Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer, Chief - Bureau of Air Regulation

FROM: Jeff Koerner, Air Permitting North

DATE: November 8, 2005

SUBJECT: Draft Air Permit No. PSD-FL-352
Project No. 1210465-014-AC
Suwannee American Cement – Branford Cement Plant
New Kiln Line No. 2 System

Attached for your review are the following items:

- Intent to Issue Permit and Public Notice Package;
- Technical Evaluation and Preliminary Determination (with BACT Determination);
- Draft PSD Permit; and
- P.E. Certification

The P.E. certification briefly summarizes the proposed permit project. The Technical Evaluation and Preliminary Determination provide a detailed description of the project, rationale, and conclusion. Day #74 is December 5, 2005. I recommend your approval of the attached Draft Permit for this project.

Attachments

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

November 8, 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Tom Messer, Plant Manager
Suwannee American Cement, L.L.C.
Branford Cement Plant
P.O. Box 410
Branford, FL 32008

Re: Draft Air Permit No. PSD-FL-352
Project No. 1210465-014-AC
Suwannee American Cement - Branford Cement Plant
New Cement Production Line No. 2 Kiln System

Dear Mr. Messer:

Enclosed is one copy of the draft permit that authorizes construction of new cement production line (Line No. 2 Kiln System) at the existing Suwannee American Cement plant, which is located in Branford at 5117 US Highway 27 in Suwannee County, Florida. The Department's "Technical Evaluation and Preliminary Determination", "Intent to Issue Permit", and the "Public Notice of Intent to Issue Air Permit" are also included.

The "Public Notice of Intent to Issue Air Permit" must be published one time only, as soon as possible, in the legal advertisement section of 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 may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Jeff Koerner, Manager of the Air Permitting North Section, at the above letterhead address. If you have any other questions, please contact Jeff at 850/921-9536.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

In the Matter of an
Application for Air Permit by:

Suwannee American Cement, L.L.C.
Branford Cement Plant
P.O. Box 410
Branford, FL 32008

Authorized Representative:
Tom Messer, Plant Manager

Draft Air Permit No. PSD-FL-352
Project No. 1210465-014-AC
New Cement Kiln Line No. 2 System
Branford Cement Plant
Suwannee County, Florida

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

Applicant: The applicant for this project is Suwannee American Cement, L.L.C. The applicant's authorized representative and mailing address is: Tom Messer, Plant Manager; Branford Cement Plant; P.O. Box 410; Branford, FL 32008.

Facility Location: Suwannee American Cement operates the existing Branford Cement Plant, which is located in Branford at 5117 US Highway 27 in Suwannee County, Florida.

Project: On February 25, 2005, Suwannee American Cement applied to the Department for an air permit to construct a new cement production line (Line No. 2 Kiln System) at the existing cement manufacturing plant located in Branford at 5117 US Highway 27 in Suwannee County, Florida. Details of the project are provided in the in the application and the enclosed "Technical Evaluation and Preliminary Determination".

Permitting Authority: Applications for air construction permits are subject to review in accordance with 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 project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114 and facsimile number is 850/922-6979.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority for additional information at the address or phone number listed above. The Department's Draft Permit and Technical Evaluation and Preliminary Determination can be viewed at http://www.dep.state.fl.us/Air/permitting/construction.htm at the link for Suwannee American Cement.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless comments received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Air Permit" (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet 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 Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within seven (7) days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of thirty (30) days from the date of publication of the Public Notice. Written comments must be post-marked by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address or facsimile number. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish a

notice of the time, date, and location on the Department's official web site for notices at http://tlhora6.dep.state.fl.us/onw and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority issue a Revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Operation Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. 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 Permitting Authority'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 each 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 state; (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 the 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 Permitting Authority'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 Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Permit package (including the Written Notice of Intent to Issue Air Permit, Public Notice of Intent to Issue Air Permit, Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 11/8/05 to the persons listed:

Tom Messer, SAC*
Celso Martini, SAC
Dan Fritz, SAC
Joe Horton, SAC
Larry Sellers, Esq.*
Stephanie Brooks, Brooks and Associates
Frank Darabi, Darabi and Associates*
Chris Kirts, NED
Jim Little, EPA Region 4
John Bunyak, NPS
Chair, Suwannee County BCC
Jim Stevenson
Tom Workman, DEP
Mark Latch, DEP
December McSherry
Svenn Lindskold
Tom Greenhalgh, Florida Geo.Survey*
Dave Bruderly
Chris Bird, Alachua Co. DER
Chair, Alachua Co. BCC*
J. Calvin Gaddy
Patrice Boyes, Esq.*
Kathy Cantwell
Ralph Ashodian
Virginia Seacrist
Bob and Lynn Milner
Linda Pollini
Helen Beaty
Bessie Robinson
Craig Pittman, St. Petersberg Times
Chuck Yagel*

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.

Mary F. Harvey — (Clerk)

11/8/05 — (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Draft Air Permit No. PSD-FL-352
Project No. 1210465-014-AC

Suwannee American Cement, L.L.C.
New Kiln Line No. 2 System
Suwannee County, Florida

Applicant: The applicant for this project is Suwannee American Cement, L.L.C. The applicant's authorized representative and mailing address is: Tom Messer, Plant Manager; Branford Cement Plant; P.O. Box 410; Branford, FL 32008.

Facility Location: Suwannee American Cement operates the existing Branford Cement Plant, which is located in Branford at 5117 US Highway 27 in Suwannee County, Florida. The existing plant consists of a portland cement manufacturing line, associated quarry, raw material handling/storage, and cement handling/storage. The plant mines raw materials on site below the water table. Raw materials are crushed and transferred by conveyor or truck to a covered storage area. The raw materials are combined in the existing dry process pre-heater/precalciner rotary kiln system with in-line raw mill to produce clinker. The clinker is milled and combined with gypsum to produce portland cement, which is stored in silos prior to shipment.

Project: On February 25, 2005, Suwannee American Cement applied to the Department for an air permit to construct a new cement production line (Line No. 2 Kiln System) at the existing Branford Cement Plant. The applicant proposes to add the following new equipment: a new dry process pre-heater/precalciner rotary kiln system with in-line raw mill, clinker cooler, air heater, exhaust stack and other ancillary equipment; miscellaneous new equipment to handle and store raw materials, clinker, and cement; and a new coal mill and transfer system. The new cement processing line will have the capacity to produce an additional 1,055,500 tons of clinker per year.

In accordance with Rule 62-212.400, F.A.C., the proposed project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), sulfur dioxide (SO_2), and volatile organic compounds (VOC). Therefore, the applicant must provide a supporting air quality analysis and the Department must determine the Best Available Control Technology (BACT) for each PSD-significant pollutant. The potential mercury introduced into the kiln is conservatively limited to no more than 117.5 pounds during any consecutive 12 months, which is less than the PSD significant emission rate of 200 pounds for mercury. Compliance with the mercury throughput limit will be demonstrated by daily sampling, analysis of monthly composite samples, and record keeping and reporting to the Department's Northeast District Office. In addition, activities are also regulated in accordance with the federal standards for cement plants in Subpart F of 40 CFR 60 and in Subpart LLL of 40 CFR 63.

The Department makes the following draft determinations of the Best Available Control Technology (BACT) for the new dry process pre-heater/precalciner rotary kiln system, which is the primary source of emissions: 2.90 lb CO per ton of clinker; 1.95 lb NOx per ton of clinker; 0.10 lb PM/PM10 per ton of dry preheater feed material and 10% opacity; 0.20 lb SO_2 per ton of clinker; and 0.12 lb VOC per ton of clinker. The BACT standards for CO and VOC emissions are based on a design providing sufficient time and temperature to oxidize these pollutants, good operating practices, and careful attention to the raw material mix. The BACT standard for NOx emissions is based on installing staged combustion in the calciner (SCC) and a Selective Non-Catalytic Reduction (SNCR) system. SCC and/or SNCR shall be used as necessary to achieve the NOx BACT standard. The BACT standard for PM/PM10 is based on a high-efficiency baghouse control system. The BACT standard for SO_2 emissions is based on careful selection and control of the raw materials and the injection of hydrated lime as necessary. Monitoring systems will be installed to demonstrate continuous compliance with the opacity standard as well as the standards for CO, NOx, SO_2, and VOC emissions. In addition, the draft permit requires monitoring data to be submitted continuously to the Department's Northeast District Office as well periodic posting of the monitoring data to the company's web site at: http://www.suwanneecement.com.

Based on the Department's review of the applicant's air quality analysis, emissions of CO, NOx, PM10, SO_2, and VOC emissions will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. With annual VOC emissions of only 63 tons per year, no modeling was deemed necessary for the pollutant ozone. The air quality analysis uses representative data from the existing PM10 monitors located near the western fence line of the facility in

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

Suwannee County and near Ichetuknee Springs State Park about 6 kilometers away in Columbia County. The existing monitors were required as part of Suwannee American Cement's original project for the Line No. 1 Kiln System.

The initial PSD Class II significant impact analysis predicted no significant impacts in the vicinity of the project for CO, NOx, or SO_2 emissions, but did predict a significant impact for PM10 emissions. Therefore, a refined dispersion modeling analysis that included other nearby major sources was required for PM10 impacts to demonstrate compliance with the PSD increments. The following table summarizes the results.

PSD Class II Increment Analysis (PM10)

Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)	Impact greater than allowable increment?	Percent of Increment
Annual	6.7	17	No	39%
24-hr	29.8	30	No	99%

The refined analysis demonstrates compliance with the regulatory requirements. The analysis showed impacts from the project to be well below the Ambient Air Quality Standards (AAQS). In addition, the PSD Class I significant impact analysis predicted no significant impact in any of the following national parks and wilderness Class I areas that are within 200 km of the project: Okefenokee National Wilderness Area, St. Marks National Wilderness Area, Chassahowitzka National Wilderness Area, and Bradwell Bay National Wilderness Area. Therefore, no PSD Class I increment analysis was required.

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Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority for additional information at the address or phone number listed above. The Department's Draft Permit and Technical Evaluation and Preliminary Determination can be viewed at http://www.dep.state.fl.us/Air/permitting/construction.htm at the link for Suwannee American Cement.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless comments received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of thirty (30) days from the date of publication of this Public Notice of Intent to Issue Air Permit (Public Notice). Written comments must be post-marked by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address or facsimile number. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish a notice of the time, date, and location on the Department's official web site for notices at http://tlhora6.dep.state.fl.us/onw and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority issue a Revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made

available for public inspection.

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A petition that disputes the material facts on which the Permitting Authority'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 each 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 state; (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 the 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 Permitting Authority'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 Permitting Authority's final action may be different from the position taken by it in this Public Notice. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

PROJECT

Project No. 1210465-014-AC
Air Permit No. PSD-FL-352

Suwannee American Cement, L.L.C.
Portland Cement Manufacturing Plant
Proposed Kiln Line No. 2

APPLICANT

Suwannee American Cement, L.L.C.
Branford Cement Plant
5117 US Highway 27
Branford, FL 32008

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation - Air Permitting North
2600 Blair Stone Road, MS #5505
Tallahassee, FL 32399-2400

November 8, 2005

1. GENERAL PROJECT INFORMATION

Facility Description and Location

Suwannee American Cement, LLC, owns and operates an existing portland cement manufacturing plant and associated quarry. The existing facility is located at U.S. Highway 27 and County Road 49 in Branford, Suwannee County, Florida. The UTM coordinates of the facility are Zone 17; 321.4 km East and 3315.9 km North. The following figures identify the map location.

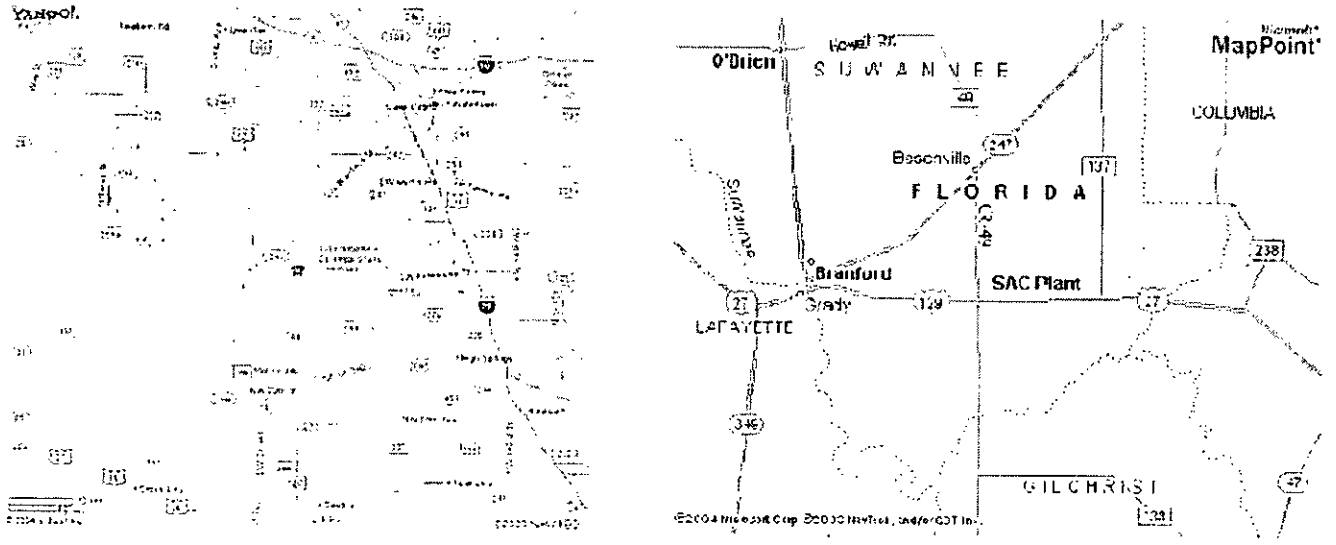

Figure 1A. Map Location of Existing Suwannee American Cement Plant (Yahoo and MapPoint)

The existing plant processes raw materials in a dry, preheater/precalciner rotary kiln system with an in-line raw mill to produce cement clinker, which is milled and combined with gypsum to produce portland cement. The existing plant has a capacity of 210 tons per hour of dry preheater feed materials, 120 tons per hour of clinker production, and 150 tons per hour of portland cement production. Annual production is limited to the following 12-month rolling totals: 1,648,578 tons per year of dry preheater feed materials; 965,425 tons per year of clinker production; and 1,191,360 tons per year of portland cement production. Fuels currently authorized for the existing pyroprocessing system include natural gas, coal, petroleum coke, tires, and fly ash. The plant also operates a coal processing operation to crush coal and/or petroleum coke with a total monthly processing capacity of 13,360 tons of coal and/or petroleum coke.

Regulatory Categories

Title III: The facility is a major source of hazardous air pollutants (HAP).

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: Some units are subject to a New Source Performance Standard (NSPS) in 40 CFR 60.

NESHAP: Some units are subject to a National Emissions Standard for Hazardous Air Pollutants in 40 CFR 63.

Project Description

The applicant proposes to expand the existing portland cement plant by constructing a new cement manufacturing line. Kiln Line No. 2 will include a new dry process preheater/precalciner rotary kiln system with in-line raw mill and will have the following hourly capacities: 215 tons per hour of dry preheater feed materials; 127 tons per hour of clinker production; and 175 tons per hour of portland cement production. For the

Kiln Line No. 2 system, dry preheater feed material will be limited to 1,789,230 tons during any consecutive 12 months and clinker production from to no more than 1,055,500 tons during any consecutive 12 months. The proposed project will affect the following existing and new emissions units.

EU No.	Emissions Unit Description
001	(Existing) Primary crusher and associated belt conveyors
003	(Existing) Raw material processing with unenclosed conveyor transfer points - D conveyors
009	(Existing) Unenclosed coal conveying equipment - S Conveyors
011	(New) Clinker and cement handling and storage with baghouse controls for miscellaneous emissions points
012	(New) Coal mill and coal transfer system with baghouse controls for miscellaneous emissions points
013	(New) Dry process preheater/precalciner rotary kiln with in-line raw mill
014	(New) Raw material handling and storage with baghouse controls for miscellaneous emissions points
015	(New) Fugitive dust from storage piles, paved roads, and unpaved roads

Proposed fuels for the pyroprocessing system include natural gas, fuel oil, on-specification used oil fuel, coal, petroleum coke, and tires. Tires will be fired whole, chipped, or gasified. The combustion of fuels and processing of raw materials will result in emissions of carbon monoxide (CO), dioxins/furans (D/F), mercury (Hg), nitrogen oxides (NOx), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC). The applicant proposes the following controls for the kiln system: Selective Non-Catalytic Reduction (SNCR) system to reduce NOx emissions; a single baghouse control system to remove particulate matter emissions from the rotary kiln, raw mill, and clinker cooler exhausts; use of low sulfur raw materials; hydrated lime injection as needed to control SO_2 emissions; and good combustion design and practices to reduce CO, D/F and VOC emissions. Potential mercury emissions will be restricted by limiting the maximum mercury throughput from raw materials and fuels.

The project includes a coal processing operation designed to crush coal and petroleum coke with an annual processing capacity of 150,000 tons per year of coal and/or petroleum coke. The project will add numerous silos, bins, and conveyors as well as increase demands on storage areas and plant roads. Raw materials will be mined, screened, and handled wet to prevent fugitive dust emissions. Enclosed bins and silos will be controlled with baghouse systems. Paved plant roads will be periodically swept with a vacuum truck to reduce dust and prevent fugitive emissions from truck traffic. Unpaved roads will be watered as necessary to reduce dust.

Application Processing Schedule

- Permit application and report received on February 25, 2005.
- Received Additional information from the applicant March 17, 2005 and March 21, 2005.
- Department's request for additional information on March 31, 2005.
- Department's request for additional information on April 15, 2005.
- Applicant's additional information received April 28, 2005.
- Applicant's additional information received May 11, 2005.
- Department's request for additional information on June 10, 2005.
- Department forwarded comments from the Fish and Wildlife Service on June 15, 2005.
- Applicant's additional information received June 24, 2005.
- Applicant submitted air quality modeling files on CD on July 8, 2005.
- Applicant's additional information received July 20, 2005 via email.
- Department's request for additional information on July 22, 2005.

- Department's request for additional information on August 5, 2005.
- Applicant's additional information (partial) received August 29, 2005.
- Applicant's additional information received September 2, 2005 (revised CD of modeling output files).
- Applicant's additional information received September 19, 2005 (revised CD of fence-line modeling output and updated pages for Attachment 1).
- Applicant's additional information received September 20, 2005 (corrected worksheets of potential emissions for sources FQ2_B40 and SP6_FR2).
- Applicant's additional information received September 22, 2005 (hardcopies of revised facility layout drawings).
- Applicant's additional information received September 23, 2005 (email of AutoCAD files of revised facility layout drawings); complete.
- Applicant's additional information received October 20, 2005 (email).

2. APPLICABLE REGULATIONS

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code.

Chapter	Description
62-4	Permitting Requirements
62-204	Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference
62-210	Required Permits, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms
62-212	Preconstruction Review, PSD Requirements, and BACT Determinations
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Emission Limiting Standards Rule 62-296.407, F.A.C. – Portland Cement Processing Plant
62-297	Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures

Federal Regulations

This project is also subject to the applicable federal provisions regarding air quality as established by the EPA in the following sections of the Code of Federal Regulations (CFR).

Title 40	Description
Part 60	Subpart A - General Provisions for NSPS Sources Subpart F - Portland Cement Plants Subpart Y - Coal Preparation Plants Subpart OOO - Non Metallic Mineral Processing Plants Applicable Appendices
Part 63	Subpart A – General Provisions for NESHAP Sources NESHAP Subpart LLL - Portland Cement Manufacturing Industry Applicable Appendices

PSD Applicability and Preconstruction Review

The Department regulates major air pollution facilities in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as defined in Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) for each regulated pollutant or areas designated as "unclassifiable" for such pollutants. A facility is considered "major" with respect to PSD if it emits or has the potential to emit:

≥ 250 tons per year of any regulated pollutant, or

≥ 100 tons per year of any regulated pollutant and belonging to one of 28 "PSD major facility categories", or

≥ 5 tons per year of lead.

For new projects at existing PSD-major facilities, each regulated pollutant is reviewed for PSD applicability based on emissions thresholds known as the Significant Emission Rates specified in Table 62-212.400-2, F.A.C. Pollutant emissions from the project exceeding these rates are considered "significant" and subject to PSD preconstruction review. This means that the applicant must employ the Best Available Control Technology (BACT) to control emissions of each PSD-significant pollutant as well as evaluate the air quality impacts. Although a facility may be "major" with respect to PSD review for only one regulated pollutant, the project may be subject to preconstruction review for several PSD-significant pollutants.

The existing Suwannee American Cement Plant is a portland cement manufacturing plant, which is one of the 28 "PSD major facility categories" listed on Table 62-212.400-1, F.A.C. For listed PSD major categories, the threshold for classification as a PSD-major source is 100 tons per year. The existing plant is a PSD-major facility because the potential emissions of several pollutants are greater 100 tons per year. In addition, the plant is located in Suwannee County, which is in an area that is in attainment with, or designated as unclassifiable for, all air pollutants subject to the state and federal Ambient Air Quality Standards (AAQS). Therefore, each new project proposed for this facility must be reviewed for the applicability of PSD preconstruction review based on the PSD Significant Emission Rates specified in Table 62-212.400-2, F.A.C. The following table summarizes the applicant's PSD applicability analysis for just the potential emissions from the proposed new kiln system.

Table 2A. Summary of the PSD Applicability for New Kiln Line No. 2 System (Initial Application)

Pollutant	PSD Significant Emission Rates (TPY)	Project Emissions (TPY).	Subject to PSD?
Carbon Monoxide (CO)	100	2111	Yes
Nitrogen Oxides (NOx)	40	1056	Yes
Particulate Matter (PM/PM10)	25/15	116/98	Yes
Sulfur Dioxide (SO_2)	40	143	Yes
Volatile Organic Compounds (VOC)	40	63	Yes
Lead (Pb)	1200 lb/year	80 lb/year	No
Mercury (Hg)	200 lb/year	122 lb/year	No

Notes: "TPY" means tons per year. Additional PM/PM10 emissions from raw material processing, clinker and cement processing, and the coal mill system are estimated to be 81/69 TPY. Increases from fugitive PM/PM10 emissions sources such as roads are estimated to increase by approximately 26/7 TPY.

As shown in the table, the project is subject to PSD preconstruction review for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), sulfur dioxide (SO_2), and volatile organic compounds (VOC). Therefore, the applicant must provide a supporting air quality analysis and the Department must determine the Best Available Control Technology (BACT) for each PSD-significant pollutant.

The EPA currently directs that BACT should be determined using the "top-down" approach. In this approach, available control technologies are reviewed for technical feasibility and control effectiveness. The most

effective control option is selected as BACT unless it is determined to be technically infeasible or rejected due to adverse energy, environmental and/or economic impacts. If the top alternative is eliminated, the next most stringent alternative is considered. The top-down approach continues until BACT is determined.

The EPA has concluded that a BACT determination shall not result in a selection of a control technology which would not meet any applicable emission limitation under 40 CFR Part 60 (Standards of Performance for New Stationary Sources), 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants), or 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants). In addition, the Department may consider the control or reduction of "non-regulated" air pollutants when determining BACT for regulated pollutants, and will weigh control of non-regulated air pollutants favorably when considering control technologies for regulated pollutants. The Department will also favorably consider control technologies that utilize pollution prevention strategies. These approaches are consistent with EPA's consideration of environmental impacts.

The remainder of this technical evaluation reviews available control technologies and work practices to establish a preliminary BACT determination for each PSD-significant pollutant. It identifies applicable state and federal air pollution regulations as well as production and process restrictions. In addition, it includes a review of the applicant's air quality modeling analysis.

3. PROCESS DESCRIPTION - PORTLAND CEMENT MANUFACTURING

Note: In addition to the application, much of the following discussion comes from the section on portland cement manufacturing in Chapter 15 of the Air Pollution Engineering Manual (1999). [10]

Portland cement is a fine powder that is usually gray in color. It consists of a mixture of dicalcium silicate, tricalcium silicate, tricalcium aluminate, and tetracalcium aluminoferrate as well as small amounts of magnesium oxide, sodium, potassium and sulfur (to which one or more forms of gypsum have been added). The production of portland cement is generally a four-step process including raw materials acquisition, kiln feed preparation, pyroprocessing, and finish grinding. The following figure is a process flow diagram for a typical dry process preheater/precalciner cement plant. [4]

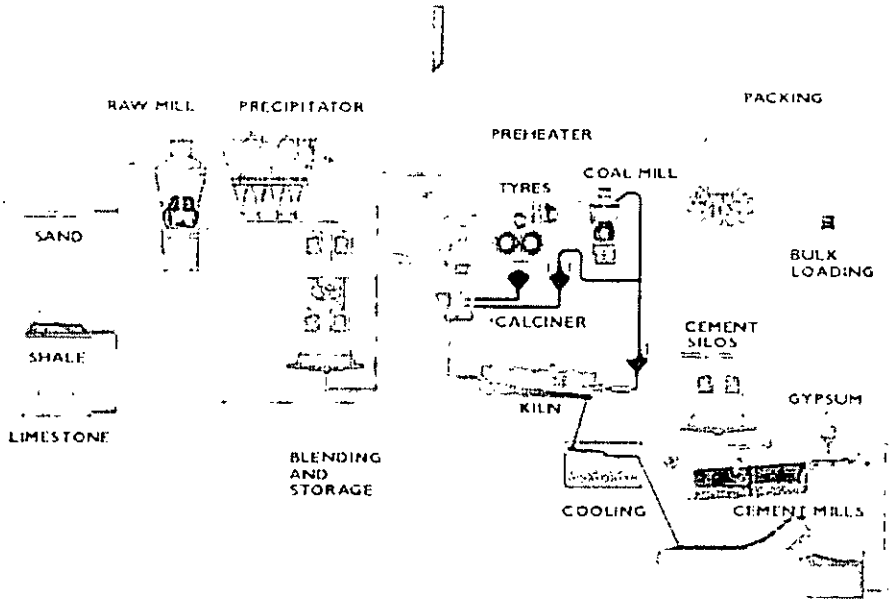

Figure 3A. Process Flow Diagram - Dry Process Preheater/Precalciner Cement Plant [4]

Raw Materials Acquisition

Raw materials are mined below the water table, crushed near the quarry, and transferred by long conveyors to storage near the pyroprocessing kiln. The raw materials are predominantly limestone, but also include sand,

clay, iron ore, and coal ash. The overburden (sand and clay) is removed from the limestone surface and stockpiled in the vicinity of the crusher. The crusher is portable and will be relocated periodically in accordance with the mining plan. Front end loaders or other material conveyors feed the overburden and limestone into the crusher in the ratios dictated by the target chemical composition of the desired raw mix. A conveyor belt system and haul trucks transfer the quarry mix to a covered storage area near the pyroprocessing kiln system. The quarry mix has a moisture content in the range of 10% to 20%. In addition to the quarry mix, the covered storage area also stores mill scale and fly ash. These other materials are transported to the facility by truck.

Kiln Feed Preparation

The quarry mix is conveyed to the raw mill feed bin, which stores the material prior to feeding the raw mill. The raw mill grinds and blends the quarry mix as well as other materials including sand, clay, iron ore, and coal ash. Hot gases from the pyroprocessing system are used to dry the blended materials. Particulate matter emissions from the raw mill will be controlled by the same baghouse used to control the main kiln and clinker cooler exhausts. Raw mill product and dust collected in the baghouse are conveyed to the homogenization silo, which is controlled by a separate baghouse. Captured dust will be recycled back to the process. Ground materials from the raw mill (raw meal) will be delivered to the kiln for processing into cement.

Pyroprocessing

The primary component of the portland cement manufacturing process is the pyroprocessing system, which transforms raw meal into cement clinker. The applicant proposes to construct a dry process preheater/precalciner kiln with in-line raw mill as shown schematically in the following figure. Fuel is fired in the main kiln burner and the calciner to produce the necessary high temperatures. Kiln temperatures are greater than 1200° C and calciner temperatures are in the range of 1000° C. Raw meal is introduced into the top of the preheater tower, passes through the preheater into the calciner and enters the feed end of the kiln opposite the main kiln burner in a direction countercurrent to the hot exhaust gases. Rotation of the slightly inclined kiln causes the solid materials to be slowly transported to the discharge end. The high temperatures and raw meal mix allow complex chemical and physical reactions to form cement clinker, which is cooled in the clinker cooler and stored in large storage silos.

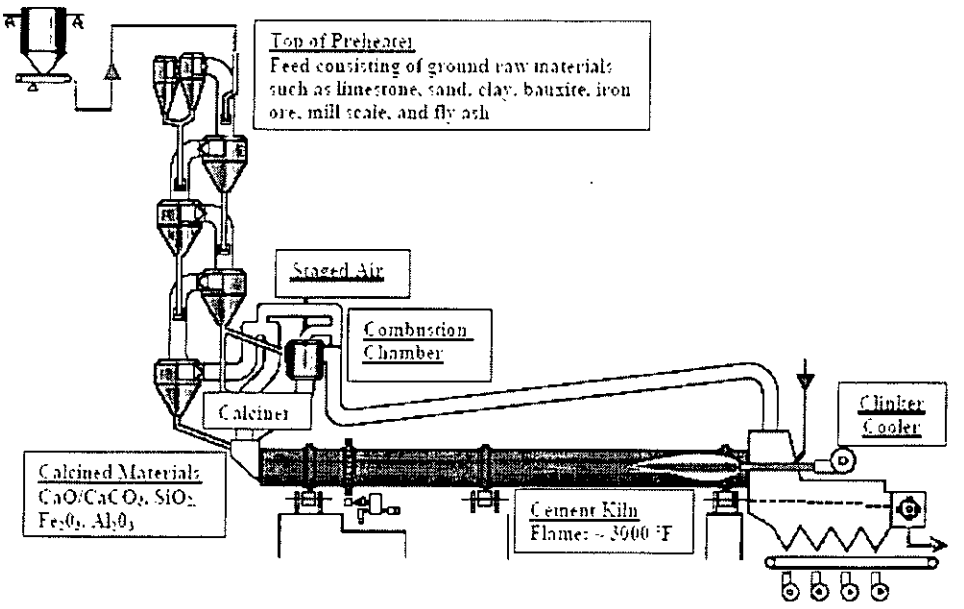

Figure 3B: Dry Process Preheater/Precalciner Pyroprocessing Kiln System [1]

Heat for pyroprocessing is typically provided by combusting coal, petroleum coke, and fly ash. Other fuels may also be fired such as natural gas, propane, distillate oil, on-specification used oil fuel, and tires. Whole or chipped tires would be introduced in the transition section between the preheater and the kiln inlet. It is also possible to gasify tires and combust the resulting gas as a fuel. For the proposed preheater/precalciner kiln system, fuel combustion is divided between the main kiln burner located at the kiln discharge and the calciner burner (~ 45%/55%). The calciner burner is located in a separate combustion chamber to the side of the preheater tower. This is in contrast with an in-line calciner where the burner is mounted horizontally within the calcination vessel. Combustion air for the calciner is provided by a tertiary air duct with hot exhaust from the clinker cooler.

Prepared raw meal from the homogenization silo is fed into the top stage of the preheater tower. The preheater vessels are arranged vertically in front of the kiln feed end. Exhaust gases from the pyroprocessing system flow countercurrent to the feed material direction, which provides intimate contact and efficient heat transfer from the hot exhaust gas to the feed materials. The hot exhaust gases exit the preheater tower and pass through the particulate control device before exiting the stack. A portion of the hot exhaust gases are used to dry raw materials in the raw mill.

The chemical reactions and physical processes that transform raw materials in the kiln to cement clinker are quite complex. Pyroprocessing may be divided into four stages, depending on location and temperature of the materials in the system: evaporation of uncombined water from raw materials; dehydration of combined water to form oxides of silicon, aluminum, and iron; calcination (liberation of carbon dioxide); and reaction and sintering of the oxides in the kiln to form cement clinker. The clinker exits the kiln and enters the clinker cooler where it is quickly cooled by ambient air to halt the formation chemistry and "freeze" material properties of the clinker. Cooled clinker is transferred to large storage silos.

Typically, a portion of the exhaust from the clinker cooler will be recovered and returned to the pyroprocessing system as combustion air and to the coal mill for drying coal and petroleum coke. Exhaust returned as combustion air to the calciner will pass through the main baghouse for the kiln system. Exhaust provided to the coal mill will pass through the coal mill baghouse control system. For this particular project, the clinker cooler exhaust is combined with the main kiln exhaust and controlled by a common baghouse control system.

