

FINAL DETERMINATION

Suwannee American Cement Plant

Modification to Increase Production, Inject Fly Ash into Calciner and Install a Selective Non-Catalytic Reduction System

DEP File No. 1210465-011-AC (PSD-FL-259F)

On February 17, 2005 the Florida Department of Environmental Protection (Department) distributed an "Intent to Issue Air Construction Permit Modification" to increase production, inject fly ash into the calciner, and install additional nitrogen oxides controls for the Suwannee American Cement Plant located on U.S. Highway 27, in Suwannee County.

The package included the Department's Draft Air Construction Permit Modification, the "Intent to Issue Air Construction Permit Modification," the "Technical Evaluation and Preliminary Determination," and the "Public Notice of Intent to Issue Air Construction Permit Modification." The Department sent copies of the package to various persons, agencies, and municipalities including those who had asked that they be informed of any Department permitting activities related to the subject facility. Suwannee American Cement, LLC published the Public Notice in The Suwannee Democrat on February 18, 2005 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. Suwannee American submitted comments by electronic mail dated March 1, 2005. Their comments are recited in italics and followed by the Department's response.

- *As requested in the Construction Permit Application submitted by SAC dated January 6, 2005 please include the increase in production for the Primary Crusher (Emission Unit 001) as it is related to the overall increase in process operations granted in Permit 1210465-011-AC.*

The Department agrees that this request was part of the original application and will have minimal effects on ambient air emissions. It is a necessary element to accomplish the requested production increase. The raw materials at the Suwannee American operation are wet and do not tend to emit significant fugitive particulate matter. The affected specific condition in Section III, Subsection A is modified as follows:

STATE REQUIREMENTS

OPERATIONAL REQUIREMENTS

2. **Process Rate Limitation:** The crusher shall not process more than ~~439,917~~ 165,155 tons of raw material in any month. [Rule 62-210.200, F.A.C., Definitions -- potential to emit (PTE)]

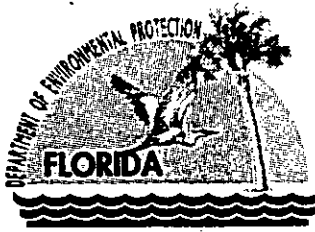
[Note: This process rate is based on an estimated moisture content of raw material of 15% and includes the weight of this moisture. This monthly limit corresponds to an annual limit of ~~4,679,000~~ 1,981,860 tons per year. The applicant has estimated that the potential to emit from crushing, transfer and unloading operations is: PM 0.8, and PM₁₀ 0.7 tons per year.]

- *In Section III, Operational Requirements 14 the Emissions Points for Emission Unit 002 are listed with the addition of Emission Units H-08A-01 (Dust collector for hydrated lime silo) and U-02-01 (Dust collector for fly ash silos). However, the Note at the bottom of the Table does not reflect the updated emission limit for the two new Emission Points. Please include the following information as included in the construction permit application submitted by SAC dated April 21, 2004.*

The Department agrees that the request was in the original permit application for the fly ash injection project received on April 27, 2004. The corrected note is added to Specific Condition 14 in Section III, Subsection B as follows:

[Note: These emission limits effectively limit annual emissions of PM for all emission points in this emission unit to ~~6.3~~8.3 tons per year. PM₁₀ emissions are estimated to equal 85% of PM emissions, or ~~5.3~~7.3 tons per year. The particulate weight emission standards and the visible emissions limit of 5% opacity are BACT.]

The final action is to issue the Air Construction Permit Modification as drafted with the changes noted above.



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

March 7, 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Tom Messer, Plant Manager
Suwannee American Cement
Post Office Box 410
Branford, Florida 32008

Re: DEP File No. 1210465-011-AC (PSD-FL-259F)
Production Increase, Fly Ash Injection, SNCR
Cement Plant – Branford, Suwannee County, Florida

Dear Mr. Messer:

The Florida Department of Environmental Protection (“the Department”) reviewed your applications and subsequent submittals requesting a modification of the original air construction permit. The requests are to increase production capacity, inject fly ash into the calciner, and install a selective non-catalytic reduction (SNCR) system. The details of our review are discussed in the Technical Evaluation and Preliminary Determination issued on February 11, 2005.

This facility was originally authorized and constructed pursuant to Permit No. PSD-FL-259 issued on June 1, 2000. This permit action supplements Permit No. PSD-FL-259 and the changes dated November 8, 2002, January 16, 2003, May 6, 2003, October 18, 2004, and December 23, 2004 to that permit. Unless otherwise specified, this permit action does not alter any requirements of the original permit or its subsequent modification.

