage.

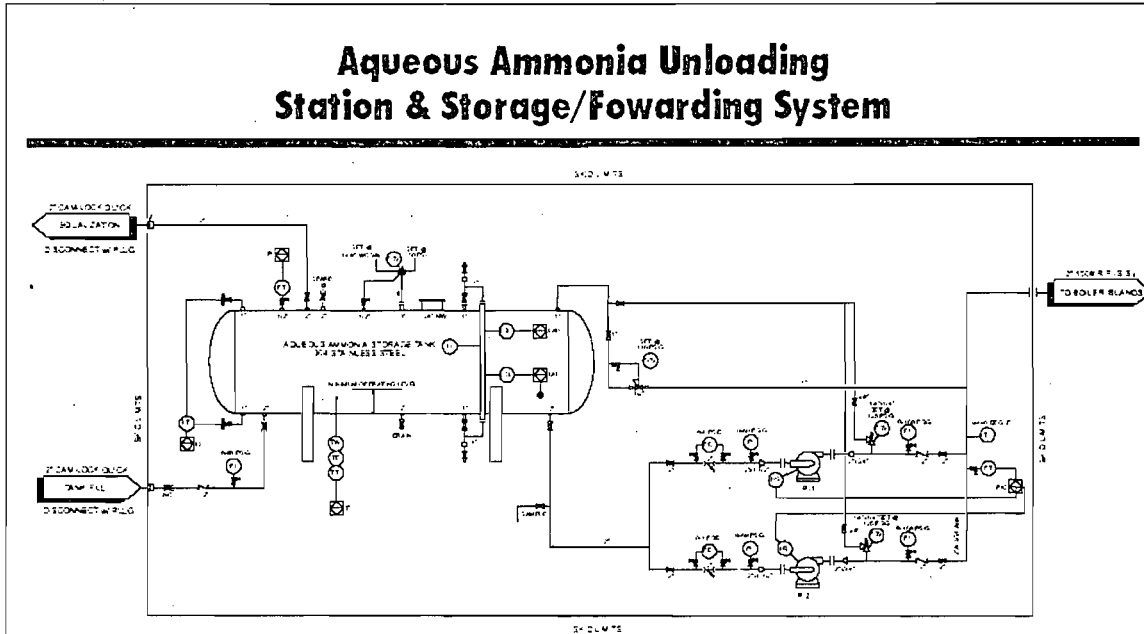


Figure 4. Diagram of Typical SNCR Ammonia Storage and Piping/Pumping System

No increases in previously-permitted production rates or emissions limitations are requested with this application.

IV. SELECTIVE NON-CATALYTIC REDUCTION PROJECT

The selective non-catalytic reduction (SNCR) project is for the purpose of providing greater control in kiln NO_x formation and emissions as well as flexibility in kiln operating parameters. The system is an alternate control strategy for meeting the applicable BACT determination made by the Department in December 2002.

Although there is a lot of recent experience with application of SNCR to cement plants in Europe, there is little experience with this technology at cement plants in the United States. Since March 2005, the nearby Suwannee American Cement has operated using SNCR, adhering to permitted emissions with regards to NO_x and Ammonia slip. Prior to reviewing the technology, it is useful to describe the original NO_x control strategy at FRI.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

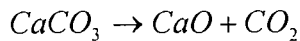
Present Staged Combustion NO_x Technology at FRI

Florida Rock has a staged air and fuel calciner as shown in the small diagram within previous Figure 2 on Page 4. The calciner burner is horizontally mounted approximately halfway up the calciner vessel. Instead of using a kiln inlet burner as shown in the diagram, FRI introduces tires at the kiln inlet.

The principle of operation of staged combustion calciner at FRI is as follows:

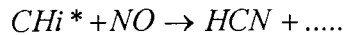
NO_x-containing exhaust gas leaving the kiln is characterized by excess air and high temperature that is less than required to sinter cement but greater than required to calcine raw meal.

Equation 1. Calcination of limestone occurs at approximately 900 degrees Celsius (°C) and liberates carbon dioxide to produce lime according to the following endothermic reaction:



This reaction tends to rapidly cool the kiln exhaust gas. The additional heat supplied by the calciner burner and tires and tertiary air sustains the reaction. This tends to limit the temperature of exhaust gases in and leaving the calciner to temperatures less than 900 °C. Combustion in the calciner proceeds as follows.

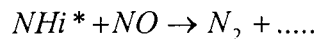
Equation 2. Fuel, such as a volatile coal, is heated and pyrolyzed releasing hydrocarbon radicals. These, in turn, *catalytically* react with NO to form hydrogen cyanide according to:



Where:

$$i = 1, 2, 3$$

Equation 3. Ammonia-like radicals are also released during pyrolysis and, under reducing conditions in the presence of raw meal, destroy NO according to:



This reaction suppresses formation of NO by the pyrolyzed fuel nitrogen and reduces NO_x in a manner that looks similar to the mechanisms of SNCR and SCR.

Other reactions involving carbon monoxide (CO) or hydrogen (H₂) are also *catalytically* driven and destroy NO_x in a reducing atmosphere. In the subsequent burning of soot and char, the NO_x reducing reactions proceed much more slowly and some of the remaining fuel nitrogen can form additional NO_x.

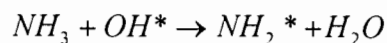
This technique (staged fuel and air combustion in the calciner) is used to meet the requirements of the December 2002 BACT determination.

Mechanisms of Selective Non-Catalytic Reduction (SNCR)

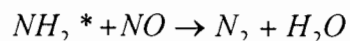
NH₃ in the form of ammonia water or urea is injected at a point in the process characterized by a suitable temperature window between 850 and 1050 °C depending on residence time, turbulence, oxygen content, and a number of other factors specific to the given gas stream. SNCR destroys NO_x by a two-step process as follows:

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

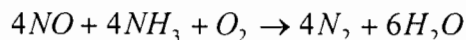
Equation 4. Ammonia reacts with available hydroxyl radicals to form amine radicals and water per the following theoretical equation:



Equation 5. Amine radicals combine with nitrogen oxides to form nitrogen and water.



Equation 6. The two steps are typically expressed as a single "global reaction".



The simplified equation does not convey the kinetics. But it suggests that, theoretically, SNCR will function best in an oxidizing atmosphere.

Equation 7. In a reducing atmosphere, CO competes with ammonia for available OH radicals

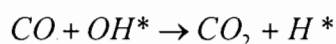


Figure 5 shows that the necessary temperature window exists at least between the kiln inlet and the bottom cyclone that receives the exhaust from the calcination section. The physical extent of the window for oxidizing conditions depends on the damper positions for the tertiary air branches for the shown calciner design. In selecting a level (or levels) for ammonia injection there must be some optimization of temperature and oxygen.

Based on the foregoing, ammonia should be injected after introduction of tertiary air. There may also be favorable injection points closer to the kiln inlet if oxidizing conditions exist in the calciner. However if fuel nitrogen oxidation is not complete, then additional NO_x may be formed and avoid treatment by ammonia.

The following figure shows the range of temperature and oxidizing/reducing conditions prevalent in a calciner such as used at FRI. Theory and practice suggest that the best overall injection point should occur in the ductwork between the tubular section and the cyclones shown in the following diagram.

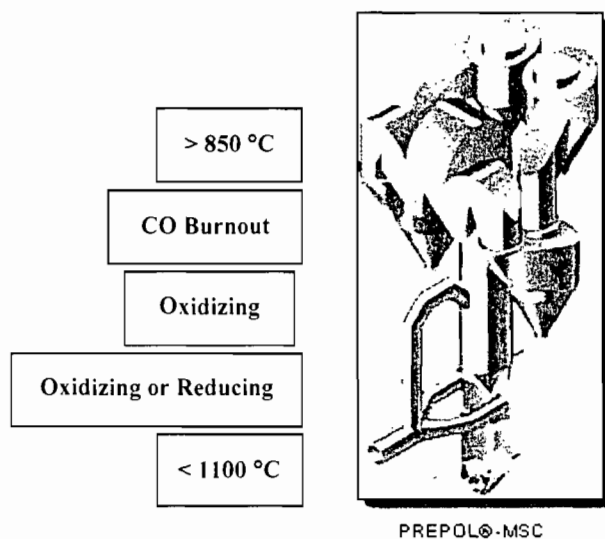


Figure 5. Temperature and Oxidizing Windows for SNCR in a Staged Combustion Calciner.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

SNCR Testing at FRI

On November 8, 2004 the Florida Department of Environmental Protection (FDEP) issued Air Construction Permit 0010087-011-AC to FRI, authorizing tests to assess the viability of SNCR in controlling NO_x emissions produced in the main kiln. These tests were conducted during the period December 6-11, 2004.

The Polysius Corporation designed the tests, supplied the equipment for the injection of ammonia, and provided personnel to operate the equipment. Additionally, Polysius monitored and reported the ammonia injection rates and the stack gas concentrations of NO_x and oxygen.

The following diagram shows some of the equipment and test points for a very similar test program conducted program also designed by Polysius at the nearby Suwannee American Cement Plant. Not shown is the metering system or the additional continuous emission monitoring equipment.

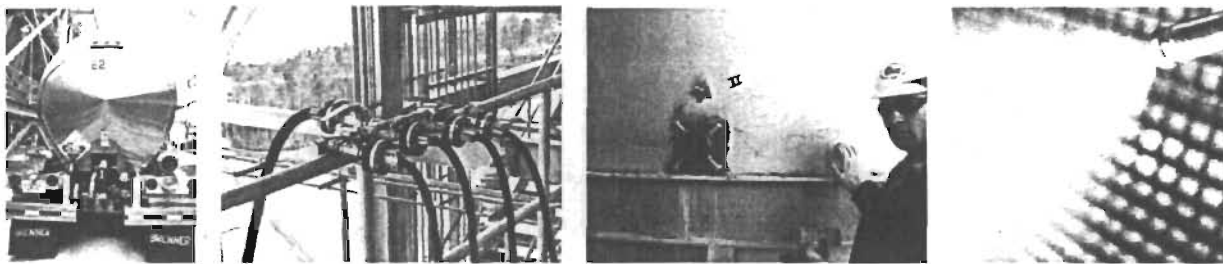


Figure 6. Aqueous Ammonia Supply Truck, Compressed Air, One of Four Ports, an Injector

At the FRI tests, plant personnel were responsible for operating the plant, reporting plant operating data and operating continuous emissions monitors for NO_x , SO_2 , total hydrocarbons, and stack gas flow located in the kiln/raw mill stack. The consultant, Koogler & Associates, provided an engineer to oversee the tests and to monitor NH_3 and CO in the kiln/raw mill stack. The summary report is available at: www.dep.state.fl.us/Air/permitting/construction/flock.htm

The Department reviewed the report and summarized the performance of the SNCR system in the graphs shown in the figure below. The graph on the left hand side represent the performance of the SNCR system while burning tires and maintaining mildly reducing or mildly oxidizing conditions in the calciner.

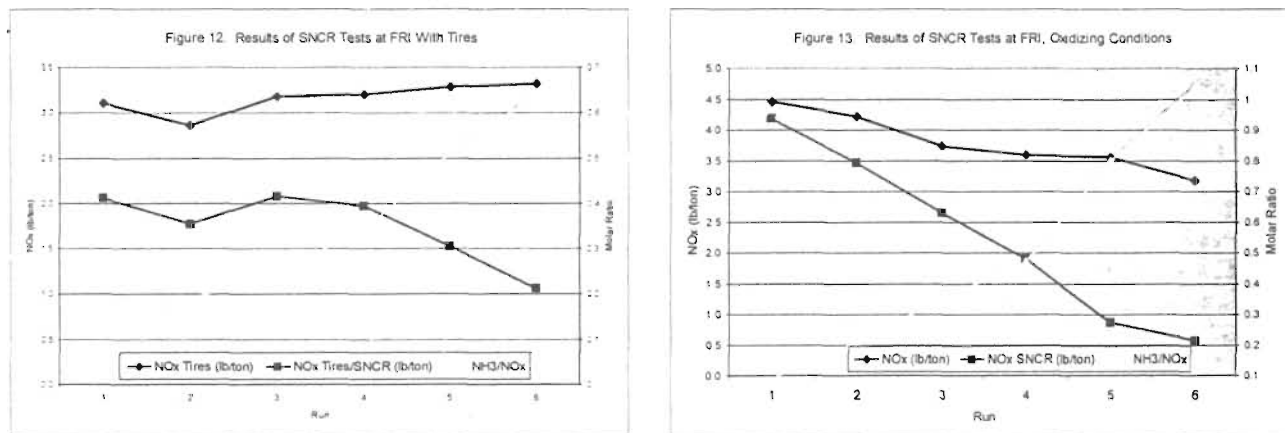


Figure 5. NO_x Emissions (middle lines) vs. Molar Ratio (lower lines) during Testing at FRI.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

NO_x emissions prior to NH₃ injection are the values represented by the top (blue) line and range from 2.9 to 3.3 lb/ton clinker reference to the axis on the left. The middle (reddish) line represents NO_x emissions after injection of NH₃ at varying molar ratios (i.e. NH₃/NO_x). The bottom (yellow) line represents the molar ratio for the given trial. Emissions ranged from 1 to 2 lb/ton clinker for molar ratios between 0.65 and 0.11. The target emission limit of 2.45 can be met with minimal NH₃ usage. This is convenient because there should be very low NH₃ emissions (slip).

Separate tests were conducted for the case when no tires were combusted and the calciner was maintained in an oxidizing atmosphere. These are summarized in the graphs on the right hand side. NO_x emissions prior to NH₃ injection range from approximately 3.2 to 4.5 lb/ton clinker.