Finish Grinding

The clinker will be withdrawn from the silos by vibrating feeders and discharged onto the finish mill feed belt. Clinker is mixed with gypsum and limestone and ground in a ball mill in the finish milling operation to produce portland cement. Portland cement will be stored in large concrete silos. Each material will be transferred by a front end loader to feed hoppers and conveyed to the finish mill. Portland cement will be withdrawn from the silos and loaded into tanker trailers for bulk shipment.

Raw Material and Solid Fuel Handling and Storage

The raw materials at this site are generally mined below the water table. The inherent moisture content of the materials inhibits fugitive dust during mining, crushing, handling and storage. The following reasonable precautions will be taken as necessary to prevent fugitive dust emissions at the plant. Primary access roadways, the manufacture area, and parking areas are already paved. Accumulated dust will be removed as necessary from paved roads by a vacuum sweeper truck. Water will be applied as needed to unpaved roads by water truck. Material stockpiles will be covered to inhibit dust from wind erosion. Raw material handling and conveying will be minimized by the inherent moisture content of the wet materials and by the application of water if necessary.

Coal and petroleum coke will be received by truck and stored in separate bins. Coal and petroleum coke will be metered from the bins to a vertical mill for milling and drying with hot gases from the clinker cooler. The milled fuels will be stored in a pulverized fuel storage bin for pneumatic conveyance to the main kiln burner and the calciner burner. All enclosed sources associated with the coal and petroleum coke handling and milling operation will be controlled with baghouses. Fugitive emissions from coal and petroleum coke handling and

conveying will be minimized by the inherent moisture of the materials, containment of coal and petroleum coke within the containment area, storage of pulverized coal and petroleum coke in storage bin, and by the application of water as necessary to suppress fugitive dust.

All enclosed sources associated with the finish milling operation will be controlled with baghouses. Gypsum and limestone will be received by truck and stored under cover in stockpiles. Fugitive emissions from gypsum and limestone handling and conveying associated with the finish milling operation will be minimized by the inherent moisture content and applying water as necessary to suppress fugitive dust.

4. BACT REVIEW – KILN SYSTEM (EU-013)

Over the last six years, the Department has issued air construction permit applications for three of the newest cement pyroprocessing kilns in the United States including Suwannee American Cement (Kiln Line No. 1), Florida Rock Industries (Kiln Line No. 2), and Florida Crushed Stone (Kiln Line No. 2). Each project was subject to PSD preconstruction review for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC). The Department has gathered a substantial body of information related to the Best Available Control Technology (BACT) for modern cement kilns. In addition, the Department worked with these existing plants to support performance tests for the application of Selective Non-Catalytic Reduction (SNCR) to further reduce NOx emissions from the kiln exhaust. These recent PSD permits provide operational flexibility while representing some of the most stringent emissions standards in the United States while requiring emissions monitoring to verify compliance on a continuous basis.

Particulate Matter (PM/PM_{10})

Particulate matter is be emitted from the kiln system due to the pyroprocessing of raw materials as well as the combustion of fuels. Nearly all of the particulate matter emitted after control will be much less than 10 microns in size (PM_{10}). Particulate matter was one of the early concerns regarding air emissions from portland cement manufacturing plants. The following table summarizes specific state and federal regulations for limiting particulate matter emissions from a variety of sources at these plants.

Table 4A. Summary of State and Federal Particulate Matter Emissions Standards

Source	NSPS Subpart F [40 CFR 60.62]		NESHAP Subpart LLL [40 CFR 63.1342 – 63.1348]		Rule 62-296.407, F.A.C.	
	lb PM/ton DPFM	Opacity	lb PM/ton DPFM	Opacity	lb PM/ton DPFM	Opacity
Kiln	0.30	20%	0.30	20%	0.30	---
Raw Mill	---	10%	0.30	20%	---	---
Clinker Cooler	0.10	10%	0.10	10%	0.10	---
Finish Mill	---	10%	---	10%	---	---
Material Handling	---	10%	---	10%	---	---

Note: "DPFM" means dry preheater feed material.

Applicant's PM/PM_{10} Review

The applicant recognizes a baghouse control system or an electrostatic precipitator as the top-level controls for cement kilns. The applicant proposes to control particulate matter emissions from the kiln exhaust, raw mill, and clinker cooler with a common baghouse control system. In general, a baghouse control system consists of a series of hanging filter bags through which the exhaust stream passes. Particulate matter collects on the surface of the bag. As the dust layer builds up, the control efficiency actually increases as does the pressure drop across the baghouse compartment. Baghouses can effectively control particulate matter much less than 10 microns in size with removal efficiencies greater than 99.9%. Periodically, the filter cake is removed during a cleaning

cycle by mechanical shaking or pulsed air. Sonic horns can also be used to enhance the cleaning mechanism. The following table identifies the key parameters for the applicant's proposed baghouse control system.

Table 4B. Baghouse Parameters for Kiln/Clinker Cooler Exhaust (EU-013)

Point No.	Baghouse Point Description	acfm	° F	Moisture	dscfm	grains/dscfm
Emissions Unit 013 – Dry Process Preheater/Precalciner Rotary Kiln with In-Line Raw Mill						
E21-02	Exhaust from kiln, raw mill and clinker cooler	333,000	215°	15%	221,408	0.01

The applicant proposes the following particulate matter emissions standards for this equipment:

PM $\leq$ 0.13 lb/ton of dry preheater feed material based on an EPA Method 5 stack test

PM_{10} $\leq$ 0.11 lb/ton of dry preheater feed material based on an EPA Method 201 stack test

Opacity $\leq$ 10% based on COMS data

A continuous opacity monitoring system (COMS) will be installed to monitor the stack exhaust.

Department's PM/PM_{10} Review

A baghouse control system is generally recognized as the top level of control for particulate matter emissions. The applicant proposes a single baghouse control system to remove particulate matter from the combined main kiln exhaust and the clinker cooler. The following table identifies some of the most recent BACT determinations made for cement kilns. It is not a comprehensive list, but is representative of recent determinations. It does not include modifications to existing kilns or "non-BACT" limits for new kilns.

Table 4C. Summary of Recent PM/PM_{10} BACT Determinations – New Kilns

Permit	RBLC ID	Company	Location	Controls and Comments	lb/ton DPFM
03/99	TX-0279	North Texas Cement	Whitewright, TX	BH+WS	0.22
09/00	CO-0043	Rio Grande Portland Cement	Pueblo, CO	BH	0.105
06/00	FL-0139	Suwannee American Cement – Kiln 1	Branford, FL	BH	0.11
		04/01 - Production Increase for Kiln 1	Branford, FL	BH	0.093
12/03	IA-0070	Lehigh Cement	Mason City, IA	ESP	0.516
07/05	---	Florida Rock Industries – Kiln 2	Newberry, FL	ESP	0.136
07/05	---	Florida Crushed Stone – Kiln 2	Brooksville, FL	BH	0.136
Review	---	Suwannee American Cement – Kiln 2	Branford, FL	BH; as proposed	0.11

Notes: "BH" means baghouse. "WS" means wet scrubber. "ESP" means electrostatic precipitator.

As shown in the above table, previous BACT determinations have relied mostly on baghouse control systems. The main kiln exhaust has a much higher particulate loading than the clinker cooler exhaust. Typically, these two exhaust streams are controlled by separate devices. The proposed design to combine the exhaust streams should result in lower overall particulate matter emissions. The Department's draft BACT determination for particulate matter is:

PM $\leq$ 0.10 lb/ton of dry preheater feed material based on an EPA Method 5 stack test

Opacity $\leq$ 10% based on COMS data

Based on the design exhaust flow rate, the particulate matter emissions standard is equivalent to:

$$PM = \frac{(0.10 \text{ lb PM/ton DPHFM})(215 \text{ tons DPHFM/hour})(\text{hour}/60 \text{ min})(7000 \text{ grains/lb})}{(221{,}400 \text{ DSCF/min})} = \mathbf{0.01 \text{ grains/dscf}}$$

The draft standards are based on a baghouse control system as well as the maximum operating conditions, maximum fuel consumption rates, and maximum production rates. In addition, NSPS Subpart F specifies a clinker cooler standard of 0.10 lb/ton of dry preheater feed materials. The combined exhausts must demonstrate compliance with this standard.

Nitrogen Oxides (NOx)

Historically, emissions of nitrogen oxides (NOx) have been a primary pollutant of concern with regard to cement kilns. The high temperature processes in the kiln systems have the potential to generate substantial amounts of NOx. There are three primary mechanisms for producing NOx emissions: fuel NOx, thermal NOx, and prompt NOx. Approximately 60% of the nitrogen in the fuels will be oxidized during combustion and form fuel NOx. The majority NOx emissions produced in the kiln will be thermal NOx, which is generated from oxidizing nitrogen available in the combustion air with very high kiln temperatures. The smallest contributor to NOx emissions is prompt NOx, which occurs instantaneously on the flame surface and independently of flame temperature or excess air.

Applicant's NOx Review

The applicant identifies the following technically feasible controls: selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), indirect firing, low-NOx burners, and staged combustion. The project will utilize indirect firing, low-NOx burners, and staged combustion in the calciner. The applicant also recognizes an SCR system as potentially offering the highest level of control. However, based on 32% control efficiency presumed by the applicant, the applicant estimates an SCR system would incur $4.6 million in capital costs and $9.1 million in annual operating costs. The applicant estimates cost-effectiveness for an SCR system of $21,599 per ton of NOx removed. Therefore, the applicant rejects SCR primarily due to excessive costs.

An SNCR system offers the next highest control alternative. In the SNCR process, an ammonia solution is injected at high temperatures (850° C to 1000° C) without a catalyst to reduce NOx emissions to nitrogen and water vapor. The applicant currently operates a modern kiln system at this plant with NOx emissions controlled by SNCR to achieve a BACT emission standard of 2.4 lb/ton of clinker (30-day rolling CEMS average). For the new Kiln Line No. 2 system, the applicant proposes the following standard:

NOx $\leq$ 2.0 lb/ton of clinker (30-day rolling CEMS average)

This standard is based on low-NOx burners, staged combustion, indirect firing, and SNCR. The SNCR system will be used alone or in conjunction with staged combustion for maximum operational flexibility. This level of control is among the lowest in the country.

Department's NOx Review

Without proper design and control, the high operating temperatures in the pyroprocessing system will result in substantial NOx emissions. Modern designs offer reduced kiln temperatures and sophisticated control systems to minimize process upsets. In Europe, most plants install and operate ammonia-based Selective Non-Catalytic Reduction (SNCR) systems to reduce NOx emissions. The only known commercial installation of a Selective Catalytic Reduction (SCR) system for a cement plant is at the Solnhofer Portland Cement Plant in Germany. Unlike the raw materials mined in Florida, the raw materials at that site contain significant amounts of ammonia, organics, and sulfur. The SCR system combined with scrubbers helps reduce higher emissions of ammonia, volatile organic compounds, and sulfur dioxide.

The following figures demonstrate relative magnitude of an SCR system compared to an SNCR system. As the figures show, there is a tremendous difference in size and scale between the two systems. The SCR system requires a large tower framework to support the catalyst structure, which requires careful design of the catalyst formulation to prevent premature fouling and poisoning. In comparison, the SNCR installation is much less intrusive consisting of an ammonia tank, pumps, piping, compressed air delivery, injectors, and a control system.

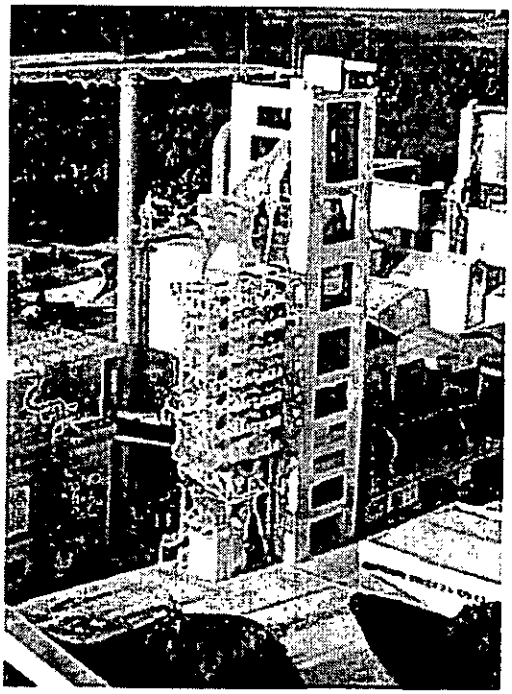

Figure 4A. Solnhofer Portland Cement Plant [2]
(SCR system is adjacent to preheater tower.)

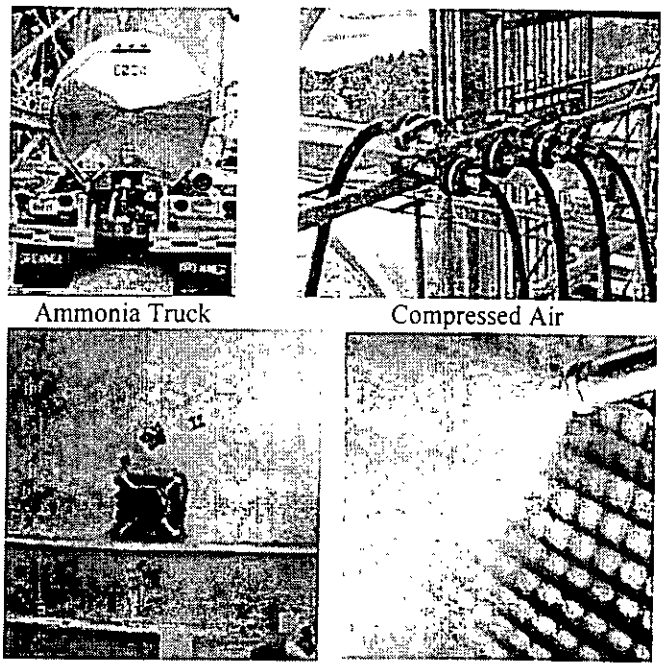

Figure 4B. Suwannee American Cement Plant [2]
(Temporary SNCR test rig.)

In the United States, plants have typically relied on low-NOx burners and staged combustion to inhibit NOx emissions. The following table identifies some of the most recent BACT determinations made for cement kilns. It is not a comprehensive list, but is representative of recent determinations. It does not include modifications to existing kilns or "non-BACT" emissions limits for new kilns.

Table 4D. Summary of Recent NOx BACT Determinations – New Kilns

Permit	RBLC ID	Company	Location	Controls and Comments	lb/ton clinker
03/99	TX-0279	North Texas Cement	Whitewright, TX	LNB+SCC	3.87
09/00	CO-0043	Rio Grande Portland Cement	Pueblo, CO	LNB+SCC; 12-month avg.	2.32
12/99	---	Holcim	Holly Hill, SC	LNB+SCC	4.33
06/00	FL-0139	Suwannee American Cement – Kiln 1	Branford, FL	GCPs; 24-hour avg.	2.9
		04/01 - Production Increase for Kiln 1	Branford, FL	GCPs; 30-day avg.	2.4
12/03	IA-0070	Lehigh Cement	Mason City, IA	LNB+SCC+SNCR	2.85
06/04	---	Holcim	Lee Island, MO	LNB+SC	2.4
07/05	---	Florida Rock Industries – Kiln 2	Newberry, FL	SCC+SNCR; 30-day avg.	1.95
07/05	---	Florida Crushed Stone – Kiln 2	Brooksville, FL	SCC+SNCR; 30-day avg.	1.95
Proposed	---	Suwannee American Cement – Kiln 2	Branford, FL	SCC+SNCR; 30-day avg.	2.0
Draft	---	St. Lawrence Cement	Hudson, NY	LNB+SCC	3.6

Notes: LNB means low-NOx burner. SC means staged combustion in calciner. GCPs means good combustion practices. SNCR means selective non-catalytic reduction.

As shown in the above table, recent BACT determinations have ranged from 1.95 to 4.3 lb/ton of clinker. The most recent permit issued outside the state of Florida is for the Holcim's Lee Island Cement Plant in Missouri, which will have the largest cement kiln in the United States. The state of Missouri permitted the new kiln with an eventual NOx standard of 2.4 lb/ton of clinker. The plant will use staged combustion in the calciner and SNCR to comply with the emissions limit.

Titan America operates an existing cement plant in Medley, Florida. Based on recent testing, the plant indicates that it can achieve an *actual* NOx emissions rate of 2.0 lb/ton of clinker based on a version of staged combustion in the calciner with raw meal catalysis in a high temperature reducing atmosphere. The design is different than that for Suwannee American Cement's existing kiln system. Titan America plans to increase the current production rate while complying with a new NOx standard of 2.17 lb/ton of clinker (12-month rolling average) to avoid PSD review.

The lowest permitted NOx BACT standard for an operating cement plant in Florida is 2.4 lb/ton of clinker for Suwannee American Cement's Kiln Line No. 1 system. This plant was originally permitted with a NOx BACT standard of 2.9 lb/ton of clinker (24-hour average) based on staged combustion in the calciner to produce a reducing atmosphere. However, the plant operators experienced difficulties in manipulating kiln operating conditions to continuously achieve the NOx standard. Under certain circumstances, operating the kiln to comply with the NOx standard had adverse affects on cement production.

To alleviate the NOx issue at Suwannee American Cement's Kiln Line No. 1 system, the plant recently installed an ammonia-based SNCR system to control NOx emissions. At the same time, it was possible to increase the production capacity of the existing kiln. A full technical discussion of SNCR as an available and technically viable control technique for cement kilns is presented in the Department's Technical Evaluation and Preliminary Determination" for Project No. 1210465-011-AC (February 16, 2005).[1] The SNCR system basically consists of an ammonia tank, pumps, piping, compressed air delivery, four injectors, and a control system. Performance tests on this unit indicate that an SNCR system can reliably reduce NOx emissions to less than 2.0 lb/ton of clinker from the kiln system processing the raw materials available at this site. The permit was modified to include a lower NOx standard of 2.4 lb/ton of clinker based on a 30-day rolling average. Actual operation indicates that the system is effective even when delivering all of the ammonia through a single injector. The plant is able to use both staged combustion in the calciner and/or the SNCR system to comply with the new standard.

Finally, to support their recent application for a second kiln, Florida Rock Industries tested SNCR on their existing kiln system. The tests indicated that a NOx emission rate of less than 2.0 lb/ton of clinker could be achieved with SNCR. Despite previous concerns expressed by the cement industry, the injection of ammonia did not result in a visible plume of fine particles consisting of ammonium sulfates and chlorides. The raw materials mined in Florida are typically low in sulfur and chloride content so the potential to form ammoniated particulate compounds is minimal. Virtually no ammonia slip was seen with the raw mill on. Some Ammonia slip occurred with the raw mill off. As a result, the Department determined BACT for nitrogen oxides to be 1.95 lb/ton of clinker (30-day rolling average) based on a combination of staged combustion in the calciner and SNCR. The same determination was made for a new second kiln at the Florida Crushed Stone plant in Brooksville, Florida. To date, these are the most stringent BACT determinations in the country.

The Department does not adopt the applicant's estimates regarding costs for an SCR system and rejects the applicant's presumption of 32% control efficiency. However, it is clear that costs would be substantial simply due to the considerable structure itself. The Department does not consider SCR necessary to achieve a BACT-level of control and believes it is sufficient to ensure that the proposed BACT standard represents the current "top level" of control for this industry. SCR makes the most sense in cases where it is necessary to minimize ammonia use to avoid the formation of a detached plume. In Florida, the potential for forming a detached plume is minimal because the raw materials are low in sulfur. Low NOx levels can be achieved by simple ammonia injection without the catalyst. Therefore, the Department's draft BACT determination is:

NOx $\leq$ 1.95 lb/ton of clinker based on a 30-day rolling CEMS average

This determination is based on staged combustion in the calciner and an SNCR system. Good combustion and operating practices will be used to minimize NOx emissions and the SNCR system will be used as necessary to ensure compliance with the standard. Continuous monitoring and recording of the NOx emissions will be required to demonstrate compliance.

Carbon Monoxide (CO)

Emissions of carbon monoxide (CO) are formed by two primary methods. First, CO may occur as a product of incomplete fuel combustion in the kiln and calciner. Second, CO may evolve from organic matter in the kiln feed materials when exposed to lower temperatures in the preheater.[6] The organic matter content is a function of the raw materials mined on site as well as mill scale and fly ash. The current kiln design includes the option of injecting fly ash directly into the calciner at high temperatures to avoid generating additional CO by exposing the organic matter in the fly ash to low temperatures in the upper region of the preheater tower.

Applicant's CO Review

The applicant reviewed over 45 recent permits in EPA's RACT/BACT/LAER Clearinghouse for cement plants. With the exception of two facilities, the review indicated that the control of CO emissions was based on "good combustion practices". The CO standards for these projects ranged from 1.03 to 15.83 lb/ton of clinker.

TXI Operations in Midlothian, Texas installed regenerative thermal oxidizers (RTOs) to control CO and VOC emissions below the thresholds for PSD preconstruction review. The uncontrolled CO emission rate is between 5 - 8 lb/ton of clinker. Based on an assumption of 80% reduction, CO emissions would be 1 – 1.6 lb/ton of clinker. The plant reports technical difficulties in maintaining continuous operation of the RTOs and substantial operating costs from combustion auxiliary fuel. The Holcim Plant in Dundee, Michigan also installed an RTO to control odors and condensable hydrocarbons resulting from the specific raw materials on site, but has since discontinued operating the control system due to system failures, high maintenance, and operating costs. It should be noted that each of these plants were "wet" process plants with much higher pre-control emissions.

Based on an RTO system designed to remove approximately 80% of the CO emissions, the applicant estimates the capital cost of an RTO at $23.7 million, the annualized cost to be $10 million, and the cost effectiveness at approximately $6000 per ton of CO removed. The applicant rejects an RTO system due to excessive costs and technical applicability. Instead, the applicant proposes the following CO standard based on an efficient combustion design and implementing good combustion practices.

CO $\leq$ 3.0 lb/ton of clinker (30-day rolling CEMS average)

Department's CO Review

Modern kiln burners can minimize the initial formation of CO generated due to incomplete combustion. Remaining CO from the combustion process can be significantly reduced if sufficient retention time, mixing, and temperatures (~ 800° C to 1000° C) are provided in the ductwork loop between the kiln and lower stage preheater cyclone. See figure below.

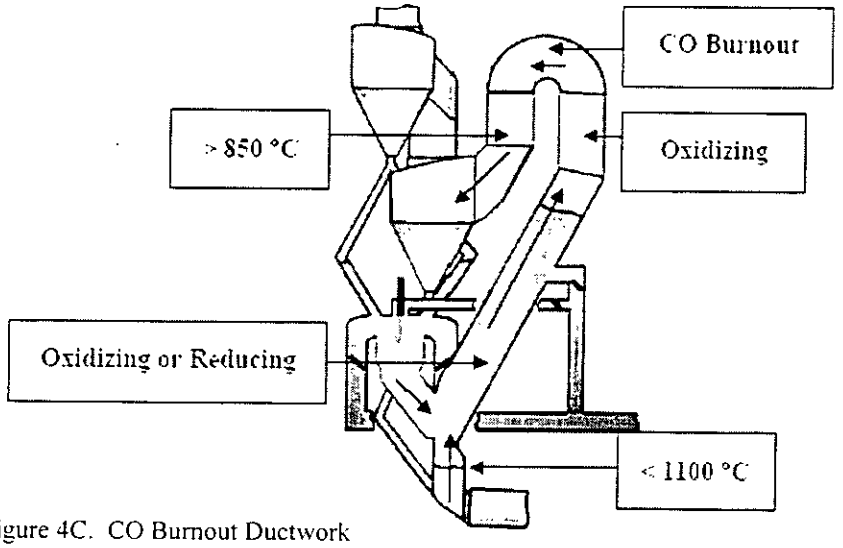

Figure 4C. CO Burnout Ductwork

Efficient transfer of heat from the exhaust gases to raw materials means longer residence time in the preheater tower. In turn, this can mean substantial amounts of CO will evolve from organic matter in the kiln feed materials due to reduced preheater temperatures. As a general rule, about 15% of the organic carbon entering the preheater tower will form CO and about 2% will form VOC.[5]

The following table identifies some of the most recent BACT determinations made for cement kilns. It is not a comprehensive list, but is representative of recent determinations. It does not include modifications to existing kilns or "non-BACT" emissions limits for new kilns.

Table 4E. Summary of Recent CO BACT Determinations – New Kilns

Permit	RBLC ID	Company	Location	Controls and Comments	lb/ton clinker
03/99	TX-0279	North Texas Cement	Whitewright, TX	GCPs	2.0
04/99	---	Lone Star Industries	Cape Giradeau, MO	GCPs	3.0
09/00	CO-0043	Rio Grande Portland Cement	Pueblo, CO	GCPs; 12-month avg.	2.1
12/99	---	Holcim	Holly Hill, SC	GCPs	6.0
06/00	FL-0139	Suwannee American Cement – Kiln 1	Branford, FL	GCPs; test	3.6
		04/01 - Production Increase for Kiln 1	Branford, FL	GCPs; test	3.3
06/03	---	Roanoke Cement	Daleville, VA	GCPs	3.0
12/03	IA-0070	Lehigh Cement	Mason City, IA	GCPs; test	3.7
06/04	---	Holcim	Lee Island, MO	GCPs	6.0
07/05	---	Florida Rock Industries – Kiln 2	Newberry, FL	GCPs; 24-hour CEMS avg.	3.6
07/05	---	Florida Crushed Stone – Kiln 2	Brooksville, FL	GCPs; 24-hour CEMS avg.	3.6
Review	----	Suwannee American Cement – Kiln 2	Branford, FL	GCPs; 30-day CEMS	3.0 (proposed)
Review	---	St. Lawrence Cement	Hudson, NY	GCPs	2.8
Review	---	ESSROC	Nazareth, PA	GCPs	4.5
Review	---	RC Cement – Hercules Cement	Stockertown, PA	GCPs	2.1

As shown in the above table, previous BACT determinations for carbon monoxide have relied on good combustion design and good operating practices to minimize emissions. In general, these plants rely on a combination of the following:

- Relatively low carbonaceous matter in the raw materials;
- Good combustion at the main kiln burner and calciner;
- The addition of tertiary air from the kiln hood and clinker cooler; and
- Varying degrees of calciner sizes and duct lengths to complete burnout.

Titan America Cement Plant in Medley, Florida operates a modern cement kiln that has achieved actual CO emissions of less than 0.5 lb/ton of clinker. The new kiln was a replacement of an old kiln and a BACT determination was not required. The plant is only able to achieve this low rate due to the very large calciner that was constructed, which includes a long loop of ductwork from the kiln to the lower stage preheater cyclone. See figure below. The large calciner and long loop provide considerable residence time at high temperatures to complete oxidation of CO emissions. However, it also requires a very large preheater tower to support the massive structure. Each foot of preheater tower adds substantial costs to the installation. Titan also limits its raw material options to achieve such low CO values. The permit limit was recently adjusted to 2.0 lb/ton of clinker to reflect the likely long term raw materials and fuel scenarios given the inherently low CO characteristics of their calciner.

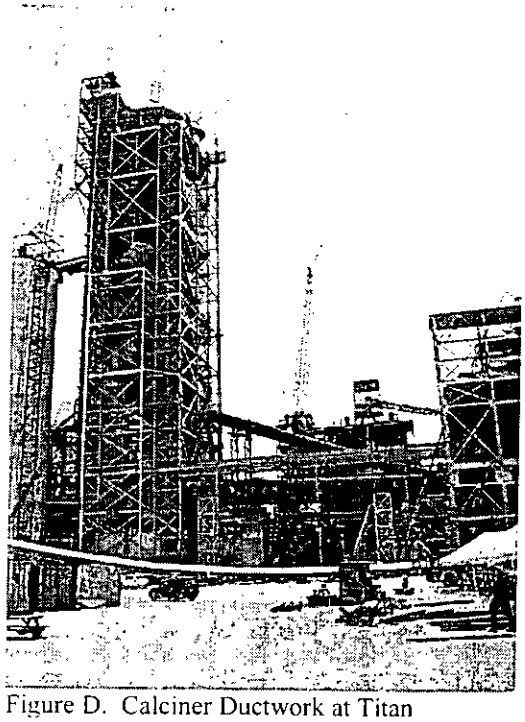

Figure D. Calciner Ductwork at Titan

It is believed that the lowest CO limit in a permit for a cement kiln is approximately 0.37 lb/ton of clinker for the TXI Midlothian Plant in Texas. This plant installed approximately ten regenerative thermal oxidizers (RTOs) to handle the inherently high carbonaceous matter

in the mined raw material. Covering the area of a football field, the RTOs allowed the project to net out of PSD preconstruction review and obtain a permit quickly. The capital cost of the RTOs was $17.5 million. The oxidizers rely on natural gas firing to maintain the necessary temperatures to oxidize CO emissions, which has resulted in very high operating costs. TXI requested authorization to discontinue use of the RTOs due to the operating problems and high costs. As a result of a settlement agreement to resolve a petition by local residents, the CO limit was adjusted to an equivalent of 1.56 lb/ton of clinker.

Many states have specified relatively low CO BACT standards based on initial and perhaps annual stack tests. In the Department's most recent PSD permits for cement kilns, it established a 24-hour CO BACT standard based on continuous monitoring requirements. In addition to demonstrating compliance, the monitoring data can provide valuable information to the plant regarding operational problems and emissions changes due to new raw material feeds. European cement plants typically do not regulate CO, but are more generally concerned with VOC emissions and complete combustion. Continuous monitoring data collected from Florida cement plants indicates relatively low VOC emission rates with the available raw materials.

For this project, the Department does not believe it is cost effective to install several regenerative thermal oxidizers. Without add-on controls, a modern cement kiln can be designed to achieve a CO emissions level of approximately 1.5 to 2.5 lb/ton of clinker based on good operating practices during periods of optimum cement production, a design allowing sufficient time/temperature to oxidize CO, and a raw material mix without unusually high concentrations of organic matter.[5,6] However, normal fluctuations in cement manufacturing can result in higher CO emissions for brief periods. In addition, it is possible that CO emissions may increase by 5% to 15% when ammonia is injected with an SNCR system to reduce NOx emissions.[5] Therefore, the Department's draft BACT determination is:

CO $\leq$ 2.90 lb/ton of clinker based on a 30-day rolling CEMS average

The above standard is achievable with a design providing sufficient time/temperature to oxidize CO, good operating practices, and careful attention to the raw material mix. The 30-day standard is a production-based emissions standard that considers fluctuations in raw materials, operating conditions, and production levels. It applies during all periods of operation including startup and shutdown, but excludes unavoidable equipment malfunctions. The long-term averaging period recognizes the capability of operating a cement kiln at a high, steady production level for long periods of time and is able to accommodate brief periods of low production or operational upsets.

Volatile Organic Compounds (VOC)

VOC emissions may occur as products of incomplete fuel combustion in the kiln and calciner. In addition, organic compounds may be generated from organic matter in the kiln feed when it is exposed to lower temperatures in the upper stages of the preheater tower. The organic matter of the kiln feed depends on the raw materials mined on site as well as mill scale and fly ash in use.

Applicant's VOC Review

The applicant reviewed over 45 recent permits in EPA's RACT/BACT/LAER Clearinghouse for cement plants. With the exception of two facilities, the review indicated that the control of VOC emissions has been based primarily on "good combustion practices". The VOC emissions standards ranged from 0.06 to 2.0 lb/ton of clinker. TXI Operations in Midlothian, Texas and the Holcim Plant in Dundee, Michigan installed regenerative thermal oxidizers (RTOs) to control CO and VOC emissions. These projects are briefly discussed under the review for CO emissions. Both plants processed raw materials with unusually high organic matter. Operational problems and high costs have caused the Holcim Plant in Dundee, Michigan to discontinue use of the installed control equipment.

Based on 95% control efficiency for an RTO system, the applicant estimates a capital cost of $23.7 million, annualized costs of $10 million, and a cost effectiveness of $165,747 per ton of VOC removed. The applicant rejects an RTO system based on excessive costs and technical applicability. The applicant proposes the

following VOC standard based on an efficient combustion design and good combustion practices.