Additions are underlined; deletions are strikethrough.

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

SUBSECTION A.

STATE REQUIREMENTS

OPERATIONAL REQUIREMENTS

2. Process Rate Limitation: The crusher shall not process more than ~~439,917~~165,155 tons of raw material in any month. [Rule 62-210.200, F.A.C., Definitions -- potential to emit (PTE)]

[Note: This process rate is based on an estimated moisture content of raw material of 15% and includes the weight of this moisture. This monthly limit corresponds to an annual limit of ~~4,679,000~~1,981,860 tons per year. The applicant has estimated that the potential to emit from crushing, transfer and unloading operations is: PM 0.8, and PM₁₀ 0.7 tons per year.]

“More Protection, Less Process”

Printed on recycled paper.

SUBSECTION B.

STATE REQUIREMENTS

OPERATIONAL REQUIREMENTS

1. Fuels: Fuels fired in the pyroprocessing system (kiln and calciner) shall not exceed a total maximum heat input of ~~364~~ 458 million Btu per hour (mmBtu/hr) and shall consist only of natural gas, coal, petroleum coke, whole tires and tire derived fuel. Usage of tires and tire derived fuel shall be in compliance with the following limits and conditions:

The remainder of Condition 1 is unchanged.

4. Process Rate Limitations: The kiln shall not process more than ~~178~~ 210 tons per hour of dry preheater feed and dry fly ash fed directly to the calciner ~~per hour~~ and shall not produce more than ~~105~~ 120 tons of clinker per hour. The facility shall not produce more than 150 tons of cement per hour. Process and production rates shall be further limited to ~~1,427,880~~ 1,684,578 tons of dry preheater feed and dry fly ash in any consecutive 12-month period, ~~839,500~~ 965,425 tons of clinker in any consecutive 12-month period, and 1,191,360 tons of portland cement in any consecutive 12-month period.

The clinker production rate identified in the above paragraph shall be determined by the following equation:

Clinker Production = [(Feed) (Kiln Feed LOI Factor) + (Fly Ash Injection) (Fly Ash LOI Factor)]

Where:

- Kiln feed is determined by the Poldos control system.
- Fly ash is determined from the rotary feed system or equivalent.
- LOI for the kiln feed and fly ash is based on a 30 operating-day block average of daily measurements. For purposes of this requirement, an operating day is any day that the kiln produces clinker or fires fuel.

[Rule 62-210.200, F.A.C., Definitions - potential to emit (PTE)]

COMBUSTION AND PROCESS CONTROL TECHNOLOGY

11. Combustion and Process Control Technology: The owner or operator shall install and operate - multistage combustion, with a separate line combustion chamber at the precalciner, for control of NO_x emissions. The owner or operator shall control emissions of CO and VOC through control of the combustion process. The owner or operator shall control emissions of SO₂ through design and control of the clinker production process.

The owner or operator may install and operate a selective non-catalytic reduction (SNCR) system, including a tank, pumps, piping, and metering equipment to inject ammonia solutions (including ammonia < 19 percent strength, urea, etc.) between the lowest cyclone and the calciner to control NO_x emissions. The ammonia injection rate shall not exceed 450 liters per hour (1-hour block for a solution containing 19% ammonia) in order to minimize ammonia emissions (slip). To demonstrate compliance, the owner or operator shall continuously monitor and record the ammonia injection rate.

{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.}

[Rules 62-4.070(3) and 62-212.400, F.A.C., and BACT]

14. Emissions Unit 002: Emissions unit 002 shall have the following emission points:

EMISSION POINT	DESCRIPTION
E-28	Dust collector – Aeropol at the homogenizing silo
E-34	Dust collector for off-spec feed handling
G-07	Dust collector for homogenizing silo inlet
H-08	Dust collector for homogenizing silo outlet
H-08A-01	Dust collector for hydrated lime silo E-30-01
<u>U-02-01</u>	<u>Dust collector for fly ash silos U-01-01</u>

This permit modification allows the use on a permanent basis of the following equipment for the injection of fly ash into the calciner: fly ash silos, baghouse, control system and associated ductwork. Fly ash may be injected into the calciner in addition to previously permitted introduction via the top of the preheater. The remainder of Condition 14, with the exception of the changes to the existing following note, is unchanged

[Note: These emission limits effectively limit annual emissions of PM for all emission points in this emission unit to ~~6.3~~ 8.3 tons per year. PM₁₀ emissions are estimated to equal 85% of PM emissions, or ~~5.3~~ 7.3 tons per year. The particulate weight emission standards and the visible emissions limit of 5% opacity are BACT.]