After NH₃ injection, emissions ranged from approximately 0.6 to 3.5 lb/ton clinker for molar ratios between 1 and 0.2. In this case, the target limit of 2.45 can be met at a molar ratio of approximately 0.4.

The key point is that the target emission rate can be met with relatively low NH₃ usage. This insures minimal CO increase or NH₃ slip. Any small CO increases will likely be offset by reductions caused by maintaining less aggressive reducing conditions (and possibly even oxidizing conditions) in the calciner.

The Department concludes that there is no reason to expect emission increases at the injection rates needed to comply with the present permit limits. The SNCR system is capable of reducing emissions to values less than the present tire introduction and staged combustion system. The SNCR can be used in conjunction with or in lieu of the present system to insure compliance with the permitted limit. It is an additional control strategy to the existing staged combustion system and will allow additional flexibility in achieving BACT.

V. APPLICABLE RULES

The Department has determined that the project is not a pollution control project to control one pollutant with collateral emission increases of other pollutants. Also it is not a pollution control project to control emissions where little or no controls presently exist. In fact at the present time the tire introduction and staged combustion in the calciner (with an aggressive reducing atmosphere) achieve good emission reductions to approximately 2 lb/ton of clinker. The SNCR system is expected to perform as well.

The Department does not expect actual emission increases of any pollutant, therefore the project is not a modification as described in 62-210.200 (Definitions). However a permit is still required in accordance with paragraph 62-210.300 that states:

“Unless exempted from permitting pursuant to paragraph 62-210.300(3)(a) or (b), F.A.C., or Rule 62-4.040, F.A.C., or unless specifically authorized by provision of Rule 62-210.300(4), F.A.C., or Rule 62-213.300, F.A.C., the owner or operator of any facility or emissions unit which emits or can reasonably be expected to emit any air pollutant shall obtain an appropriate permit from the Department prior to beginning construction, reconstruction pursuant to 40 CFR 60.15 or 63.2, modification, or the addition of pollution control equipment; etc.”

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

VI. SPECIAL CONDITIONS FOR SNCR

Because SO₂ emissions are minimal from cement kilns in Florida, very little particulate matter can be formed by reaction with excess NH₃ emissions (slip). Although there is no reason to inject as much NH₃ as it takes to react with all NO_x, the Department will limit the maximum NH₃ injection rate to that level, at a molar ratio of 1.0. This equates to approximately 150 pounds per hour of ammonia (as 100% ammonia) assuming pretreatment emissions of 4 lb/ton of clinker. The actual delivered aqueous ammonia solutions will be in the range of 9 to 19 percent ammonia.

FRI will use the SNCR system at its option and is still required to retain the staged combustion calciner and the capability of operating the calciner in a reducing atmosphere in accordance with their previous construction permits and present Title V Operation Permit.

VII. ADDITIONAL COMMENTS

The Department's preliminary determination is based only on the facts presented by FRI and the Department rules sufficient to evaluate the proposed project.

Furthermore the Department's determination is strictly limited to this specific case and should not be used as a precedent for other cases, or lead to unintended consequences construed from the language contained in this determination. Ultimately, it is the Department that interprets its own regulations and opinions.

PERMITTEE

Florida Rock Industries
4000 NW CR 235
Post Office Box 459
Newberry, Florida 32669

DEP File No. 0010087-021-AC
Expires: June 30, 2007
Thompson S. Baker Cement Plant
Selective Non-Catalytic Reduction System

PROJECT AND LOCATION

This permit authorizes Florida Rock Industries, Inc. to install a Selective Non-Catalytic Reduction (SNCR) system on Kiln No. 1 at the existing Thompson S. Baker Cement Plant in Alachua County. The facility is on County Road 235 approximately 2.5 miles northeast of Newberry, Florida. The map coordinates are: UTM Zone 17, 346.8 km East and 3287.0 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. This permit supplements all other air construction and operation permits for the subject emissions unit and does not alter any requirements from such previously issued air permits.

APPENDICES

The following appendices are attached as part of this permit.
Appendix GC - Construction Permit General Conditions

Joseph Kahn, Acting Director
Division of Air Resource Management

SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION

Florida Rock Industries, Inc. (FRI) owns and operates the Thompson S. Baker Cement Plant in Newberry, Alachua County. The facility consists of raw material handling and storage, a raw mill system, kiln system, clinker handling, finish grinding operations, cement handling, loading, and bagging operations, and coal handling and grinding operations.

Kiln No. 1 is presently permitted to produce 2,650 tons per day of clinker, 800,000 tons per year, with a peak hourly clinker production limit of 115.2 tons per hour (0010087-006-AC). A second line (Kiln No. 2) is presently under construction.

PROJECT

The project is to install a Selective Non-Catalytic Reduction (SNCR) system on Kiln No. 1. SNCR is a nitrogen oxides control technology. The purpose of the project is to provide an alternate/backup/additional control technology at the facility to achieve compliance with the best available control technology (BACT). This can be used in conjunction with or in lieu of the strategy of staged combustion in the calciner and tire introduction at the kiln inlet.

The process utilizes injection of ammonia solutions near the lowest preheater cyclone. The equipment consists of a storage tank, piping, pumps, compressed air and one or more injectors. No increases in previously-permitted production rates or emissions limitations are requested with this application.

REGULATORY CLASSIFICATION

Title I, Section 111, Clean Air Act (CAA): This facility is subject to certain Standards of Performance for New Stationary Sources. They are adopted and incorporated by reference in Rule 62-204.800, F.A.C. These include:

- 40 CFR 60, Subpart A - Standards of Performance for New Stationary Sources – General Provisions.
- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants. Certain requirements from Subpart F are replaced by requirements from 40 CFR 63, Subpart LLL listed below.
- 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants.
- 40 CFR 60, Subpart OOO - New Source Performance Standards For Nonmetallic Mineral Processing Plants.

Title I, Section 112 CAA: The facility has the potential to emit 10 tons per year or more of any one hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. This facility is subject to the Major Source provisions of:

- 40 CFR 63, Subpart A - National Emission Standards for Hazardous Air Pollutants – General Provisions.
- 40 CFR 63, Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

Title I, Part C (PSD): The facility is located in an area designated as “attainment”, “maintenance”, or “unclassifiable” for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a “portland cement plant”, which is one of the 28 Prevention of Significant Deterioration (PSD) source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400 F.A.C., Prevention of Significant Deterioration.

Title IV, CAA: The facility does not operate any units subject to the Acid Rain provisions of the Clean Air Act.

SECTION I. FACILITY INFORMATION

Title V, CAA: The facility is a Title V or "Major Source" of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a major source of HAPS. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

RELEVANT DOCUMENTS

- Original Air Construction Permit AC01-267311 (renumbered 0010087-001-AC) issued in December 1996 (as amended in August 2001). Also known as PSD-FL-228.
- Construction permit modification (PSD-FL-228B and 0010087-004-AC) issued on August 20, 2001, to extend the permit expiration date to December 31, 2001, install VOC monitor, and install multi-stage combustion (MSC) calciner.
- Current Title V Operation Permit 0010087-002-AV issued January 11, 2002.
- Construction Permit modification (PSD -FL-228C and 0010087-006-AC) issued on December 11, 2002.
- Selective Non-Catalytic Reduction Test Report dated February 2, 2005.
- Application submitted by Florida Rock and received by the Department on May 24, 2006.
- Technical Evaluation and Preliminary Determination issued on September 14, 2006.

DRAFT

SECTION II. ADMINISTRATIVE REQUIREMENTS

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify or operate this emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection ("Department"), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114. Copies of these documents shall be submitted to the Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the Northeast District Office at 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590. The phone number is 904/807-3300 and the fax number is 904/448-4363.
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403, F.S. [Rule 62-4.160, F.A.C.]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Permit: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. Upon completion of construction of this project, a Title V operation permit revision is required for regular operation of the new equipment. The permittee shall apply for a revised Title V operation permit prior to expiration of this permit. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

EU 003. KILN SYSTEM

This section of the permit addresses the following emissions unit:

ID No.	Emission Unit Description
003	Kiln system. The kiln system (or pyroprocessing system) includes the 156.5 foot kiln (Kiln No. 1), a four-stage preheater tower, a 25,300 cubic foot multi-stage combustion (MSC) calciner, a tire feed system, a selective non-catalytic reduction (SNCR) system, two coal burners and ancillary equipment. Particulate emissions are controlled by an electrostatic precipitator.

ADMINISTRATIVE REQUIREMENTS

Previous Permit Conditions: The following conditions are in addition to those of the previous air construction permits and the facility Title V Operation Permit. Unless otherwise specified, the emissions unit remains subject to all applicable conditions from previous air construction permits. [Rule 62-4.070(3), F.A.C.]

SPECIFIC CONDITIONS

1. The owner or operator may install and operate a selective non-catalytic reduction (SNCR) system, including an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Aqueous ammonia solution will be injected at a location(s) in the preheater/calciner with an appropriate temperature profile to support the SNCR process. [Applicant Design]
2. The SNCR system shall be designed, constructed and capable of achieving the previously permitted limit of for NO_x emissions from the pyroprocessing system. [62-4.070, F.A.C.]
3. The SNCR system may be operated in conjunction with or in lieu of operation of the existing MSC calciner in a reducing atmosphere or tire injection system for the purposes of meeting the applicable NO_x limit. [Applicant Request, Rule 62-210.650, F.A.C.]
4. Upon malfunction or unavailability of the SNCR system, the operator shall, as soon as practicable, effect a reducing atmosphere in the calciner or inject tires as needed to maintain NO_x control. [Rule 62-210.650, F.A.C.]
5. The concentration of stored ammonia solutions shall be between 9 and 19 percent (%) by weight. [Applicant Request]

{Note: The limitation to 19% avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity}

6. The ammonia injection rate shall not exceed 150 pounds per hour (1-hour block as 100% ammonia) in order to minimize ammonia emissions (slip). To demonstrate compliance, the owner or operator shall continuously monitor and record the ammonia injection rate. The injection rate of ammonia solution measured in terms of volumetric flow rate shall be converted to pounds per hour as 100% ammonia.

{Note: the maximum ammonia injection rate is equivalent to an NH₃/NO_x molar ratio of 1.0 presuming baseline uncontrolled NO_x emissions of 4 lb/ton of clinker.}

SECTION IV. GENERAL CONDITIONS

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

SECTION IV. GENERAL CONDITIONS

The permittee shall be responsible for any and all damages, which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (not applicable to project);
 - (b) Determination of Prevention of Significant Deterioration (not applicable to project)
 - (c) Compliance with National Emission Standards for Hazardous Air Pollutants (not applicable to this project); and
 - (d) Compliance with New Source Performance Standards (not applicable to project).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SENDER: COMPLETE THIS SECTION.

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Chris Horner
 Florida Rock Industries, Inc.
 4000 NW CR 235
 Post Office Box 459
 Newberry, Florida 32669

2. Article Number 7000 1670 0013 3110 1113
 (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Walter Sapp Addressee

B. Received by (Printed Name) Walter Sapp C. Date of Delivery

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:



3. Service Type* Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

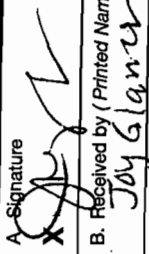
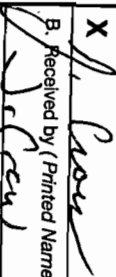
4. Restricted Delivery? (Extra Fee) Yes

**U.S. Postal Service
 CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)**

OFFICIAL USE

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Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Po		
Sent To	Mr. Chris Horner	
Street, Ap	Florida Rock Industries, Inc.	
City, State	4000 NW CR 235	
	Post Office Box 459	
	Newberry, Florida 32669	

<p>SENDER: COMPLETE THIS SECTION</p> <p>1. Article Addressed to: Mr. Lowell Garrett City of Newberry Post Office Box 369 Newberry, Florida 32669</p> <p>2. Article Number (Transfer from service label) 0601 011E E100 0L91 000L</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Registered <input type="checkbox"/> Insured Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	<p>COMPLETE THIS SECTION ON DELIVERY</p> <p>A. Signature </p> <p>B. Received by (Printed Name) Joy Glanz</p> <p>C. Date of Delivery 9-20-06</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>
<p>SENDER: COMPLETE THIS SECTION</p> <p>1. Article Addressed to: Ms. Cynthia Moore Chestnut Alachua County Board of County Commissioners Post Office Box 2877 Gainesville, Florida 32602</p> <p>2. Article Number (Transfer from service label) 7000 1670 0013 3110 0918</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Registered <input type="checkbox"/> Insured Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	<p>COMPLETE THIS SECTION ON DELIVERY</p> <p>A. Signature </p> <p>B. Received by (Printed Name) Cynthia Moore</p> <p>C. Date of Delivery 9-20-06</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>

**U.S. Postal Service
CERTIFIED MAIL RECEIPT**
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage \$	Postmark Here
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	

Total P

Sent To
 Mr. Lowell Garrett
 City of Newberry
 Post Office Box 369
 Newberry, Florida 32669

Street, A
 City, Sta

PS Form 3800, May 2000 See Reverse for Instructions

**U.S. Postal Service
CERTIFIED MAIL RECEIPT**
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage \$	Postmark Here
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Return Receipt Fee (Endorsement Required)	
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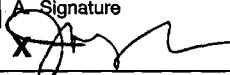
Sent To
 Ms. Cynthia Moore Chestnut
 Alachua County Board of County Commissioners
 Post Office Box 2877
 Gainesville, Florida 32602

Street, Ap
 City, State

PS Form 3800, May 2000 See Reverse for Instructions

0601 011E E100 0L91 000L

9180 011E E100 0L91 000L

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee
1. Article Addressed to: Mayor John Glanzer City of Newberry Post Office Box 369 Newberry, Florida 32669	B. Received by (Printed Name) <u>Jay Glanzer</u> C. Date of Delivery <u>1/13/06</u>
2. Article Number <u>7000 1670 0013 3110 1106</u> (Transfer from service label)	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