VOC ≤ 0.12 lb/ton of clinker (15.2 lb/hour) based on a 30-day block average of CEMS data

Department's VOC Review

The following table identifies some of the most recent BACT determinations made for cement kilns. It is not a comprehensive list, but is representative of recent determinations. It does not include modifications to existing kilns or "non-BACT" emissions limits for new kilns.

Table 4F. Summary of Recent VOC BACT Determinations – New Kilns

Permit	RBLC ID	Company	Location	Controls and Comments	lb/ton clinker
06/00	FL-0139	Suwannee American Cement – Kiln 1	Branford, FL	GCPs and raw materials	0.12
		04/01 - Production Increase for Kiln 1	Branford, FL	GCPs and raw materials	0.12
06/04	---	Holcim	Lee Island, MO	GCPs and raw materials	0.33
07/05	---	Florida Rock Industries – Kiln 2	Newberry, FL	GCPs and raw materials	0.12
07/05	---	Florida Crushed Stone – Kiln 2	Brooksville, FL	GCPs and raw materials	0.12
Review	---	Suwannee American Cement – Kiln 2	Branford, FL	GCPs and raw materials	0.12

"GCP" means good combustion practices.

As shown above, recent BACT determinations have relied on an efficient combustion design and good operating practices to minimize VOC emissions. NESHAP Subpart LLL now requires continuous monitoring and recording of total hydrocarbons (THC) from new cement plants. Based on Suwannee American Cement's existing kiln system, VOC emissions have been low based on the continuous monitoring data collected. This is primarily due to the modern kiln design and relatively low organic matter in the raw materials. It is noted that fly ash should be carefully monitored when used as a supplemental fuel and/or raw material. Poor quality fly ash may result in both increased CO and VOC emissions.

Potential annual VOC emissions based on the applicant's proposal are approximately 60 tons per year. The addition of an add-on control device to reduce VOC emissions from this level would be cost prohibitive. The NEHSAP Subpart LLL standard for total hydrocarbons is 50 ppmvd (as propane) corrected to 7% oxygen, which is roughly equivalent to 0.3 to 0.4 lb/ton of clinker. The Department's draft BACT determination is:

VOC ≤ 0.12 lb/ton of clinker based on a 30-day block average of CEMS data

The averaging period and monitoring requirements are intended to be consistent with the NESHAP Subpart LLL requirements for THC emissions. All THC emissions are assumed to be VOC emissions. The emissions concentration will be expressed as propane.

Sulfur Dioxide (SO_2)

Emissions of sulfur dioxide will be emitted due to sulfur in the fuels combusted as well as in the raw materials being processed. However, the raw materials mined at this site contain relatively low levels of sulfur (pyrites). In addition, conditions in the proposed kiln system offer a calciner temperature of approximately 1650° F and a substantial amount of free CaO, which readily absorbs SO_2.

Applicant's SO_2 Review

With the raw mill on, the applicant believes an SO_2 emission rate of 0.27 lb/ton of clinker can be achieved due to the inherently low emitting process coupled with the use of low-sulfur raw materials. With the raw mill off, the SO_2 emission rate may be higher. The applicant identified wet scrubbing, wet absorbent addition, and dry absorbent addition as available control alternatives. Based on the applicant's analysis, the cost effectiveness of these technologies is estimated to be: $86,887/ton of SO_2 removed for wet scrubbing; $124,518/ton of SO_2 removed for wet absorbent injection; $7271/ton of SO_2 removed for dry absorbent injection. The applicant

rejects wet scrubbing and wet absorbent addition based on excessive costs.

The applicant proposes the following SO_2 standard based on the current raw materials available at this site, the plant's experience with operating the existing Kiln Line No. 1 system, and using hydrated lime injection as necessary to control potential spikes.

$SO_2 \leq 0.27$ lb/ton of clinker

At this maximum rate, potential annual SO_2 emissions would be approximately 143 tons per year.

Department's SO_2 Review

The following table identifies some of the most recent BACT determinations made for cement kilns. It is not a comprehensive list, but is representative of recent determinations. It does not include modifications to existing kilns or "non-BACT" emissions limits for new kilns.

Table 4G. Summary of Recent SO_2 BACT Determinations – New Kilns

Permit	RBLC ID	Company	Location	Controls and Comments	lb/ton clinker
03/99	TX-0279	North Texas Cement	Whitewright, TX	WS: 85% removal	2.75
09/00	CO-0043	Rio Grande Portland Cement	Pueblo, CO	LSM: 12-month avg.	1.99
12/99	---	Holcim	Holly Hill, SC	LSM + WS?	3.26
06/00	FL-0139	Suwannee American Cement – Kiln 1	Branford, FL	LSM: 3-hour CEMS avg.	0.27
		04/01 - Production Increase for Kiln 1	Branford, FL	LSM: 3-hour CEMS avg.	0.20
12/03	IA-0070	Lehigh Cement	Mason City, IA	WS: 30-day CEMS avg.	1.01
06/04	---	Holcim	Lee Island, MO	LI w/raw mill off	1.26
07/05	---	Florida Rock Industries – Kiln 2	Newberry, FL	LSM: 24-hour CEMS avg.	0.28
07/05	---	Florida Crushed Stone – Kiln 2	Brooksville, FL	LSM: 24-hour CEMS avg.	0.23
Review	---	Suwannee American Cement – Kiln 2	Branford, FL	LSM: 30-day CEMS avg. (as proposed)	0.27
Review	---	St. Lawrence Cement	Hudson, NY	DS/WS	0.65

"LSM" means low sulfur materials. "WS" means wet scrubber. "LI" means lime injection. "DS" means dry scrubber.

The figures in the above table show that scrubbers can be necessary and cost effective in areas with very high sulfur concentrations. This is not the case for this project. For the existing plant, the naturally low sulfur characteristics of the raw materials as well as the absorption mechanism described above are evidenced by the low SO_2 continuous emissions data collected (actual day-to-day levels ranging from ~ 0.04 to ~ 0.13 lb/ton clinker). The Department does not agree with the applicant's cost estimates for scrubbers. However, scrubbers are not necessary to achieve BACT-level emissions at this site. The Department's draft BACT determination for sulfur dioxide is:

$SO_2 \leq 0.20$ lb/ton of clinker based on a 24-hour rolling CEMS average

This determination is based on the expected emissions from the new kiln and injecting hydrated lime as necessary to comply with the standard as demonstrated by continuous emissions monitoring. It is consistent with the recent permit modification to increase the production of Kiln Line No. 1.

Mercury

Mercury may only be emitted from the cement kiln if present in the raw materials and fuels used. Actual mercury air emissions are expected to be less than the amount of mercury in the raw materials and fuels because some mercury may be bound in solid form to the cement clinker produced. However, when establishing limits and reporting results, it is conservatively assumed that *all* mercury in the raw materials and fuels will exhaust through the stack as air emissions (i.e., that no mercury is bound up in the clinker). The applicant proposes a mercury throughput limit of 117.5 pounds per consecutive 12 months based on the highest expected mercury levels in the proposed fuels and raw materials and the requested maximum production rates. This is less than

the PSD significant emission rate of 200 pounds per year. To ensure compliance with the limit, the Department will require the following sampling, analysis, calculation, and record keeping requirements.

> Mercury Compliance Demonstration: The owner or operator shall demonstrate compliance with the mercury throughput limitation by material balance and maintaining records of the monthly and rolling 12-month mercury throughput. Samples of the raw mill feed, fly ash and all fuels shall be collected each day. A single composite daily sample shall be made from all samples collected during a day. A monthly composite sample shall be made from each of the daily composite samples. Each monthly composite sample shall be analyzed to determine the representative mercury concentration for the month. The analytical methods used to determine mercury concentration shall be EPA or ASTM methods such as EPA Method 7471A (Mercury in Solid or Semisolid Waste). No other methods may be used unless prior written approval is received from the Department. For samples with levels below the detection limit, the permittee shall report the detection limit as the corresponding level. For each composite sample, the mercury throughput rate (pounds per month) shall be the product of the mercury concentration from the monthly composite sample and the corresponding monthly processing rate. For each month, the mass of mercury introduced into the pyroprocessing system (pounds per month) shall be the sum of the monthly mercury throughput rates for the raw mill feed, fly ash and fuel. The consecutive 12-month mercury throughput rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of mercury per consecutive 12-months). Such records, including calculations and data, shall be completed no later than 25 days following the month of the records. [Rules 62-4.070(3) and 62-212.400(2)(g), F.A.C.]

The above methodology will ensure the conservative reporting of mercury emissions from the kiln system and compliance with the mercury throughput limit.

Other Considerations

Ammonia Slip: The following discussion is from the Department's "Technical Evaluation and Preliminary Determination" for Suwannee American Cement's project to increase production capacity.[1]

> "Use of SNCR to control NOx can cause NH_3 emissions. NH_3 is not listed as a PSD pollutant or as a hazardous air pollutant (HAP). It is regulated under the Clean Air Act Section 112r when it is stored in concentrated form (20% or more by weight). NH_3 can contribute to formation of particulate emissions emitted from processes and to particulate formation in the environment. Therefore, the Department typically limits emissions of NH_3 in PSD permits.
>
> NH_3 emissions are normally low when used to control NH_3 under the proper conditions (e.g. temperature, oxygen, CO, reaction time, etc.) as long as no more NH_3 is injected than the theoretical amount needed to react with all NOx. The complete reaction is theoretically possible when one mole of ammonia is used for every mole of NOx in the exhaust gas stream (molar ratio (NH_3/NOx = 1).
>
> According to the curve for SAC, the molar ratio required to reduce uncontrolled NOx emissions from 4 lb/ton to 2.4 lb/ton (40%) is roughly 0.25. SAC and the Department are evaluating the reasons why such a low molar ratio is required to achieve such a high reduction. There may be some synergistic effects related to CO increases when NH_3 solutions are used.
>
> Because SO_2 emissions are minimal from cement kilns in Florida, very little particulate matter can be formed by reaction with excess NH_3 emissions (slip). Although there is no reason to inject as much NH_3 as it takes to react with all NOx, the Department will limit the maximum NH3 injection rate to that level. Therefore NH_3 use will be limited to a molar ratio of 1.0. This equates to 450 liters per hour (L/hr) of 19% ammonia solution although typical rates will be closer to 100 L/hr."

The concept of ammonia slip becoming significant when the molar ratio is greater than 1.0 is also discussed in paper titled "BACT: What is Achievable with Today's Technologies" by Mark. S Terry of the Krupp Polysius Corporation, a cement kiln manufacturer.[5] The draft permit for the Kiln No. 2 system will use this same approach to ensure ammonia slip is minimized with the following permit condition.

> To prevent excessive ammonia slip, the ammonia injection rate shall not exceed a NH3/NOx molar ratio of 1.0. The Title V air operation permit shall specify a maximum ammonia injection rate (gph) that represents a NH3/NOx molar ratio of less than 1.0. SCC and/or SNCR shall be used to achieve the NOx emissions standards specified in this permit.

The draft permit also requires continuous monitoring of the ammonia injection rate to demonstrate compliance.

Initial Startup and Shakedown: Although two cement kilns may be constructed based on identical designs, the initial shakedown and operation of each new kiln is unique. The kiln itself must be "burned in". Raw materials, fuels, process equipment, automated control systems, and pollution control devices must be continually adjusted for a period of time to achieve steady production of quality cement. For this reason, the Department will establish the following emissions standards for the initial startup period.

> For an "initial startup" period, NOx emissions shall not exceed 3.0 lb/ton of clinker (380.5 lb/hour) based on a 30-day rolling average. The "initial startup" period shall begin after initial certification of the NOx CEMS and shall end when any of the following conditions are met:
>
> a. The Kiln Line No. 2 system produces 75,000 tons of clinker or more in any 30-day rolling period.
> b. The Kiln Line No. 2 system produces 150,000 tons of clinker.
> c. 365 calendar days elapse after initial certification of the NOx CEMS.
>
> After the "initial startup" period ends, NOx emissions shall not exceed 1.95 lb/ton of clinker (247.7 lb/hour) based on a 30-day rolling average.

The higher NOx emission standards provide a period of time to evaluate the full production capacity and operations of the kiln as well as the potential NOx reduction capability of the SNCR system. These requirements do not waive or vary any applicable NSPS or NESHAP monitoring or record keeping requirements.

Excess Emissions: The draft permit requires continuous monitoring for emissions of CO, NOx, SO_2, and VOC as well as stack opacity. The draft permit allows limited amounts of monitoring data to be excluded from the compliance demonstration due to equipment malfunctions as follows.

> Continuous monitoring data collected during periods of startup, shutdown, and malfunction may be excluded from the compliance demonstrations only in accordance with the following requirements, provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions are minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., the following conditions replace the provisions in Rule 62-210.700(1), F.A.C.
>
> a. *Definitions*: "Startup" means the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions. "Shutdown" means the cessation of the operation of an emissions unit for any purpose. "Malfunction" means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.
>
> b. *CO Data*: Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to equipment malfunctions. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to equipment malfunctions. Malfunctions do not include process upsets that occur as a normal part of cement production.
>
> c. *NOx Data*: Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to malfunctions of the SNCR system. "Malfunctions of the SNCR system" are defined as any unavoidable mechanical and/or electrical failure that prevents introduction of ammonia-based solutions into the kiln system. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to malfunctions of the SNCR system.
>
> d. *SO_2 Data*: Each 24-hour rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to malfunctions of the hydrated lime system, which are defined as any unavoidable mechanical and/or electrical failure that prevents introduction of lime into the kiln system. No more than 30 hours of data in any calendar month shall be excluded from the compliance determinations due to malfunctions of the hydrated lime system.
>
> e. *Other Data*: All opacity and VOC data shall be included in the compliance determination.

Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such reasonably preventable emissions shall be included in any CEMS compliance determinations. All valid emissions data (including data collected during startup, shutdown and malfunction) shall be used to report emissions for the Annual Operating Report.

Telemetry: When the Kiln Line No. 1 system was originally permitted in 1999, the company agreed to provide the equipment and software necessary to transmit emissions monitoring data to the Department's Northeast District Office. The information is periodically updated and shows information regarding stack opacity and emissions of NOx, SO_2, and VOC. In addition, a summary of this data is periodically updated on an Internet Web Site available to the public. The draft permit will require similar telemetry requirements for the new kiln.

On-Specification Used Oil: The applicant requests authorization to fire used oil meeting EPA's "on-specification" requirements for arsenic, cadmium, chromium, lead, and total halogens (a group of five electronegative elements including fluorine, chlorine, iodine, bromine, or astatine). Initially, the applicant plans to fire used oil generated on site from a variety of equipment for purposes of energy recovery. Eventually, a fuel vendor may be selected to supply on-specification used oil also for this purpose.

Based on a variety of tests conducted on rotary cement kilns with a preheater tower, these pollutants will be emitted at much less (<< 0.005%) than the stoichiometric quantity available in the fuel. [11] Arsenic is almost completely bound in the clinker. Lead and cadmium react with excess chlorides and sulfates in the section between the kiln and preheater to form low-volatile compounds, which then condense on kiln feed particles to be bound in the clinker. Almost 90-95% of the fluorine is bound to the clinker and the remainder reacts with excess calcium to form calcium fluoride, which is bound to the kiln dust. Chlorine from the fuel reacts with alkalis in the kiln feed to form alkali chlorides, which condense on kiln feed or kiln dust and then re-renter the kiln system to evaporate again; however, hydrogen chloride will not be emitted due to the alkaline nature of the kiln exhaust. Plants with high chloride levels in the raw materials often install a bypass to avoid coating formations causing operating problems. This is not the case for this project. The draft permit allows the annual firing of up to 1.5 million gallons of on-specification used oil fuel.

Summary of Kiln Emissions Standards

The following table summarizes the emissions standards for the new kiln including: proposed BACT standards; state standards for cement plants; NSPS Subpart F standards; and NESHAP Subpart LLL standards.

Table 4G. Summary of Kiln Emissions Standards

Pollutant	Emissions Standards		Averaging Time
Best Available Control Technology (BACT) - Rule 62-212.400(6), F.A.C.			
CO [a]	2.90 lb/ton of clinker	368.3 lb/hour	30-day rolling CEMS average
NOx [b]	1.95 lb/ton of clinker	247.7 lb/hour	30-day rolling CEMS average
NOx (Initial Startup)	(3.0 lb/ton of clinker)	(381.0 lb/hour)	(30-day rolling CEMS average)
PM/PM10 [c, d]	0.10 lb/ton of dry PHFM	21.5 lb/hour	Average of three, 1-hour test runs
	10% opacity		6-minute block average w/COMS
SO_2 [e]	0.20 lb/ton of clinker	25.4 lb/hour	24-hour rolling CEMS average
VOC [f]	0.12 lb/ton of clinker	15.2 lb/hour	30-day block CEMS average
PSD Preconstruction Review Avoidance – Rule 62-212.400(2)(g), F.A.C.			
Mercury [g]	117.5 pounds per consecutive 12 months		Material Balance
State Rule for Portland Cement Plants – Rule 62-296.407, F.A.C.			
PM (Kiln) [d]	0.3 lb/ton of dry PHFM		Average of three, 1-hour test runs

Pollutant	Emissions Standards	Averaging Time
PM (Clinker Cooler) [d]	0.1 lb/ton of dry PHFM	Average of three, 1-hour test runs
NSPS Subpart F – 40 CFR 60.62 (See Appendix G in Section 4 of this permit for full requirements.)		
PM (Kiln) [c, d]	0.30 lb/ton of dry PHFM	Average of three, 1-hour test runs
	20% opacity	6-minute block average w/COMS
PM (Clinker Cooler) [c, d]	0.10 lb/ton of dry PHFM	Average of three, 1-hour test runs
	10% opacity	6-minute block average
NESHAP Subpart LLL – 40 CFR 63.1343 (See Appendix J in Section 4 of this permit for full requirements.)		
PM [d]	0.30 lb/ton of dry PHFM	Average of three, 1-hour test runs
Opacity [c]	20% opacity	6-minute block average w/COMS
Dioxin/Furan [h]	0.20 ng/dscm (TEQ) @ 7% oxygen	Average of three test runs
THC	50 ppmvd (as propane) @ 7% oxygen	30-day block CEMS average

a. Compliance shall be demonstrated by CO CEMS.

b. Compliance shall be demonstrated by NOx CEMS.

c. Compliance opacity standard shall be demonstrated by COMS and/or EPA Method 9. Opacity shall be based on a 6-minute block average computed from at least one observation (measurement) every 15 seconds. For the COMS, the 6-minute block averages shall begin at the top of each hour.

d. "PHFM" means preheater feed material. Compliance with the particulate matter standard shall be demonstrated based on stack testing conducted in accordance with EPA Method 5. All PM emitted from baghouse exhaust is assumed to be PM10. *{Permitting Note: The BACT standard is equivalent to approximately 0.17 lb of PM per ton of clinker and includes the clinker cooler emissions. The emissions limits for particulate matter and visible emissions imposed by Rule 62-212.400(BACT) are as stringent as or more stringent than the limits imposed by the applicable NSPS or NESHAP provisions. Nevertheless, the BACT requirements do not waive or vary any applicable NSPS or NESHAP monitoring or record keeping requirements.}*

e. Compliance shall be demonstrated by SO2 CEMS.

f. Compliance shall be demonstrated by THC CEMS. VOC emissions shall be measured as total hydrocarbons (THC) and expressed as "propane" for the mass emissions rate. The 30-day block CEMS average shall be consistent with the averaging period specified in 40 CFR 63.1350(h).

g. The total mass of mercury compounds (expressed as Hg) introduced into the pyroprocessing system of the raw mill feed and fuels shall not exceed 117.5 pounds during any consecutive 12-month period. Compliance shall be demonstrated by material balance using the sampling, analysis, and calculation methods.

h. Alternatively, dioxin/furans shall not exceed 0.40 ng/dscm (TEQ) @ 7% oxygen when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less.

In combination with the annual raw material process rate limitation of 1,789,230 tons/year and annual clinker production limitation of 1,055,500 tons/year, the above emissions standards effectively limit annual potential emissions in tons/year (TPY) to: 89 TPY of PM/PM10; 106 TPY of SO2; 1029 TPY of NOx (after year one); 1530 TPY of CO; and 63 TPY of VOC. First year annual NOx emissions could be as high as 1583 TPY.

5. BACT REVIEW – MISCELLANEOUS SOURCES OF PARTICULATE MATTER (PM/PM10)

Primary Crusher

The existing primary crusher (EU-001) and associated conveyors process wet raw materials mined below the water table. This emissions unit is subject to the following applicable requirements: NSPS Subpart A (General Provisions) and NSPS Subpart OOO (Nonmetallic Mineral Processing Plants) in 40 CFR 60. It was originally constructed in accordance with Permit No. PSD-FL-259. The proposed new Kiln No. 2 system will result in an

increase in processing rate and particulate matter emissions. The Department's draft BACT determination for particulate matter emissions is:

- Visible emissions from any crusher, at which a capture system is not used, shall not exceed 15% opacity.
- Visible emissions from any transfer point on belt conveyors or from any other affected facility shall not exceed 10% opacity.

These opacity standards do not apply to truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher. This is consistent with NSPS Subpart OOO requirements.

Miscellaneous PM Sources – Handling/Storage of Raw Materials and Clinker

The proposed project affects the following emissions units: existing raw material processing points (EU-003); new clinker and cement storage and handling points (EU-011); and new raw material processing points (EU-014). These emissions units are subject to the following applicable requirements: NSPS Subpart A (General Provisions) and NSPS Subpart F (Portland Cement Plants) in 40 CFR 60; NESHAP Subpart A (General Provisions) and NESHAP Subpart LLL (Portland Cement Manufacturing Industry) in 40 CFR 63. EU-003 was originally constructed in accordance with Permit No. PSD-FL-259. Each of the emissions points for Emissions Units 011 and 012 will be controlled by a baghouse. The following table summarizes the design parameters for each of the new proposed baghouses.

Table 5A. Baghouse Parameters for Miscellaneous PM Sources

Point No.	Baghouse Point Description	acfm	° F	Moisture	dscfm	grains/dscfm
Emissions Unit 011 – Clinker and Cement Processing						
L-03-02	Clinker pan conveyor	3000	300	2%	2043	0.0085
L-06-02	Clinker silo inlet	11,390	300	2%	7755	0.0085
L-25-02	Gypsum/off-spec. clinker transport	6000	90	2%	5645	0.0085
M-08-02	Clinker silo outlet conveyor	6000	212	2%	4620	0.0085
M-09-02	Gypsum/off-specification clinker silo outlet	4500	90	2%	4234	0.0085
N-09-02	Finish mill separator (1)	128,600	198	3%	100,097	0.0085
N-12-02	Finish mill (2)	35,000	198	4.6%	26,793	0.0085
N-36-02	Fringe cement bin	4000	130	2%	3508	0.0085
N-91-02	Finish mill (3)	6000	200	2%	4704	0.0085
P-03-02	Cement transport conveyor	3000	130	2%	2631	0.0085
P-11-02	Cement silos	10,000	130	2%	8770	0.0085
Q-17-02	Cement truck load out No. 3	3000	130	2%	2631	0.0085
Emissions Unit 014 – Raw Material Processing						
E28-02	Raw mill	3000	300	2%	2043	0.0085
E34-02	Off-spec. feed handling	2000	300	2%	1362	0.0085
G07-02	Homogenizing silo	15,000	200	2%	11,760	0.0085
H08-02	Poldos homogenizing silo	2000	200	2%	1568	0.0085
H08A-02	Hydrated lime silo	2700	140	2%	2328	0.0085
U-05-02	Fly ash silo	2700	140	2%	2323	0.0085

The application indicates that PM_{10} emissions will not exceed 0.0085 grains per dscf of exhaust from each baghouse. The draft permit will include this as a design specification to ensure proper maintenance and replacement of bags. The Department's draft BACT determination for particulate matter emissions is:

Opacity Standards: The following standards apply to each emissions point of Emissions Units 003, 011, and 014 including the finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems. As determined in accordance with EPA Method 9 observations:

a. Visible emissions from each baghouse exhaust point shall not exceed 5% opacity, and

b. Visible emissions from any emissions point not controlled by a baghouse (i.e., conveyors) shall not exceed 10% opacity.

[Rule 62-212.400(BACT), F.A.C.]

Particulate Matter Standard: For Emissions Point N-09-02 of Emissions Unit 011, particulate matter emissions shall not exceed 0.0085 grains/dscf based on a performance test conducted in accordance with EPA Method 5.

A particulate matter emissions standard is being established for Point N-09-02 of Emissions Unit 011 because this emissions point is controlled by the largest baghouse of the group with a design flow rate of nearly 130,000 acfm. The "0.0085 grains/dscf" standard is based on the application and baghouse design specifications. All particulate matter emissions are assumed to be PM_{10}.

Coal Mill and Transfer System

The new coal mill and coal transfer systems (EU-014) are subject to the applicable requirements of NSPS Subpart Y (Coal Preparation Plants) in 40 CFR 60. The following table summarizes the baghouse control systems the applicant proposes to install to reduce particulate matter emissions from these points.

Table 5B. Baghouse Parameters for Coal Mill and Coal Bin

Point No.	Baghouse Point Description	acfm	° F	Moisture	dscfm	grains/dscfm
Emissions Unit 012 – Coal Mill and Coal Transfer System						
S17-02	Coal mill (1 and 2)	25,000	150	6.5%	20,223	0.0085
S21-02	Pulverized coal bin	2000	150	2%	1697	0.0085

The application indicates that PM_{10} emissions will not exceed 0.0085 grains per dscf of exhaust from each baghouse. The draft permit will include this as a design specification to ensure proper maintenance and replacement of bags. The Department's draft BACT determination for particulate matter emissions is:

Particulate Matter Standards: As determined by EPA Method 5, particulate matter emissions from any thermal dryer shall not exceed 0.0085 grains per dscf of exhaust. [Rules 62-212.400(BACT), F.A.C.]

Opacity Standards: As determined by EPA Method 9:

a. Visible emissions shall not exceed 5% opacity from any emissions point controlled by a baghouse.

b. Visible emissions shall not exceed 20% opacity from any coal processing and conveying equipment or coal storage system.

Storage Piles, Paved Roads and Unpaved Roads

The process of manufacturing cement has the potential to emit significant amounts of particulate matter in the form of fugitive dust from sources such as raw materials, coal, petcoke, fly ash, and road dust. Activities that generate fugitive dust include mining, crushing, grinding, dumping, conveying, silo loading/unloading, truck traffic, wind erosion from storage piles, and dusty roads. The applicant mines below the water table, so the raw materials are inherently wet and fugitive dust is greatly minimized throughout the entire process. As previously discussed, crushing, grinding, dumping, conveying, and silo loading/unloading are activities that are confined and controlled by equipment or minimized by work practice standards in accordance with specific regulations. More generally, state regulations (Rule 62-296.320(4)(c), F.A.C.) require operators to take reasonable

precautions to prevent sources of fugitive dust that could be emitted from sources such as stockpiles and roads. The state regulation requires the Department to consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

The following list identifies reasonable precautions that will be taken at the plant to prevent fugitive dust emissions during construction of the new kiln system as well as normal operations.

- Paving and maintenance of access roadways, manufacturing area, parking areas and yards.
- Landscaping or planting of vegetation.
- Confining abrasive blasting where possible.
- Applications of water to control emissions from activities such as demolition of buildings, grading roads, construction, and land clearing.
- Applications of asphalt, water, or dust suppressants to unpaved roads, yards, open stockpiles, and similar activities.
- Storage of all materials at the plant under roof on compacted clay or concrete, or in enclosed vessels.
- Maintaining water supply lines, hoses and sprinklers near all stockpiles of raw materials, coal, and petroleum coke.
- Removal of particulate matter from buildings, roads, and other paved areas under the control of the owner or operator of the facility to prevent particulate from becoming airborne.
- Periodic sweeping with a vacuum sweeper truck to remove dust from paved roads, parking, and other work areas.

The above techniques are commonly used for this industry [7, 8, 9]. The existing plant has already paved the access roadways, manufacturing area, parking areas and yards. Landscaping is planted and water supply lines are available for wetting fugitive dust sources. A vacuum sweeper periodically removes dust from paved roads and areas. The figure shows the existing Kiln No. 1 system, enclosed conveyors, paved manufacture area, paved roadways, roadway curbs, and grass planted along roadway edges. Based on site visits, the existing facility is well maintained and fugitive dust is minimal.

In general, it is difficult to specify the frequency with which to wet materials or sweep roadways. Nearly all of prescribed techniques are most effective when applied as necessary, just before a fugitive dust problem is caused. For example, vacuum sweeping is necessary to remove dust buildup on paved roads. If the sweeping is not conducted often enough, traffic and winds can cause dust emissions. However, the act of vacuum sweeping can also cause particulate matter to become airborne. If performed too frequently, vacuum sweeping is actually less effective and generates dust emissions. Therefore, most of the reasonable precautions listed should be taken as necessary.

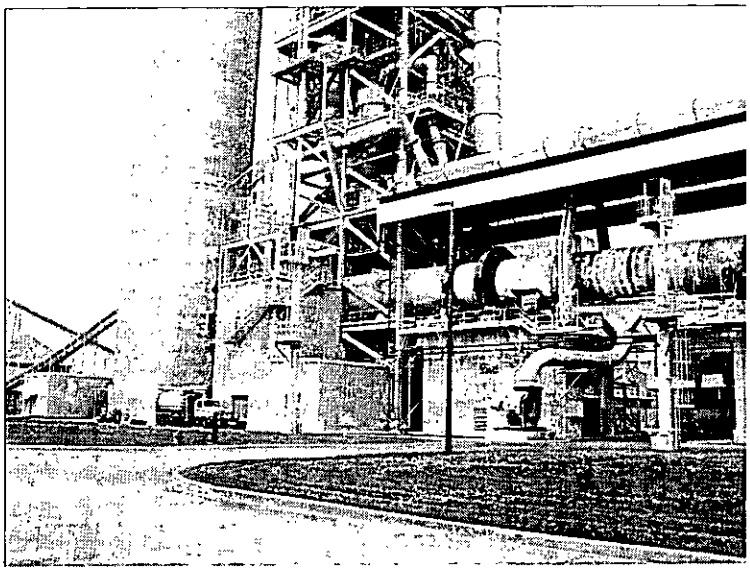

Figure 5A. Grounds at Suwannee American Cement's Existing Plant.

6. AIR QUALITY ANALYSIS REVIEW

Introduction

The proposed project is a major modification to an existing facility and will increase PM_{10}, SO_2, NOx, CO and VOC emissions at levels in excess of PSD significant amounts. PM_{10}, SO_2, and NO_X are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments and significant impact levels defined for them. CO is a criteria pollutant and has only AAQS and significant impact levels defined for it. Emissions of VOC are related to the formation of ozone and are not generally modeled for individual stationary sources. The air quality impact analyses required by the PSD regulations for these pollutants include:

- An analysis of existing air quality for PM_{10}, SO_2, NO_X, CO and VOC;
- A significant impact analysis for PM_{10}, SO_2, NO_X and CO;
- A PSD increment analysis for PM_{10};
- An Ambient Air Quality Standards (AAQS) analysis for PM_{10}; and
- An analysis of impacts on soils, vegetation, and visibility and growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines. Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. A discussion of the required analyses follows.

Analysis of Existing Air Quality in the Vicinity of the Project

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement shall be granted by rule if either of the following conditions is met: the maximum predicted air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimis ambient concentration; or the existing ambient concentrations are less than a pollutant-specific de minimis ambient concentration. If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from the existing representative monitoring data. The background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling. No de minimis ambient concentration is provided for ozone. Instead the net emissions increase of VOC is compared to a de minimis monitoring emission rate of 100 tons per year.

The table below shows project air quality impacts for comparison to de minimis ambient concentrations.

Air Quality Impacts Compared to De Minimis Levels

Pollutant	Averaging Time	Modeled Concentration ($\mu g/m^3$)	Impact Greater than De Minimis?	De Minimis Level ($\mu g/m^3$)
SO_2	24-hr	2	No	13
PM_{10}	24-hr	19	Yes	10
CO	8-hr	54	No	575
NO_2	Annual	0.5	No	14
Ozone	Annual Rate	63 TPY of VOC	No	100 TPY of VOC

As shown in the table SO_2, NO_2 and CO impacts from the project are predicted to be less than the de minimis levels; therefore, preconstruction monitoring is not required for these pollutants. VOC emissions are predicted to be less than the de minimis emission rate; therefore preconstruction monitoring is not required for ozone. As will be shown in the significant impacts section of this evaluation, SO_2 and NO_2 emissions are not predicted to have significant impacts; therefore no further modeling for these pollutants is required, and no background concentrations need to be determined.