EMISSION LIMITATIONS AND PERFORMANCE STANDARDS

15. Emissions Unit 004: Emissions unit 004 shall have one emission point, the stack of the in-line kiln/raw mill, designated by the applicant as E-21. Particulate matter emissions from this emissions unit shall be controlled by a baghouse.

Emissions from emissions unit 004, the in-line kiln/raw mill, shall not exceed the following limits for the following pollutants: [Emissions from the natural gas fired air heater are included in the limits below]

POLLUTANT	EMISSION LIMIT		AVERAGING TIME	BASIS
PM	0.13 <u>0.11</u> lb/ton of dry preheater feed	23.1 lb/hour	3 hours ³	BACT
PM ₁₀	0.11 <u>0.093</u> lb/ton of dry preheater feed	19.6 lb/hour	3 hours ³	BACT
SO ₂	0.27 <u>0.20</u> lb/ton of clinker	28.4 <u>24.0</u> lb/hour	3 hours ⁴	BACT
NO _x	2.9 lb/ton of clinker ¹	304.5 lb/hour ¹	24 hours ⁴	BACT
	<u>2.4 lb/ton of clinker¹</u>	<u>288 lb/hour¹</u>	<u>30 days⁴</u>	
CO	3.6 <u>3.34</u> lb/ton of clinker	378.0 lb/hour <u>400.3 lb/hour</u>	3 hours ⁵	BACT
VOC	0.12 lb/ton of clinker ²	12.6 lb/hour² <u>14.4 lb/hour²</u>	30 days ⁶	BACT
VE	10% opacity		6 minutes ⁷	BACT

- ¹ NOx emissions shall not exceed 3.8 lb/ton of clinker and 399.0 lb/hour during the first 12 months after initial startup. After 12 months after initial plant startup, emissions of NOx shall not exceed the limits shown in the table. Emissions of NOx up to 600 lb/hr for up to one hour in duration shall be allowed for each startup of the pyroprocessing system which occurs when there is no material in the kiln.

Malfunction of the SNCR system is defined as any unavoidable mechanical and/or electrical failure that prevents introduction of ammonia-based solutions into the kiln system. In accordance with the following limits, the exclusion of NOx data collected during periods of malfunction and/or repair of the SNCR system is allowed when demonstrating compliance with the 24-hour NOx standard: no more than 6 hours per calendar day and no more than 30 hours in any 30 operating-day block. Within one working day of occurrence, the permittee shall notify the Department's Northeast District office of any malfunction of the SNCR system.

If SNCR is added, a permanent tank for the storage of ammonia-based solutions shall be installed. During construction of the permanent tank, temporary storage tanks may be used. An additional 4 hours of NOx data exclusion is allowed for each switch between temporary storage tanks. This 4-hour data exclusion is in addition to the data exclusion allowed above for each calendar day and for each 30 operating-day block. No more than 12 hours of NOx data in any 30 operating-day block shall be excluded due to switching between temporary tanks. Within one working day of occurrence, the permittee shall notify the Department's Northeast District office of each switch between temporary storage tanks. Once the permanent ammonia storage is complete, no NOx data shall be excluded due to switching between temporary tanks.

All valid NOx hourly averages shall be included into the 30 operating-day block average.

No changes in Note 2

- ⁴ The averaging time for the short-term NOx limit shall be a 24-hour rolling average computed in accordance with specific condition 18 of this subsection. The averaging time for the long-term NOx limit shall be a 30 operating-day block average computed in accordance with specific condition 18 of this subsection. The averaging time for SO₂ shall be a 3-hour rolling average computed in accordance with specific condition 18 of this subsection.

No changes in Notes 5-7

[Note: These emission limits, along with annual production limits, effectively limit annual emissions to: PM, 92.8; PM10, 78.4; SO₂, ~~113.4~~ 96.5; NOx, ~~1217.5~~ 1158.5; CO, ~~1511.1~~ 1610.1; and VOC, ~~50.4~~ 58.0 tons per year. First year NOx emissions are effectively limited to 1595.4 tons per year. NOx emissions are estimated assuming that two startups as specified occur per year, each resulting in maximum allowable excess emissions. Mercury introduced into the pyroprocessing system is limited pursuant to specific condition 13 of this subsection of this permit; annual emissions of mercury are effectively limited by this condition to 97 pounds per year.]