U.S. Postal Service CERTIFIED MAIL RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
OFFICIAL USE	
Postage \$	
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total P	Mayor John Glanzer
Sent To	City of Newberry
Street, A	Post Office Box 369
City, Sta	Newberry, Florida 32669
PS Form 3800, May 2000	See Reverse for Instructions

7000 1670 0013 3110 1106

Postmark Here

Friday, Barbara

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Monday, September 18, 2006 11:28 AM
To: Friday, Barbara
Subject: Delivery Notification: Message successfully forwarded

Attachments: ATT237610.txt; ATT237611.txt



ATT237610.txt (626 B) ATT237611.txt (2 KB)

This report relates to a message you sent with the following header fields:

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Message-id: <19B16B8D7B20F14CB4EC9E20EB0F6E449B0E68@tlhexsmb4.floridadep.net>  
Date: Mon, 18 Sep 2006 11:25:33 -0400  
From: "Friday, Barbara" <Barbara.Friday@dep.state.fl.us>  
To: jkoogler@kooglerassociates.com, little.james@epamail.epa.gov,  
"Kirts, Christopher" <Christopher.Kirts@dep.state.fl.us>, hgotsch@flarock.com  
Subject:
```

Your message has been successfully relayed to the recipients

```
Recipient address: little.james@mseive.epa.gov  
Original address: little.james@epa.gov  
Reason: Message successfully relayed to a system that does not support receipts  
Diagnostic code: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|1162|134.67.221.149|25)  
(mseive01.rtp.epa.gov ESMTX Postfix) smtp;250 Ok  
Remote system: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|1162|134.67.221.149|25)  
(mseive01.rtp.epa.gov ESMTX Postfix)
```

on a remote system that does not support the generation of successful delivery receipts. This does NOT mean that your message has actually been placed in the recipients' mailboxes; merely that it has passed through a part of the message transport infrastructure. In the event of a nondelivery you should expect to receive a nondelivery notification; in the event of successful delivery, however, you are unlikely to receive a positive confirmation of delivery.

Friday, Barbara

From: Exchange Administrator
Sent: Monday, September 18, 2006 11:28 AM
To: Friday, Barbara
Subject: Delivery Status Notification (Relay)

Attachments: ATT237567.txt; Untitled Attachment



ATT237567.txt Untitled Attachment
(286 B)

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients, but the requested delivery status notifications may not be generated by the destination.

hgotsch@flarock.com

Friday, Barbara

From: System Administrator
To: Kirts, Christopher
Sent: Monday, September 18, 2006 11:26 AM
Subject: Delivered:Delivery Status Notification (Success)

Your message

To: 'jkoogler@kooglerassociates.com'; 'little.james@epa.gov'; Kirts, Christopher; 'hgotsch@flarock.com'
Cc: Hodges, Robert; Linero, Alvaro; Adams, Patty
Subject:
Sent: 9/18/2006 11:26 AM

was delivered to the following recipient(s):

Kirts, Christopher on 9/18/2006 11:26 AM

Friday, Barbara

From: System Administrator
To: jkoogler@kooglerassociates.com
Sent: Monday, September 18, 2006 11:33 AM
Subject: Delivered:Mail System Delivery Report

Your message

To: jkoogler@kooglerassociates.com; little.james@epa.gov; Kirts, Christopher; hgotsch@flarock.com
Cc: Hodges, Robert; Linero, Alvaro; Adams, Patty
Subject:
Sent: 9/18/2006 11:26 AM

was delivered to the following recipient(s):

jkoogler@kooglerassociates.com on 9/18/2006 11:30 AM



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ■ FAX/377-7158

KA 187-06-10

August 11, 2006

RECEIVED

AUG 14 2006

BUREAU OF AIR REGULATION

Mr. A. L. Linero, P.E.
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Waiver of 90-day Period
Florida Rock Industries, Inc. - Thompson S. Baker Cement Plant
Alachua County, Florida
FDEP File No. 0010087-021-AC

Dear Mr. Linero:

This is a follow up to our telephone conversation regarding a waiver of the 90-day period for the above referenced project until December 31, 2006.

If you have any questions, please call me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK.par
Encl.

C: Robert Hodges, FDEP
Henry Gotsch, FRI

RECEIVED

AUG 14 2006

BUREAU OF AIR REGULATION

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

WAIVER OF 90 DAY TIME LIMIT FOR ISSUANCE OF PERMIT
UNDER SECTIONS 120.60(1) and 403.0876, FLORIDA STATUTES

Applicant: Florida Rock Industries, Inc. - Thompson S. Baker Cement Plant.

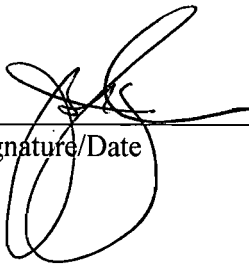
DEP File No.: 0010087-021-AC

The undersigned has read Sections 120.60(1) and 403.0876, Florida Statutes (F.S.), and fully understands the applicant's rights under those sections.

With regard to the above referenced permit application, the applicant hereby, with full knowledge and understanding of its rights under Sections 120.60(1) and 403.0876, F.S., waives the right under those statutes to have the application for a permit issued or denied by the State of Florida Department of Environmental Protection within the ninety day time period proscribed in those sections. Said waiver is made freely and voluntarily by the applicant, is in its self-interest, and is made without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Protection.

This waiver shall expire on December 31, 2006.

The undersigned is authorized to make this waiver on behalf of the applicant.

 8/11/2006

Signature/Date

John B. Koogler, Ph.D., P.E.
Name/Title (please print)



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

187-06-10
May 22, 2006

RECEIVED

MAY 24 2006

BUREAU OF AIR REGULATION

Trina Vielhauer and Al Linero
FDEP
Twin Towers Office Bldg
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

Subject: *Florida Rock Industries
Thompson S. Baker Cement Plant
Permit Application to Install SNCR on Kiln 1*

Dear Trina/Al:

Enclosed are four copies of an air construction permit application (FDEP Form No. 62-210.900(1)) requesting approval to install a Selective Non-Catalytic Reduction System on Kiln 1.

Included in the application package is a report outlining the scope of the application and providing the rationale for the requested project.

I will contact you within a week of your receipt of the application to see if there are any questions or comments. If questions or comments arise prior to my contact, please do not hesitate to contact me at 352-377-5822 or jkoogler@kooglerassociates.com.

Very truly yours,

KOOGLER & ASSOCIATES, INC.

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

JBK/lt

Encl.

cc: Mr. Gary Sauer
Mr. Chris Horner
Mr. Henry Gotsch



Department of Environmental Protection

RECEIVED

Division of Air Resource Management

MAY 24 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/revised/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: Florida Rock Industries, Inc.	
2. Site Name: Thompson S. Baker Cement Plant – Newberry	
3. Facility Identification Number: 0010087	
4. Facility Location... Street Address or Other Locator: 4000 NW CR 235 City: Newberry County: Alachua Zip Code: 32669	
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: John B. Koogler, Ph. D., P.E.	
2. Application Contact Mailing Address... Organization/Firm: Koogler & Associates, Inc. Street Address: 4014 NW 13th Street City: Gainesville State: Florida Zip Code: 32609	
3. Application Contact Telephone Numbers... Telephone: (352) 377-5822 ext. Fax: (352) 377-7158	
4. Application Contact Email Address: jkoogler@kooglerassociates.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 5/24/06	3. PSD Number (if applicable):
2. Project Number(s): 0010087-021-AC	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 install a Selective non-Catalytic Reduction (SNCR) system on Kiln No. 1 (EU-003). Details are provided in Attachment 1, hereto.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
003	No. 1 Kiln System	ACM1	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 : Chris Horner, Plant Manager
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Florida Rock Industries, Inc. Street Address: 4000 NW CR 235 City: Newberry State: Florida Zip Code: 32669
3. Owner/Authorized Representative Telephone Numbers... Telephone: 353-474-4722 Ext 130 Fax: 352-472-2449
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 of any permitted emissions unit.</i>  _____ Signature 5/23/06 _____ Date

APPLICATION INFORMATION