However, the table shows that PM10 impacts from the project are predicted to be greater than the corresponding de minimis level. Therefore, the applicant is not exempt from preconstruction monitoring for PM10. The applicant may, instead, satisfy this requirement using previously existing representative data. Previously existing representative monitoring data do exist from PM10 monitors located near the western fence line of the facility in Suwannee County and near Ichetuknee Springs State Park about 6 kilometers away in Columbia County. These monitors were required as part of Suwannee's Kiln 1 construction permit. The following table summarizes the monitoring data.

PM10 Monitor Data for Background Concentrations			
Years	**Monitor Locations**	**Concentration (ug/m^3) High 2nd high 24-hour average**	**Arithmetic Mean Concentration (ug/m^3) Annual Average**
2003 - 2004	Suwannee and Columbia Counties	61	24

The above data is appropriate for fulfilling the monitoring requirement for this pollutant. It will be used as the background concentration in the PM10 analysis with respect to the Ambient Air Quality Standards.

Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses

The air quality models used are those listed in the "Guideline on Air Quality Models" in Appendix W of 40 CFR Part 51.

PSD Class II Area

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing facilities in the surrounding Class II area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features.

A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria. Elevated terrain was not a concern since most of the terrain within 10 kilometers of the site is at about the same elevation as the plant, i.e., in the 55 to 90 feet range above sea level. However, digitized terrain data derived from 30 m DEM data for each applicable USGS quadrangle were used in the ISCST3 modeling.

Modeling was performed by both the applicant and the Department. Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations from the National Weather Service (NWS) stations at Gainesville, Florida and twice-daily upper air soundings from Waycross, Georgia (1992-1994)/Jacksonville, Florida (1995-1996). The 5-year period of meteorological data was from 1992 through 1996. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

PSD Class I Area

The nearest distances of this site from the Okefenokee National Wilderness Area (ONWA), St. Marks National Wilderness Area, Chassahowitzka National Wilderness Area and Bradwell Bay National Wilderness Areas are 82, 110, 133 and 161 kilometers, respectively. Since the PSD Class I areas evaluated for impacts are greater than 50 km from the proposed facility, long-range transport modeling was required for the Class I impact assessments. The California Puff (CALPUFF) dispersion model was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments and the Air Quality Related Values (AQRVs), regional haze and sulfur/nitrate deposition, in the four nearby Class I areas.

CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanisms.

CALPUFF was run in screen mode using extended ISCST3 meteorological input data, which includes precipitation data. The same five years of representative data that were used in the Class II analysis were used as input. These were hourly surface weather observations from the National Weather Service (NWS) stations at Gainesville, Florida and twice-daily upper air soundings from Waycross, Georgia (1992-1994)/Jacksonville, Florida (1995-1996).

Characterization of Sources and Buildings

The proposed major modification consists of a new Kiln No. 2 cement production line consisting of a raw mill, a vertical preheater and calciner, an in-line kiln and clinker cooler, clinker handling and storage, finish mill, and cement storage and load out operations. Other emission increases will occur at a number of existing sources due to increased throughput at the quarry, the primary crusher, conveying, material handling and storage, and roadway traffic. These increases have been considered in the Significant Impact Analysis. In addition, existing Kiln No. 1 sources at the facility were considered in the PM_{10} AAQS analysis and the PM_{10} PSD Class II analysis.

The modeling source inputs consisted of point, volume and area sources. Stack, baghouse vents and other point sources include the existing and proposed main kiln stacks, finish mill stacks, and stacks associated with silos, conveyors, coal bins and truck and rail load out. The roadway sources, which include both paved and unpaved roads, were subdivided into 68 area source segments for the whole facility. Characterization of road sources as area sources is generally more conservative than characterizing them as volume sources. The process-related fugitive sources were characterized as 25 volume sources for the whole facility in the modeling inputs and included stockpiles, quarry conveyors and limestone, sand, iron, ash, gypsum, coal storage sources.

The building configuration at the plant consists of multiple building complexes and many outbuildings used for storage, maintenance, and other support services. Many of these buildings were constructed with their major building axes lying from north to south in keeping with the straight line of operations for the cement line. The exception is various storage areas and buildings as well as the quarry operations and conveying systems which are spread throughout the facility. The dimensions of these buildings and structures were used in the modeling to determine downwash impacts.

The applicant provided the Department with oversized plot plans and electronic files representing the property and all sources, buildings, and fence lines used in the modeling. These plans were overlaid onto a modeling source map showing the spatial coordinates of each point, volume and area source, building and fence line. Using the physical and electronic layouts, the Department was able to verify the accuracy of the modeling input information.

Significant Impact Analysis

Determination of the Significant Impact Area (SIA) was based on modeling of the proposed major modification only. Where predicted concentrations are below the significance levels for a given pollutant, no further modeling is required for that pollutant. A rectangular grid was used with this modeling to evaluate the distance to where highest (high-first-high) short term and long term ambient concentrations fall below the appropriate pollutant significance levels.

Modeling to determine significance in the PSD Class II area in the vicinity of the project was conducted using facility fence line receptors with 50-meter spacing, and multiple Cartesian grids from the fence line out to 10 kilometers at grid spacing varying from 100 meters near the fence line to 1000 meters at the outer extent of the grid. There are over 2000 receptors in the Class II SIA modeling. In the Class II area, the significant impact distance is the critical distance and determines the SIA over which any additional multi-source modeling is required. The SIA is defined as a circular area centered on the proposed source with a radius equal to the critical distance. The SIA, if any, was established for every averaging period of every applicable pollutant for every year of meteorological data. The SIA, for each applicable pollutant, over which NAAQS and increment compliance modeling is performed, is the largest of these areas. The following table shows maximum predicted impacts and the SIA in the Class II area for each applicable averaging period for each pollutant.

Maximum Project Air Quality Impacts for Comparison to the PSD Class II Significant Impact Levels in the Vicinity of the Facility

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Significant Impact? (Yes/No)	SIA (km)
SO_2	Annual	0.1	1	No	None
	24-hr	2	5	No	None
	3-hr	6	25	No	None
PM_{10}	Annual	4	1	Yes	2
	24-hr	19	5	Yes	4
CO	8-hr	54	500	No	None
	1-hr	189	2,000	No	None
NO_2	Annual	0.5	1	No	None

SO_2, NO_2 and CO emissions were determined to have less than significant impacts in the Class II area. Under New Source Review modeling guidance, no further air quality modeling is required for these air pollutants and it is reasonable to conclude that ambient air quality standards and PSD increments for these pollutants will be attained. PM_{10} was determined to have greater than significant impacts in the Class II area. The SIA based on maximum predicted ambient air concentrations of PM_{10} for all periods was 4 km with the maximum predicted impacts located along the southern facility boundary. Therefore, refined dispersion modeling including other sources in the area was required and conducted for PM_{10} to demonstrate compliance with the PSD increments and the AAQS.

Significant impact modeling was also done in the four PSD Class I areas mentioned above. More than 1400 discrete rectangular receptors were placed in these Class I areas for evaluation. Concentrations were predicted using the CALPUFF model in a screening mode. According to federal land manager policy for the use of CALPUFF in the screening mode, receptors were spaced every two degrees in all 360 degrees of the compass regardless of where each Class I area was located with respect to the facility. The receptors were placed at two radii, one of which covered the distance from the facility to the nearest boundary of each Class I area and one at a distance, which is inside the Class I area. If a predicted pollutant concentration or Air Quality Related Values analysis shows impacts greater than the applicable significance level, then further modeling may be requested by

the federal land manager using a fully developed CALMET and CALPUFF analysis containing mesoscale meteorological data, and by using federal land manager specified Class I area receptors in any Class I area of concern.

The following table shows the predicted impacts in the Class I area for each applicable averaging period for each pollutant. The table shows that there is no predicted significant impact due to any pollutant at any of the four nearby Class I areas.

Maximum Project Air Quality Impacts for Comparison to PSD Class I Significant Impact Levels in All Nearby PSD Class I Areas				
Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Significant Impact? (Yes/No)
SO2	Annual	0.004	0.1	No
	24-hr	0.1	0.2	No
	3-hr	0.4	1.0	No
PM10	Annual	0.01	0.2	No
	24-hr	0.12	0.3	No
NO2	Annual	0.02	0.1	No

PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant over a baseline level set in 1977. Refined Class I and II Increment compliance modeling is performed only if the SIA determination modeling indicates that the project would have a significant impact on air quality. The purpose of this increment compliance modeling is to demonstrate that the new sources will not significantly cause or contribute to a violation of a PSD increment.

This modeling involved the sources under review as well as sources from within and near the SIA in the inventory prepared by the Department and the applicant using approved screening techniques for determining the sources to be included in the modeling analysis. These runs were to identify regulatory high receptors, high-first-high for each year for PM10 annual average, and high-second-highest over the five years for the 24-hour average.

The applicant originally submitted a PSD Class II increment analysis based on 50 meter receptor spacing along the fence line. However, the Department requested an updated analysis with receptor spacing of 25 meters along the fence line and an additional requirement that there be receptors no further than 25 meters from either edge of the two proposed haul roads into and out of the facility. The entrance roads were flared at the exit of the property onto Highway 27 to better reflect the configuration of the existing and future roads. Off fence line receptors were located out to 10 km and in the same locations as those in the significant impact analysis, even though the PM10 significant impact area was only 4 kilometers. The results of the PM10 Class II increment analysis are given below and show that the maximum predicted impacts are less than the respective allowable increments.

PSD Class II Increment Analysis				
Pollutant	**Averaging Time**	**Maximum Predicted Impact ($\mu g/m^3$)**	**Impact > Allowable Increment? (Yes/No)**	**Allowable Increment ($\mu g/m^3$)**
PM10	Annual	6.7	No	17
	24-hr	29.8	No	30

The predicted long-term maximum annual impact is well below the allowable increment. The predicted short-term maximum 24-hour impact is just below the allowable increment, and is located on the fence line. This impact is due to stack/point sources in combination with modeled fugitive PM_{10} emissions impacts from haul roads on the property. Stack/point sources contribute slightly more than one-half of the total impact. All of the highest predicted increment impacts are along the fence line. In general, predicted impacts due to the stack/point sources dominate the highest predicted impacts and contribute over 80% of the concentration value in some cases. However, the maximum predicted road impacts at any time are less than 15 ug/m^3, or less than one-half of the allowable increment of 30 ug/m^3. The maximum predicted PM_{10} increment consumption values drop off rapidly with distance from the fence line. The maximum predicted impacts are less than half the 24-hour increment within 700 meters of the fence line.

The Department believes the modeling analysis presented by the applicant is conservative in nature. Roadways were characterized as area sources, which is a generally more conservative approach than characterization as volume sources. Modeled roadway emission rates were based on the maximum vehicular traffic expected to support the maximum potential of the plant to operate at capacity. Stack/point source emission rates were based on the maximum equipment design rates and potential emissions. The main kiln stack was modeled at the applicant's proposed emission rate, which turned out to be approximately 10% higher than the Department's draft BACT determination for PM_{10} emissions.

The capacity of a cement plant is limited by the processing and production capabilities of the pyroprocessing kiln systems. Establishing maximum process and production rates for the kiln systems effectively limits the maximum activities and potential emissions from sources throughout the plant. In addition to the process and production restrictions established for the facility and existing Kiln No. 1 system, the draft permit will contain the following limitations:

- The facility shall (Kiln Line Nos. 1 and 2) not produce more than 2,382,720 tons of portland cement during any consecutive 12 months.
- The process rate of dry preheater feed material (including dry fly ash) to Kiln No. 2 shall not exceed 1,789,230 tons during any consecutive 12 months.
- The clinker production rate of Kiln No. 2 shall not exceed 127 tons per hour (24-hour average) and 1,055,500 tons during any consecutive 12-months.
- The primary raw material crusher shall not process more than 3,450,000 tons of raw materials during any consecutive 12 months.
- For the Kiln No. 2 system, the maximum annual coal processing rate shall not exceed 150,000 tons per consecutive 12 months.

The raw materials are mined below the water table and are processed wet. The inherent moisture content suppresses much of the potential dust emissions during processing. As discussed in the previous section regarding BACT determinations, the existing plant is currently taking numerous reasonable precautions to prevent fugitive dust emissions such as: paving the manufacture and parking areas and most frequently used roads; confining and enclosing conveyors where practicable; storing all materials under roof on compacted clay or concrete, or in enclosed vessels; maintaining water supply lines near all stockpiles of raw materials, coal, and petroleum coke and using as necessary; and periodic sweeping of paved roads with a vacuum sweeper to remove accumulated dust. On site inspections of the plant have shown these mitigation techniques to be effective in controlling fugitive dust at this plant.

Ambient Air Quality Standards (AAQS) Analysis

AAQS compliance modeling was performed for PM_{10} because the SIA determination modeling indicated that the new sources would have a significant impact on air quality. The purpose of AAQS compliance modeling is to demonstrate that the new sources will not cause or contribute to a violation of an AAQS. AAQS compliance

modeling addressed all areas within the SIA. These runs identify regulatory high receptors; high-first-high for each year for PM10 annual average, and high-second-highest over the five years for the 24-hour average.

The applicant originally submitted an AAQS analysis based on 50 meter receptor spacing along the fence line. However, the Department requested an updated analysis with receptor spacing of 25 meters along the fence line and an additional requirement that there be receptors no further than 25 meters from either edge of the two proposed haul roads into and out of the facility. The entrance roads were flared at the exit of the property onto Highway 27 to better reflect the configuration of the existing and future roads. Off fence line receptors were located out to 10 km and in the same locations as those in the significant impact analysis, even though the PM10 SIA was only 4 kilometers.

AAQS compliance modeling involved the sources under review as well as sources from within and near the SIA in the inventory prepared by the Department and the applicant using approved screening techniques. The background concentrations developed from the existing monitoring data discussed earlier were added to the modeled concentrations to determine compliance with the AAQS. The table below gives the results and shows that maximum predicted impacts are less than the AAQS.

Ambient Air Quality Impacts						
Pollutant	**Averaging Time**	**Major Sources Impact ($\mu g/m^3$)**	**Background Concentration ($\mu g/m^3$)**	**Total Impact ($\mu g/m^3$)**	**Total Impact Greater than AAQS**	**Florida AAQS ($\mu g/m^3$)**
PM10	Annual	7.2	24	31.2	No	50
	24-hr	30.6	61	91.6	No	150

Additional Impacts Analysis

Federal Secondary Ambient Air Quality Standards were established to protect the public welfare including the protection of animal and plant life, property, visibility and atmospheric clarity, and the enjoyment of life and property. The U. S. Environmental Protection Agency was directed by Congress to develop primary and secondary ambient air quality standards. The primary standards were to protect human health and the secondary standards were to, "... protect the public welfare from any known or anticipated adverse effects of a pollutant." The public welfare was to include soils, vegetation and visibility.

As a basis for promulgating the air quality standards, EPA undertook studies related to the effects of all major air pollutants and published criteria documents summarizing the results of the studies. The studies included in the criteria documents were related to both acute and chronic effects of air pollutants. Based on the results of these studies, the criteria documents recommended air pollutant concentration limits for various periods of time that would protect against both chronic and acute effects of air pollutants with a reasonable margin of safety.

The facility will not cause or contribute to any exceedance of established ambient air quality standards. The emissions from the facility will result in ambient impacts that are less than significant and are considered to be de minimis, for all regulated pollutants except for PM10.

Impacts on Soils, Vegetation, and Wildlife

The impacts to ambient air resulting from emissions of PM10 are well below the applicable Federal Secondary Ambient Air Quality Standards. Compliance with PSD Class II increments establishes an effective ambient air quality standard that is much more stringent than the ambient air quality standards. It is concluded that there will be no adverse effect to the soils or vegetation of the area. Maximum predicted impacts are less than the critical values established by the federal land manager.

Impact on Visibility

A regional haze analysis was used to assess the potential for a significant increase in regional haze in the four

nearby Class I areas due to this source's projected increase in emissions. A regional haze analysis to determine visibility impacts in these Class I area was required by the Fish and Wildlife Service. The maximum change in background extinction coefficient using CALPUFF in the screening mode is 5.16 percent, which is slightly higher than the criteria value of 5 percent. However, the use of CALPUFF in the screening mode using the 360 degree ring of receptors is conservative. The Department received comments from the U.S. Fish and Wildlife Service (FWS) regarding this project on June 14, 2005 and again and on September 26, 2005. Ultimately, the FWS concluded the following, "Upon examining the information presented, including the amount and type of emissions from this project, the distance to the Class I area, the magnitude of visibility impact, in this specific case, FWS does not anticipate this project will have a significant impact on the three Class I refuges." Predicted regional haze impacts due to a fully developed CALPUFF run would result in a regional haze impact less than the critical value. Therefore, the screening results indicate that the impact of this project on visibility in the Class I area is insignificant.

Class I Deposition Impacts

The applicant did a sulfate/nitrate deposition analysis in the four nearby PSD Class I areas using CALPUFF in the screening mode. The deposition values given by this analysis are compared to a Deposition Analysis Threshold (DAT), which has been developed by the federal land manager. For this project, the predicted deposition values for sulfate and nitrate are less than the DAT and no adverse impacts due to deposition are expected.

Growth-Related Air Quality Impacts

No quantifiable air quality impacts are projected for the area as a result of general commercial, residential, industrial and other growth associated with the facility. The proposed construction will require an increase in personnel at the cement plant. No increase in residential or commercial construction is expected in the area surrounding the plant as a result of this modification. Therefore, no additional growth impacts are expected as a result of the proposed project.

The area the facility will affect is the area of significant impact described in the air quality analysis section of this report. This area is within a radius of 4 kilometers from the proposed facility. The applicant owns a substantial amount of this area. General commercial, residential, and other growth within the radius is expected to continue at approximately the current rate.

Good Engineering Practice Stack Height Determination

A Good Engineering Practice (GEP) review was conducted for each proposed new source to determine if building downwash effects needed to be included in the modeling and to determine the appropriate stack heights to be used with the models. The new stacks will be lower than GEP height; therefore building downwash effects were included in the modeling analyses.

Conclusion

The applicant conducted the required modeling analysis in accordance with EPA-approved regulatory models and methods and Department protocols. Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed in the draft permit, will not cause or significantly contribute to a violation of any AAQS or PSD increment. The Department's consultant on this project, Enviroplan Consulting, reviewed the applicant's air quality modeling analysis and concurred with the Department's conclusion.

7. AVAILABLE INFORMATION

In addition to information provided and referenced in the application, the Department also relied on the following information.

1. "Technical Evaluation and Preliminary Determination" for Suwannee American Cement's project to

increase production capacity; Florida Department of Environmental Protection, Bureau of Air Regulation; February 16, 2005; Project No. 1210465-011-AC (PSD-FL-259F).

2. "SNCR: NOx at U.S. Cement Plant. Is SCR Close Behind?"; Al Linero, P.E.; Florida Department of Environmental Protection; June 2005; Paper #638 Presented at National AWMA Conference in Minneapolis, MN.
3. "What's Up with Cement Permitting?"; Al Linero, P.E.; Florida Department of Environmental Protection; June 2005; Paper #884 Presented at National AWMA Conference in Minneapolis, MN.
4. Blue Circle Home Page. http:/www.cement.bluecircle.co.uk; Teleconference between A.A. Linero (Florida DEP) and W. McLendon (Blue Circle); March 19, 2001; Permission to use modified version of Blue Circle cement process diagram.
5. "BACT: What is Achievable with Today's Technologies"; Mark S. Terry, Krupp Polysius Corporation 2000; Paper in the Conference Proceedings for the International Cement Seminar 2000.
6. "Roanoke Cement PSD Permit"; Heather Jackson (Roanoke Cement Company); June 12, 2003; Engineering Analysis in Support Increasing CO Emission Level
7. "Control of Open Fugitive Dust Sources"; United State Environmental Protection Agency; September 1988; EPA. Document No. EPA-450-3-88-008.
8. "Identification, Assessment, and Control of Fugitive Particulate Emissions"; Prepared for United State Environmental Protection Agency; Midwest Research Institute, Kansas City, MO; August 1986; Document No. PB86-230083.
9. "Reference Document on Best Available Techniques in the Cement and Lime Manufacturing Industries"; European Commission, Directorate-General Joint Research Centre; March 2000.
10. *Air Pollution Engineering Manual*; AWMA, Edited by Anthony J. Bunicore and Wayne T. Davis; Van Nostrand Reinhold, 1992; New York, NY.
11. "Heavy Metals in Cement and Concrete Resulting from Co-incineration of Waste in Cement Kilns with Regard to the Legitimacy of Waste Utilisation"; M. Achternbasch, K.-R. Brautigam, N. Hartlieb, C. Kupsch, U. Richers, P. Stemmermann; Institut fur Technikfolgenabschatung und Sytemanalyse, Institut fur Technische Chemie; October 2003; Forschungszentrum Karlsruhe GmbH, Karlruhe.

8. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Cleve Holladay is the project meteorologist responsible for reviewing the air quality modeling analysis. Bobby Bull and Jeff Koerner are the project engineers responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. *{Filename: TEPD - PSD-FL-352}*

DRAFT PERMIT

PERMITTEE:

Suwannee American Cement, L.L.C.
Branford Cement Plant
5117 US Highway 27
Branford, FL 32008

Authorized Representative:
Tom Messer, Plant Manager

Air Permit No. PSD-FL-352
Project No. 1210465-014-AC
New Kiln Line No. 2 System
Permit Expires: *{3 Years from Final}*

FACILITY AND LOCATION

Suwannee American Cement, LLC operates an existing portland cement manufacturing plant (SIC No. 3241), which is located at 5117 US Highway 27 in Suwannee County, Florida. The UTM coordinates are: Zone 17; 321.4 km E and 3315.9 km N.

STATEMENT OF BASIS

This permit authorizes the construction of a second dry process, preheater/precalciner kiln system with in-line raw mill at the existing plant. The 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 perform the proposed work 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.

(DRAFT)

Michael G. Cooke, Director
Division of Air Resources Management

Effective Date: _____

FACILITY DESCRIPTION

The existing facility consists of a portland cement manufacturing plant, the associated quarry, and raw material and cement handling operations. The plant combines raw materials and utilizes a preheater/calciner kiln system with inline mill to produce cement clinker. The clinker is milled and combined with gypsum to produce portland cement. The existing plant has a capacity of 210 tons per hour of dry preheater feed materials, 120 tons per hour of clinker production, and 150 tons per hour of portland cement production. Annual production is limited to the following 12-month rolling totals: 1,648,578 tons per year of dry preheater feed materials; 965,425 tons per year of clinker production; and 1,191,360 tons per year of portland cement production. Fuel authorized for the pyroprocessing system includes natural gas, coal, petroleum coke, and whole or chipped tires. The plant also operates a coal processing operation to crush coal and petroleum coke with a monthly processing capacity of 13,360 tons of coal and/or petroleum coke, combined. The plant uses Selective Non-Catalytic Reduction (SNCR) to control NOx emissions from the existing pyroprocessing system.

REGULATORY CLASSIFICATION

Title III: The cement plant is a major source of hazardous air pollutants (HAP).

Title IV: The cement plant operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The cement plant is a Title V major source in accordance with Chapter 213, F.A.C.

PSD: The cement plant is a PSD-major facility in accordance with Rule 62-212.400, F.A.C. The proposed project is a major PSD modification.

NSPS: Portions of the cement plant are subject to the following New Source Performance Standards (NSPS) in 40 CFR 60: Subpart A (General Provisions); Subpart F (Portland Cement Plants); Subpart Y (Coal Preparation Plants); and Subpart OOO (Non Metallic Mineral Processing).

NESHAP: Portions of the cement plant are subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63: Subpart A (General Provisions); and Subpart LLL (Portland Cement Manufacturing Industry).

State Rules: The cement plant is subject to state Rule 62-296.407, F.A.C. (Portland Cement Plants).

PROJECT DESCRIPTION

This permit authorizes the construction of a new cement manufacturing line (Kiln Line No. 2) at the existing facility. The project will affect the following existing and new emissions units.

ID No.	Emissions Unit Description
001	(Existing) Primary crusher and associated belt conveyors
003	(Existing) Raw material processing with unenclosed conveyor transfer points - D conveyors
009	(Existing) Unenclosed coal conveying equipment - S Conveyors
011	(New) Clinker and cement handling and storage with baghouse controls for miscellaneous emissions points
012	(New) Coal mill and coal transfer system with baghouse controls for emissions points
013	(New) Dry process preheater/precalciner rotary kiln with in-line raw mill
014	(New) Raw material handling and storage with baghouse controls for miscellaneous emissions points
015	(New) Fugitive dust from storage piles, paved roads, and unpaved roads

Kiln Line No. 2 will have the following capacities: 215 tons per hour of dry preheater feed materials; 127 tons per hour of clinker production; and 175 tons per hour of portland cement production. The permit limits annual

clinker production from Kiln Line No. 2 to no more than 1,055,500 tons during any consecutive 12 months. This project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), sulfur dioxide (SO_2), and volatile organic compounds (VOC). The permit includes emissions standards and work practices that represent determinations of the Best Available Control Technology (BACT) for each of these pollutants.

NOx emissions from the pyroprocessing system will be controlled with a Selective Non-Catalytic Reduction (SNCR) system. Particulate matter emissions from the kiln system will be controlled by a single baghouse control system. Authorized fuels for the pyroprocessing system include natural gas, fuel oil, on specification used oil fuel, coal, petroleum coke, and tires (whole, chipped, or gasified tires). The plant will also include a coal processing operation designed to crush coal and petroleum coke with an annual processing capacity of 150,000 tons per year of coal and/or petroleum coke.

CONTENTS

RELEVANT DOCUMENTS

The permit application, additional information received to make it complete, and the Department's Technical Evaluation and Preliminary Determination are not a part of this permit; however, this information is specifically related to the permitting action and is on file with the Department.

1. Permitting Authority: All documents related to PSD applications for permits to construct or modify emissions units shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. All documents related to applications for permits to construct minor sources of air pollution or to operate the facility shall be submitted to the Air Resources Section of the Department's Northeast District Office at 7825 Baymeadows Way, Suite 200-B, Jacksonville, FL 32256-7590.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the Department's Northeast District Office at 7825 Baymeadows Way, Suite 200-B, Jacksonville, FL 32256-7590.

3. Appendices: The following appendices are attached as a part of this permit: Appendix A (Citation Formats); Appendix B (General Conditions); Appendix C (Common State Rules); Appendix D (Used Oil Fuel Requirements); Appendix E (Summary of Final BACT Determinations); Appendix F (Quarterly Upset Report); Appendix G (NSPS Subpart F Provisions - Portland Cement Plants); Appendix H (NSPS Subpart Y Provisions – Coal Preparation Plants); Appendix I (NSPS Subpart OOO Provisions – Nonmetallic Mineral Processing Plants); and Appendix J (NESHAP Subpart LLL Provisions – Portland Cement Manufacturing Industry).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and Title 40 of the Code of Federal Regulations (CFR) adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. 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 permittee 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. Construction and Expiration: The permit expiration date includes sufficient time to complete construction, perform required testing, submit test reports, and submit an application for a Title V operation permit to the Department. Approval to construct shall become invalid for any of the following reasons: construction is not commenced within 18 months after issuance of this permit; construction is discontinued for a period of 18 months or more; or construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. In conjunction with an extension of the 18-month period to commence or continue construction (or to construct the project in phases), the Department may require the permittee to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for emissions units regulated by the project. For good cause, the permittee may request that this PSD 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, 62-210.300(1), and 62-212.400(6)(b), F.A.C.; 40 CFR 52.21(r)(2); 40 CFR 51.166(j)(4)]

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. Relaxations of Restrictions on Pollutant Emitting Capacity. If a previously permitted facility or modification becomes a facility or modification which would be subject to the preconstruction review

requirements of this rule if it were a proposed new facility or modification solely by virtue of a relaxation in any federally enforceable limitation on the capacity of the facility or modification to emit a pollutant (such as a restriction on hours of operation), which limitation was established after August 7,1980, then at the time of such relaxation the preconstruction review requirements of this rule shall apply to the facility or modification as though construction had not yet commenced on it. [Rule 62-212.400(2)(g), F.A.C.]

8. 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. [Rule 62-4.030 and Chapters 62-210 and 62-212, F.A.C.]

9. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. 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. The application shall be submitted to the Air Resources Section of the Department's Northeast District Office at 7825 Baymeadows Way, Suite 200-B, Jacksonville, FL 32256-7590. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. Kiln Line No. 2 System

The following specific conditions apply to the following emissions units after construction:

ID No.	Emissions Unit Description
013	Kiln Line No. 2 – Dry process preheater/precalciner rotary kiln with in-line raw mill

{Permitting Note: This emissions unit is subject to the following applicable requirements: NSPS Subpart A (General Provisions) and NSPS Subpart F (Portland Cement Plants) in 40 CFR 60; NESHAP Subpart A (General Provisions) and NESHAP Subpart LLL (Portland Cement Manufacturing Industry) in 40 CFR 63; and Rule 62-296.407, F.A.C. (Portland Cement Plants). This unit is also subject to the Best Available Control Technology (BACT) requirements in Rule 62-212.400, F.A.C. as specified in this section.}

PERFORMANCE REQUIREMENTS

1. Kiln Line No. 2: The permittee is authorized to install a second pyroprocessing system consisting of a dry process pre-heater/precalciner rotary kiln with in-line raw mill, clinker cooler, air heater (associated with raw mill), exhaust stack and other ancillary equipment subject to the capacities and maximum process rates specified in this permit. All exhaust from the pyroprocessing system (including the air heater) shall be controlled by a single baghouse and shall pass through a single stack (Emissions Point No. 2K-06). *{Permitting Note: The exhaust stack will be no more than 9.42 feet in diameter and no less than 315 feet tall.}* [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; Application No. 1210465-014-AC]
2. Hours of Operation: The hours of operation for this emissions unit are not limited (8760 hours per year). [Rule62-210.200(PTE), F.A.C.]
3. Facility Portland Cement Production: The facility shall (Kiln Line Nos. 1 and 2) not produce more than 2,382,720 tons of portland cement during any consecutive 12 months. [Rule 62-4.070(3), 62-212.200(PTE), and 62-212.400(BACT), F.A.C.]
4. Kiln Process and Production Rate Limitations: The dry preheater feed material rate (including dry fly ash) to the kiln shall not exceed 1,789,230 tons during any consecutive 12 months. The clinker production rate of the kiln shall not exceed 127 tons per hour (24-hour rolling average) and 1,055,500 tons during any consecutive 12-months. The clinker production rate shall be determined by the following equation:

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

   Where:

   - Kiln Feed as determined by Poldos control system
   - "Fly Ash Injection" as determined from the rotary feed system or equivalent.
   - The "Kiln Feed LOI Factor" and the "Fly Ash LOI Factor" shall be 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.

   {Permitting Note: For reference, the kiln will be designed to process approximately 215 tons per hour of dry preheater feed material (including dry fly ash) through the kiln.} [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; Application No. 1210465-014-AC]
5. Authorized Fuels: The maximum heat input rate to the pyroprocessing system (kiln and calciner) shall not exceed 364 MMBtu per hour. Only the following authorized fuels shall be fired: coal, petroleum coke, fly ash, gasified tires, whole or chipped tires, natural gas, distillate oil, and/or on-specification used oil fuel.
   a. The permittee is authorized to install a tire gasification system with an airlock on the feed mechanism. The maximum heat input rate from gasified tires shall not exceed 40% of the total pyroprocessing heat input rate (kiln and calciner) and shall not exceed 146 MMBtu per hour at any time. The remaining 60% of the total pyroprocessing heat input rate shall come from other authorized fuels. The permittee shall provide details of the gasifier system within 30 days of finalizing the design.

b. The maximum heat input rate from firing whole or chipped tire derived fuel (TDF) shall not exceed 15% of the total pyroprocessing heat input rate (kiln and calciner) and shall not exceed 54.6 MMBtu per hour at any time. The remaining 85% of the total pyroprocessing heat input rate shall be from the firing of other authorized fuels. TDF shall be directly fed into the kiln system at the transition section between the base of the calciner and the point where gases exit the kiln. The tire feed mechanism shall be designed with an airlock/gate system. Tires shall be stored, handled and managed in accordance with the provisions of Chapter 62-711, F.A.C.

c. The firing of "on-specification" used oil fuel shall not exceed 1000 gallons per hour and 1,500,000 gallons during any consecutive 12 months. See Appendix D for "on-specification" used oil fuel requirements.

d. Fly ash may be introduced as a raw material supplement or a fuel through either the preheater tower of directly into the calciner. *{Permitting Note: "Fly ash" may consist of fly or bottom ash from a power plant.}*

e. The air heater shall fire only natural gas with a design maximum heat input rate of 32 MMBtu per hour.