[Rules 62-4.070(3) and 62-212.400, F.A.C., and BACT]

The remainder of Condition 15 is unchanged

16. **Emissions Unit 005:** Emissions unit 005 shall have one emission point, the stack of the clinker cooler, designated by the applicant as K-15. Particulate matter emissions from this emissions unit shall be controlled by an electrostatic precipitator.

Emissions from emissions unit 005, the clinker cooler, shall not exceed the following limits for the following pollutants:

POLLUTANT	EMISSION LIMIT		AVERAGING TIME	BASIS
PM	0.07 <u>0.06</u> lb/ton of dry preheater feed	12.5 lb/hour	3 hours ¹	BACT
PM ₁₀	0.06 <u>0.051</u> lb/ton of dry preheater feed	10.7 lb/hour	3 hours ¹	BACT
VE	10% opacity		6 minutes ²	BACT

The notes and remainder of Condition 16 is unchanged

COMPLIANCE MONITORING AND TESTING REQUIREMENTS

18. **Continuous Emission Monitoring Systems:** The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring (CEM) system in the in-line kiln/raw mill stack to measure and record the emissions of NO_x, SO₂, and VOC from the in-line kiln/raw mill, in a manner sufficient to demonstrate compliance with the emission limits of this permit. The CEM system shall express the results in units of pounds per ton of clinker produced, and pounds per hour.

- a. *Compliance Demonstration:* Compliance with the short-term emission limit for NO_x shall be based on a 24-hour rolling average that shall be recomputed after every valid hour as the arithmetic average of that hourly average and the preceding 23 valid hourly averages. Compliance with the emission limit for SO₂ shall be based on a rolling 3-hour average that shall be recomputed after every valid hour as the arithmetic average of that hourly average and the preceding two valid hourly averages. Compliance with the emission limits for VOC and long-term NO_x shall be based on a 30 operating-day block average that shall be computed as the arithmetic average of all valid hourly averages occurring within each 30 operating-day block. For purposes of the VOC and long-term NO_x limits, an operating day is any day that the kiln produces clinker and/or fires fuel.

Conditions 18b through 18g remain unchanged.

[Rule 62-4.070(3), F.A.C., and BACT]

[Note: Continuous opacity monitor (COM) systems shall be installed, operated, and maintained at the kiln/raw mill baghouse stack and the outlet of the clinker cooler ESP pursuant to 40 CFR 60.63. A continuous emission monitor for emissions of total hydrocarbon is required pursuant to 40 CFR 63.1349 and ~~63.1350~~ 63.1450. A continuous monitor for the temperature at the inlet to the in-line kiln/raw mill baghouse is required pursuant to 40 CFR 63.1349 and ~~63.1350~~ 63.1450.]

SUBSECTION C.

OPERATIONAL REQUIREMENTS

2. Process Rate Limitation: The coal mill shall not crush more than ~~10,658~~ 13,360 tons of coal and petroleum coke in any month.

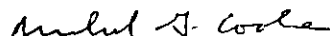
[Rule 62-210.200, F.A.C., Definitions -- potential to emit (PTE)]

[Note: This monthly limit corresponds to an annual limit of ~~127,896~~ 160,300 tons per year.]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Any party to this permitting decision (order) has the right to seek judicial review of it under Section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, 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 must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida



Michael G. Cooke, Director
Division of Air Resource Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this PERMIT MODIFICATION was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 3/15/05 to the person(s) listed:

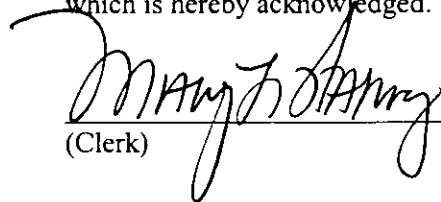
Tom Messer, SAC*
Celso Martini, SAC*
Dan Fritz, SAC*
Joe Horton, SAC
Larry Sellers, Esq.*
Steve Cullen, P.E.
John Koogler, P.E.
Chris Kirts, DEP NED
Jim Little, EPA
John Bunyak, NPS
Frank Darabi, P.E

Jim Stevenson
Tom Workman, DEP
Mark Latch, DEP
December McSherry
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Clerk Stamp

FILED AND ACKNOWLEDGMENT FILED,
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which is hereby acknowledged.


(Clerk)

3/15/05
(Date)

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<p>1. Article Addressed to:</p> <p>Mr. Celso Martini Suwannee American Cement, LLC Post Office Box 410 Branford, Florida 32008</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If YES, enter delivery address below:</p> <p>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.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
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PS Form 3800, May 2000
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