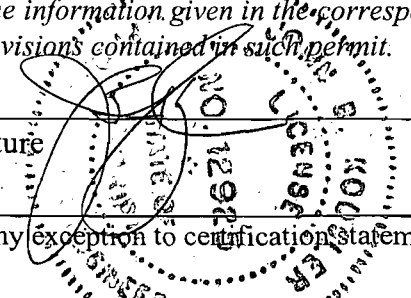
Application Responsible Official Certification

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: Not Applicable
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: John B. Koogler Registration Number: 12925
2. Professional Engineer Mailing Address... Organization/Firm: Koogler & Associates, Inc. Street Address: 4014 NW 13th Street City: Gainesville State: Florida Zip Code: 32609
3. Professional Engineer Telephone Numbers... Telephone: (352) 377-5822 ext. Fax: (352) 377-7158
4. Professional Engineer Email Address: <u>jkoo@kooglerassociates.com</u>
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 designed 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>5/22/2006</u> (seal) 

* Attach any exception to certification statement.

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:	
Field 6: Presumed major for HAPs.	
Field 8: NSPS Subpart F superseded by NESHAP Subpart LLL; NSPS Subpart OOO and NSPS Subpart Y apply to certain affected facilities.	
Field 10: Subject to applicable provisions of NESHAP Subpart LLL.	

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

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: _____
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 at a maximum heat input rate of 364 mmBTU/hr. PM emissions are controlled by an ESP.**

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 install SNCR. The kiln feed rate and clinker production rate are not affected nor are the fuel types or heat input rate. There are no emission rate changes associated with this project. This application therefore addresses only matters that could be affected by SNCR.**

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: 191.4 tph, peak hourly preheater feed rate
2. Maximum Production Rate: 115.0 tph, peak hourly clinker production rate
3. Maximum Heat Input Rate: million Btu/hr 364.0 mmBTU/hr
4. Maximum Incineration Rate: pounds/hr N/A tons/day
5. Requested Maximum Operating Schedule: hours/day 24 days/week 7 weeks/year 52 hours/year 8760
6. Operating Capacity/Schedule Comment: Clinker Production: 115.0 tph, max hourly, 110.3 tph, 24-hr rolling average and 800,000 tpy Preheater Feed: 191.4 tph, max hourly, 183.4 tph, 24-hr rolling average and 1,331,000 tpy Clinker production is determined from preheater feed

EMISSIONS UNIT INFORMATION

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

**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: E-21		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: E-21 Kiln No. 1/Raw Mill Stack			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: EU-002; Raw Mill and Raw Mill Auxiliary Heater discharge through E-21			
5. Discharge Type Code: V	6. Stack Height: Feet 250	7. Exit Diameter: Feet 9.42	
8. Exit Temperature: °F 215	9. Actual Volumetric Flow Rate: Acfm 225,000	10. Water Vapor: % 12	
11. Maximum Dry Standard Flow Rate: Dscfm 155,000		12. Nonstack Emission Point Height: Feet N/A	
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:			

EMISSIONS UNIT INFORMATION

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

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type): Note: All Process and Fuel Segments are unchanged.		
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 __ of __

1. Segment Description (Process/Fuel Type): N/A		
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:		

EMISSIONS UNIT INFORMATION

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

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: NOx		2. Total Percent Efficiency of Control: 0-50%	
3. Potential Emissions: 271 lb/hour		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		980 tons/year	
5. Range of Estimated Fugitive Emissions (as applicable): N/A to tons/year			
6. Emission Factor: 2.45 lb/ton clinker Reference: BACT		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): N/A tons/year		8.b. Baseline 24-month Period: N/A From: To:	
9.a. Projected Actual Emissions (if required): N/A tons/year		9.b. Projected Monitoring Period: N/A <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Hourly: 2.45 lb/ton x 110.3 tph = 271 lb/hr NOx Annual: 2.45 lb/ton x 800,000 tpy/2000 lb/ton = 980 tpy			
11. Potential, Fugitive, and Actual Emissions Comment:			

**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 1 of 1 NOx

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions: N/A
3. Allowable Emissions and Units: 2.45 lb/ton clinker	4. Equivalent Allowable Emissions: 271.0 lb/hour 980 tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): Hourly and annual emissions from Permit 0010087-006-AC	

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

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

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 1

1. Parameter Code: EM	2. Pollutant(s): SO2/NOx
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: Sick AG Environmental Monitoring Model Number: GM31-3 Serial Number: 8040 8002	
5. Installation Date: 12/2000	6. Performance Specification Test Date: July, 2005 - Annual RATA
7. Continuous Monitor Comment: CEMS required by BACT for NOx	

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 checked="" type="checkbox"/> Attached, Document ID: <u>Attach. 1</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

Attached, Document ID: _____

Test Date(s)/Pollutant(s) Tested: _____

Previously Submitted, Date: _____

Test Date(s)/Pollutant(s) Tested: _____

To be Submitted, Date (if known): _____

Test Date(s)/Pollutant(s) Tested: _____

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

Attached, Document ID: _____

Not Applicable

Attachment 1
Scope of Application and Information in Support of Application

SCOPE OF APPLICATION

Florida Rock Industries (FRI) operates the Thompson S. Baker Portland cement plant in Alachua County, Florida. The plant is on County Road 235 approximately 2.5 miles northeast of Newberry, Florida. The company has one operating Portland cement production line (Line 1) and was recently permitted to construct a second line (Line 2).

The purpose of this application is to request the installation of Selective Non-Catalytic Reduction (SNCR) on Line 1. Currently, Line 1 has a NOx emission limit of 2.45 pounds per ton of clinker (30-day average). The NOx emission limit is among the lowest permitted NOx emission limits for operating Portland cement plants in the U.S. This limit is met through plant design which incorporates multi-stage combustion and by controlling plant operating parameters.

FRI conducted SNCR tests on Line 1 during the period December 6-11, 2004. The purpose of these tests was to determine the efficacy of SNCR for Line 2 which was being permitted at that time. In addition to the tests demonstrating that the technology was quite effective for controlling NOx emissions, FRI found that by operating the multi-stage combustion system on Kiln 1 under less severe reducing conditions, kiln operations were improved and the potential for plugging in the riser duct/preheater/calcliner sections of the plant were reduced. These same results were experienced and reported by Suwannee American Cement, and as a result of favorable SNCR tests conducted by Suwannee American, that company elected to retrofit their existing Kiln No. 1 with SNCR.

The Line 2 permitted by Florida Rock in July 2005 is permitted with SNCR and by this application, FRI is requesting approval to retrofit existing Line 1 with SNCR. The purpose of this retrofit is to allow greater flexibility in plant operations while maintaining compliance with the existing NOx emission limiting standard of 2.45 pounds per ton of clinker, 30-day rolling average. The rationale for this request is discussed in detail in subsequent sections of this Report.

SELECTIVE NON-CATALYTIC REDUCTION FOR LINE 1

When Line 1 was originally permitted in December 1996, the permitted NOx emission limit was 2.80 pounds per ton of clinker, 30-day rolling average, and the clinker production rate was 2300 tons per day. In December 2002, FRI received Permit 0010087-006-AC from FDEP authorizing a production rate increase to 2650 tons per day of clinker. Concurrent with this rate increase was a reduction in the NOx emission limit to 2.45 pounds per ton of clinker, 30-day rolling average. This limit was established so there would be no increase in actual/permitted NOx emissions associated with the production rate increase.