The permittee may submit an application for an air construction permit requesting authorization to fire other additional fuels (non-hazardous solids and liquids) in the pyroprocessing system (kiln and calciner). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; Application No. 1210465-014-AC]

6. Prohibited Fuels and Materials: The owner or operator shall not introduce into any part of the process or emission control equipment (i.e., staged combustion in calciner) any of the following fuels and materials: hazardous wastes; petroleum contaminated soil or materials; oil, used oil, or solid fuels other than those allowed by this permit; or solid wastes other than tires as allowed by this permit. [Rule 62-4.070(3), F.A.C.]

7. Cement Kiln Dust: Cement kiln dust shall be recirculated in the process and shall not be directly discharged from process or emission control equipment unless authorized by the Department. Cement kiln dust removed from process equipment during maintenance and repair shall be confined and controlled at all times and shall be managed in accordance with the applicable provisions of 40 CFR 261. [Rule 62-4.070(3), F.A.C.]

8. Emissions Controls

a. *Nitrogen Oxides (NOx)*: The kiln system design shall incorporate staged combustion in the calciner (SCC) to reduce NOx emissions. An ammonia-based Selective Non-Catalytic Reduction (SNCR) system shall be installed to further control NOx emissions. The SNCR system consists of an ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Ammonia solutions (i.e., 19% ammonia, urea, etc.) shall be injected at a location with an appropriate temperature profile to support the SNCR process. To prevent excessive ammonia slip, the ammonia injection rate shall not exceed a NH_3/NO_x molar ratio of 1.0. The Title V air operation permit shall specify a maximum ammonia injection rate (gph) that represents a NH_3/NO_x molar ratio of less than 1.0. SCC and/or SNCR shall be used to achieve the NOx emissions standards specified in this permit.

b. *Particulate Matter (PM/PM10)*: The permittee shall install a baghouse control system to remove particulate matter emissions from the exhaust gas stream (kiln/raw mill/clinker cooler) to achieve the PM/PM_{10} emissions standards specified in this permit.

c. *Sulfur Dioxide (SO_2)*: The owner or operator shall control SO_2 emissions through design and control of the clinker production process. In addition, the owner or operator shall install a hydrated lime injection system to reduce SO_2 emissions. The hydrated lime injection system shall be used as necessary to achieve the SO_2 emissions standards specified in this permit.

d. *Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)*: The owner or operator shall control CO and VOC emissions through design and control of the combustion process with good operating practices.

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

9. O&M Plan for Baghouse: The permittee shall prepare an operation and maintenance (O&M) plan to address the schedule for inspection and preventive maintenance of the baghouse control system. The O&M plan shall be submitted to the Compliance Authority prior to expiration of this permit. The permittee shall maintain records of the condition of the control equipment for each inspection and any maintenance activities performed. [Rule 62-4.070(3), F.A.C.]

EMISSION LIMITATIONS AND PERFORMANCE STANDARDS

10. Kiln Line No. 2: Emissions from the pyroprocessing system (including emissions from the air heater) shall not exceed the following emissions standards.

Pollutant	Emissions Standards		Averaging Time
Best Available Control Technology (BACT) - Rule 62-212.400(6), F.A.C.			
CO [a]	2.90 lb/ton of clinker	368.3 lb/hour	30-day rolling CEMS average
NOx [b]	1.95 lb/ton of clinker	247.7 lb/hour	30-day rolling CEMS average
NOx [b] (Initial Startup)	(3.0 lb/ton of clinker)	(381.0 lb/hour)	(30-day rolling CEMS average)
PM/PM10 [c, d]	0.10 lb/ton of dry PHFM	21.5 lb/hour	Average of three, 1-hour test runs
	10% opacity		6-minute block average w/COMS
SO2 [e]	0.20 lb/ton of clinker	25.4 lb/hour	24-hour rolling CEMS average
VOC [f]	0.12 lb/ton of clinker	15.2 lb/hour	30-day block CEMS average
PSD Preconstruction Review Avoidance – Rule 62-212.400(2)(g), F.A.C.			
Mercury [g]	117.5 pounds per consecutive 12 months		See permit Condition No. 19.
State Rule for Portland Cement Plants – Rule 62-296.407, F.A.C.			
PM (Kiln) [d]	0.3 lb/ton of dry PHFM		Average of three, 1-hour test runs
PM (Clinker Cooler) [d]	0.1 lb/ton of dry PHFM		Average of three, 1-hour test runs
NSPS Subpart F – 40 CFR 60.62 (See Appendix G in Section 4 of this permit for full requirements.)			
PM (Kiln) [h]	0.30 lb/ton of dry PHFM		Average of three, 1-hour test runs
	20% opacity		6-minute block average w/COMS
PM (Clinker Cooler) [h]	0.10 lb/ton of dry PHFM		Average of three, 1-hour test runs
	10% opacity		6-minute block average
NESHAP Subpart LLL – 40 CFR 63.1343 (See Appendix J in Section 4 of this permit for full requirements.)			
PM [i]	0.30 lb/ton of dry PHFM		Average of three, 1-hour test runs
Opacity [i]	20% opacity		6-minute block average w/COMS
Dioxin/Furan [i, j]	0.20 ng/dscm (TEQ) @ 7% oxygen		Average of three test runs
THC [i]	50 ppmvd (as propane) @ 7% oxygen		30-day block CEMS average

a. Compliance shall be demonstrated by CO CEMS.

b. Compliance shall be demonstrated by NOx CEMS. For an "initial startup" period, NOx emissions shall not exceed 3.0 lb/ton of clinker (381.0 lb/hour) based on a 30-day rolling average. The "initial startup" period shall begin after initial certification of the NOx CEMS and shall end when any of the following conditions are met:

1) The Kiln Line No. 2 system produces 75,000 tons of clinker or more in any 30-day rolling period.

2) The Kiln Line No. 2 system produces 150,000 tons of clinker.

3) 365 days calendar days elapse after initial certification of the NOx CEMS.

After the "initial startup" period ends, NOx emissions shall not exceed 1.95 lb/ton of clinker (247.7 lb/hour) based on a 30-day rolling average. These requirements do not waive or vary any applicable NSPS or NESHAP monitoring or record keeping requirements.

c. Compliance opacity standard shall be demonstrated by COMS and/or EPA Method 9. Opacity shall be based on a 6-minute block average computed from at least one observation (measurement) every 15 seconds. For the COMS, the 6-minute block averages shall begin at the top of each hour.

d. "PHFM" means preheater feed material. Compliance with the particulate matter standard shall be demonstrated based on stack testing conducted in accordance with EPA Method 5. All PM emitted from baghouse exhaust is assumed to be PM_{10}. *{Permitting Note: The BACT standard is equivalent to approximately 0.17 lb of PM per ton of clinker and includes the clinker cooler emissions. The emissions limits for particulate matter and visible emissions imposed by Rule 62-212.400(BACT) are as stringent as or more stringent than the limits imposed by the applicable NSPS or NESHAP provisions. Nevertheless, the BACT requirements do not waive or vary any applicable NSPS or NESHAP monitoring or record keeping requirements.}*

e. Compliance shall be demonstrated by SO_2 CEMS.

f. Compliance shall be demonstrated by THC CEMS. VOC emissions shall be measured as total hydrocarbons (THC) and expressed as "propane" for the mass emissions rate. The 30-day block CEMS average shall be consistent with the averaging period specified in §63.1350(h).

g. The total mass of mercury compounds (expressed as Hg) introduced into the pyroprocessing system of the raw mill feed and fuels shall not exceed 117.5 pounds during any consecutive 12-month period. Compliance shall be demonstrated using the sampling, analysis, and calculation methods specified in permit Condition No. 19.

h. See Appendix G of this permit for the NSPS Subpart F requirements.

i. See Appendix J of this permit for the NESHAP Subpart LLL requirements.

j. Alternatively, dioxin/furans shall not exceed 0.40 ng/dscm (TEQ) @ 7% oxygen when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less.

{Permitting Note: In combination with the annual raw material process rate limitation of 1,789,230 tons per year and annual clinker production limitation of 1,055,500 tons per year, the above emissions standards effectively limit annual potential emissions to: 89 tons/year of PM/PM_{10}; 106 tons/year of SO_2; 1029 tons/year of NOx (after year one); 1530 tons/year of CO; and 63 tons/year of VOC. Note that first year annual NOx emissions could be as high as 1583 tons/year.} [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

11. Excess Emissions: Continuous monitoring data collected during periods of startup, shutdown, and malfunction may be excluded from the compliance demonstrations only in accordance with the following requirements, provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions are minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., the following conditions replace the provisions in Rule 62-210.700(1), F.A.C.

a. *Definitions*: "Startup" means the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions. "Shutdown" means the cessation of the operation of an emissions unit for any purpose. "Malfunction" means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

b. *CO Data*: Each 30-day rolling average shall include all periods of operation (including startup,

shutdown, and malfunction), but may exclude limited periods due to equipment malfunctions. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to equipment malfunctions. Malfunctions do not include process upsets that occur as a normal part of cement production.

c. *NOx Data*: Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to malfunctions of the SNCR system, which are defined as any unavoidable mechanical and/or electrical failure that prevents introduction of ammonia-based solutions into the kiln system. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to malfunctions of the SNCR system.

d. *SO_2 Data*: Each 24-hour rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to malfunctions of the hydrated lime system, which are defined as any unavoidable mechanical and/or electrical failure that prevents introduction of lime into the kiln system. No more than 30 hours of data in any calendar month shall be excluded from the compliance determinations due to malfunctions of the hydrated lime system.

e. *Other Data*: All opacity and VOC data shall be included in the compliance determination.

Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such reasonably preventable emissions shall be included in any CEMS compliance determinations. All valid emissions data (including data collected during startup, shutdown and malfunction) shall be used to report emissions for the Annual Operating Report.

[Rules 62-210.200, 62-212.400(BACT) and 62-210.700, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

12. Continuous Emission Monitoring Systems (CEMS): The permittee shall install, calibrate, operate and maintain CEMS to measure and record concentrations of CO, NOx, SO_2, and VOC in the kiln system exhaust stack in a manner sufficient to demonstrate continuous compliance with the emissions standards specified in this permit. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting initial performance tests. The permittee shall notify the Compliance Authority within one working day of discovering emissions in excess of a CEMS standard subject to the specified averaging period. Each monitoring system shall be installed, calibrated, and properly functioning prior to the initial stack tests.

a. *CO Monitor.* A monitor shall be installed to determine CO emissions from the stack and shall meet the requirements of Performance Specification 4 or 4A in Appendix B of 40 CFR 60. The required RATA tests shall be performed using EPA Method 10 in Appendix A of 40 CFR 60. Quality assurance procedures shall conform to the requirements of Appendix F in 40 CFR 60.

b. *NOx Monitor.* A monitor shall be installed to determine NOx emissions from the stack and shall meet the requirements of Performance Specification 2 in Appendix B of 40 CFR 60. The required RATA tests shall be performed using EPA Method 7E in Appendix A of 40 CFR 60. Quality assurance procedures shall conform to the requirements of Appendix F in 40 CFR 60.

c. *SO_2 Monitor.* A monitor shall be installed to determine SO_2 emissions from the stack and shall meet the requirements of Performance Specification 2 in Appendix B of 40 CFR 60. The required RATA tests shall be performed using EPA Method 6C in Appendix A of 40 CFR 60. Quality assurance procedures shall conform to the requirements of Appendix F in 40 CFR 60.

d. *VOC Monitor.* A monitor shall be installed to determine THC emissions from the stack and shall meet

the requirements of NESHAP Subpart LLL in 40 CFR 63 (§63.1349 and §63.1350). The THC monitor shall include provisions to determine the moisture content of the exhaust gas and an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). An oxygen monitor shall also be installed at the THC monitor location to correct measured THC emissions to the required oxygen concentration.

e. *Emissions Data.* Each CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour. Each 1-hour block average shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel (or produced clinker) during that quadrant of an hour. Notwithstanding this requirement, a 1-hour average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data and the 1-hour block average is not valid. Hours during which there is no kiln feed and no fuel fired are not valid hours. The CEMS shall express emissions in units of "pounds per ton of clinker produced" and "pounds per hour". THC emissions data shall also be expressed as "ppmvd (as propane) @ 7% oxygen".

f. *Emissions Averaging Periods.*

1) SO_2: Each 24-hour rolling average shall be the arithmetic average of the last 24 valid hourly averages. A new 24-hour rolling average shall be recomputed after every valid hour of operation for the new hour and the preceding 23 valid operating hours.

2) CO and NOx: Each 30-day rolling average shall be the arithmetic average of all valid hourly averages collected during the last 30 operating days. A new 30-day rolling average shall be recomputed after every day of operation for the new day and the preceding 29 operating days.

3) VOC: Each 30-day block average shall be the arithmetic average of all valid emissions data collected during the 30-day block of operation. Emissions data shall be collected at least once each minute of operation. A new 30-day block average shall be recomputed based on 30 new days of operation. This averaging period applies only to VOC emissions and shall be consistent with the averaging period specified in §63.1350(h) for THC emissions.

g. *Data Exclusion.* Except for monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, each CEMS shall monitor and record emissions during all operations including episodes of startups, shutdowns, and malfunctions. Limited amounts of CEMS emissions data recorded during some of these episodes may be excluded from the corresponding compliance demonstration as provided by Condition No. 11 in this section. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable.

h. *Availability.* Monitor availability for each CEMS shall be 95% or greater in any calendar quarter. Monitor availability shall be reported in the quarterly excess emissions report. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Compliance Authority.

CEMS are also subject to the General Provisions specified in Subpart A of 40 CFR 60 (CO, NOx, and SO_2) and Subpart A of 40 CFR 63 (THC/VOC). [Rules 62-4.070(3), 62-210.800, 62-212.400(BACT) and 62-297.520, F.A.C.]

13. Flow Monitoring: To support the CEMS monitoring data, a monitor shall be installed to determine the representative stack exhaust flow rate in accordance with Performance Specification No. PS-6 (Specifications and Test Procedures For Continuous Emission Rate Monitoring Systems in Stationary Sources) in Appendix B of 40 CFR 60. [Rules 62-4.070(3), F.A.C.; Appendix B in 40 CFR 60]

14. Continuous Opacity Monitoring System (COMS): A COMS shall be installed, calibrated, operated, and maintained in the kiln system exhaust stack after the baghouse in a manner sufficient to demonstrate continuous compliance with the opacity standards specified in this permit. The COMS shall meet the applicable requirements of §63.1350: [NESHAP Subpart LLL in 40 CFR 63]

15. CEMS/COMS Certification and Initial Startup: Each CEMS/COMS required by this permit shall be installed prior to startup. Within 60 calendar days of achieving an average daily clinker production rate of 105 tons per hour, but no later than 180 calendar days after initial startup, the owner or operator shall certify each CEMS/COMS. Upon certification of each CEMS/COMS, the owner or operator shall demonstrate compliance with all applicable standards as specified in this permit. [Rules 62-4.070(3), 62-210.800, 62-212.400(BACT) and 62-297.520, F.A.C.; 40 CFR 60.7(a), 60.13(b) and Appendix B; and 40 CFR 63.7(a)(2)]

16. Baghouse Temperature Monitor: A continuous temperature monitor shall be installed, calibrated, operated, and maintained at the inlet to the baghouse for the kiln system exhaust in accordance with the requirements of §63.1350(f). [NESHAP Subpart LLL in 40 CFR 63]

17. Ammonia Injection: A monitoring system to continuously monitor and record the ammonia injection rate of the SNCR system (1-hour block averages) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

18. Continuous Monitor Data Retrieval System: At its sole expense, the owner or operator shall:

    a. Ensure all of the CEMS are operational, recording and continuously transmitting available data to the Compliance Authority.

    b. Provide the Compliance Authority with one personal computer equipped with a modem and software (as necessary), and corresponding hardware at the owner's facility, to enable the Compliance Authority at any time to connect to the CEMS and access the following: emissions data from the continuous monitors for CO, NOx, SO_2, and VOC expressed in terms of the units of the emission limiting standards of this permit; opacity data from the COMS; temperature data from the monitor at the inlet to the baghouse for the in-line kiln/raw mill system; ammonia injection rate data from the continuous monitor for the SNCR system; dry preheater feed material rate data; and clinker production rate data. The computer and software shall also: provide a numerical and graphical display of these data in real time pursuant to the averaging requirements of this permit; allow the Compliance Authority to electronically store, retrieve, and print such data; and allow the Compliance Authority to review the exception log for any previous period of time accessible through the continuous monitor data management system.

    c. Post emissions to an Internet web site, accessible to the Compliance Authority and public at any time via standard Internet browser software, the following data on a real-time basis: emissions data from the continuous monitors for CO, NOx, SO_2, and VOC expressed in terms of the units of the emission limiting standards of this permit; opacity data from the COMS; temperature data from the monitor at the inlet to the baghouse for the in-line kiln/raw mill system; and ammonia injection rate data from the continuous monitor for the SNCR system.

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

COMPLIANCE TESTING REQUIREMENTS

19. Mercury Compliance Demonstration: The owner or operator shall demonstrate compliance with the mercury throughput limitation by material balance and maintaining records of the monthly and rolling 12-month mercury throughput. Samples of the raw mill feed, fly ash and all fuels shall be collected each day. A single composite daily sample shall be made from all samples collected during a day. A monthly composite sample shall be made from each of the daily composite samples. Each monthly composite sample shall be analyzed to determine the representative mercury concentration for the month. The analytical methods used to determine mercury concentration shall be EPA or ASTM methods such as EPA Method 7471A (Mercury in Solid or Semisolid Waste). No other methods may be used unless prior written approval is received from the Department. For samples with levels below the detection limit, the permittee shall report the detection limit as the corresponding level. For each composite sample, the mercury throughput rate (pounds per month) shall be the product of the mercury concentration from the monthly composite sample and the corresponding monthly processing rate. For each month, the mass of mercury introduced into the pyroprocessing system (pounds per month) shall be the sum of the monthly mercury throughput rates for the raw mill feed, fly ash and fuel. The consecutive 12-month mercury throughput rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of mercury per consecutive 12-months). Such records, including calculations and data, shall be completed no later than 25 days following the month of the records. [Rules 62-4.070(3) and 62-212.400(2)(g), F.A.C.]

20. Test Methods: Any required stack tests shall be performed in accordance with the following methods.

EPA Method	Description of Method and Comments
1 - 4	Determination of Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content *Methods shall be performed as necessary to support other methods.*
5	Measurement of Particulate Matter Emissions *The minimum sample volume shall be 30 dry standard cubic feet.*
6C	Measurement of SO2 Emissions (Instrumental)
7E	Measurement of NOx Emissions (Instrumental) *NOx emissions testing shall be conducted with the air heater operating at the highest heat input possible during the test.*
9	Visual Determination of the Opacity
10	Measurement of Carbon Monoxide Emissions (Instrumental) *The method shall be based on a continuous sampling train.*
19	Calculation Method for NOx, PM, and SO2 Emission Rates
23	Measurement of Dioxin/Furan Emissions
25A	Measurement of Gaseous Organic Concentrations (Flame Ionization – Instrumental)

The methods are specified in Appendix A of 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. Tests shall be conducted in accordance with the appropriate test method and the applicable requirements specified in Appendix C of this permit, NSPS Subparts A and F in 40 CFR 60, and NESHAP Subparts A and LLL in 40 CFR 63. [Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

21. Initial and Subsequent Tests

    a. *Pollutants*: In accordance with the test methods specified in this permit, the kiln system exhaust stack shall be tested to demonstrate compliance with the emission standards for particulate matter and dioxins/furans. Compliance with the permit standards for opacity and emissions of CO, NOx, SO_2, and

VOC shall be demonstrated with data collected from the required continuous monitoring systems. Compliance with the mercury throughput limitation shall be demonstrated in accordance with the sampling, analysis, and record keeping requirements specified in Condition No. 19 of this permit. The permittee shall provide the Compliance Authority with any initial emissions performance tests conducted to satisfy vendor guarantees.

b. *Deadline for Tests*: Initial compliance stack tests shall be conducted within 60 days after achieving a daily average clinker production rate of 105 tons per hour, but not later than 180 days after the initial startup. Subsequent annual compliance stack tests for particulate matter shall be conducted during each federal fiscal year (October 1st to September 30th). Subsequent dioxins/furans tests shall be conducted in accordance with the provisions of §63.1349 and Condition No. 22 of this subsection.

c. *Test Conditions*: Initial tests shall be conducted between 90% and 100% of permitted capacity; otherwise, this permit shall be modified to reflect the true maximum capacity as constructed. Subsequent annual tests shall be conducted between 90% and 100% of permitted capacity in accordance with the requirements of Rule 62-297.310(2), F.A.C. Tests shall be conducted for each required pollutant under the fuel scenario representing the highest potential for generating emissions. In general, this fuel scenario is firing coal as the primary fuel and firing tires, petroleum coke, and fly ash as secondary fuels. If a secondary fuel listed above is not available at the time of testing, tests shall be based on the fuels that are available. If a secondary fuel is added later, additional tests shall be conducted with that fuel scenario within 60 days of first fire of the new secondary fuel.

d. *Monitoring Data*: CEMS and COMS data shall be reported and summarized for each required test run.

[Rules 62-212.400(5)(c) and 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]

22. Supplemental Dioxin/Furan and PM/PM10 Tests: The owner or operator shall notify the Compliance Authority prior to initiating any significant change in the feed or fuel used in the most recent satisfactory compliance performance test for dioxin/furan or PM/PM10. For purposes of this condition, significant means any of the following: a physical or chemical change in the feed or fuel; the use of a raw material not previously used; a change in the LOI of the fly ash; a change between non-beneficiated fly ash and beneficiated fly ash. Based on the information provided, the Compliance Authority will promptly determine if performance testing pursuant to §63.1349 will be required for the new feed or fuel. A significant change shall not include switching to a feed/fuel mix for which the permittee already tested in compliance with the dioxin/furan and PM/PM10 emission limits. [62-4.070(3), F.A.C.]

23. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

24. Operational Records: To demonstrate compliance with the limitations specified in this section, the owner or operator shall maintain the following records on site.

a. For each 1-hour block of operation, continuously monitor and record: the dry preheater feed rate, clinker production rate, fuel firing rate, heat input rate (as determined by the representative heating value of each fuel and the hourly fuel firing rate), and NH3/NOx molar ratio or ammonia injection rate. Records shall also document the dray preheater feed rate and clinker production rates for each 24-hour rolling period and consecutive 12 months.

b. No later than the 10th day of the following month, calculate and record the cement production rate (tons

per month and tons per consecutive 12 months).

c. For each fuel delivery, maintain records of the quantity of fuel delivered and a representative analysis of the fuel. Records shall include the sulfur content, higher and lower heating value, proximate analysis, and ultimate analyses.

d. Maintain records demonstrating compliance with the mercury throughput limitation as required in Condition No. 19 of this permit.

e. Maintain the following records for each equipment malfunction resulting in excluded monitoring data: date and time of event, duration of event, suspected cause of event, and any corrective actions taken.

All records shall be made available to the Department and Compliance Authority upon request. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

25. Stack Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the specified in Rule 62-297.310(8), F.A.C. [Rule 62-297.310(8), F.A.C.]

26. Malfunction Notifications: If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind or by other cause, the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the malfunction. [Rules 62-210.700(6) and 62-4.130, F.A.C.]

27. Quarterly Report: Within 30 days following the end of each calendar quarter, the permittee shall submit a report to the Compliance Authority summarizing: equipment malfunctions resulting in excluded CEMS data; mercury throughput rates; and the monitor availability of each CEMS. The report shall contain the information and follow the general format specified in Appendix F of this permit. [Rules 62-4.070(3), 62-4.130, and 62-212.400(BACT), F.A.C.]

NSPS SUBPART F OF 40 CFR 60 - PORTLAND CEMENT PLANTS

28. NSPS Subpart F: The affected emissions units are subject to the applicable requirements for Portland Cement Plants specified in NSPS Subpart F of 40 CFR 60. For the full NSPS provisions, see Appendix G in Section 4 of this permit. [40 CFR 60, Subparts A and F]

NESHAP SUBPART LLL OF 40 CFR 63 - PORTLAND CEMENT MANUFACTURING INDUSTRY

29. NESHAP Subpart LLL: The affected emissions units are subject to the applicable requirements for the Portland Cement Manufacturing Industry specified in NESHAP Subpart LLL of 40 CFR 63. For the full NESHAP provisions, see Appendix J in Section 4 of this permit. [40 CFR 63, Subparts A and LLL]

B. Primary Crusher

The specific conditions of this subsection apply to the following emissions unit after construction is complete.

ID	Emission Unit Description
001	(Existing) Primary crusher and associated belt conveyors

{Permitting Note: This emissions unit is subject to the following applicable requirements: NSPS Subpart A (General Provisions) and NSPS Subpart OOO (Nonmetallic Mineral Processing Plants) in 40 CFR 60. It was originally constructed in accordance with Permit No. PSD-FL-259. For this unit, the emissions limiting and performance standards specified in this section also satisfy the requirements of Best Available Control Technology (BACT) in Rule 62-212.400, F.A.C.}

PERFORMANCE REQUIREMENTS

1. Hours of Operation: The hours of operation of this emissions unit are not limited (8760 hours per year). [Rule62-210.200(PTE), F.A.C.]

2. Process Rate Limitation: The crusher shall not process more than 3,450,000 tons of raw materials during any consecutive 12 months. The permittee shall maintain written records of the monthly processing rate. Such records shall be recorded and available for inspection no later than 10 days following the end of the month. *{Permitting Note: The process rate is based on an estimated raw materials moisture content of 15% by weight and includes the weight of this moisture. This is an increase of 1,771,000 tons per year over the existing annual crushing capacity of 1,679,000 tons per year.}* [Rules 62-210.200(PTE) and 62-4.070(3), F.A.C.]

3. Opacity Standards: As determined in accordance with EPA Method 9 observations:

   a. Visible emissions from any crusher, at which a capture system is not used, shall not exceed 15% opacity.

   b. Visible emissions from any transfer point on belt conveyors or from any other affected facility shall not exceed 10% opacity.

   These opacity standards do not apply to truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher.

   [Rule 62-212.400(BACT), F.A.C.]

TESTING REQUIREMENTS

4. Visible Emissions Tests: The permittee shall demonstrate compliance with the visible emission limits specified in this subsection by conducting tests in accordance with EPA Method 9. Initial tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup. Thereafter, the permittee shall demonstrate compliance during each federal fiscal year (October 1st to September 30th) for the primary crusher. Tests shall be conducted in accordance with the applicable requirements in Appendix C of this permit as well as the applicable NSPS. *{Permitting Note: Unless requested by the Compliance Authority, annual compliance tests for the conveyors are not required.}* [Rules 62-297.310(7)(a), F.A.C.]

5. Test Reports. For each test conducted, the permittee shall file a test report including the information specified in Rule 62-297.310(8), F.A.C. with the Department as soon as practical, but no later than 45 days after the last sampling run of each test is completed. [Rules 62-297.310(8), F.A.C.]

NSPS SUBPART OOO OF 40 CFR 60 - NONMETALLIC MINERAL PROCESSING PLANTS

6. NSPS Subpart OOO: The affected emissions units are subject to the applicable requirements for Nonmetallic Mineral Processing Plants specified in NSPS Subpart OOO of 40 CFR 60. For the full NSPS provisions, see Appendix I in Section 4 of this permit. [40 CFR 60, Subparts A and OOO]

C. Miscellaneous PM Sources – Handling/Storage of Raw Materials and Clinker

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description	
003	(Existing) Raw material processing - unenclosed conveyor transfer points (D conveyors)	
011	(New) Clinker and cement processing with the following emissions points:	
	Point ID No.	*Description*
	L-03-02	Baghouse for clinker pan conveyor
	L-06-02	Baghouse for clinker silo inlet
	L-25-02	Baghouse for gypsum/off-specification clinker transport
	M-08-02	Baghouse for clinker silo outlet conveyor
	M-09-02	Baghouse for gypsum/off-spec. clinker silo outlet
	N-09-02	Baghouse for finish mill separator (1)
	N-12-02	Baghouse for finish mill vent (2)
	N-36-02	Baghouse for fringe cement bin
	N-91-02	Baghouse for finish mill (3)
	P-03-02	Baghouse for cement transport conveyor
	P-11-02	Baghouse for cement silos
	Q-17-02	Baghouse for cement truck load out No. 3
014	(New) Baghouses for raw material processing	
	Point ID No.	*Description*
	E28-02	Baghouse for raw mill
	E34-02	Baghouse for off-specification feed handling
	G07-02	Baghouse for homogenizing silo
	H08-02	Baghouse for Poldos homogenizing silo
	H08A-02	Baghouse for hydrated lime silo
	U-05-02	Baghouse for fly ash silo

{Permitting Note: These emissions units are subject to the following applicable requirements: NSPS Subpart A (General Provisions) and NSPS Subpart F (Portland Cement Plants) in 40 CFR 60; NESHAP Subpart A (General Provisions) and NESHAP Subpart LLL (Portland Cement Manufacturing Industry) in 40 CFR 63. EU-003 was originally constructed in accordance with Permit No. PSD-FL-259. For new units EU-011 and EU-014, the emissions limiting and performance standards specified in this section also satisfy the requirements of Best Available Control Technology (BACT) in Rule 62-212.400, F.A.C.}

PERFORMANCE REQUIREMENTS

1. Hours of Operation: The hours of operation of this emissions unit are not limited (8760 hours per year). [Rule62-210.200(PTE), F.A.C.]

2. Baghouse Controls (EU-011 and EU-014): Each emissions point identified for clinker and cement processing (EU-011) and raw material processing (EU-014) shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a particulate matter design specification of 0.0085 grains/dscf. For each new baghouse, the permittee shall prepare an operation and maintenance (O&M) plan to address: proper operation; parametric monitoring; and a regular schedule for conducting periodic inspections and preventive maintenance. Baghouse inspections and maintenance

activities shall be recorded in a written log. The O&M plan shall be submitted to the Compliance Authority prior to expiration of this permit. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

3. Particulate Matter Standard: For Emissions Point N-09-02 of Emissions Unit 011, particulate matter emissions shall not exceed 0.0085 grains/dscf based on a performance test conducted in accordance with EPA Method 5. *{Permitting Note: This emissions point is controlled by the largest baghouse of the group with a design flow rate of nearly 130,000 acfm.}* [Rule 62-212.400(BACT), F.A.C.]

4. Opacity Standards: As determined in accordance with EPA Method 9 observations, the following standards apply to each emissions point of Emissions Units 003, 011, and 014 including the finish mill system, raw mill, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems.

   a. Visible emissions from each baghouse exhaust point shall not exceed 5% opacity, and

   b. Visible emissions from any emissions point not controlled by a baghouse (i.e., conveyors) shall not exceed 10% opacity.

   [Rule 62-212.400(BACT), F.A.C.]

TESTING REQUIREMENTS

5. Particulate Matter Tests: The permittee shall demonstrate compliance with the particulate matter emission standard specified for Emissions Point N-09-02 of Emissions Unit 011 by conducting tests in accordance with EPA Method 5. Initial tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup. Thereafter, the permittee shall demonstrate compliance during 12 months prior to renewal of the operation permit. Tests shall be conducted in accordance with the applicable requirements in Appendix C of this permit as well as applicable NSPS and NESHAP provisions. [Rules 62-297.310(7)(a), F.A.C.]

6. Visible Emissions Tests: The permittee shall demonstrate compliance with the visible emission limits specified in this subsection by conducting EPA Method 9 tests. The initial tests shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility. Thereafter, the permittee shall demonstrate compliance during each federal fiscal year (October 1st to September 30th). Tests shall be conducted in accordance with the applicable requirements in Appendix C of this permit as well as the applicable NSPS and NESHAP provisions. [Rules 62-297.310(7)(a), F.A.C.]