Subsequent to December, 2002, FRI has demonstrated that the NOx emission limit of 2.45 pounds per ton of clinker is achievable through the use of multi-stage combustion which was a design feature of Line 1 and by controlling plant operating parameters.

In 2004, FRI developed plans for the construction of a second production line at the Thompson S. Baker Cement Plant. During the preparation of the permit application for the second line, FRI requested authorization from FDEP for a trial period to evaluate SNCR technology by temporarily installing a SNCR system on Line 1. The authority was granted by Permit 0010087-011-AC issued on November 8, 2004.

Following the same line of reason and for the same purpose, Suwannee American Cement also requested authorization to evaluate SNCR and was granted approval by Permit 1210465-013-AC issued on November 2, 2004. The SNCR testing at Suwannee American Cement (SAC) took place during the period November 8-29, 2004 and the testing at FRI took place during the period December 6-11, 2004. The results of both tests were submitted to FDEP. A copy of the FRI report is included as Attachment A.

The tests at both FRI and SAC demonstrated that SNCR was effective in reducing NOx emissions with minimal ammonia slip. The FRI experience (Attachment A) shows

NOx reductions ranging from 6-82 percent with ammonia/NOx mole ratios ranging from 0.1-1.0. The tests conducted at FRI were conducted both with and without tire derived fuel used as a supplemental fuel.

The actual ammonia injection rates during the FRI tests ranged from 75-600 liters per hour of 10 percent aqua-ammonia. Ammonia slip was observed only when the raw mill was not operating. The peak ammonia concentration in the kiln stack was in the order of 40 ppm.

During the test period, FRI operated for a 16-hour period with a variable ammonia injection rate, maintaining a NOx emission rate of 1.8 pounds per ton of clinker. This limited test demonstrated NOx emissions could be controlled at a set emission rate through a feedback system that automatically varied the ammonia injection rate based on the signal from the NOx CEMS. During this period of the test, the ammonia injection rate ranged from 200-400 liters per hour of 10 percent aqua-ammonia.

The SNCR testing at SAC covered a longer period of time and specifically, a longer period of time (approximately nine days) when the kiln operated a set NOx emission rate maintained by varying the ammonia injection rate. In the case of the SAC tests, the ammonia was injected as 19 percent aqua-ammonia.

The results of the testing at the two plants demonstrated that by operating the kilns under less severe reducing conditions in the riser duct and calciner, the stability of kiln operations was increased. By increasing the oxygen concentration at the kiln exit to 2-3 percent, the kiln operations were more stable and build-up (due to sulfur deposition) was reduced in the riser duct and calciner.

The only drawbacks to SNCR noted during the test periods at the two plants were a possible increase in CO emissions and the aforementioned ammonia slip. Regarding CO emissions, it is expected that once operating experience is gained with SNCR, the higher oxygen levels at the kiln exit will result in lower CO levels at the kiln exit and no

measurable change in CO emissions at the kiln stack. As a result, the CO emission limit of 2.50 pounds per ton of clinker for the FRI Line 1 will remain unchanged and actual emissions are not expected to change.

The other disadvantage noted during the two tests was the fact that ammonia slip occurred when the raw mills were not operating. The maximum observed ammonia concentrations in the two stacks were in the range of 40-50 ppm. It is expected that if the mole ratio of ammonia/NOx is maintained below 1.0, ammonia slip will be minimized.

The other factor to consider with SNCR is a failure of the ammonia injection equipment. If this occurs, there will be short-term NOx emissions that exceed the limit of 2.45 pounds per ton of clinker. However, when averaged over the 30-day rolling average period for this limit, no change in emissions is expected.

As stated previously, the installation of the SNCR system at FRI is for purposes of stabilizing kiln operations and providing greater flexibility in operating the kiln. The SNCR installation is not for achieving compliance with the presently permitted NOx emission limit nor is the installation proposed as a means of increasing production. FRI operated at a clinker production factor of 90.2 percent for the period 2004-2005, and at a factor of 94.1 percent during 2003. Any change in clinker production will be based strictly on product demand.

Regarding compliance with the NOx emission limiting standard, FRI has demonstrated over the past three plus years (December 2002-May 2006) that this limit can be (and has been) achieved on a continuous basis. FRI will continue to operate at NOx emission levels (lb/ton clinker) that are in the range in which the plant has operated since December 2002. The installation of the SNCR system will not result in any change in NOx emissions and hence, the emission limit (pounds per ton of clinker) and the mass emission rate (tons per year) will remain unchanged for NOx; and for other regulated pollutants.

Based on the results of the tests conducted at FRI and SAC in November-December 2004, FRI will inject the ammonia between the calciner and the lowest stage cyclone in the preheater. The ammonia will be injected just prior to the gases entering the cyclone; thus allowing as much time as possible after the introduction of tertiary combustion air for the burn-out of CO. This injection location is consistent with the experience of SAC and the experience that Krupp-Polysius has had at other plants. This injection location is also consistent with information provided in a recent paper by Horton, Linero and Miller.¹

Aqua-ammonia will be used as the source of ammonia. It is anticipated that a 10-19 percent ammonia solution will be utilized. To expedite the installation of the SNCR system, FRI is considering the temporary use of a Polysius system, or equivalent, identical/similar to the system used during the December, 2004 SNCR tests. That system is described in Attachment D.

In the permanent SNCR system, the ammonia will be stored in a double-walled tank having the capacity to handle 110 percent of the tank volume. The tank capacity will be approximately 10,000-15,000 gallons and the tank will be equipped with overflow and leak alarms as well as a level detection system. The tank and associated equipment will be pressure rated and will have means to ensure the vapors from the tank are not vented to the atmosphere. The ammonia will be delivered from the tank to the SNCR system by a dual pump system. This will ensure ammonia delivery even with the failure of one of the pumps. The system will be automated through the existing plant control system, including the NOx CEMS in the Line 1 kiln stack.

¹ *Use of SNCR to Control Emissions of Oxides of Nitrogen from Cement Plants*, presented at IEEE Conference, Dallas, Texas, April 2006.

Attachment A
FRI SNCR Test Report

SELECTIVE NON-CATALYTIC REDUCTION TEST REPORT

**FLORIDA ROCK INDUSTRIES, INC.
Thompson S. Baker Cement Plant**

**Facility ID: 0010087
Newberry, Florida**

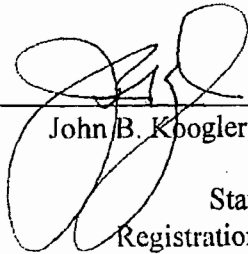
**Test Date: December 6-11, 2004
Report Date: February 2, 2005**

***Koogler & Associates, Inc.
4014 N.W. 13th Street
Gainesville, Florida 32609
(352) 377-5822***

187-04-16



To the best of my knowledge, all test data and plant operating data are true and correct and the conclusions presented herein are representative of the data reported.



John B. Koogler, Ph.D., P.E.
State of Florida
Registration No. 12925

2/2/05

Date



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Appendix

1.0 INTRODUCTION

Florida Rock Industries, Inc. (FRI) operates the Thompson S. Baker Portland cement plant on CR 235, approximately 3.5 miles north of the city center of Newberry, Florida. The plant is a modern preheater/precalciner Portland cement plant designed by the Polysius Corporation. The plant has a permitted clinker production rate of 2650 tons per day and currently operates under FDEP Permit 0010087-009-AV.

On November 8, 2004 the Florida Department of Environmental Protection (FDEP) issued Air Construction Permit 0010087-011-AC to FRI authorizing tests to assess the viability of Selective Non-Catalytic Reduction (SNCR) for the control of NO_x emissions from the cement kiln. These tests were conducted during the period December 6-11, 2004. The Polysius Corporation designed the tests, supplied the equipment for the injection of ammonia and provided personnel to operate the equipment. Additionally, Polysius monitored and reported the ammonia injection rates and the stack gas concentrations of NO and oxygen. FRI personnel were responsible for operating the plant, reporting plant operating data and operating continuous emissions monitors for NO_x, SO₂, total hydrocarbons, and stack gas flow located in the kiln/raw mill stack. Koogler and Associates, Inc. was the engineer of record for the tests and monitored ammonia and carbon monoxide in the kiln/raw mill stack.

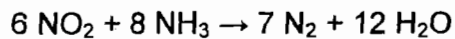
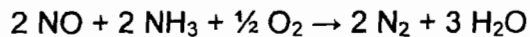
The purpose of the testing was to evaluate the effectiveness of SNCR for NOx reduction. The ammonia used for the tests was a 10 percent (by weight) ammonia/water solution. This solution was injected into the calciner just before the Stage I cyclone (the bottom cyclone) of the preheater. This injection point was selected by Polysius based on experience at other plants. Ammonia was injected at various rates defined by the molar ratio of ammonia to uncontrolled NOx (NO + NO₂) measured in the kiln/raw mill stack. The NOx reductions measured in the kiln/raw mill stack are reported as a function of these molar ratios. The ammonia injection tests were conducted with and without the firing of whole-tire derived fuel at the kiln inlet. The tests demonstrated NOx reduction efficiencies in the range of 6-82 percent with molar ratios in the range of 0.1-1.0.

Additionally, ammonia was injected at varying rates for approximately a 16-hour period to maintain a set stack gas NOx concentration of about 130 ppm (v/v); equivalent to about 1.8 pounds of NOx per ton of clinker. This test demonstrated that a relatively constant NOx stack gas concentration can be maintained with an SNCR system by varying the injection rate of ammonia.

Finally, this report includes a cost estimate for the operation of an SNCR system at the FRI Thompson S. Baker Cement Plant based on the results of this test program.

2.0 THE SNCR PROCESS

The bases of the SNCR process are reactions between ammonia (NH_3) and NO and ammonia and NO_2 . In these reactions, the NO and NO_2 are chemically reduced to elemental nitrogen. The governing reactions are as follows:



These reactions take place without the aid of a catalyst and are highly temperature dependent. With the injection of aqua ammonia (an ammonia/water solution), the optimum reaction temperature is approximately 950°C (1750°F). For urea injection, the optimum temperature is in the range of 1000°C (1830°F). For temperatures significantly below these optimum temperatures, some of the ammonia is unreacted and ends up in the raw materials or as ammonia in the stack gas. At temperatures significantly above the temperatures, the ammonia will react with oxygen, increasing the concentrations of NO and NO_2 (referred to as collectively herein as NO_x).

The actual reaction between ammonia and NO_x first involves the reaction of ammonia with OH^\cdot radicals to produce the NH_2^\cdot radical and water. The NH_2^\cdot

then reacts with NO_x to produce the elemental nitrogen and water as shown in the above equations.

Because of this intermediate reaction, another factor to take into consideration is the presence of carbon monoxide (CO) in the gas stream into which the ammonia is injected. The oxidation of CO to CO₂ involves the same OH^{*} radicals that react with ammonia to produce the NH₂^{*} radical. Thus, if CO is present, there are competing reactions between the CO and NH₃ for the OH^{*} radicals and both the oxidation of CO and the creation of NH₂^{*} radicals suffer.

For SNCR to be effective, therefore, there must be enough residence time in the precalciner between the injection of tertiary combustion air and the injection of ammonia for the CO to be substantially oxidized. Considering these factors, Polysius has found that the most favorable point of ammonia injection at this Multi-Stage Combustion (MSC) plant is just prior to the Stage I cyclone of the preheater.

Polysius has found that because of the aforementioned competing reactions between CO and NH₃ for OH^{*} radicals, the presence of unoxidized carbon monoxide at the point of ammonia injection will result in an increase in carbon monoxide emissions. Polysius has reported (*Latest Developments in NO_x Reduction Technology in the Cement Industry*, R. M. Erpelding, Polysius A.G.-

Germany, Cement Plant Environmental Handbook, 2003) that at a molar ratio of ammonia to NO_x of 0.8, CO emissions will increase in the range of 0.3-1.0 pounds per ton of clinker. At a molar ratio of 1.0, the CO increase will be in the range of 0.5-1.5 pounds per ton of clinker.

3.0 SNCR TEST EQUIPMENT

Polysius supplied the equipment necessary for injecting the aqua ammonia. For the test at FRI, a 10 percent (by weight) ammonia in water solution was delivered by tank truck. The specific gravity of the solution was 0.9582.

The Polysius equipment consisted of three components; a control panel, the pump station and the injectors. The aqua ammonia was delivered from the tank truck through a 20 stage centrifugal pump and a series of controllers to the injectors at a pressure in the range of 150-220 psig (10-15 bars). Four injector nozzles were placed at 90 degrees to one another in the wall of a circular cross section of the precalciner just upstream of the Stage I cyclone of the preheater. Each injector nozzle created a flat fan-shaped distribution with an aperture angle of 60 degrees. The flat, thin spray of aqua ammonia maximized the interface between the reagent and the gas stream, optimizing the reaction between ammonia and NOx. One to four nozzles were used during the test period depending upon the ammonia injection rate.

The entire system was controlled with a control panel designed to maintain a constant ammonia injection rate or to vary the ammonia injection rate in order to maintain a constant stack gas NOx concentration.

The Polysius controller recorded NO in the stack gas (ppm, dry), stack gas oxygen (volume percent, dry), kiln feed (tons per hour provided by FRI), stack gas flow (from the FRI continuous monitoring system), and the ammonia injection rate, and other operating variables.

4.0 MONITORING

Ammonia injection at varying set molar ratios and ammonia injection at a variable rate to maintain a set stack gas NOx concentration was conducted during the period 0800 hours on December 9, 2004 and 2400 hours on December 10, 2004. During this period of time, there were two periods of disruption in kiln feed (See Figure 1). Ammonia injection tests were not conducted during these periods.

During the periods of testing, the kiln feed rate ranged from 165-175 tons per hour and averaged approximately 170 tons per hour (approximately 102 tph of clinker). During this period of time, the kiln and calciner were both fired with coal. Testing was conducted for about a one hour period between 0800-0900 hours on December 9 while whole-tire derived fuel was fired at the kiln inlet and again between 1400-2400 hours on December 10, 2004 with the firing of tire derived fuel. The tire firing rate typically averages about one ton per hour and provides about seven percent of the total heat input to the pyroprocessing system.

FRI was responsible for monitoring the kiln feed rate, the fuel firing rates, clinker production rate, and stack gas parameters including NOx, SO₂, total hydrocarbons, flow rate and temperature. The stack gas monitoring was conducted with continuous monitors permanently installed in the FRI kiln/raw mill stack. These monitors have been previously certified in accordance with the

requirements of 40 CFR 60, Appendices B and F. The FRI NOx data were used for the analyses presented herein.