7. Test Reports: For each test conducted, the permittee shall file a test report including the information specified in Rule 62-297.310(8), F.A.C. with the Department as soon as practical, but no later than 45 days after the last sampling run of each test is completed. [Rules 62-297.310(8), F.A.C.]

NSPS SUBPART F OF 40 CFR 60 - PORTLAND CEMENT PLANTS

8. NSPS Subpart F: The affected emissions units are subject to the applicable requirements for Portland Cement Plants specified in NSPS Subpart F of 40 CFR 60. For the full NSPS provisions, see Appendix G in Section 4 of this permit. [40 CFR 60, Subpart F]

NESHAP SUBPART LLL OF 40 CFR 63 - PORTLAND CEMENT MANUFACTURING INDUSTRY

9. NESHAP Subpart LLL: The affected emissions units are subject to the applicable requirements for the Portland Cement Manufacturing Industry specified in NESHAP Subpart LLL of 40 CFR 63. For the full NESHAP provisions, see Appendix J in Section 4 of this permit. [40 CFR 63, Subparts A and LLL]

D. Coal Mill and Conveying Equipment

The specific conditions of this subsection apply to the following emissions unit.

ID No.	Emissions Unit Description	
009	(Existing) Unenclosed coal conveying equipment	
012	(New) Coal mill and coal transfer system with the following emissions points:	
	Point ID No.	*Description*
	S-17-02	Baghouse for coal mill (1 and 2)
	S-21-02	Baghouse for pulverized coal bin

{Permitting Note: The above emissions units are subject to the following applicable requirements in 40 CFR 60: NSPS Subpart A (General Provisions) and NSPS Subpart Y (Coal Preparation Plants). Some equipment was originally constructed pursuant to Permit No. PSD-FL-259. The units are also subject to the Best Available Control Technology (BACT) requirements in Rule 62-212.400, F.A.C. as specified in this section.}

PERFORMANCE REQUIREMENTS

1. Hours of Operation: The hours of operation for this emissions unit are not limited (8760 hours per year). [Rule62-210.200(PTE), F.A.C.]

2. Process Rate Limitation: This permit authorizes construction of a new coal mill, which shall not crush more than 150,000 tons of coal and/or petroleum coke (combined) during any consecutive 12 months. The permittee shall maintain written records of the monthly processing rate. Such records shall be recorded and available for inspection no later than 10 days following the end of the month. [Rule 62-210.200(PTE), F.A.C.]

3. Baghouse Controls (EU-012): Each emissions point associated with the coal mill and coal transfer station (EU-012) shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a particulate matter design specification of 0.0085 grains per dscf. For each new baghouse, the permittee shall prepare an operation and maintenance (O&M) plan to address: proper operation; parametric monitoring; and a regular schedule for conducting periodic inspections and preventive maintenance. Baghouse inspections and maintenance activities shall be recorded in a written log. The O&M plan shall be submitted to the Compliance Authority prior to expiration of this permit. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

4. Particulate Matter Standards: As determined by EPA Method 5, particulate matter emissions from any thermal dryer shall not exceed 0.0085 grains per dscf of exhaust. "Thermal dryer" means any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere. [Rules 62-212.400(BACT), F.A.C.]

5. Opacity Standards: As determined by EPA Method 9:

   a. Visible emissions shall not exceed 5% opacity from any emissions point controlled by a baghouse.

   b. Visible emissions shall not exceed 20% opacity from any coal processing and conveying equipment or coal storage system.

   [Rule 62-212.400(BACT), F.A.C.]

TESTING REQUIREMENTS

6. Particulate Matter Tests (EU-012): The permittee shall conduct the stack tests in accordance with EPA Method 5 to demonstrate initial compliance with the particulate matter emissions standard for any coal mill thermal dryer. Initial tests shall be conducted within 60 days after achieving the maximum production rate

at which the unit will be operated, but not later than 180 days after initial startup. Thereafter, the permittee shall demonstrate compliance during 12 months prior to renewal of the operation permit. Tests shall be conducted in accordance with the applicable requirements in Appendix C of this permit as well as applicable NSPS and NESHAP provisions. [Rules 62-212.400(BACT), 62-297.310(7)(a), F.A.C.]

7. Visible Emissions Tests (EU-009 and EU-012): The permittee shall demonstrate compliance with the visible emission limits specified in this subsection by conducting test in accordance with EPA Method 9. Initial tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup. Thereafter, the permittee shall demonstrate compliance during each federal fiscal year (October 1st to September 30th). Tests shall be conducted in accordance with the applicable requirements in Appendix C of this permit as well as the applicable NSPS (initial tests). For each test conducted, the permittee shall file a test report including the information specified in Rule 62-297.310(8), F.A.C. with the Department as soon as practical, but no later than 45 days after the last sampling run of each test is completed. [Rules 62-297.310(7)(a), F.A.C.]

8. Test Reports: For each test conducted, permittee shall file a test report including the information specified in Rule 62-297.310(8), F.A.C. with the Department as soon as practical, but no later than 45 days after the last sampling run of each test is completed. [Rules 62-297.310(8), F.A.C.]

NSPS SUBPART Y OF 40 CFR 60 - COAL PREPARATION PLANTS

9. NSPS Subpart Y: The affected emissions units are subject to the applicable requirements for Coal Preparation Plants specified in NSPS Subpart Y of 40 CFR 60. For the full NSPS provisions, see Appendix H in Section 4 of this permit. [40 CFR 60, Subparts A and Y]

E. Miscellaneous Fugitive Emissions Sources

The following specific conditions apply to the following emissions units after construction.

ID No.	Emissions Unit Description
015	(New) Storage Piles, Paved Roads and Unpaved Roads

PERFORMANCE REQUIREMENTS

1. Unconfined Emissions of Particulate Matter

   a. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity without taking reasonable precautions to prevent such emissions. Such activities include, but are not limited to: vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling.

   b. Reasonable precautions shall include the following:

      (1) Landscaping and planting of vegetation.

      (2) Application of water to control fugitive dust from activities such as demolition of buildings, grading roads, construction, and land clearing.

      (3) Water supply lines, hoses and sprinklers shall be located near all stockpiles of raw materials, coal, and petroleum coke.

      (4) All plant operators shall be trained in basic environmental compliance and shall perform visual inspections of raw materials, coal and petroleum coke periodically and before handling. If the visual inspections indicate a lack of surface moisture, such materials shall be wetted with sprinklers. Wetting shall continue until the potential for unconfined particulate matter emissions are minimized.

      (5) Water spray shall be used to wet the materials and fuel if inherent moisture and moisture from wetting the storage piles are not sufficient to prevent unconfined particulate matter emissions.

      (6) As necessary, applications of asphalt, water, or dust suppressants to unpaved roads, yards, open stockpiles and similar activities.

      (7) Paving of access roadways, parking areas, and manufacture area.

      (8) Removal of dust from buildings, roads, and other paved areas under the control of the owner or operator of the facility to prevent particulate matter from becoming airborne.

      (9) A vacuum sweeper shall be used to remove dust from paved roads, parking, and other work areas.

      (10) Enclosure or covering of conveyor systems where practicably feasible.

      (11) All materials, coal, and petroleum coke shall be stored under roof on compacted clay or concrete, or in enclosed vessels.

      (12) Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.

      (13) Confining abrasive blasting where possible.

   c. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

   [Rules 62-212.400(BACT) and 62-296.320(4)(c), F.A.C.]

SECTION 4. APPENDICES
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SECTION 4. APPENDIX A
CITATION FORMATS

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number
"001"identifies the specific permit project
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CRF 60.7]

Means: Title 40, Part 60, Section 7

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

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.

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, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

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.

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.

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.

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.

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.

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.

   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.

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.

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.

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.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology;
    b. Determination of Prevention of Significant Deterioration; and
    c. Compliance with New Source Performance Standards.

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:

        a. The date, exact place, and time of sampling or measurements;
        b. The person responsible for performing the sampling or measurements;
        c. The dates analyses were performed;
        d. The person responsible for performing the analyses;
        e. The analytical techniques or methods used; and
        f. The results of such analyses.

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.

{Permitting Note: Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.}

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1. F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

GENERAL COMPLIANCE TESTING REQUIREMENTS

The focal point of a compliance test is the stack or duct which vents process and/or combustion gases and air pollutants from an emissions unit into the ambient air. [Rule 62-297.310, F.A.C.]

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20%

below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]
12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
13. Applicable Test Procedures [Rule 62-297.310(4), F.A.C.]
    a. *Required Sampling Time.*
        (1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.
        (2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
            (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.
            (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
            (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
    b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.
    c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.
    d. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1.
    e. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.
14. Determination of Process Variables [Rule 62-297.310(5), F.A.C.]
    a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
    b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted

to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. [Rule 62-297.310(6), F.A.C.]

    a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.

    b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

    c. *Sampling Ports.*

        (1) All sampling ports shall have a minimum inside diameter of 3 inches.

        (2) The ports shall be capable of being sealed when not in use.

        (3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.

        (4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.

        (5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

    d. *Work Platforms.*

        (1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.

        (2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.

        (3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.

        (4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

    e. *Access to Work Platform.*

        (1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.

        (2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

    f. *Electrical Power.*

        (1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.

(2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

(1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.

(a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.

(b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.

(c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.

(2) A complete monorail or dualrail arrangement may be substituted for the eyebolt and bracket.

(3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

16. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required. [Rule 62-297.310(7), F.A.C.]

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

(a) Did not operate; or

(b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours.

4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

(a) a. Visible emissions, if there is an applicable standard;

(b) b. Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

(c) c. Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.
9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.

b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

RECORDS AND REPORTS

17. Test Reports [Rule 62-297.310(8), F.A.C.]

a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information.

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.

6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

RECORDS AND REPORTS

18. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]
19. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

SECTION 4. APPENDIX D
USED OIL FUEL REQUIREMENTS

1. "On-Specification" Used Oil Fuel: Used oil fuel shall meet the following specifications.

   a. Arsenic shall not exceed 5.0 ppm;
   b. Cadmium shall not exceed 2.0 ppm;
   c. Chromium shall not exceed 10.0 ppm;
   d. Lead shall not exceed 100.0 ppm;
   e. Total halogens shall not exceed 1000 ppm; and
   f. Flash point shall not be less than 100° F.

   Used oil fired as a fuel may be generated from on site sources or purchased from a vendor. Used oil shall not contain any PCB's. [40 CFR 279.61; 40 CFR 761.20(e); Rule 62-4.070(3), F.A.C.]

2. Analysis Required: For each shipment of used oil received, the owner or operator shall maintain records from the vendor certifying that the used oil meets the above requirements for "on-specification" used oil fuel. Records shall include the following parameters: arsenic, cadmium, chromium, lead, total halogens, flash point, PCBs, sulfur content, ash, and heating value. Otherwise, the owner or operator shall sample and analyze each shipment of used oil received for the above parameters. If vendor certifications are relied upon, the owner or operator shall analyze at least one sample obtained each calendar year for the above parameters. If analytical results show that the used oil does not meet the above requirements, the owner or operator shall immediately: cease burning of the used oil, and notify the Compliance Authority of the analytical results. The analysis shall be performed via with EPA-approved or ASTM methods. [Rule 62-4.070(3), F.A.C.]

3. Record Keeping: The permittee shall obtain, make, and keep the following records:

   a. Gallons of on-specification used oil received and burned each month;
   b. Name and address of all vendors delivering used oil to the facility;
   c. Copies of the vendor certifications, if obtained, and any supporting information; and
   d. Analytical results.

   The records shall be retained in a form suitable for inspection at the facility by the Department, and shall be retained permanently. [40 CFR 279.61; 40 CFR 761.20(e); Rule 62-4.070(3), F.A.C.]

Project Description

The existing facility consists of a portland cement manufacturing plant, the associated quarry, and raw material and cement handling operations. The plant combines raw materials and utilizes a preheater/calciner kiln (Kiln Line No. 1) system with in-line raw mill to produce cement clinker (120 tons per hour capacity). The clinker is milled and combined with gypsum to produce portland cement. Fuel authorized for the pyroprocessing system includes natural gas, coal, petroleum coke, and whole or chipped tires. The plant also operates a coal processing operation to crush coal and petroleum coke. The plant uses Selective Non-Catalytic Reduction (SNCR) to control NOx emissions from the existing pyroprocessing system and hydrated lime injection to control SO_2 emissions.

This permit authorizes the construction of a new cement manufacturing line (Kiln Line No. 2) at the existing facility. The project will affect the following existing and new emissions units.

ID No.	Emissions Unit Description
001	(Existing) Primary crusher and associated belt conveyors
003	(Existing) Raw material processing with unenclosed conveyor transfer points - D conveyors
009	(Existing) Unenclosed coal conveying equipment - S Conveyors
011	(New) Clinker and cement handling and storage with baghouse controls for miscellaneous emissions points
012	(New) Coal mill and coal transfer system with baghouse controls for emissions points
013	(New) Dry process preheater/precalciner rotary kiln with in-line raw mill
014	(New) Raw material handling and storage with baghouse controls for miscellaneous emissions points
015	(New) Fugitive dust from storage piles, paved roads, and unpaved roads

The Kiln Line No. 2 system will have a capacity of 127 tons per hour of clinker and 175 tons per hour of portland cement. In accordance with Rule 62-212.400, F.A.C., the project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC). The permit includes emissions standards and work practices that represent determinations of the Best Available Control Technology (BACT) for each of these pollutants. The following describes the control equipment required as well as the final BACT emissions limiting standards.

Kiln Line No. 2 System

New Emissions Unit 013 consists of a dry process preheater/precalciner rotary kiln with in-line raw mill. The kiln fires a variety of fuels to process raw materials into cement clinker. Emissions are controlled by the following equipment and techniques.

Nitrogen Oxides (NOx): The kiln system design shall incorporate staged combustion in the calciner (SCC) to reduce NOx emissions. An ammonia-based Selective Non-Catalytic Reduction (SNCR) system shall be installed to further control NOx emissions. The SNCR system consists of an ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. SCC and/or SNCR shall be used to achieve the NOx BACT emissions standards specified in this permit.

Particulate Matter (PM/PM10): The owner or operator shall install a baghouse control system to remove particulate matter emissions from the exhaust gas stream (kiln/raw mill/clinker cooler) to achieve the PM/PM_{10} emissions standards specified in this permit.

Sulfur Dioxide (SO_2): The owner or operator shall control SO_2 emissions by selection and control of the raw materials. In addition, the owner or operator shall install a hydrated lime injection system to achieve the SO_2 emissions standards specified in this permit.

Carbon Monoxide (CO) and Volatile Organic Compounds (VOC): The owner or operator shall control CO and VOC emissions with a design providing sufficient time/temperature to oxidize these pollutants, good operating practices, and

careful attention to the raw material mix.

Table E-1. Final BACT Standards for the Kiln No. 2 System

Pollutant	Emissions Standards		Averaging Time
Best Available Control Technology (BACT) - Rule 62-212.400(6), F.A.C.			
CO	2.90 lb/ton of clinker	368.3 lb/hour	30-day rolling CEMS average
NOx	1.95 lb/ton of clinker	247.7 lb/hour	30-day rolling CEMS average
PM	0.10 lb/ton of dry PHFM	21.5 lb/hour	Average of three, 1-hour test runs
	10% opacity		6-minute block average w/COMS
SO_2	0.20 lb/ton of clinker	25.4 lb/hour	24-hour rolling CEMS average
VOC	0.12 lb/ton of clinker	15.2 lb/hour	30-day block CEMS average

"PHFM" means preheater feed material.

Due to the typical break-in period for shakedown of a cement kiln, the permit specifies an initial NOx standard of 3.0 lb/ton of clinker (381.0 lb/hour). This temporary standard applies to the kiln upon initial certification of the NOx CEMS and ends when any of the following conditions are met:

- The Kiln Line No. 2 system produces 75,000 tons of clinker or more in any 30-day rolling period, or
- The Kiln Line No. 2 system produces 150,000 tons of clinker, or
- 365 calendar days elapse after initial certification of the NOx CEMS.

After one of these conditions is met, the NOx standard in the above table applies. These requirements do not waive or vary any applicable federal monitoring or record keeping requirements for cement plants in Subpart F of 40 CFR 60 and in Subpart LLL of 40 CFR 63.

The permit also limits the maximum mercury throughput to the pyroprocessing kiln to no more than 117.5 pounds per year. Therefore, potential mercury emissions are less than the PSD significant emissions rate of 200 pounds per year and the project is not subject to PSD preconstruction review for this pollutant.

Primary Crusher and Associated Belt Conveyors

The existing primary crusher (Emissions Unit 001) crushes raw materials prior to transfer to the conveyor system. As determined in accordance with EPA Method 9 observations, opacity from these activities is limited as follows.

- Visible emissions from any crusher, at which a capture system is not used, shall not exceed 15% opacity.
- Visible emissions from any transfer point on belt conveyors or from any other affected facility shall not exceed 10% opacity.

These opacity standards do not apply to truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher.

Miscellaneous Particulate Matter Sources

The plant will operate a variety of miscellaneous sources of particulate matter including: existing Emissions Unit 003 (raw material processing with unenclosed conveyor transfer points, D conveyors); new Emissions Unit 011 (miscellaneous sources of clinker/cement handling and storage with baghouse controls; and new Emissions Unit 014 (miscellaneous sources of raw material handling and storage with baghouse controls). Each emissions point identified for clinker/cement processing (EU-011) and raw material processing (EU-014) shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a particulate matter design specification of 0.007 grains/dscf. The following BACT standards apply to the affected units.

- As determined in accordance with EPA Method 9 observations, visible emissions from each baghouse exhaust point shall not exceed 5% opacity, and
- As determined in accordance with EPA Method 9 observations, visible emissions from any emissions point not

controlled by a baghouse (i.e., conveyors) shall not exceed 10% opacity.

- As determined in accordance with EPA Method 5, particulate matter emissions shall not exceed 0.007 grains/dscf from the baghouse controlling the finish mill separator (Emissions Point N-09-02 of Emissions Unit 011). This emissions point represents the largest baghouse of the group with a design flow rate of nearly 130,000 acfm.

Coal Mill

A new coal mill and coal transfer system (Emissions Unit 012) will be installed for the Kiln Line No. 2 system, which will also use existing coal conveying equipment (Emissions Unit 009). Each emissions point associated with the coal mill and coal transfer station (EU-012) shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a particulate matter design specification of 0.007 grains per dscf. The following BACT standards apply to the affected units.

- As determined by EPA Method 5, particulate matter emissions from any thermal dryer shall not exceed 0.007 grains per dscf of exhaust.
- As determined by EPA Method 9, visible emissions from any emissions point controlled by a baghouse shall not exceed 5% opacity.
- As determined by EPA Method 9, visible emissions shall not exceed 20% from any coal processing and conveying equipment or coal storage system.

Fugitive Dust from Storage piles, Paved Roads, and Unpaved Roads

New and increased activities related to storage piles, paved roads, and unpaved roads (Emissions Unit 015) will increase fugitive dust emissions at the plant. The following work practices are determined to be BACT for controlling the fugitive dust emissions.

- Landscaping and planting of vegetation.
- Application of water to control fugitive dust from activities such as demolition of buildings, grading roads, construction, and land clearing.
- Water supply lines, hoses and sprinklers shall be located near all stockpiles of raw materials, coal, and petroleum coke.
- All plant operators shall be trained in basic environmental compliance and shall perform visual inspections of raw materials, coal and petroleum coke periodically and before handling. If the visual inspections indicate a lack of surface moisture, such materials shall be wetted with sprinklers. Wetting shall continue until the potential for unconfined particulate matter emissions are minimized.
- Water spray shall be used to wet the materials and fuel if inherent moisture and moisture from wetting the storage piles are not sufficient to prevent unconfined particulate matter emissions.
- As necessary, applications of asphalt, water, or dust suppressants to unpaved roads, yards, open stockpiles and similar activities.
- Paving of access roadways, parking areas, and manufacture area.
- Removal of dust from buildings, roads, and other paved areas under the control of the owner or operator of the facility to prevent particulate matter from becoming airborne.
- A vacuum sweeper shall be used to remove dust from paved roads, parking, and other work areas.
- Enclosure or covering of conveyor systems where practicably feasible.
- All materials, coal, and petroleum coke shall be stored under roof on compacted clay or concrete, or in enclosed vessels.
- Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
- Confining abrasive blasting where possible.

The above reasonable precautions will be taken as necessary to prevent and mitigate fugitive dust emissions.

SECTION 4. APPENDIX F
QUARTERLY REPORT

Within 30 days following the end of each quarter, the permittee shall submit a report to the Compliance Authority summarizing: each equipment malfunction resulting in excluded CEMS data; the mercury throughput rates (with supporting documentation); and the monitor availability of each CEMS. For each day with a malfunction resulting in excluded data, the following information shall be provided. In addition, the owner or operator shall identify the cause of any malfunction, the corrective action taken to restore normal operation, and the total hours of excluded CEMS data for the month.

Date of Event: _____ Begin Time: _____ End Time: _____

Hour	Clinker tons/hour	Ammonia gph	Hyd. Lime lb/hour	Baghouse Inlet, ° F	Emissions, lb/ton of clinker				Comment
					CO	NOx	SO_2	VOC	
1									
2									
3									
4									
5									
6									
7									
8									
9									
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SECTION 4. APPENDIX G
NSPS SUBPART F PROVISIONS – PORTLAND CEMENT PLANTS

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description	
003	(Existing) Raw material processing - unenclosed conveyor transfer points (D conveyors)	
011	(New) Clinker and cement processing with the following emissions points:	
	Point ID No.	*Description*
	L-03-02	Baghouse for clinker pan conveyor
	L-06-02	Baghouse for clinker silo inlet
	L-25-02	Baghouse for gypsum/off-specification clinker transport
	M-08-02	Baghouse for clinker silo outlet conveyor
	M-09-02	Baghouse for gypsum/off-spec. clinker silo outlet
	N-09-02	Baghouse for finish mill separator (1)
	N-12-02	Baghouse for finish mill vent (2)
	N-36-02	Baghouse for fringe cement bin
	N-91-02	Baghouse for finish mill (3)
	P-03-02	Baghouse for cement transport conveyor
	P-11-02	Baghouse for cement silos
	Q-17-02	Baghouse for cement truck load out No. 3
013	(New) Dry process preheater/precalciner rotary kiln with in-line raw mill	
014	(New) Baghouses for raw material processing	
	Point ID No.	*Description*
	E28-02	Baghouse for raw mill
	E34-02	Baghouse for off-specification feed handling
	G07-02	Baghouse for homogenizing silo
	H08-02	Baghouse for Poldos homogenizing silo
	H08A-02	Baghouse for hydrated lime silo
	U-05-02	Baghouse for fly ash silo

1. NSPS Subpart A: The affected emissions units are also subject to the applicable General Provisions in NSPS Subpart A of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart A]
2. NSPS Subpart F: The affected emissions units are also subject to the applicable requirements for Portland Cement Plants specified in NSPS Subpart F of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart F]

§ 60.60 Applicability and Designation of Affected Facility.

(a) The provisions of this subpart are applicable to the following affected facilities in portland cement plants: Kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

§ 60.61 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Portland cement plant* means any facility manufacturing portland cement by either the wet or dry process.

(b) *Bypass* means any system that prevents all or a portion of the kiln or clinker cooler exhaust gases from entering the main control device and ducts the gases through a separate control device. This does not include emergency systems designed to duct exhaust gases directly to the atmosphere in the event of a malfunction of any control device controlling kiln or clinker cooler emissions.

(c) *Bypass stack* means the stack that vents exhaust gases to the atmosphere from the bypass control device.

(d) *Monovent* means an exhaust configuration of a building or emission control device (e.g., positive- pressure fabric filter) that extends the length of the structure and has a width very small in relation to its length (i.e., length to width ratio is typically greater than 5:1). The exhaust may be an open vent with or without a roof, louvered vents, or a combination of such features.

§ 60.62 Standard for Particulate Matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any kiln any gases which:

(1) Contain particulate matter in excess of 0.15 kg per metric ton of feed (dry basis) to the kiln (0.30 lb per ton).

(2) Exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any clinker cooler any gases which:

(1) Contain particulate matter in excess of 0.050 kg per metric ton of feed (dry basis) to the kiln (0.10 lb per ton).

(2) Exhibit 10 percent opacity, or greater.

(c) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit 10 percent opacity, or greater.

§ 60.63 Monitoring of Operations.

(a) The owner or operator of any portland cement plant subject to the provisions of this part shall record the daily production rates and kiln feed rates.

(b) Except as provided in paragraph (c) of this section, each owner or operator of a kiln or clinker cooler that is subject to the provisions of this subpart shall install, calibrate, maintain, and operate in accordance with § 60.13 a continuous opacity monitoring system to measure the opacity of emissions discharged into the atmosphere from any kiln or clinker cooler. Except as provided in paragraph (c) of this section, a continuous opacity monitoring system shall be installed on each stack of any multiple stack device controlling emissions from any kiln or clinker cooler. If there is a separate bypass installed, each owner or operator of a kiln or clinker cooler shall also install, calibrate, maintain, and operate a continuous opacity monitoring system on each bypass stack in addition to the main control device stack. Each owner or operator of an affected kiln or clinker cooler for which the performance test required under § 60.8 has been completed on or prior to December 14, 1988, shall install the continuous opacity monitoring system within 180 days after December 14, 1988.

(c) Each owner or operator of a kiln or clinker cooler subject to the provisions of this subpart using a positive-pressure fabric filter with multiple stacks, or a negative-pressure fabric filter with multiple stacks, or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by § 60.63(b), monitor visible emissions at least once per day by using a certified visible emissions observer. If the control device exhausts gases through a monovent, visible emission observations in lieu of a continuous opacity monitoring system are required. These observations shall be taken in accordance with EPA Method 9. Visible emissions shall be observed during conditions representative of normal operation. Observations shall be recorded for at least three 6-minute periods each day. In the event that visible emissions are observed for a number of emission sites from the control device with multiple stacks, Method 9 observations shall be recorded for the emission site with the highest opacity. All records of visible emissions shall be maintained for a period of 2 years.

(d) For the purpose of reports under § 60.65, periods of excess emissions that shall be reported are defined as all 6-minute

periods during which the average opacity exceeds that allowed by § 60.62(a)(2) or § 60.62(b)(2).

(e) The provisions of paragraphs (a), (b), and (c) of this section apply to kilns and clinker coolers for which construction, modification, or reconstruction commenced after August 17, 1971.

§ 60.64 Test Methods and Procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standard in § 60.62 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E = (c_s\ Qsd)/(P\ K)$

where:

E = emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed.

C_s = concentration of particulate matter, g/dscm (gr/dscf).

Qsd = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P = total kiln feed (dry basis) rate, metric ton/hr (ton/hr).

K = conversion factor, 1000 g/kg (7000 gr/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (cs) and the volumetric flow rate (Qsd) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.

(3) Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

§ 60.65 Recordkeeping and Reporting Requirements.

(a) Each owner or operator required to install a continuous opacity monitoring system under § 60.63(b) shall submit reports of excess emissions as defined in § 60.63(d). The content of these reports must comply with the requirements in § 60.7(c). Notwithstanding the provisions of § 60.7(c), such reports shall be submitted semi-annually.

(b) Each owner or operator monitoring visible emissions under § 60.63(c) shall submit semi-annual reports of observed excess emissions as defined in § 60.63(d).

(c) Each owner or operator of facilities subject to the provisions of § 60.63(c) shall submit semi-annual reports of the malfunction information required to be recorded by § 60.7(b). These reports shall include the frequency, duration, and cause of any incident resulting in deenergization of any device controlling kiln emissions or in the venting of emissions directly to the atmosphere.

(d) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, 42 U.S.C. 7411, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

§ 60.66 Delegation of Authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: No restrictions.

SECTION 4. APPENDIX H
NSPS SUBPART Y PROVISIONS – COAL PREPARATION PLANTS

The specific conditions of this subsection apply to the following emissions unit.

ID No.	Emissions Unit Description	
009	(Existing) Coal Conveying Equipment	
012	(New) Coal mill and coal transfer station with the following emissions points:	
	Point ID No.	*Description*
	S-17-02	Baghouse for coal mill
	S-21-02	Baghouse coal transfer system

1. NSPS Subpart A: The affected emissions units are also subject to the applicable General Provisions in Subpart A of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart A]
2. NSPS Subpart Y: The affected emissions units are also subject to the applicable requirements for Coal Preparation Plants specified in NSPS Subpart Y of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart Y]

{Permitting Note: Numbering of the original NSPS rules in the following conditions has been preserved for ease of reference with the rules. Paragraphs that are not applicable have been omitted for clarity and brevity. When used in 40 CFR 60, the term "Administrator" shall mean the Secretary or the Secretary's designee.}

§ 60.250 Applicability and Designation of Affected Facility.

(a) The provisions of this subpart are applicable to any of the following affected facilities in coal preparation plants which process more than 200 tons per day: thermal dryers, pneumatic coal cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), and coal storage systems.

§ 60.251 Definitions.

(a) *Coal preparation plant* means any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying.

(b) *Bituminous coal* means solid fossil fuel classified as bituminous coal by ASTM Designation D388-77, 90, 91, 95, or 98a (incorporated by reference: see § 60.17).

(c) *Coal* means all solid fossil fuels classified as anthracite, bituminous, sub bituminous, or lignite by ASTM Designation D388-77, 90, 91, 95, or 98a (incorporated by reference; see § 60.17).

(d) *Cyclonic flow* means a spiraling movement of exhaust gases within a duct or stack.

(e) *Thermal dryer* means any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere.

(f) *Pneumatic coal-cleaning equipment* means any facility which classifies bituminous coal by size or separates bituminous coal from refuse by application of air stream(s).

(g) *Coal processing and conveying equipment* means any machinery used to reduce the size of coal or to separate coal from refuse, and the equipment used to convey coal to or remove coal and refuse from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts.

(h) *Coal storage system* means any facility used to store coal except for open storage piles.

(i) *Transfer and loading system* means any facility used to transfer and load coal for shipment.

§ 60.252 Standards for Particulate Matter.

(a) On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, an owner or operator shall not cause to be discharged into the atmosphere from any thermal dryer gases which:

(1) Contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(c) On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, an owner or operator shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment or coal storage system, gases which exhibit 20 percent opacity or greater. [40 CFR 60.252(a) and (c)]

§ 60.253 Monitoring of Operations.

(a) The owner or operator of any thermal dryer shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(1) A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within ±3° Fahrenheit.

(b) All monitoring devices under paragraph (a) of this section are to be recalibrated annually in accordance with procedures under 40 CFR 60.13(b). [40 CFR 60.253(a) and (b)]

§ 60.254 Test Methods and Procedures.

(a) In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b).

(b) The owner or operator shall determine compliance with the particular matter standards in 40 CFR 60.252 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin.

(2) Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.

NSPS SUBPART OOO PROVISIONS – NONMETALLIC MINERAL PROCESSING PLANTS

The provisions of this subsection apply to the following emissions unit.

ID	Emission Unit Description
001	(Existing) Primary crusher and associated belt conveyors

1. NSPS Subpart A: The affected emissions units are subject to the applicable General Provisions in NSPS Subpart A of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart A]
2. NSPS Subpart OOO: The affected emissions units are subject to the applicable requirements for Nonmetallic Mineral Processing Plants specified in NSPS Subpart OOO of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart OOO]

{Permitting Note: Numbering of the original NSPS rules in the following conditions has been preserved for ease of reference with the rules. Paragraphs that are not applicable have been omitted for clarity and brevity. When used in 40 CFR 60, the term "Administrator" shall mean the Secretary or the Secretary's designee.}

§ 60.670 Applicability and Designation of Affected Facility.

(a) (1) The provisions of 40 CFR 60 Subpart OOO are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each belt conveyor or crusher.

§ 60.671 Definitions.

Belt conveyor means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

Crusher means a machine used to crush any nonmetallic materials, and includes, but is not limited to, the following types: jaw, gyratory, cone roll, rod mill, hammermill, and impactor.

§ 60.672 Standard for Particulate Matter.

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under 40 CFR 60.11, no owner or operator shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraph (c) and (d) of this section.

(c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under 40 CFR 60.11, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.

(d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

§ 60.675 Test Methods and Procedures.

(a) In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in 40 CFR 60 Appendix A or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.

(c) (1) In determining compliance with the particulate matter standards in 40 CFR 60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in 40 CFR 60.11, with the following additions:

(i) The minimum distance between the observer and the emissions source shall be 4.57 meters (15 feet).

(ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emissions units (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.

(iii) For affected emissions units using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of

emissions is to be made at a point in the plume where the mist is no longer visible.

(3) When determining compliance with the fugitive emissions standard for any affected facility described under Section 60.672(b) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:

(i) There are no individual readings greater than 10 percent opacity; and

(ii) There are no more than 3 readings of 10 percent for the 1-hour period.

(4) When determining compliance with the fugitive emissions standard for any crusher at which a capture system is not used as described under Section 60.672(c) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6- minute averages) only if the following conditions apply:

(i) There are no individual readings greater than 15 percent opacity; and

(ii) There are no more than 3 readings of 15 percent for the 1-hour period.

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For the method and procedure of 40 CFR 60.675(c), if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

(i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.

(g) If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operation problems, etc.) in conducting any rescheduled performance test required in this section, the owner or operator of an affected facility shall submit a notice to the Administrator at least 7 days prior to any rescheduled performance test.

§ 60.676 Reporting and Recordkeeping.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in 40 CFR 60.672, including reports of opacity observations made using Method 9 to demonstrate compliance with 40 CFR 60.672(b) and (c).

(h) The Subpart A requirement under 40 CFR 60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart.

(i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.

(1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

The provisions of this subsection apply to the following emissions units.

ID	Emission Unit Description	
003	(Existing) Raw material processing - unenclosed conveyor transfer points (D conveyors)	
011	(New) Clinker and cement processing with the following emissions points:	
	Point ID No.	*Description*
	L-03-02	Baghouse for clinker pan conveyor
	L-06-02	Baghouse for clinker silo inlet
	L-25-02	Baghouse for gypsum/off-specification clinker transport
	M-08-02	Baghouse for clinker silo outlet conveyor
	M-09-02	Baghouse for gypsum/off-spec. clinker silo outlet
	N-09-02	Baghouse for finish mill separator (1)
	N-12-02	Baghouse for finish mill vent (2)
	N-36-02	Baghouse for fringe cement bin
	N-91-02	Baghouse for finish mill (3)
	P-03-02	Baghouse for cement transport conveyor
	P-11-02	Baghouse for cement silos
	Q-17-02	Baghouse for cement truck load out No. 3
013	(New) Dry process preheater/precalciner rotary kiln with in-line raw mill	
014	(New) Baghouses for raw material processing	
	Point ID No.	*Description*
	E28-02	Baghouse raw mill
	E34-02	Baghouse off-specification feed handling
	G07-02	Baghouse homogenizing silo
	H08-02	Baghouse Poldos homogenizing silo
	H08A-02	Baghouse hydrated lime silo
	U-05-02	Baghouse fly ash silo

1. NESHAP Subpart A: The affected emissions units are subject to the applicable General Provisions in NESHAP Subpart A of 40 CFR 63, as adopted by Rule 62-204.800(11), F.A.C. At the end of Appendix J, Table J-1 summarizes the portions of the NESHAP General Provisions that are applicable to the affected NESHAP Subpart LLL units. [40 CFR 63, Subpart A]
2. NESHAP Subpart LLL: The affected emissions units are subject to the applicable requirements for the Portland Cement Manufacturing Industry specified in NESHAP Subpart LLL of 40 CFR 63, as adopted by Rule 62-204.800(11), F.A.C. [40 CFR 63, Subpart LLL]

§ 63.1340 Applicability and Designation of Affected Sources.

(a) Except as specified in paragraphs (b) and (c) of this section, the provisions of this subpart apply to each new and existing portland cement plant which is a major source as defined in §63.2.

(b) The affected sources subject to this subpart are:

(1) Each kiln and each in-line kiln/raw mill at any major source, including alkali bypasses, except for kilns and in-line kiln/raw mills that burn hazardous waste and are subject to and regulated under subpart EEE of this part;

(2) Each clinker cooler at any portland cement plant which is a major source;

(3) Each raw mill at any portland cement plant which is a major source;

(4) Each finish mill at any portland cement plant which is a major source;

(5) Each raw material dryer at any portland cement plant which is a major source and each greenfield raw material dryer at any portland cement plant which is a major source;

(6) Each raw material, clinker, or finished product storage bin at any portland cement plant which is a major source;

(7) Each conveying system transfer point including those associated with coal preparation used to convey coal from the mill to the kiln at any portland cement plant which is a major source;

(8) Each bagging system at any portland cement plant which is a major source; and

(c) For portland cement plants with on-site nonmetallic mineral processing facilities, the first affected source in the sequence of materials handling operations subject to this subpart is the raw material storage, which is just prior to the raw mill. Any equipment of the on-site nonmetallic mineral processing plant which precedes the raw material storage is not subject to this subpart. In addition, the primary and secondary crushers of the on-site nonmetallic mineral processing plant, regardless of whether they precede the raw material storage, are not subject to this subpart. Furthermore, the first conveyor transfer point subject to this subpart is the transfer point associated with the conveyor transferring material from the raw material storage to the raw mill.

(d) The owner or operator of any affected source subject to the provisions of this subpart is subject to title V permitting requirements.

§ 63.1341 Definitions.

All terms used in this subpart that are not defined below have the meaning given to them in the CAA and in subpart A of this part.

Alkali bypass means a duct between the feed end of the kiln and the preheater tower through which a portion of the kiln exit gas stream is withdrawn and quickly cooled by air or water to avoid excessive buildup of alkali, chloride and/or sulfur on the raw feed. This may also be referred to as the "kiln exhaust gas bypass".

Bagging system means the equipment which fills bags with portland cement.

Bin means a manmade enclosure for storage of raw materials, clinker, or finished product prior to further processing at a Portland cement plant.

Clinker cooler means equipment into which clinker product leaving the kiln is placed to be cooled by air supplied by a forced draft or natural draft supply system.

Continuous monitor means a device which continuously samples the regulated parameter specified in §63.1350 of this subpart without interruption, evaluates the detector response at least once every 15 seconds, and computes and records the average value at least every 60 seconds, except during allowable periods of calibration and except as defined otherwise by the continuous emission monitoring system performance specifications in appendix B to part 60 of this chapter.

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a facility. Conveying systems include but are not limited to the following: feeders, belt conveyors, bucket elevators and pneumatic systems.

Conveying system transfer point means a point where any material including but not limited to feed material, fuel, clinker or product, is transferred to or from a conveying system, or between separate parts of a conveying system.

Dioxins and furans (D/F) means tetra-, penta-, hexa-, hepta-, and octa- chlorinated dibenzo dioxins and furans.

Facility means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

Feed means the prepared and mixed materials, which include but are not limited to materials such as limestone, clay, shale, sand, iron ore, mill scale, cement kiln dust and fly ash, that are fed to the kiln. Feed does not include the fuels used in the kiln to produce heat to form the clinker product.

Finish mill means a roll crusher, ball and tube mill or other size reduction equipment used to grind clinker to a fine powder. Gypsum and other materials may be added to and blended with clinker in a finish mill. The finish mill also includes the air

separator associated with the finish mill.

Greenfield kiln, in-line kiln/raw mill, or *raw material dryer* means a kiln, in-line kiln/raw mill, or raw material dryer for which construction is commenced at a plant site (where no kilns and no in-line kiln/raw mills were in operation at any time prior to March 24, 1998) after March 24, 1998.

Hazardous waste is defined in §261.3 of this chapter.

In-line kiln/raw mill means a system in a portland cement production process where a dry kiln system is integrated with the raw mill so that all or a portion of the kiln exhaust gases are used to perform the drying operation of the raw mill, with no auxiliary heat source used. In this system the kiln is capable of operating without the raw mill operating, but the raw mill cannot operate without the kiln gases, and consequently, the raw mill does not generate a separate exhaust gas stream.

Kiln means a device, including any associated preheater or precalciner devices, that produces clinker by heating limestone and other materials for subsequent production of portland cement.

Kiln exhaust gas bypass means alkali bypass.

Monovent means an exhaust configuration of a building or emission control device (e. g. positive pressure fabric filter) that extends the length of the structure and has a width very small in relation to its length (i. e., length to width ratio is typically greater than 5:1). The exhaust may be an open vent with or without a roof, louvered vents, or a combination of such features.

New brownfield kiln, in-line kiln raw mill, or *raw material dryer* means a kiln, in-line kiln/raw mill or raw material dryer for which construction is commenced at a plant site (where kilns and/or in-line kiln/raw mills were in operation prior to March 24, 1998) after March 24, 1998.

One-minute average means the average of thermocouple or other sensor responses calculated at least every 60 seconds from responses obtained at least once during each consecutive 15 second period.

Portland cement plant means any facility manufacturing portland cement.

Raw material dryer means an impact dryer, drum dryer, paddle-equipped rapid dryer, air separator, or other equipment used to reduce the moisture content of feed materials.

Raw mill means a ball and tube mill, vertical roller mill or other size reduction equipment, that is not part of an in-line kiln/raw mill, used to grind feed to the appropriate size. Moisture may be added or removed from the feed during the grinding operation. If the raw mill is used to remove moisture from feed materials, it is also, by definition, a raw material dryer. The raw mill also includes the air separator associated with the raw mill.

Rolling average means the average of all one-minute averages over the averaging period.

Run average means the average of the one-minute parameter values for a run.

TEQ means the international method of expressing toxicity equivalents for dioxins and furans as defined in U.S. EPA, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and -dibenzofurans (CDDs and CDFs) and 1989 Update, March 1989.

§ 63.1342 Standards - General.

(a) Table 1 to this subpart provides cross references to the 40 CFR part 63, subpart A, general provisions, indicating the applicability of the general provisions requirements to subpart LLL.

(b) Table 1 of this section provides a summary of emission limits and operating limits of this subpart.

Table 1 to § 63.1342. Emission Limits and Operating Limits.

Affected Source	Pollutant / Opacity	Emission and Operating Limit
All kilns and in-line kiln/raw mills at major sources (including alkali bypass)	PM	0.15 kg/Mg of feed (dry basis)
	Opacity	20 percent
All kilns and in-line kiln/raw mills at major sources (including alkali bypass)	D/F	0.20 ng TEQ/dscm corrected to 7 percent oxygen or 0.40 ng TEQ/dscm corrected to 7 percent oxygen when the average of the performance test run average

Affected Source	Pollutant / Opacity	Emission and Operating Limit
		particulate matter control device (PMCD) inlet temperatures is 204° C or less. Operate such that the three-hour rolling average PMCD inlet temperature is no greater than the temperature established at performance test. If activated carbon injection is used: Operate such that the three-hour rolling average activated carbon injection rate is no less than rate established at performance test. Operate such that either the carrier gas flow rate or carrier gas pressure drop exceeds the value established at performance test. Inject carbon of equivalent specifications to that used at performance test.
New greenfield kilns and in-line kiln/raw mills at major sources	THC	50 ppmvd, as propane, corrected to 7 percent oxygen
All clinker coolers at major sources	PM	0.050 kg/Mg of feed (dry basis)
	Opacity	10 percent
All raw mills and finish mills at major sources	Opacity	10 percent
New greenfield raw material dryers at major sources	THC	50 ppmvd, as propane, corrected to 7 percent oxygen
All raw material dryers and material handling points at major sources	Opacity	10 percent

§ 63.1343 Standards for Kilns and In-line Kiln/Raw Mills.

(a) *General.* The provisions in this section apply to each kiln, each in-line kiln/raw mill, and any alkali bypass associated with that kiln or in-line kiln/raw mill.

(b) *Existing, reconstructed, or new brownfield/major sources.* No owner or operator of an existing, reconstructed or new brownfield kiln or an existing, reconstructed or new brownfield in-line kiln/raw mill at a facility that is a major source subject to the provisions of this subpart shall cause to be discharged into the atmosphere from these affected sources, any gases which:

(1) Contain particulate matter (PM) in excess of 0.15 kg per Mg (0.30 lb per ton) of feed (dry basis) to the kiln. When there is an alkali bypass associated with a kiln or in-line kiln/raw mill, the combined particulate matter emissions from the kiln or in-line kiln/raw mill and the alkali bypass are subject to this emission limit.

(2) Exhibit opacity greater than 20 percent.

(3) Contain D/F in excess of:

(i) 0.20 ng per dscm (8.7×10^{-11} gr per dscf)(TEQ) corrected to seven percent oxygen; or

(ii) 0.40 ng per dscm (1.7×10^{-10} gr per dscf)(TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less.

(c) *Greenfield/major sources.* No owner or operator that commences construction of a greenfield kiln or greenfield inline kiln/raw mill at a facility which is a major source subject to the provisions of this subpart shall cause to be discharged into the atmosphere from these affected sources any gases which:

(1) Contain particulate matter in excess of 0.15 kg per Mg (0.30 lb per ton) of feed (dry basis) to the kiln. When there is an alkali bypass associated with a kiln or in-line kiln/raw mill, the combined particulate matter emissions from

the kiln or in-line kiln/raw mill and the bypass stack are subject to this emission limit.

(2) Exhibit opacity greater than 20 percent.

(3) Contain D/F in excess of:

(i) 0.20 ng per dscm (8.7×10^{-11} gr per dscf)(TEQ) corrected to seven percent oxygen; or

(ii) 0.40 ng per dscm (1.7×10^{-10} gr per dscf)(TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less.

(4) Contain total hydrocarbon (THC), from the main exhaust of the kiln or in-line kiln/raw mill, in excess of 50 ppmvd as propane, corrected to seven percent oxygen.

(d) *Reserved*

(e) *Rseserved*

§ 63.1344 Operating Limits for Kilns and In-line Kiln/Raw Mills.

(a) The owner or operator of a kiln subject to a D/F emission limitation under §63.1343 must operate the kiln such that the temperature of the gas at the inlet to the kiln particulate matter control device (PMCD) and alkali bypass PMCD, if applicable, does not exceed the applicable temperature limit specified in paragraph (b) of this section. The owner or operator of an in-line kiln/raw mill subject to a D/F emission limitation under §63.1343 must operate the in-line kiln/raw mill, such that,

(1) When the raw mill of the in-line kiln/raw mill is operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in paragraph (b) of this section and established during the performance test when the raw mill was operating is not exceeded.

(2) When the raw mill of the in-line kiln/raw mill is not operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in paragraph (b) of this section and established during the performance test when the raw mill was not operating, is not exceeded.

(3) If the in-line kiln/raw mill is equipped with an alkali bypass, the applicable temperature limit for the alkali bypass specified in paragraph (b) of this section and established during the performance test, with or without the raw mill operating, is not exceeded.

(b) The temperature limit for affected sources meeting the limits of paragraph (a) of this section or paragraphs (a)(1) through (a)(3) of this section is determined in accordance with §63.1349(b)(3)(iv).

(c) The owner or operator of an affected source subject to a D/F emission limitation under §63.1343 that employs carbon injection as an emission control technique must operate the carbon injection system in accordance with paragraphs (c)(1) and (c)(2) of this section.

(1) The three-hour rolling average activated carbon injection rate shall be equal to or greater than the activated carbon injection rate determined in accordance with §63.1349(b)(3)(vi).

(2) The owner or operator shall either:

(i) Maintain the minimum activated carbon injection carrier gas flow rate, as a three-hour rolling average, based on the manufacturer's specifications. These specifications must be documented in the test plan developed in accordance with §63.7(c) of this part, or

(ii) Maintain the minimum activated carbon injection carrier gas pressure drop, as a three-hour rolling average, based on the manufacturer's specifications. These specifications must be documented in the test plan developed in accordance with §63.7(c).

(d) Except as provided in paragraph (e) of this section, the owner or operator of an affected source subject to a D/F emission limitation under §63.1343 that employs carbon injection as an emission control technique must specify and use the brand and type of activated carbon used during the performance test until a subsequent performance test is conducted, unless the site-specific performance test plan contains documentation of key parameters that affect adsorption and the owner or operator establishes limits based on those parameters, and the limits on these parameters are maintained.

(e) The owner or operator of an affected source subject to a D/F emission limitation under §63.1343 that employs carbon injection as an emission control technique may substitute, at any time, a different brand or type of activated carbon provided that the replacement has equivalent or improved properties compared to the activated carbon specified in the site-specific performance test plan and used in the performance test. The owner or operator must maintain documentation that the substitute activated carbon will provide the same or better level of control as the original activated carbon.

§ 63.1345 Standards for Clinker Coolers.

(a) No owner or operator of a new or existing clinker cooler at a facility which is a major source subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the clinker cooler any gases which:

(1) Contain particulate matter in excess of 0.050 kg per Mg (0.10 lb per ton) of feed (dry basis) to the kiln.

(2) Exhibit opacity greater than ten percent.

(b) [Reserved]

§ 63.1346 Standards for New and Reconstructed Raw Material Dryers.

(a) *Brownfield/major sources.* No owner or operator of a new or reconstructed brownfield raw material dryer at a facility which is a major source subject to this subpart shall cause to be discharged into the atmosphere from the new or reconstructed raw material dryer any gases which exhibit opacity greater than ten percent.

(b) *Reserved*

(c) *Greenfield/major sources.* No owner or operator of a greenfield raw material dryer at a facility which is a major source subject to this subpart shall cause to be discharged into the atmosphere from the greenfield raw material dryer any gases which:

(1) Contain THC in excess of 50 ppmvd, reported as propane, corrected to seven percent oxygen.

(2) Exhibit opacity greater than ten percent.

§ 63.1347 Standards for Raw and Finish Mills.

The owner or operator of each new or existing raw mill or finish mill at a facility which is a major source subject to the provisions of this subpart shall not cause to be discharged from the mill sweep or air separator air pollution control devices of these affected sources any gases which exhibit opacity in excess of ten percent.

§ 63.1348 Standards for Affected Sources Other than Kilns; In-line Kiln/Raw Mills; Clinker coolers; New and Reconstructed Raw Material Dryers; and Raw and Finish Mills.

The owner or operator of each new or existing raw material, clinker, or finished product storage bin; conveying system transfer point; bagging system; and bulk loading or unloading system; and each existing raw material dryer, at a facility which is a major source subject to the provisions of this subpart shall not cause to be discharged any gases from these affected sources which exhibit opacity in excess of ten percent.

§ 63.1349 Performance Testing Requirements.

(a) The owner or operator of an affected source subject to this subpart shall demonstrate initial compliance with the emission limits of §63.1343 and §§63.1345 through 63.1348 using the test methods and procedures in paragraph (b) of this section and §63.7. Performance test results shall be documented in complete test reports that contain the information required by paragraphs (a)(1) through (a)(10) of this section, as well as all other relevant information. The plan to be followed during testing shall be made available to the Administrator prior to testing, if requested.

(1) A brief description of the process and the air pollution control system;

(2) Sampling location description(s);

(3) A description of sampling and analytical procedures and any modifications to standard procedures;

(4) Test results;

(5) Quality assurance procedures and results;

(6) Records of operating conditions during the test, preparation of standards, and calibration procedures;

(7) Raw data sheets for field sampling and field and laboratory analyses;

(8) Documentation of calculations;

(9) All data recorded and used to establish parameters for compliance monitoring; and

(10) Any other information required by the test method.

(b) Performance tests to demonstrate initial compliance with this subpart shall be conducted as specified in paragraphs (b)(1) through (b)(4) of this section.

(1) The owner or operator of a kiln subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting a performance test as specified in paragraphs (b)(1)(i) through (b)(1)(iv) of this section. The owner or operator of an in-line kiln/raw mill subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting separate performance tests as specified in paragraphs (b)(1)(i) through (b)(1)(iv) of this section while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating. The owner or operator of a clinker cooler subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting a performance test as specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section. The opacity exhibited during the period of the Method 5 of Appendix A to part 60 of this chapter performance tests required by paragraph (b)(1)(i) of this section shall be determined as required in paragraphs (b)(1)(v) through (vi) of this section.

(i) Method 5 of appendix A to part 60 of this chapter shall be used to determine PM emissions. Each performance test shall consist of three separate runs under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with Sec. 63.7(e). Each run shall be conducted for at least 1 hour, and the minimum sample volume shall be 0.85 dscm (30 dscf). The average of the three runs shall be used to determine compliance. A determination of the PM collected in the impingers ("back half") of the Method 5 particulate sampling train is not required to demonstrate initial compliance with the PM standards of this subpart. However, this shall not preclude the permitting authority from requiring a determination of the "back half" for other purposes.

(ii) Suitable methods shall be used to determine the kiln or inline kiln/raw mill feed rate, except for fuels, for each run.

(iii) The emission rate, E, of PM shall be computed for each run using equation 1:

$$E = (c_s Q_{sd}) / P \qquad \textbf{(Eq 1)}$$

Where:

E = emission rate of particulate matter, kg/Mg of kiln feed.

c_s = concentration of PM, kg/dscm.

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr.

P = total kiln feed (dry basis), Mg/hr.

(iv) When there is an alkali bypass associated with a kiln or in-line kiln/raw mill, the main exhaust and alkali bypass of the kiln or in-line kiln/raw mill shall be tested simultaneously and the combined emission rate of particulate matter from the kiln or in-line kiln/raw mill and alkali bypass shall be computed for each run using equation 2,

$$E_c = (c_{sk}Q_{sdk} + c_{sb}Q_{sdb})/P \qquad \textbf{(Eq 2)}$$

Where:

E_c = the combined emission rate of particulate matter from the kiln or in-line kiln/raw mill and bypass stack, kg/Mg of kiln feed.

c_{sk} = concentration of particulate matter in the kiln or in-line kiln/raw mill effluent, kg/dscm.

Q_{sdk} = volumetric flow rate of kiln or in-line kiln/raw mill effluent, dscm/hr.

c_{sb} = concentration of particulate matter in the alkali bypass gas, kg/dscm.

Q_{sdb} = volumetric flow rate of alkali bypass gas, dscm/hr.

P = total kiln feed (dry basis), Mg/hr.

(v) Except as provided in paragraph (b)(1)(vi) of this section the opacity exhibited during the period of the Method 5 performance tests required by paragraph (b)(1)(i) of this section shall be determined through the use of a continuous opacity monitor (COM). The maximum six-minute average opacity during the three Method 5 test runs shall be determined during each Method 5 test run, and used to demonstrate initial compliance with the applicable opacity limits of §63.1343(b)(2), §63.1343(c)(2), or §63.1345(a)(2).

(vi) Each owner or operator of a kiln, in-line kiln/raw mill, or clinker cooler subject to the provisions of this subpart using a fabric filter with multiple stacks or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by paragraph (b)(1)(v) of this section, conduct an opacity test in accordance with Method 9 of appendix A to part 60 of this chapter during each Method 5 performance test required by paragraph (b)(1)(i) of this section. If the control device exhausts through a monovent, or if the use of a COM in accordance with the installation specifications of Performance Specification 1 (PS-1) of appendix B to part 60 of this chapter is not feasible, a test shall be conducted in accordance with Method 9 of appendix A to part 60 of this chapter during each Method 5 performance test required by paragraph (b)(1)(i) of this section. The maximum six-minute average opacity shall be determined during the three Method 5 test runs, and used to demonstrate initial compliance with the applicable opacity limits of §63.1343(b)(2), §63.1343(c)(2), or §63.1345(a)(2).

(2) The owner or operator of any affected source subject to limitations on opacity under this subpart that is not subject to paragraph (b)(1) of this section shall demonstrate initial compliance with the affected source opacity limit by conducting a test in accordance with Method 9 of appendix A to part 60 of this chapter. The performance test shall be conducted under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with Sec. 63.7(e). The maximum 6-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the standard. The duration of the Method 9 performance test shall be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the conditions of paragraphs (b)(2)(i) through (ii) of this section apply:

(i) There are no individual readings greater than 10 percent opacity;

(ii) There are no more than three readings of 10 percent for the first 1-hour period.

(3) The owner or operator of an affected source subject to limitations on D/F emissions under this subpart shall demonstrate initial compliance with the D/F emission limit by conducting a performance test using Method 23 of appendix A to part 60 of this chapter. The owner or operator of an in-line kiln/raw mill shall demonstrate initial compliance by conducting separate performance tests while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating. The owner or operator of a kiln or in-line kiln/raw mill equipped with an alkali bypass shall conduct simultaneous performance tests of the kiln or in-line kiln/raw mill exhaust and the alkali bypass. However, the owner or operator of an in-line kiln/raw mill may conduct a performance test of the alkali bypass exhaust when the raw mill of the in-line kiln/raw mill is operating or not operating.

(i) Each performance test shall consist of three separate runs; each run shall be conducted under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with Sec. 63.7(e). The duration of each run shall be at least 3 hours, and the sample volume for each run shall be at least 2.5 dscm (90 dscf). The concentration shall be determined for each run, and the arithmetic average of the concentrations measured for the three runs shall be calculated and used to determine compliance.

(ii) The temperature at the inlet to the kiln or in-line kiln/raw mill PMCD, and where applicable, the temperature at the inlet to the alkali bypass PMCD, must be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) must be included in the performance test report.

(iii) One-minute average temperatures must be calculated for each minute of each run of the test.

(iv) The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report and will determine the applicable temperature limit in accordance with §63.1344(b).

(v) If activated carbon injection is used for D/F control, the rate of activated carbon injection to the kiln or in-line

kiln/raw mill exhaust, and where applicable, the rate of activated carbon injection to the alkali bypass exhaust, must be continuously recorded during the period of the Method 23 test, and the continuous injection rate record(s) must be included in the performance test report. In addition, the performance test report must include the brand and type of activated carbon used during the performance test and a continuous record of either the carrier gas flow rate or the carrier gas pressure drop for the duration of the test. Activated carbon injection rate parameters must be determined in accordance with paragraphs (b)(3)(vi) of this section.

(vi) The run average injection rate must be calculated for each run, and the average of the run average injection rates must be determined and included in the performance test report and will determine the applicable injection rate limit in accordance with §63.1344(c)(1).

(4) The owner or operator of an affected source subject to limitations on emissions of THC shall demonstrate initial compliance with the THC limit by operating a continuous emission monitor in accordance with Performance Specification 8A of appendix B to part 60 of this chapter. The duration of the performance test shall be three hours, and the average THC concentration (as calculated from the one-minute averages) during the three hour performance test shall be calculated. The owner or operator of an in-line kiln/raw mill shall demonstrate initial compliance by conducting separate performance tests while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating.

(c) Except as provided in paragraph (e) of this section, performance tests required under paragraphs (b)(1) and (b)(2) of this section shall be repeated every five years, except that the owner or operator of a kiln, in-line kiln/raw mill or clinker cooler is not required to repeat the initial performance test of opacity for the kiln, in-line kiln/raw mill or clinker cooler.

(d) Performance tests required under paragraph (b)(3) of this section shall be repeated every 30 months.

(e) (1) If a source plans to undertake a change in operations that may adversely affect compliance with an applicable D/F standard under this subpart, the source must conduct a performance test and establish new temperature limit(s) as specified in paragraph (b)(3) of this section.

(2) If a source plans to undertake a change in operations that may adversely affect compliance with an applicable PM standard under Sec. 63.1343, the source must conduct a performance test as specified in paragraph (b)(1) of this section.

(3) In preparation for and while conducting a performance test required in paragraph (e)(1) of this section, a source may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in paragraphs (e)(3)(i) through (iv) of this section are met. The source shall submit temperature and other monitoring data that are recorded during the pretest operations.

(i) The source must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph shall include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (e)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to paragraph (a) of this section.

(iii) A test plan must be made available to the Administrator prior to testing, if requested.

(iv) The performance test must be conducted, and it must be completed within 360 hours after the planned operational change period begins.

(f) Table 1 of this section provides a summary of the performance test requirements of this subpart.

TABLE 1 TO § 63.1349. SUMMARY OF PERFORMANCE TEST REQUIREMENTS

Affected Source and Pollutant	Performance Test
New and existing kiln and in-line kiln/raw mill[b,c] PM	EPA Method 5[a]
New and existing kiln and in-line kiln/raw mill[b,c] Opacity	COM if feasible[d,e] or EPA Method 9 visual opacity readings.

Affected Source and Pollutant	Performance Test
New and existing kiln and in-line kiln/raw mill[b,c,f,g] D/F	EPA Method 23[h]
New greenfield kiln and in-line kiln/raw mill[e] THC	THC CEM (EPA PS-8A)[i]
New and existing clinker cooler PM	EPA Method 5[a]
New and existing clinker cooler opacity	COM[d,j] or EPA Method 9 visual opacity readings
New and existing raw and finish mill opacity	EPA Method 9[a,j]
New and existing raw material dryer and materials handling processes (raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging, and bulk loading and unloading systems) opacity	EPA Method 9[a,j]
New greenfield raw material dryer THC	THC CEM (EPA PS-8A)[i]

[a] Required initially and every 5 years thereafter.

[b] Includes main exhaust and alkali bypass.

[c] In-line kiln/raw mill to be tested with and without raw mill in operation.

[d] Must meet COM performance specification criteria. If the fabric filter or electrostatic precipitator has multiple stacks, daily EPA Method 9 visual opacity readings may be taken instead of using a COM.

[e] Opacity limit is 20 percent.

[f] Alkali bypass is tested with the raw mill operating or not operating.

[g] Temperature and (if applicable) activated carbon injection parameters determined separately with and without the raw mill operating.

[h] Required initially and every 30 months thereafter.

[i] EPA Performance Specification (PS)-8A of appendix B to part 60 of this chapter.

[j] Opacity limit is 10 percent.

§ 63.1350 Monitoring Requirements.

(a) The owner or operator of each portland cement plant shall prepare for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan shall be submitted to the Administrator for review and approval as part of the application for a part 70 permit and shall include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits of §63.1343 through §63.1348;

(2) Corrective actions to be taken when required by paragraph (e) of this section;

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year; and

(4) Procedures to be used to periodically monitor affected sources subject to opacity standards under §63.1346 and §63.1348. Such procedures must include the provisions of paragraphs (a)(4)(i) through (a)(4)(iv) of this section.

(i) The owner or operator must conduct a monthly 1-minute visible emissions test of each affected source in accordance with Method 22 of Appendix A to part 60 of this chapter. The test must be conducted while the affected source is in operation.

(ii) If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the owner or operator must resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six

consecutive monthly tests.

(iii) If no visible emissions are observed during the semi-annual test for any affected source, the owner or operator may decrease the frequency of testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual test, the owner or operator must resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iv) If visible emissions are observed during any Method 22 test, the owner or operator must conduct a 6-minute test of opacity in accordance with Method 9 of appendix A to part 60 of this chapter. The Method 9 test must begin within one hour of any observation of visible emissions.

(v) The requirement to conduct Method 22 visible emissions monitoring under this paragraph shall not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. ``Totally enclosed conveying system transfer point'' shall mean a conveying system transfer point that is enclosed on all sides, top, and bottom. The enclosures for these transfer points shall be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

(vi) If any partially enclosed or unenclosed conveying system transfer point is located in a building, the owner or operator of the portland cement plant shall have the option to conduct a Method 22 visible emissions monitoring test according to the requirements of paragraphs (a)(4)(i) through (iv) of this section for each such conveying system transfer point located within the building, or for the building itself, according to paragraph (a)(4)(vii) of this section.

(vii) If visible emissions from a building are monitored, the requirements of paragraphs (a)(4)(i) through (iv) of this section apply to the monitoring of the building, and you must also test visible emissions from each side, roof and vent of the building for at least 1 minute. The test must be conducted under normal operating conditions.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with paragraph (a) of this section shall be a violation of the standard.

(c) The owner or operator of a kiln or in-line kiln/raw mill shall monitor opacity at each point where emissions are vented from these affected sources including alkali bypasses in accordance with paragraphs (c)(1) through (c)(3) of this section.

(1) Except as provided in paragraph (c)(2) of this section, the owner or operator shall install, calibrate, maintain, and continuously operate a continuous opacity monitor (COM) located at the outlet of the PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by subpart A, general provisions of this part, and according to PS-1 of appendix B to part 60 of this chapter.

(2) The owner or operator of a kiln or in-line kiln/raw mill subject to the provisions of this subpart using a fabric filter with multiple stacks or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by paragraph (c)(1) of this section, monitor opacity in accordance with paragraphs (c)(2)(i) through (ii) of this section. If the control device exhausts through a monovent, or if the use of a COM in accordance with the installation specifications of PS-1 of appendix B to part 60 of this chapter is not feasible, the owner or operator must monitor opacity in accordance with paragraphs (c)(2)(i) through (ii) of this section.

(i) Perform daily visual opacity observations of each stack in accordance with the procedures of Method 9 of appendix A to part 60 of this chapter. The Method 9 test shall be conducted while the affected source is operating at the representative performance conditions. The duration of the Method 9 test shall be at least 30 minutes each day.