Polysius was responsible for the ammonia injection and the monitoring of parameters associated with this injection. These parameters included the ammonia injection rate and stack gas concentration of NO, O₂, and CO. The NO, O₂, and CO were measured on a dry basis in a bypass stream from the Koogler and Associates monitors.

Koogler and Associates was responsible as the engineer of record for the testing and monitored ammonia and CO in the stack. The ammonia was monitored continually in accordance with the general procedures of EPA Method 320 (the FTIR method) and CO was measured in accordance with the general procedures of EPA Method 10. Both methods are described in 40 CFR 60, Appendix A. The CO monitored in accordance with Method 10 was used for the analyses reported herein.

The extractive stack gas monitoring (NH₃ and CO) and the continuous in-stack gas monitoring were conducted in the 112-inch diameter, 241-foot high kiln/raw mill stack. The sampling ports are located 15.7 diameters downstream from the point where gases enter the stack and 5.4 diameters below the top of the stack.

5.0 DESCRIPTION OF TESTS

The purpose of the SNCR tests was two fold. First, the NO_x (expressed as NO₂) control efficiency was determined as a function of the molar ratio of ammonia to uncontrolled NO_x and secondly, a test was conducted with variable ammonia/NO_x molar ratios to see if a set stack gas NO_x concentration could be maintained.

In both cases, the ammonia was injected into the calciner just prior to the Stage I cyclone of the preheater. At this point, the average temperature during the test period was 862°C (1580°F) and the average pressure was -15 millibars (approximately -6 in. H₂O).

For the NO_x reduction tests, ammonia was introduced for discrete periods of time ranging from approximately 30-60 minutes. During each injection period, the ammonia injection rate was held constant at a predetermined NH₃/NO_x molar ratio. The molar ratios ranged from approximately 0.1-1.0. Tests were conducted with whole-tire derived fuel fired at the inlet of the kiln and again with no whole-tire derived fuel being used.

Before and after each ammonia injection period, the uncontrolled NO_x (expressed as NO₂) concentrations were measured in the stack gas. The

uncontrolled NOx emission rate for each NH₃ injection period (expressed as pound per ton of clinker) was calculated as the average of the uncontrolled NOx emission rates before and after each injection period. From these data, the NOx reduction for each test period was calculated as:

$$\text{NOx Reduction (\%)} = (\text{NOx}_{\text{uncontrolled}} - \text{NOx}_{\text{controlled}}) \times 100 / \text{NOx}_{\text{uncontrolled}}$$

The molar ratio of ammonia to NOx was calculated as the molar injection rate of ammonia (moles per hour) divided by the uncontrolled NOx emission rate (moles per hour). The molar injection rate of ammonia was based on a 10 percent (by weight) solution of ammonia in water. The specific gravity of this solution was 0.9582. The molar injection rate of ammonia is expressed as moles of NH₃ per hour.

6.0 TEST RESULTS

The results derived from the SNCR testing at FRI are divided into three sections; NOx control as a function of ammonia injection rate, factors associated with carbon monoxide and ammonia emissions and the estimated cost of operating an SNCR system at FRI.

6.1 NOx Control Efficiency

The control of NOx from the kiln/raw mill stack is defined as a function of the uncontrolled emissions and the controlled emissions as defined in Section 5.0. The uncontrolled emissions are based on NOx data collected immediately before and immediately following periods of ammonia injection. During the time periods used for determining uncontrolled NOx emissions, no ammonia was being injected. The controlled emissions were measured and calculated based on data collected during each period of ammonia injection.

The controlled and uncontrolled NOx emissions, expressed both as pounds per ton of clinker and pound-moles (of NO₂) per hour for each period of ammonia injection are summarized in Table 1. One set of data was collected while tire derived fuel was fired at the kiln inlet and the second set of data was collected with no tire derived fuel being burned.

The ammonia injection rate was varied from approximately 75-600 liters per hour during the NOx control efficiency test period. Ammonia was injected at six discrete flow rates while tire derived fuel was being used and six discrete flow rates when no tire derived fuel was being used. The time periods of ammonia injection typically ranged from 30-60 minutes.

The injection rates of ammonia were calculated in terms of moles per hour based on the injection rate of the ten percent aqua ammonia solution (liters per hour), a solution specific gravity of 0.9582 and the molecular weight of ammonia (NH_3 ; m.w. = 17).

The molar ratio of ammonia to NOx was calculated for each period based on the ammonia injection rate (moles per hour) and the uncontrolled NOx emission rate (moles per hour). The data summarized in Table 1 show that the molar ratios for the two test periods combined ranged from approximately 0.1-1.0.

The NOx control efficiencies range from about seven percent with a molar ratio of 0.09 (with no tire derived fuel) to about 82 percent with a molar ratio of 1.04 (with no tire derived fuel). The control efficiencies with tire derived fuel ranged from about 34-68 percent with molar ratios ranging from 0.12-0.64. The control efficiency data are also shown in graphical form in Figure 2.

It will be noted from the data presented in Figure 2 that the apparent NO_x control efficiency is greater when tires are used as a supplemental fuel than when tires are not used. This is particularly true at the lower molar ratios; i.e., between 0.1 and 0.6. At molar ratios of 0.6 and above, the control efficiencies tend to converge.

The difference in control efficiencies with and without tire derived fuel is not readily explained. Looking at the data in Table 1, it will be noted that in general, the uncontrolled NO_x emissions during tests without tire derived fuel were greater than the uncontrolled NO_x emissions when tire derived fuel was being burned. This would indicate a higher oxygen level at the kiln exit (resulting in higher uncontrolled NO_x emissions) when no tire derived fuel was used. This higher oxygen level and the fact that oxygen was not consumed by the combustion of tire derived fuel, would have a tendency to lower CO levels in the calciner and result in a more efficient reaction between ammonia and NO_x (See Section 2.0). The control efficiency data are contrary to this.

The data presented in Figures 3 and 4 are the time dependent NO_x emission rates, carbon monoxide emission rates, and ammonia injection rates for the SNCR tests when tire derived fuel was being burned (Figure 3a-3c) and when no tire derived fuel was being burned (Figure 4). These data confirm that when the highest uncontrolled NO_x emissions occurred (the lower molar ratio injections

with no tire derived fuel), the CO emissions were lowest (approximately 10 pound-moles per hour). As the uncontrolled NOx emissions decreased (again with no tire derived) the CO emissions increased to approximately 20 pound-moles per hour. This higher CO emissions rate was typical of most of the ammonia injection periods when tire derived fuel was fired (Figures 3a-3c). Again, the lower levels of CO would indicate the reaction between ammonia and NOx should be more efficient. As stated previously, the data in Figure 2 do not support this.

For purposes of evaluating the effectiveness of SNCR for NOx control under the variable conditions of this cement plant, it is probably best to use the relationship between ammonia injection and NOx control represented by the combined data set shown in Figure 2.

The molar injection of ammonia (pound-moles per hour) is compared with the reduction in NOx in the stack gas (pound-moles per hour) in Figure 5. Again, these data show an apparent greater reduction when tire derived fuel was being burned than when tire derived fuel was not being burned. Again, it is probably best to use the combined data set to represent the functioning of SNCR at this cement plant.

These data show that stack gas NO_x is reduced by approximately 0.8 pound-moles with the injection of 1.0 pound-mole of ammonia. The data further show that this relationship is linear over the injection rates tested (molar ratios between 0.1 and 1.0). This indicates an ammonia utilization efficiency of about 80 percent.

The other part of the NO_x control efficiency tests was to set a stack gas NO_x concentration and to maintain this concentration over an extended period of time by varying the ammonia injection rate. This was done for an approximate 16-hour period between 1800 hours on December 9 and 1000 hours on December 10, 2004. The ammonia injection rate (liters per hour) and the stack gas NO_x concentration (ppm) for this period of time are presented in Figure 6. These data show (for the limited period of this test) that it is possible to maintain a relatively constant NO_x emission rate by varying the ammonia injection rate.

For the period, the stack gas NO_x concentration averaged approximately 130 ppm (equivalent to an NO_x emission rate of 1.80 pounds per ton of clinker). The ammonia injection rate for the period ranged from approximately 200-400 liters per hour (equivalent to molar ratios of NH₃/NO_x of 0.35-0.70).

6.2 Carbon Monoxide and Ammonia Emissions

Carbon monoxide and ammonia concentrations were measured in the kiln/raw mill stack during the SNCR test period in accordance with the general procedures of EPA Methods 10 and 320, respectively.

6.2.1 Carbon Monoxide Emissions

The carbon monoxide emissions (pound-mole per hour) are presented graphically in Figures 3 and 4 for periods when tire derived fuel was fired and periods when no tire derived fuel was fired. During the period when tire derived fuel was fired (Figure 3a-c) the CO emissions were generally quite variable and no trend between ammonia injection and CO emissions is discernible. During the period when no tire derived fuel was fired (Figure 4) the CO emissions were more stable; especially during the first part of the test period. From these data, a trend of increased CO emissions is observed when ammonia was injected. This is consistent with previous Polysius observations and the reactions between ammonia, CO, and NO_x discussed in Section 2.0.

Until more experience is gathered defining the relationship between CO emissions and the injection of ammonia, FRI is comfortable with the CO emission limit proposed in the Air Construction Permit Application for Line No. 2 of 3.6 pounds of CO per ton of clinker.

6.2.2 Ammonia Emissions

The continuous monitoring of ammonia in the kiln/raw mill stack demonstrated that during most periods of time when the raw mill was operating, very little to no ammonia was observed in the stack gas. When the raw mill was not operating, however, the ammonia concentration in the stack gas peaked at approximately 40 ppm (v/v) (See Figure 7a-7b).

This indicates that the unreacted ammonia is absorbed in the raw materials in the raw mill and recirculated until such time that the raw mill shuts down. With the raw mill down, some of the absorbed ammonia is purged from the system.

Due to the limited period of time over which the SNCR tests were conducted at FRI (six days), no definitive conclusion can be reached regarding long-term ammonia emissions during the operation of an SNCR system.

It appears that long term, an ammonia equilibrium would be reached in the plant and that some ammonia slip may occur even with the raw mill running. The majority of the unreacted ammonia would more than likely still be purged during periods when the raw mill is not operating. The long-term effect of ammonia emissions can only be determined with the continuous operation of an SNCR system.

6.3 SNCR Cost Estimate

The SNCR system is relatively easy to install and operate compared with other add-on NOx control systems. Additionally, the operational costs (reagent, variable operating cost, and capital return) are relatively low compared with other systems and the SNCR system offers considerable operating flexibility.

In general, an SNCR system would include:

- an ammonia storage tank,
- a redundant pumping system,
- a control system,
- a set of injectors, and
- the necessary piping.

The system can be installed in a relatively short period of time with minimal plant downtime.

Based on data provided by Polysius and others, the basic fixed costs associated with an SNCR system for the FRI plant are approximately 0.20 dollars per ton of clinker.

The operating cost can vary considerably depending on the source of ammonia and the ammonia injection rate. For purposes of this report, the ammonia

considered was a 10 percent aqua ammonia solution at a delivered cost of \$145 per ton of solution (\$1,450 per ton of ammonia).

The cost data developed from data collected during the SNCR test period at FRI are presented in Figure 8. These data show the costs of an SNCR system (operating cost plus capital recovery) to reduce NOx emissions from a range of uncontrolled emission rates to a range of targeted controlled emission rates. For example, to reduce NOx emissions from 3.5 pounds per ton of clinker (uncontrolled) to 2.0 pounds per ton of clinker (controlled), the cost would be about 0.60 dollars per ton of clinker.

7.0 CONCLUSION

The six-day SNCR test at FRI demonstrated the apparent feasibility of SNCR for controlling NOx emissions from the FRI cement plant. NOx emissions were reduced between 7 and 82 percent with ammonia injected at molar ratios between 0.1 and 1.0. Limited testing also demonstrated that a relatively constant NOx level can be maintained in the kiln/raw mill stack gas by varying the ammonia injection rate.

Factors that could not be totally evaluated because of the short duration of the tests include the long-term ammonia equilibrium in the kiln/raw mill system and the effect of this equilibrium on ammonia emissions both during periods with the raw mill operating and with the raw mill not operating. Other factors that could not be fully evaluated are the long-term effect of ammonia on overall plant operations and the product quality and the effect of operating an SNCR system while using tire derived fuel.

The tests did demonstrate that SNCR is effective for controlling NOx emissions during normal plant operations. Because of the temperature dependency of the reactions associated with SNCR, it is apparent that SNCR will not be effective during plant startups and during periods of plant upset. There will also be periods of downtime for the SNCR system. During periods of startup, plant

malfunction and SNCR system downtime, NOx emissions can be controlled using best operating practices and Multi-Stage Combustion.

Table 1. Summary of NOx Control Efficiency Data

Test Condition	Uncontrolled NOx (as NO2)		Controlled NOx (as NO2)		NH3 as NH3	Molar Ratio (NH3/NOx)	NOx Reduction (%)
	(lb/ton Cl)	(lb-mol/hr)	(lb/ton cl)	(lb-mol/hr)	(lb-mol/hr)		lb/ton Cl basis
With Tires	3.10	6.83	2.05	4.63	0.84	0.12	33.9
	2.86	6.03	1.76	3.76	1.14	0.19	38.5
	3.17	7.02	2.07	4.62	1.78	0.25	34.7
	3.20	7.08	1.96	4.34	2.42	0.34	38.8
	3.28	7.34	1.52	3.43	3.73	0.51	53.7
	3.32	7.47	1.06	2.36	4.75	0.64	68.1
Without Tires	4.46	9.54	4.17	9.01	0.88	0.09	6.5
	4.21	9.00	3.46	7.88	1.85	0.21	17.8
	3.74	8.01	2.64	6.09	2.78	0.35	29.4
	3.59	7.68	1.90	4.10	3.64	0.47	47.1
	3.55	7.63	0.87	1.84	6.10	0.80	75.5
	3.17	6.91	0.58	1.26	7.19	1.04	81.7

Figure 1

Kiln Operating Rate During SNCR Tests

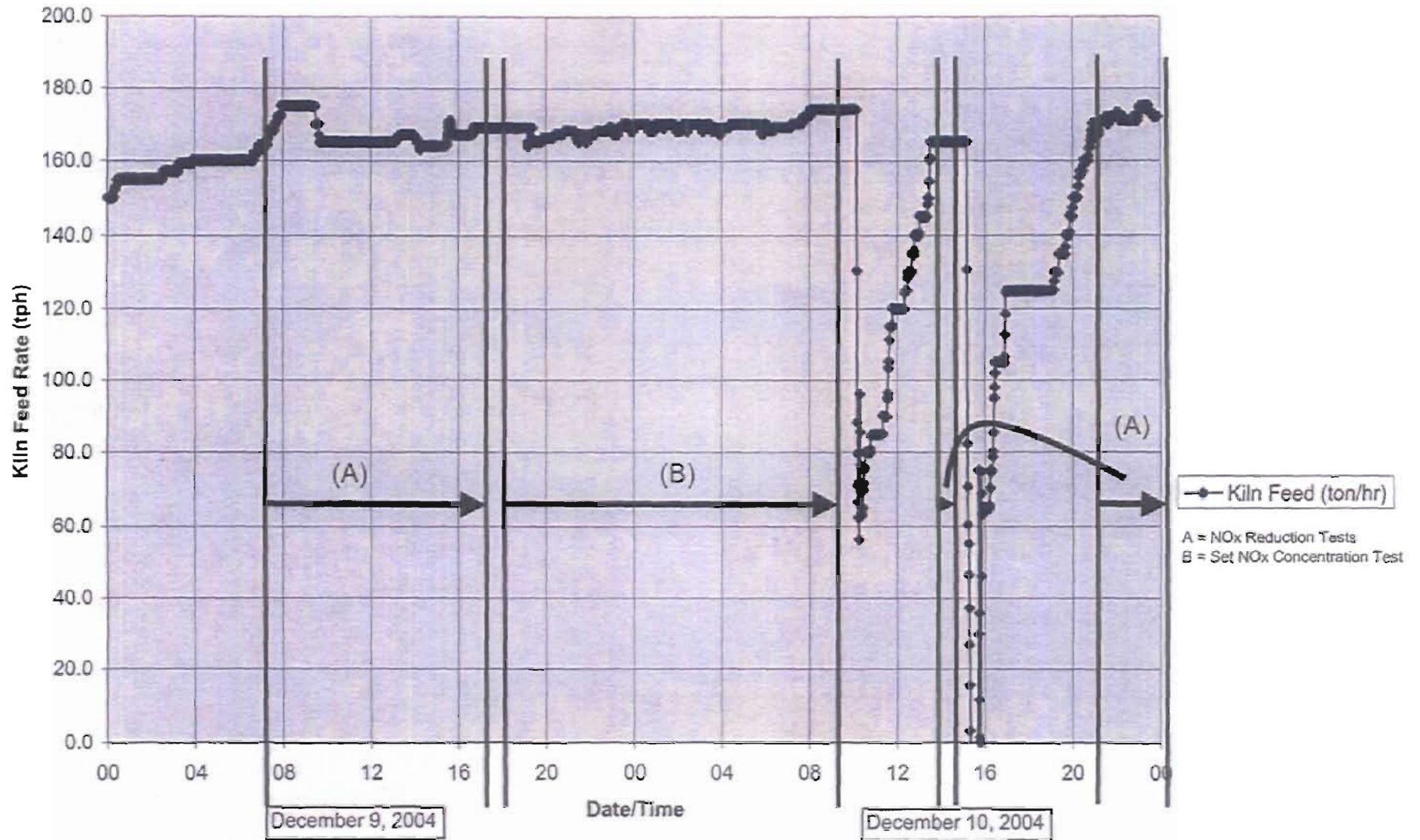


Figure 2
NO_x Control Efficiency as a Function of NH₃/NO_x Molar Ratio

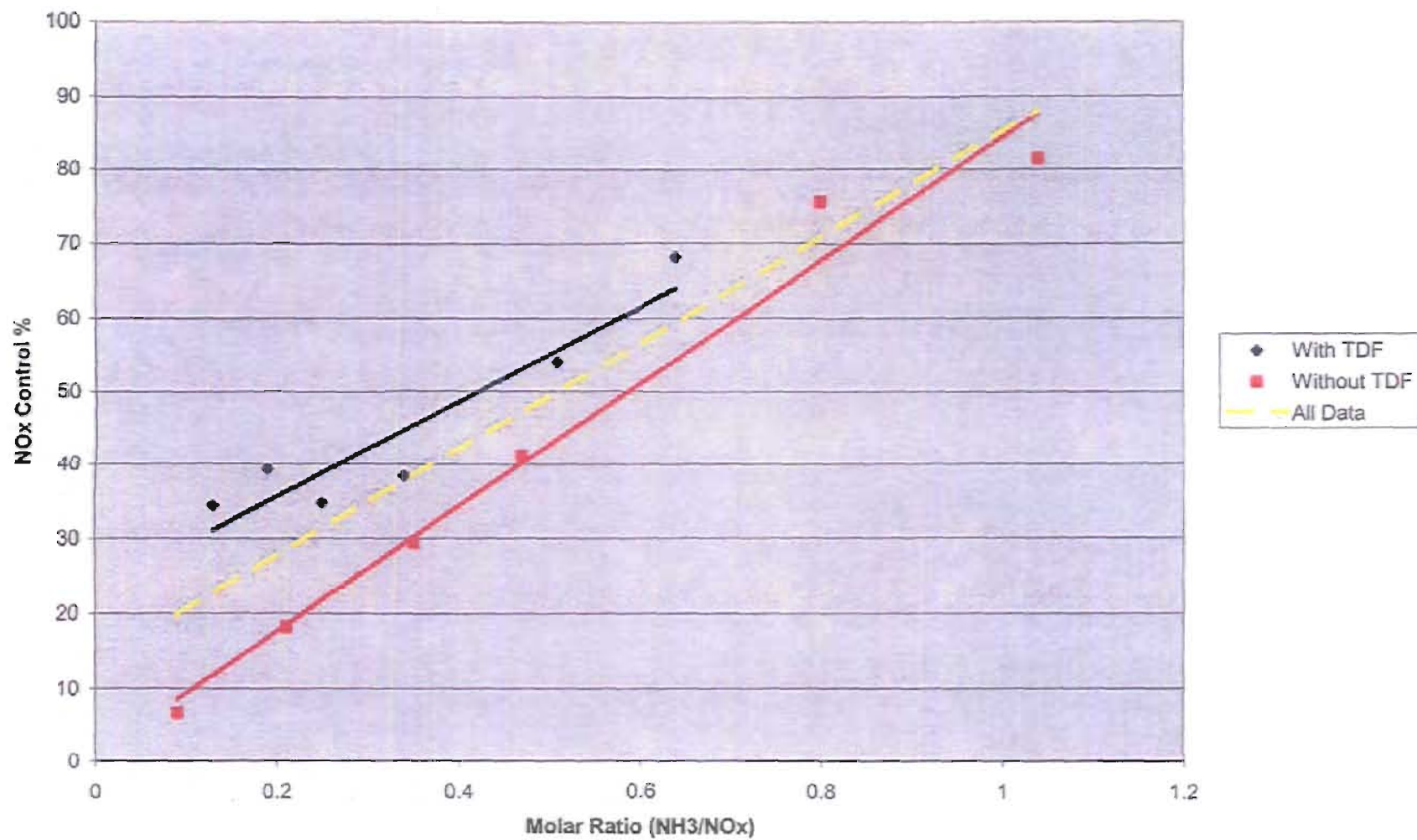


Figure 3a

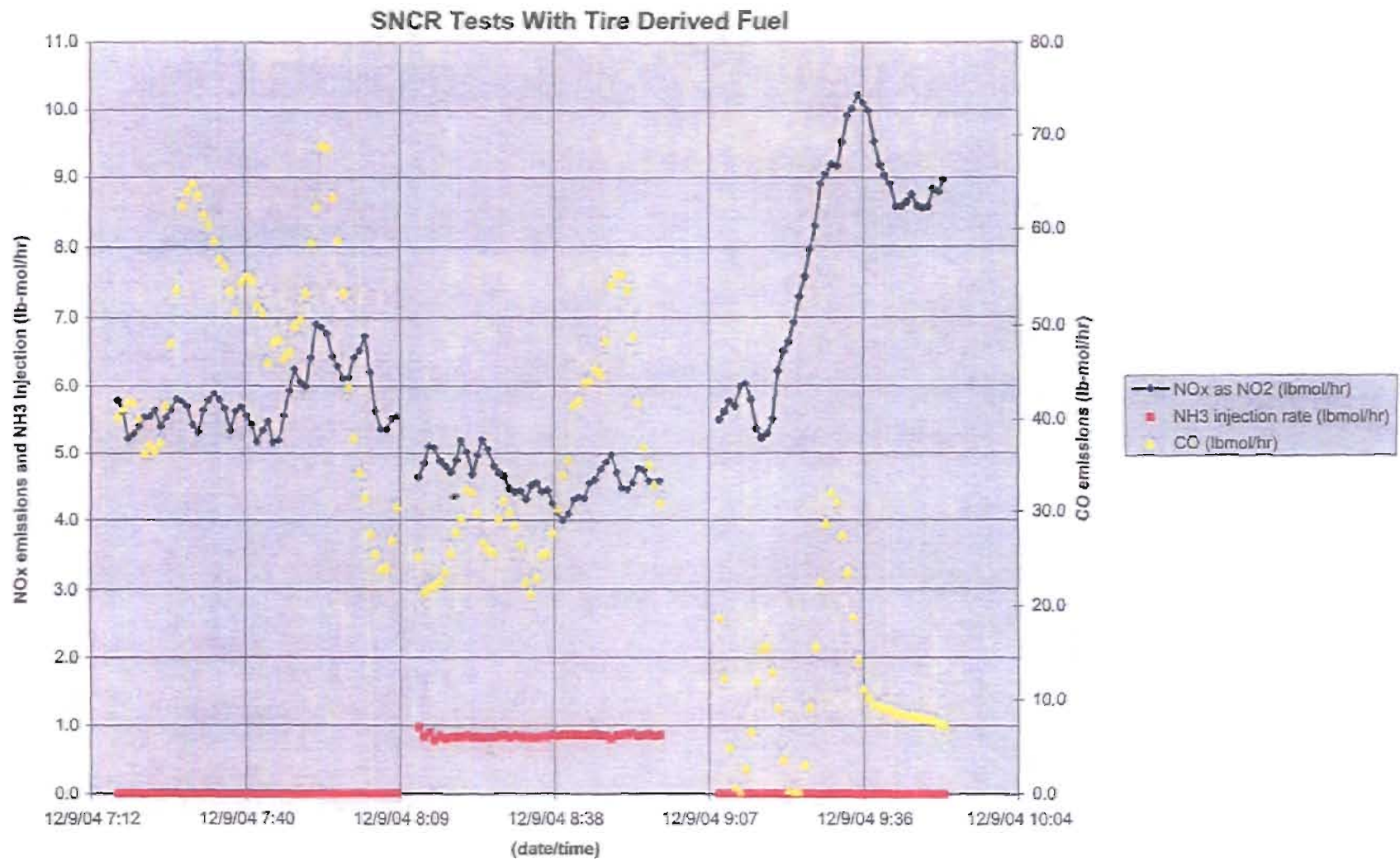


Figure 3b

SNCR Test With Tire Derived Fuel

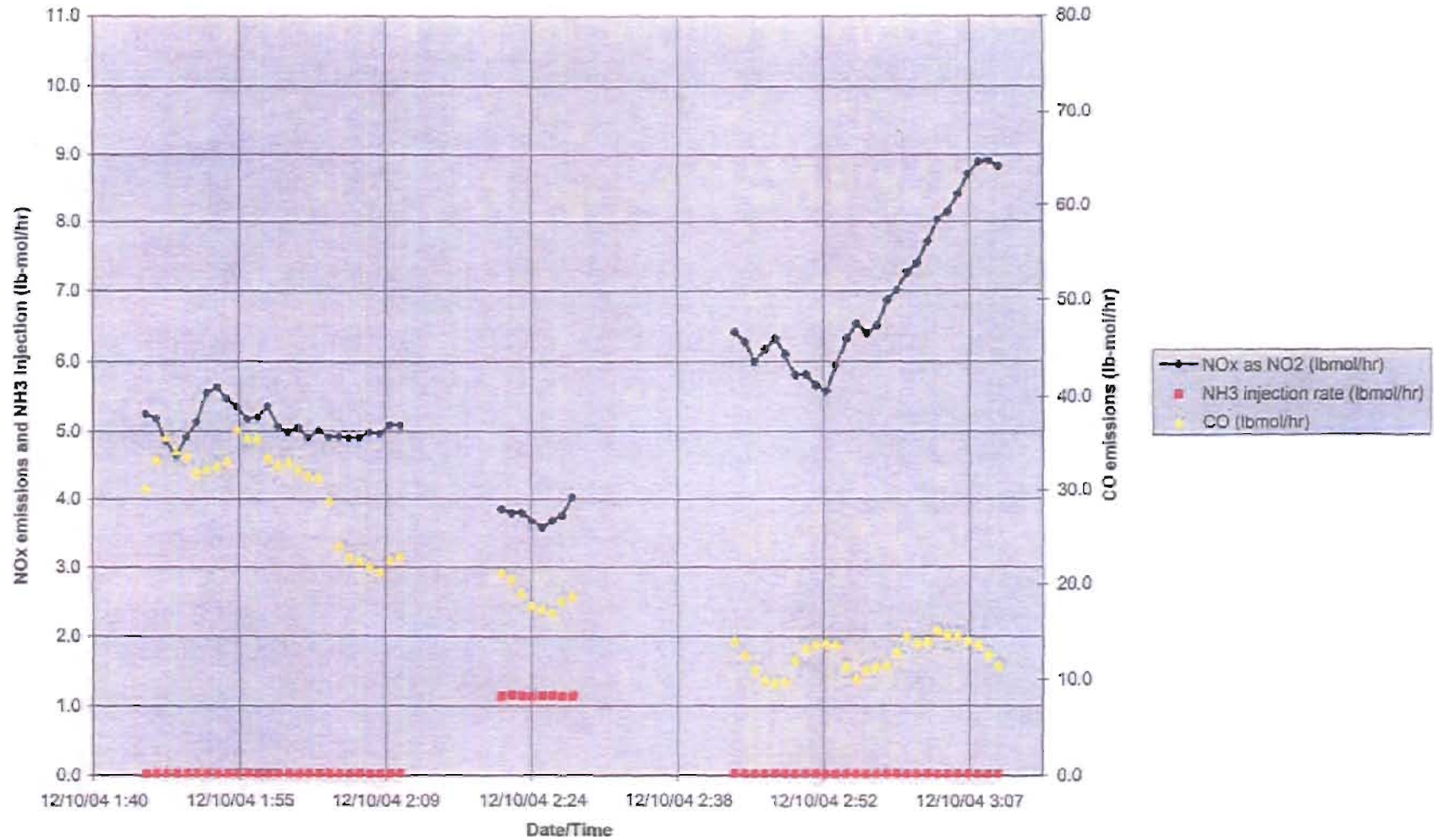


Figure 3c

SNCR Test With Tire Derived Fuel

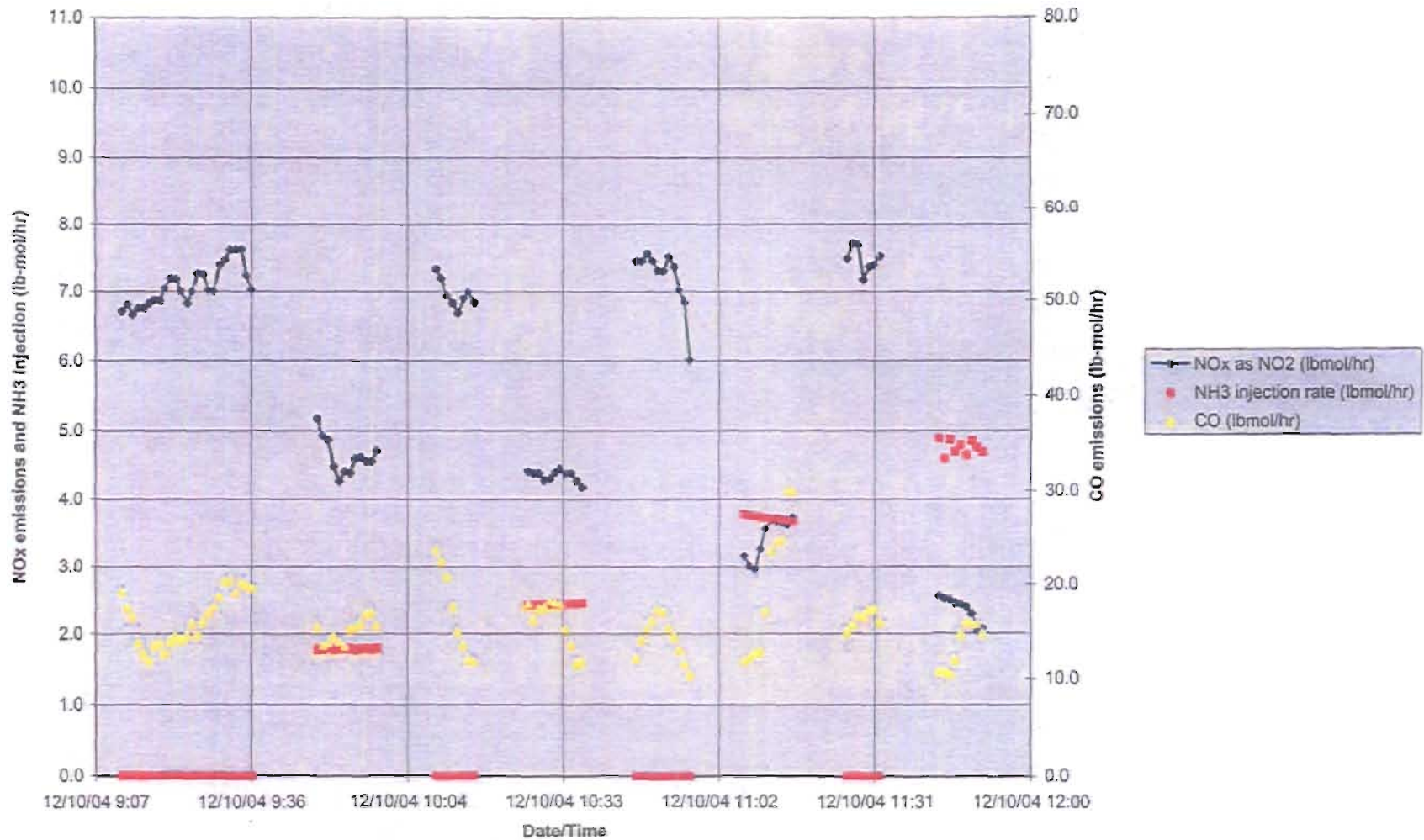


Figure 4

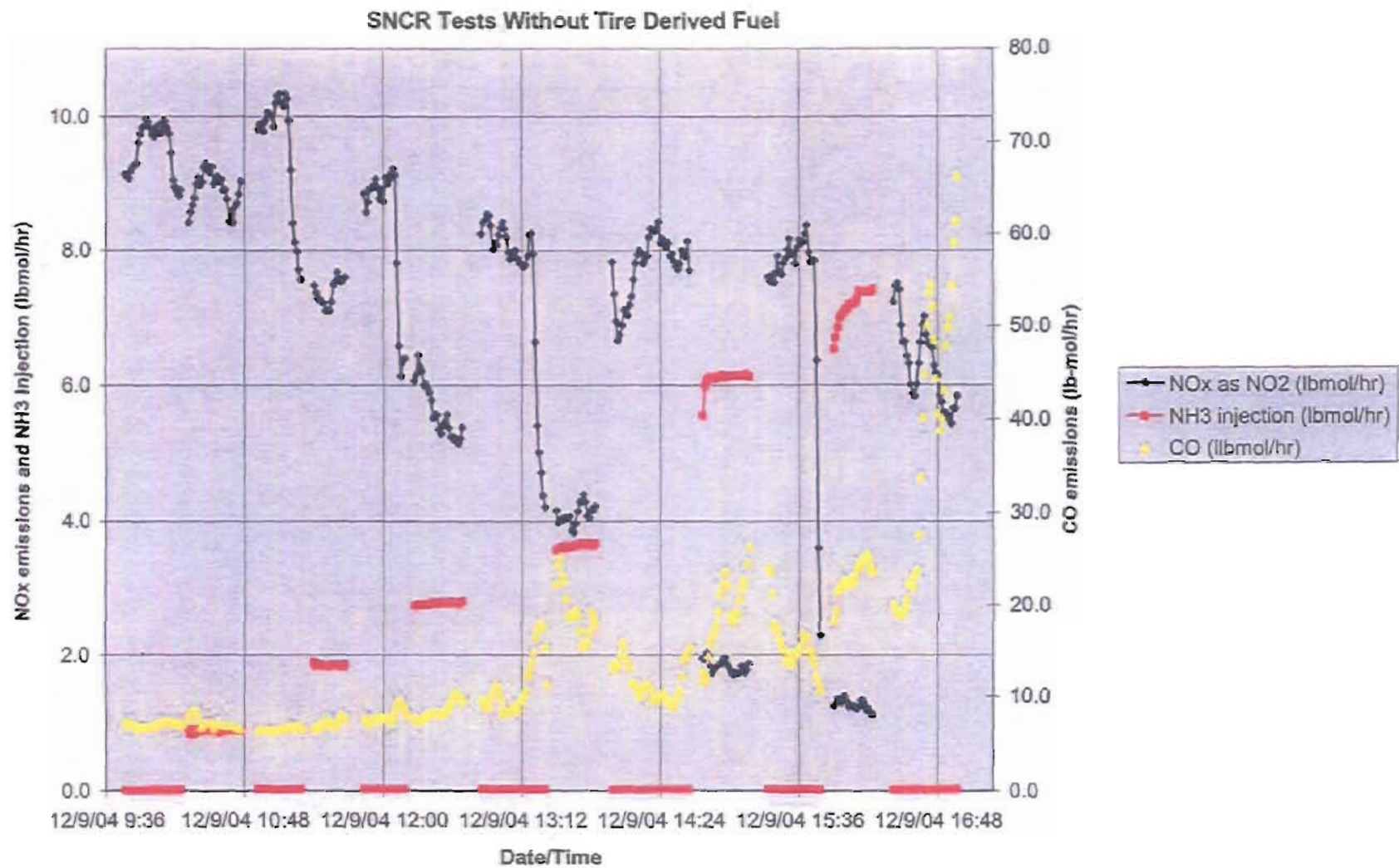


Figure 5
NOx Reduction and Ammonia Injection

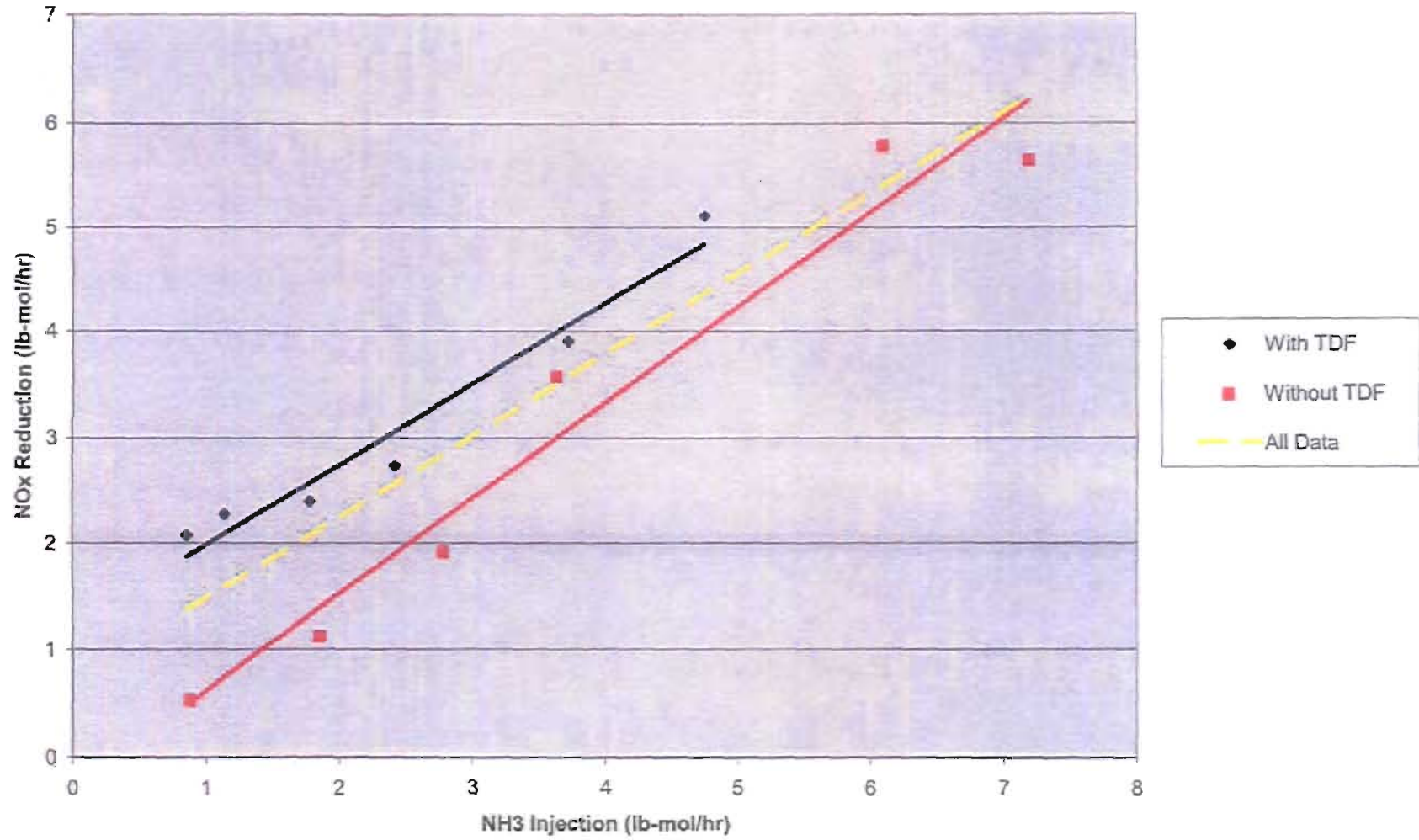


Figure 6

Stack Gas NOx and NH3 Injection

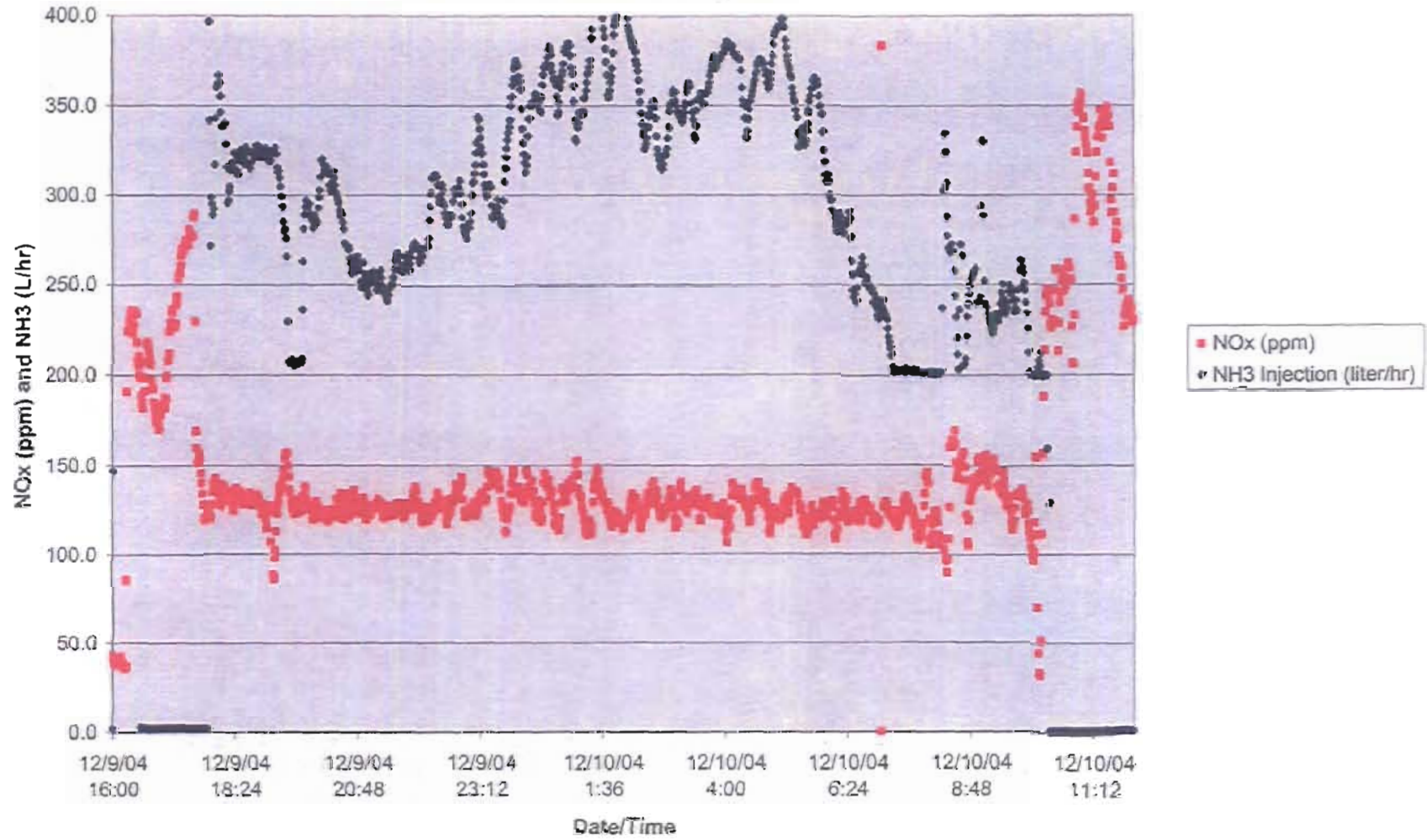


Figure 7a

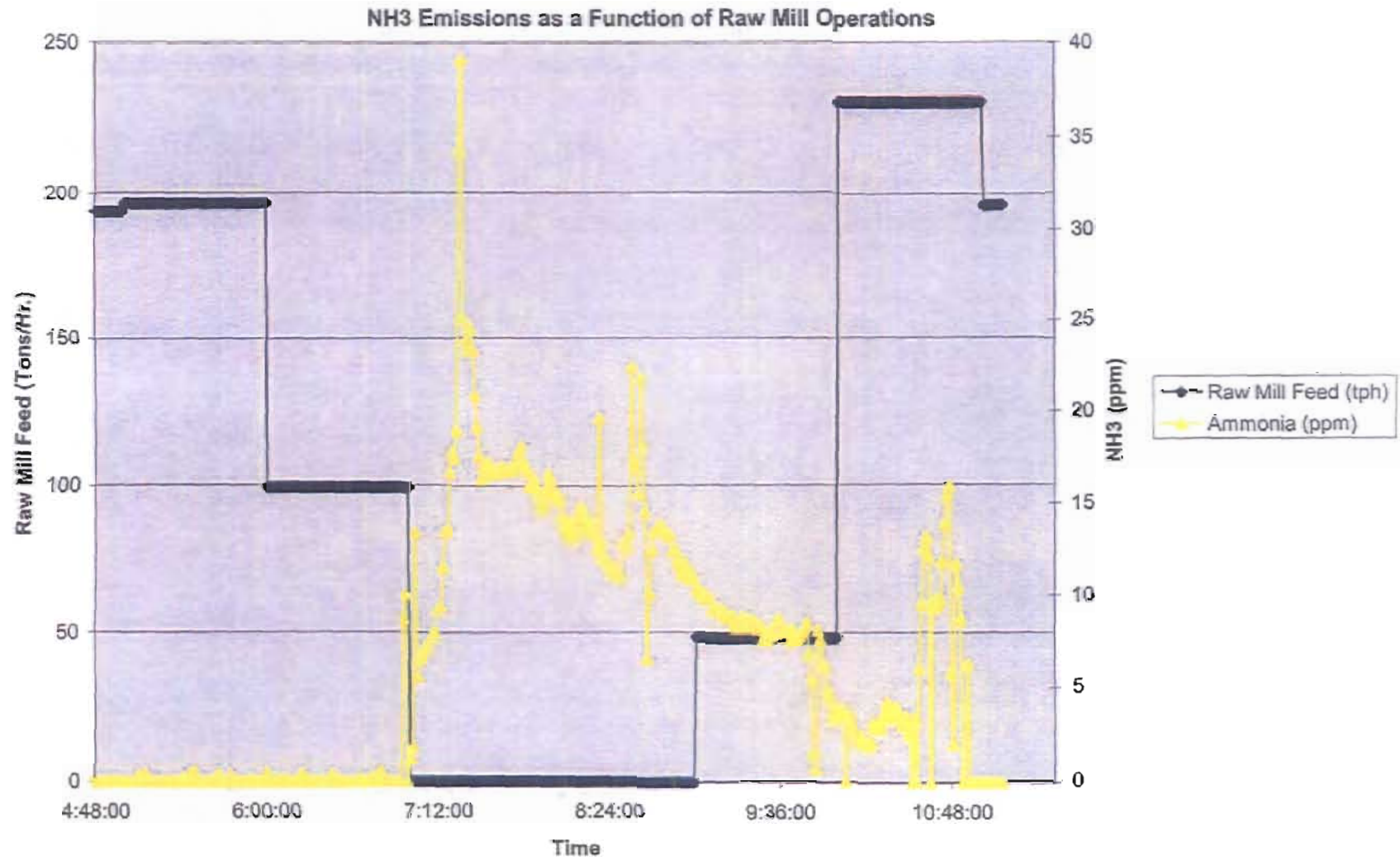


Figure 7b

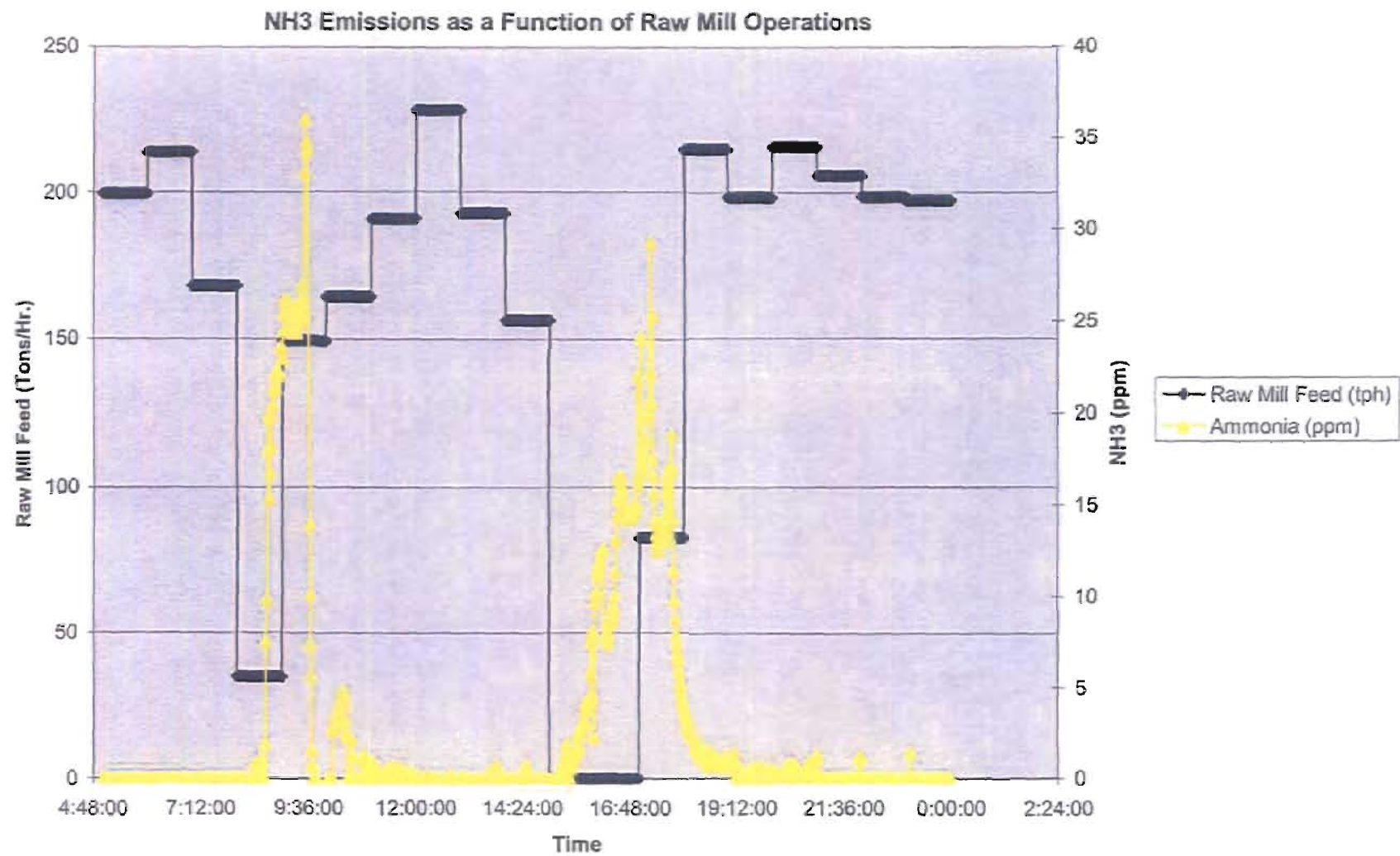


Figure 8
Cost Per Ton of Clinker to Reduce NOx
from an Uncontrolled Emission Rate to a Target Rate