(ii) Use the Method 9 procedures to monitor and record the average opacity for each six-minute period during the test.

(3) To remain in compliance, the opacity must be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 20 percent. If the average opacity for any 6-minute block period exceeds 20 percent, this shall constitute a violation of the standard.

(d) The owner or operator of a clinker cooler shall monitor opacity at each point where emissions are vented from the clinker cooler in accordance with paragraphs (d)(1) through (d)(3) of this section.

(1) Except as provided in paragraph (d)(2) of this section, the owner or operator shall install, calibrate, maintain, and continuously operate a COM located at the outlet of the clinker cooler PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by subpart A, general provisions of this part, and according to PS-1 of appendix B to part 60 of this chapter.

(2) The owner or operator of a clinker cooler subject to the provisions of this subpart using a fabric filter with multiple stacks or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by paragraph (d)(1) of this section, monitor opacity in accordance with paragraphs (d)(2)(i) through (ii) of this section. If the control device exhausts through a monovent, or if the use of a COM in accordance with the installation specifications of PS-1 of appendix B to part 60 of this chapter is not feasible, the owner or operator must monitor opacity in accordance with paragraphs (d)(2)(i) through (ii) of this section.

(i) Perform daily visual opacity observations of each stack in accordance with the procedures of Method 9 of appendix A to part 60 of this chapter. The Method 9 test shall be conducted while the affected source is operating at the representative performance conditions. The duration of the Method 9 test shall be at least 30 minutes each day.

(ii) Use the Method 9 procedures to monitor and record the average opacity for each six-minute period during the test.

(3) To remain in compliance, the opacity must be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 10 percent. If the average opacity for any 6-minute block period exceeds 10 percent, this shall constitute a violation of the standard.

(e) The owner or operator of a raw mill or finish mill shall monitor opacity by conducting daily visual emissions observations of the mill sweep and air separator PMCD of these affected sources in accordance with the procedures of Method 22 of appendix A to part 60 of this chapter. The Method 22 test shall be conducted while the affected source is operating at the representative performance conditions. The duration of the Method 22 test shall be 6 minutes. If visible emissions are observed during any Method 22 visible emissions test, the owner or operator must:

(1) Initiate, within one-hour, the corrective actions specified in the site specific operating and maintenance plan developed in accordance with paragraphs (a)(1) and (a)(2) of this section; and

(2) Within 24 hours of the end of the Method 22 test in which visible emissions were observed, conduct a follow-up Method 22 test of each stack from which visible emissions were observed during the previous Method 22 test. If visible emissions are observed during the follow-up Method 22 test from any stack from which visible emissions were observed during the previous Method 22 test, conduct a visual opacity test of each stack from which emissions were observed during the follow up Method 22 test in accordance with Method 9 of appendix A to part 60 of this chapter. The duration of the Method 9 test shall be 30 minutes.

(f) The owner or operator of an affected source subject to a limitation on D/F emissions shall monitor D/F emissions in accordance with paragraphs (f)(1) through (f)(6) of this section.

(1) The owner or operator shall install, calibrate, maintain, and continuously operate a continuous monitor to record the temperature of the exhaust gases from the kiln, in-line kiln/raw mill and alkali bypass, if applicable, at the inlet to, or upstream of, the kiln, in-line kiln/raw mill and/or alkali bypass PM control devices.

(i) The recorder response range must include zero and 1.5 times either of the average temperatures established according to the requirements in §63.1349(b)(3)(iv).

(ii) The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.

(2) The owner or operator shall monitor and continuously record the temperature of the exhaust gases from the kiln, in-line kiln/raw mill and alkali bypass, if applicable, at the inlet to the kiln, in-line kiln/raw mill and/or alkali bypass PMCD.

(3) The three-hour rolling average temperature shall be calculated as the average of 180 successive one-minute average temperatures.

(4) Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average is added to the previous 179 values to calculate the three-hour rolling average.

(5) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on, or from on to off the calculation of the three-hour rolling average temperature must begin anew, without considering previous recordings.

(6) The calibration of all thermocouples and other temperature sensors shall be verified at least once every three months.

(g) The owner or operator of an affected source subject to a limitation on D/F emissions that employs carbon injection as an emission control technique shall comply with the monitoring requirements of paragraphs (f)(1) through (f)(6) and (g)(1) through (g)(6) of this section to demonstrate continuous compliance with the D/F emission standard.

(1) Install, operate, calibrate and maintain a continuous monitor to record the rate of activated carbon injection. The accuracy of the rate measurement device must be ± 1 percent of the rate being measured.

(2) Verify the calibration of the device at least once every three months.

(3) The three-hour rolling average activated carbon injection rate shall be calculated as the average of 180 successive one-minute average activated carbon injection rates.

(4) Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average is added to the previous 179 values to calculate the three-hour rolling average.

(5) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on, or from on to off the calculation of the three-hour rolling average activated carbon injection rate must begin anew, without considering previous recordings.

(6) The owner or operator must install, operate, calibrate and maintain a continuous monitor to record the activated carbon injection system carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) established during the D/F performance test in accordance with paragraphs (g)(6)(i) through (g)(6)(iii) of this section.

(i) The owner or operator shall install, calibrate, operate and maintain a device to continuously monitor and record the parameter value.

(ii) The owner or operator must calculate and record three-hour rolling averages of the parameter value.

(iii) Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average shall be added to the previous 179 values to calculate the three-hour rolling average.

(h) The owner or operator of an affected source subject to a limitation on THC emissions under this subpart shall comply with the monitoring requirements of paragraphs (h)(1) through (h)(3) of this section to demonstrate continuous compliance with the THC emission standard:

(1) The owner or operator shall install, operate and maintain a THC continuous emission monitoring system in accordance with Performance Specification 8A, of appendix B to part 60 of this chapter and comply with all of the requirements for continuous monitoring systems found in the general provisions, subpart A of this part.

(2) The owner or operator is not required to calculate hourly rolling averages in accordance with section 4.9 of Performance Specification 8A.

(3) Any thirty-day block average THC concentration in any gas discharged from a greenfield raw material dryer, the main exhaust of a greenfield kiln, or the main exhaust of a greenfield in-line kiln/raw mill, exceeding 50 ppmvd, reported as propane, corrected to seven percent oxygen, is a violation of the standard.

(i) The owner or operator of any kiln or in-line kiln/raw mill subject to a D/F emission limit under this subpart shall conduct an inspection of the components of the combustion system of each kiln or in-line kiln raw mill at least once per year.

(j) The owner or operator of an affected source subject to a limitation on opacity under §63.1346 or §63.1348 shall monitor opacity in accordance with the operation and maintenance plan developed in accordance with paragraph (a) of this section.

(k) The owner or operator of an affected source subject to a particulate matter standard under §63.1343 shall install,

calibrate, maintain and operate a particulate matter continuous emission monitoring system (PM CEMS) to measure the particulate matter discharged to the atmosphere. All requirements relating to installation, calibration, maintenance, operation or performance of the PM CEMS and implementation of the PM CEMS requirement are deferred pending further rulemaking.

(l) An owner or operator may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the emission standards of this subpart, except for emission standards for THC, subject to the provisions of paragraphs (l)(1) through (l)(6) of this section.

(1) The Administrator will not approve averaging periods other than those specified in this section, unless the owner or operator documents, using data or information, that the longer averaging period will ensure that emissions do not exceed levels achieved during the performance test over any increment of time equivalent to the time required to conduct three runs of the performance test.

(2) If the application to use an alternate monitoring requirement is approved, the owner or operator must continue to use the original monitoring requirement until approval is received to use another monitoring requirement.

(3) The owner or operator shall submit the application for approval of alternate monitoring requirements no later than the notification of performance test. The application must contain the information specified in paragraphs (l)(3)(i) through (l)(3)(iii) of this section:

(i) Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach;

(ii) A description of the proposed alternative monitoring requirement, including the operating parameter to be monitored, the monitoring approach and technique, the averaging period for the limit, and how the limit is to be calculated; and

(iii) Data or information documenting that the alternative monitoring requirement would provide equivalent or better assurance of compliance with the relevant emission standard.

(4) The Administrator will notify the owner or operator of the approval or denial of the application within 90 calendar days after receipt of the original request, or within 60 calendar days of the receipt of any supplementary information, whichever is later. The Administrator will not approve an alternate monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard. Before disapproving any alternate monitoring application, the Administrator will provide:

(i) Notice of the information and findings upon which the intended disapproval is based; and

(ii) Notice of opportunity for the owner or operator to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for the owner or operator to provide additional supporting information.

(5) The owner or operator is responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application, nor the Administrator's failure to approve or disapprove the application relieves the owner or operator of the responsibility to comply with any provision of this subpart.

(6) The Administrator may decide at any time, on a case-by-case basis that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of this subpart.

(m) The requirements under paragraph (e) of this section to conduct daily Method 22 testing shall not apply to any specific raw mill or finish mill equipped with a continuous opacity monitor COM or bag leak detection system (BLDS). If the owner or operator chooses to install a COM in lieu of conducting the daily visual emissions testing required under paragraph (e) of this section, then the COM must be installed at the outlet of the PM control device of the raw mill or finish mill, and the COM must be installed, maintained, calibrated, and operated as required by the general provisions in subpart A of this part and according to PS-1 of appendix B to part 60 of this chapter. To remain in compliance, the opacity must be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 10 percent. If the average opacity for any 6-minute block period exceeds 10 percent, this shall constitute a violation of the standard. If the owner or operator chooses to install a BLDS in lieu of conducting the daily visual emissions testing required under paragraph (e) of this section, the requirements in paragraphs (m)(1) through (9) of this section apply to

each BLDS:

(1) The BLDS must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less. ``Certify'' shall mean that the instrument manufacturer has tested the instrument on gas streams having a range of particle size distributions and confirmed by means of valid filterable PM tests that the minimum detectable concentration limit is at or below 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The sensor on the BLDS must provide output of relative PM emissions.

(3) The BLDS must have an alarm that will activate automatically when it detects a significant increase in relative PM emissions greater than a preset level.

(4) The presence of an alarm condition should be clearly apparent to facility operating personnel.

(5) For a positive-pressure fabric filter, each compartment or cell must have a bag leak detector. For a negative-pressure or induced-air fabric filter, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required for either type of fabric filter, detectors may share the system instrumentation and alarm.

(6) All BLDS must be installed, operated, adjusted, and maintained so that they are based on the manufacturer's written specifications and recommendations. The EPA recommends that where appropriate, the standard operating procedures manual for each bag leak detection system include concepts from EPA's ``Fabric Filter Bag Leak Detection Guidance'' (EPA-454/R-98-015, September 1997).

(7) The baseline output of the system must be established as follows:

(i) Adjust the range and the averaging period of the device; and

(ii) Establish the alarm set points and the alarm delay time.

(8) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the operations and maintenance plan required by paragraph (a) of this section. In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 1 calendar year period unless a responsible official as defined in Sec. 63.2 certifies in writing to the Administrator that the fabric filter has been inspected and found to be in good operating condition.

(9) The owner or operator must maintain and operate the fabric filter such that the bag leak detector alarm is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month block period. Each time the alarm activates, alarm time will be counted as the actual amount of time taken by the owner or operator to initiate corrective actions. If inspection of the fabric filter demonstrates that no corrective actions are necessary, no alarm time will be counted. The owner or operator must continuously record the output from the BLDS during periods of normal operation. Normal operation does not include periods when the BLDS is being maintained or during startup, shutdown or malfunction.

(n) A summary of the monitoring requirements of this subpart is given in Table 1 to this section.

Table 1 to §63.1350. Monitoring Requirements.

Affected Source/Pollutant or Opacity	Monitor Type/ Operation/Process	Monitoring Requirements
All affected sources	Operations and maintenance plan	Prepare written plan for all affected sources and control devices
All kilns and in-line kiln raw mills at major sources (including alkali bypass)/opacity	Continuous opacity monitor, if applicable	Install, calibrate, maintain and operate in accordance with general provisions and with PS-1
	Method 9 opacity test, if applicable	Daily test of at least 30-minutes, while kiln is at highest load or capacity level
Kilns and in-line kiln raw mills at major sources (including alkali bypass)/particulate matter	Particulate matter continuous emission monitoring system	Deferred

Affected Source/Pollutant or Opacity	Monitor Type/ Operation/Process	Monitoring Requirements
Kilns and in-line kiln raw mills at major sources (including alkali bypass)/ D/F	Combustion system inspection	Conduct annual inspection of components of combustion system
	Continuous temperature monitoring at PMCD inlet	Install, operate, calibrate and maintain continuous temperature monitoring and recording system; calculate three-hour rolling averages; verify temperature sensor calibration at least quarterly
Kilns and in-line kiln raw mills at major sources (including alkali bypass)/ D/F (continued)	Activated carbon injection rate monitor, if applicable	Install, operate, calibrate and maintain continuous activated carbon injection rate monitor; calculate three-hour rolling averages; verify calibration at least quarterly; install, operate, calibrate and maintain carrier gas flow rate monitor or carrier gas pressure drop monitor; calculate three-hour rolling averages; document carbon specifications
New greenfield kilns and in-line kiln raw mills at major sources/THC	Total hydrocarbon continuous emission monitor	Install, operate, and maintain THC CEM in accordance with PS-8A; calculate 30-day block average THC concentration
Clinker coolers at major sources/opacity	Continuous opacity monitor, if applicable	Install, calibrate, maintain and operate in accordance with general provisions and with PS-1
	Method 9 opacity test, if applicable	Daily test of at least 30-minutes, while kiln is at highest load or capacity level.
Raw mills and finish mills at major sources/opacity	Method 22 visible emissions test (This requirement does not apply to a raw mill or finish mill equipped with a continuous opacity monitor or bag leak detection system)	Conduct daily 6-minute Method 22 visible emissions test while mill is operating at highest load or capacity level; if visible emissions are observed, initiate corrective action within one hour and conduct 30-minute Method 9 test within 24 hours
	Continuous opacity monitoring, if appilicable	Install, operate, and maintain in accordance with general provisions and with PS-1. A six-minute average greater than 10% opacity is a violation
	Bag leak detection system, if applicable	Install, operate and maintain in accordance with Sec. 63.1350(m). Operate and maintain such that alarm is not activated and alarm condition does not exist for more than 4% of the total operating time in a 6-month period. If alarm sounds, initiate corrective action.
New greenfield raw material dryers at major sources/THC	Total hydrocarbon continuous emission monitor	Install, operate, and maintain THC CEM in accordance with PS-8A; calculate 30-day block average THC concentration
Raw material dryers; raw material, clinker, finished product storage bins; conveying system transfer points; bagging systems; and bulk loading and unloading systems at major sources/opacity	Method 22 visible emissions test	As specified in operation and maintenance plan

§ 63.1351 Compliance Dates.

(a) The compliance date for an owner or operator of an existing affected source subject to the provisions of this subpart is June 14, 2002.

(b) The compliance date for an owner or operator of an affected source subject to the provisions of this subpart that commences new construction or reconstruction after March 24, 1998 is June 14, 1999 or upon startup of operations, whichever is later.

§ 63.1352 Additional Test Methods.

(a) Owners or operators conducting tests to determine the rates of emission of hydrogen chloride (HCl) from kilns, in-line kiln/raw mills and associated bypass stacks at portland cement manufacturing facilities, for use in applicability determinations under §63.1340 are permitted to use Method 320 or Method 321 of appendix A of this part.

(b) Owners or operators conducting tests to determine the rates of emission of hydrogen chloride (HCl) from kilns, in-line kiln/raw mills and associated bypass stacks at portland cement manufacturing facilities, for use in applicability determinations under §63.1340 are permitted to use Methods 26 or 26A of appendix A to part 60 of this chapter.

(c) Owners or operators conducting tests to determine the rates of emission of specific organic HAP from raw material dryers, kilns and in-line kiln/raw mills at portland cement manufacturing facilities, for use in applicability determinations under §63.1340 of this subpart are permitted to use Method 320 of appendix A to this part, or Method 18 of appendix A to part 60 of this chapter.

§ 63.1353 Notification Requirements.

(a) The notification provisions of 40 CFR part 63, subpart A that apply and those that do not apply to owners and operators of affected sources subject to this subpart are listed in Table 1 of this subpart. If any State requires a notice that contains all of the information required in a notification listed in this section, the owner or operator may send the Administrator a copy of the notice sent to the State to satisfy the requirements of this section for that notification.

(b) Each owner or operator subject to the requirements of this subpart shall comply with the notification requirements in §63.9 as follows:

(1) Initial notifications as required by §63.9(b) through (d). For the purposes of this subpart, a Title V or 40 CFR part 70 permit application may be used in lieu of the initial notification required under §63.9(b), provided the same information is contained in the permit application as required by §63.9(b), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA. Permit applications shall be submitted by the same due dates as those specified for the initial notification.

(2) Notification of performance tests, as required by §§63.7 and 63.9(e).

(3) Notification of opacity and visible emission observations required by §63.1349 in accordance with §§63.6(h)(5) and 63.9(f).

(4) Notification, as required by §63.9(g), of the date that the continuous emission monitor performance evaluation required by §63.8(e) of this part is scheduled to begin.

(5) Notification of compliance status, as required by §63.9(h).

§ 63.1354 Reporting Requirements.

(a) The reporting provisions of subpart A of this part that apply and those that do not apply to owners or operators of affected sources subject to this subpart are listed in Table 1 of this subpart. If any State requires a report that contains all of the information required in a report listed in this section, the owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.

(b) The owner or operator of an affected source shall comply with the reporting requirements specified in §63.10 of the general provisions of this part 63, subpart A as follows:

(1) As required by §63.10(d)(2), the owner or operator shall report the results of performance tests as part of the notification of compliance status.

(2) As required by §63.10(d)(3), the owner or operator of an affected source shall report the opacity results from tests required by §63.1349.

(3) As required by §63.10(d)(4), the owner or operator of an affected source who is required to submit progress reports as a condition of receiving an extension of compliance under §63.6(i) shall submit such reports by the dates specified in the written extension of compliance.

(4) As required by §63.10(d)(5), if actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan specified in §63.6(e)(3), the owner or operator shall state such information in a semiannual report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report may be submitted simultaneously with the excess emissions and continuous monitoring system performance reports; and

(5) Any time an action taken by an owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the owner or operator shall make an immediate report of the actions taken for that event within 2 working days, by telephone call or facsimile (FAX) transmission. The immediate report shall be followed by a letter, certified by the owner or operator or other responsible official, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

(6) As required by §63.10(e)(2), the owner or operator shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by §63.8(e). The owner or operator shall submit the report simultaneously with the results of the performance test.

(7) As required by §63.10(e)(2), the owner or operator of an affected source using a continuous opacity monitoring system to determine opacity compliance during any performance test required under §63.7 and described in §63.6(d)(6) shall report the results of the continuous opacity monitoring system performance evaluation conducted under §63.8(e).

(8) As required by §63.10(e)(3), the owner or operator of an affected source equipped with a continuous emission monitor shall submit an excess emissions and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

(9) The owner or operator shall submit a summary report semiannually which contains the information specified in §63.10(e)(3)(vi). In addition, the summary report shall include:

(i) All exceedences of maximum control device inlet gas temperature limits specified in §63.1344(a) and (b);

(ii) All failures to calibrate thermocouples and other temperature sensors as required under §63.1350(f)(7) of this subpart; and

(iii) All failures to maintain the activated carbon injection rate, and the activated carbon injection carrier gas flow rate or pressure drop, as applicable, as required under §63.1344(c).

(iv) The results of any combustion system component inspections conducted within the reporting period as required under §63.1350(i).

(v) All failures to comply with any provision of the operation and maintenance plan developed in accordance with §63.1350(a).

(10) If the total continuous monitoring system downtime for any CEM or any continuous monitoring system (CMS) for the reporting period is ten percent or greater of the total operating time for the reporting period, the owner or operator shall submit an excess emissions and continuous monitoring system performance report along with the summary report.

§ 63.1355 Recordkeeping Requirements.

(a) The owner or operator shall maintain files of all information (including all reports and notifications) required by this section recorded in a form suitable and readily available for inspection and review as required by §63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained on microfilm, on a computer, on floppy disks, on magnetic tape, or on microfiche.

(b) The owner or operator shall maintain records for each affected source as required by §63.10(b)(2) and (b)(3) of this part; and

(1) All documentation supporting initial notifications and notifications of compliance status under §63.9 of this part;

(2) All records of applicability determination, including supporting analyses; and

(3) If the owner or operator has been granted a waiver under §63.8(f)(6), any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements.

(c) In addition to the recordkeeping requirements in paragraph (b) of this section, the owner or operator of an affected source equipped with a continuous monitoring system shall maintain all records required by §63.10(c).

§ 63.1356 Exemption from New Source Performance Standards.

(a) Except as provided in paragraphs (a)(1) and (a)(2) of this section, any affected source subject to the provisions of this subpart is exempted from any otherwise applicable new source performance standard contained in subpart F or subpart OOO of part 60 of this chapter.

(1) Reserved

(2) Reserved

(b) The requirements of subpart Y of part 60 of this chapter, "Standards of Performance for Coal Preparation Plants", do not apply to conveying system transfer points used to convey coal from the mill to the kiln that are associated with coal preparation at a portland cement plant that is a major source under this subpart.

§ 63.1357 Temporary, Conditioned Exemption from Particulate Matter and Opacity Standards.

(a) Subject to the limitations of paragraphs (b) through (f) of this section, an owner or operator conducting PM CEMS correlation tests (that is, correlation with manual stack methods) is exempt from:

(1) Any particulate matter and opacity standards of part 60 or part 63 of this chapter that are applicable to cement kilns and in-line kiln/raw mills.

(2) Any permit or other emissions or operating parameter or other limitation on workplace practices that are applicable to cement kilns and in-line kiln raw mills to ensure compliance with any particulate matter and opacity standards of this part or part 60 of this chapter.

(b) The owner or operator must develop a PM CEMS correlation test plan. The plan must be submitted to the Administrator for approval at least 90 days before the correlation test is scheduled to be conducted. The plan must include:

(1) The number of test conditions and the number of runs for each test condition;

(2) The target particulate matter emission level for each test condition;

(3) How the operation of the affected source will be modified to attain the desired particulate matter emission rate; and

(4) The anticipated normal particulate matter emission level.

(c) The Administrator will review and approve or disapprove the correlation test plan in accordance with §63.7(c)(3)(i) and (iii). If the Administrator fails to approve or disapprove the correlation test plan within the time period specified in §63.7(c)(3)(iii), the plan shall be considered approved, unless the Administrator has requested additional information.

(d) The stack sampling team must be on-site and prepared to perform correlation testing no later than 24 hours after operations are modified to attain the desired particulate matter emissions concentrations, unless the correlation test plan documents that a longer period is appropriate.

(e) The PM and opacity standards and associated operating limits and conditions will not be waived for more than 96 hours, in the aggregate, for the purposes of conducting tests to correlate PM CEMS with manual method test results, including all runs and conditions, except as described in this paragraph. Where additional time is required to correlate a PM CEMS device, a source may petition the Administrator for an extension of the 96-hour aggregate waiver of compliance with the PM and opacity standards. An extension of the 96-hour aggregate waiver is renewable at the discretion of the Administrator.

(f) The owner or operator must return the affected source to operating conditions indicative of compliance with the applicable particulate matter and opacity standards as soon as possible after correlation testing is completed.

§ 63.1358 Implementation and Enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State,

local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in Sec. Sec. 63.1340, 63.1342 through 63.1348, and 63.1351.

(2) Approval of major alternatives to test methods under Sec. 63.7(e)(2)(ii) and (f), as defined in Sec. 63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under Sec. 63.8(f), as defined in Sec. 63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under Sec. 63.10(f), as defined in Sec. 63.90, and as required in this subpart.

§ 63.1359 [Reserved]

Table J-1. Applicability of NESHAP Subpart A Provisions to Affected NESHAP Subpart LLL Units

Citation	Requirement	Applies?	Explanation
63.1(a)(1)–(4)	Applicability	Yes	
63.1(a)(5)		No	[Reserved]
63.1(a)(6)–(8)	Applicability	Yes	
63.1(a)(9)		No	[Reserved]
63.1(a)(10)–(14)	Applicability	Yes	
63.1(b)(1)	Initial Applicability Determination	No	§ 63.1340 specifies applicability.
63.1(b)(2)–(3)	Initial Applicability Determination	Yes	
63.1(c)(1)	Applicability After Standard Established	Yes	
63.1(c)(2)	Permit Requirements	Yes	Area sources must obtain Title V permits.
63.1(c)(3)		No	[Reserved]
63.1(c)(4)–(5).	Extensions, Notifications	Ye	
63.1(d)		No	[Reserved]
63.1(e)	Applicability of Permit Program	Yes	
63.2	Definitions	Yes	Additional definitions in § 63.1341.
63.3(a)–(c)	Units and Abbreviations	Yes	
63.4(a)(1)–(3)	Prohibited Activities	Yes	
63.4(a)(4)		No	[Reserved]
63.4(a)(5)	Compliance date	Yes	
63.4(b)–(c)	Circumvention, Severability	Yes	
63.5(a)(1)–(2)	Construction/Reconstruction	Yes	
63.5(b)(1)	Compliance Dates	Yes	
63.5(b)(2)		No	[Reserved]
63.5(b)(3)–(6)	Construction Approval, Applicability	Yes	
63.5(c)		No	[Reserved]
63.5(d)(1)–(4)	Approval of Construction/Reconstruction	Yes	
63.5(e)	Approval of Construction/Reconstruction	Yes	
63.5(f)(1)–(2)	Approval of Construction/Reconstruction	Yes	
63.6(a)	Compliance for Standards and Maintenance	Yes	
63.6(b)(1)–(5)	Compliance Dates	Yes	
63.6(b)(6)		No	[Reserved]
63.6(b)(7)	Compliance Dates	Yes	
63.6(c)(1)–(2)	Compliance Dates	Yes	
63.6(c)(3)–(4)		No	[Reserved]
63.6(c)(5)	Compliance Dates	Yes	
63.6(d)		No	[Reserved]
63.6(e)(1)–(2)	Operation & Maintenance	Yes	
63.6(e)(3)	Startup, Shutdown Malfunction Plan	Yes	
63.6(f)(1)–(3)	Compliance with Emission Standards	Yes	
63.6(g)(1)–(3)	Alternative Standard	Yes	
63.6(h)(1)–(2)	Opacity/VE Standards	Yes	
63.6(h)(3)	Opacity/VE Standards	No	[Reserved]
63.6(h)(4)–(h)(5)(i)	Opacity/VE Standards	Yes	
63.6(h)(5)(ii)–(iv)	Opacity/VE Standards	No	Test duration specified in subpart LLL.
63.6(h)(6)	Opacity/VE Standards	Yes	
63.6(h)(7)	Opacity/VE Standards	Yes	
63.6(i)(1)–(14)	Extension of Compliance	Yes	
63.6(i)(15)		No	[Reserved]
63.6(i)(16)	Extension of Compliance		Yes
63.6(j)	Exemption from Compliance	Yes	
63.7(a)(1)–(3)	Performance Testing Requirements	Yes	§ 63.1349 has specific requirements.
63.7(b)	Notification	Yes	
63.7(c)	Quality Assurance/Test Plan	Yes	

NESHAP SUBPART LLL PROVISIONS – PORTLAND CEMENT MANUFACTURING INDUSTRY

Citation	Requirement	Applies?	Explanation
63.7(d)	Testing Facilities	Yes	
63.7(e)(1)–(4)	Conduct of Tests	Yes	
63.7(f)	Alternative Test Method	Yes	
63.7(g)	Data Analysis	Yes	
63.7(h)	Waiver of Tests	Yes	
63.8(a)(1)	Monitoring Requirements	Yes	
63.8(a)(2)	Monitoring	No	§ 63.1350 includes CEMS requirements.
63.8(a)(3)	Monitoring	No	[Reserved]
63.8(a)(4)	Monitoring	No	Flares not applicable.
63.8(b)(1)–(3)	Conduct of Monitoring	Yes	
63.8(c)(1)–(8)	CMS Operation/Maintenance	Yes	PS supersedes requirements for THC CEMS. Temperature and activated carbon injection monitoring data reduction requirements given in Subpart LLL.
63.8(d)	Quality Control	Yes	
63.8(e)	Performance Evaluation for CMS	Yes	PS supersedes requirements for THC CEMS.
63.8(f)(1)–(5)	Alternative Monitoring Method	Yes	Additional requirements in § 63.1350(l).
63.8(f)(6)	Alternative to RATA Test	Yes	
63.8(g)	Data Reduction	Yes	
63.9(a)	Notification Requirements	Yes	
63.9(b)(1)–(5)	Initial Notifications	Yes	
63.9(c)	Request for Compliance Extension	Yes	
63.9(d)	New Source Notification for Special Compliance Req	Yes	
63.9(e)	Notification of Performance Test	Yes	
63.9(f)	Notification of VE/Opacity Test	Yes	Notification not required under § 63.1350(e) and (j).
63.9(g)	Additional CMS Notifications	Yes	
63.9(h)(1)–(3)	Notification of Compliance Status	Yes	
63.9(h)(4)		No	[Reserved]
63.9(h)(5)–(6)	Notification of Compliance Status	Yes	
63.9(i)	Adjustment of Deadlines	Yes	
63.9(j)	Change in Previous Information	Yes	
63.10(a)	Recordkeeping/Reporting	Yes	
63.10(b)	General Requirements	Yes	
63.10(c)(1)	Additional CMS Recordkeeping	Yes	PS–8A supersedes requirements for THC CEMS.
63.10(c)(2)–(4)		No	[Reserved]
63.10(c)(5)–(8)	Additional CMS Recordkeeping	Yes	PS–8A supersedes requirements for THC CEMS.
63.10(c)(9)		No	[Reserved]
63.10(c)(10)–(15)	Additional CMS Recordkeeping	Yes	PS–8A supersedes requirements for THC CEMS.
63.10(d)(1)	General Reporting Requirements	Yes	
63.10(d)(2)	Performance Test Results	Yes	
63.10(d)(3)	Opacity or VE Observations	Yes	
63.10(d)(4)	Progress Reports	Yes	
63.10(d)(5)	Startup, Shutdown, Malfunction Reports	Yes	
63.10(e)(1)–(2)	Additional CMS Reports	Yes	
63.10(e)(3)	Excess Emissions and CMS Performance Reports	Yes	Exceedances are defined in subpart LLL.
63.10(f)	Waiver for Recordkeeping/Reporting	Yes	
63.11(a)–(b)	Control Device Requirements	No	Flares not applicable.
63.12(a)–(c)	State Authority and Delegations	Yes	
63.13(a)–(c)	State/Regional Addresses	Yes	
63.14(a)–(b)	Incorporation by Reference	Yes	
63.15(a)–(b)	Availability of Information	Yes	

P.E. CERTIFICATION STATEMENT

PERMITTEE

Suwannee American Cement, L.L.C.
Branford Cement Plant
5117 US Highway 27
Branford, FL 32008

Draft Air Permit No. PSD-FL-352
Project No. 1210465-014-AC
New Kiln Line No. 2 System
Suwannee County, Florida

PROJECT DESCRIPTION

The existing facility consists of a portland cement manufacturing plant, the associated quarry, and raw material and cement handling operations. The plant combines raw materials and utilizes the existing preheater/precalciner kiln system with in-line raw mill to produce cement clinker. The clinker is milled and combined with gypsum to produce portland cement. Fuel authorized for the pyroprocessing system includes natural gas, coal, petroleum coke, and tires. The plant also operates a coal processing operation to crush coal and petroleum coke.

The applicant proposes to construct a new dry process preheater/precalciner rotary kiln with in-line raw mill (Kiln Line No. 2 System) at the existing facility. The new kiln system will fire similar fuels as the existing kiln, but will have a capacity of 127 tons per hour of clinker and 175 tons per hour of portland cement. In accordance with Rule 62-212.400, F.A.C., the project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), sulfur dioxide (SO_2), and volatile organic compounds (VOC). Potential mercury introduced into the kiln is limited to no more than 117.5 pounds during any consecutive 12 months, which is less than the PSD significant emission rate of 200 pounds for mercury. Compliance with the mercury throughput limit will be conservatively demonstrated by daily sampling, analysis of monthly composite samples, and record keeping and periodic reporting to the Department's Northeast District Office. In addition, activities are also regulated in accordance with the federal standards for cement plants in Subpart F of 40 CFR 60 and in Subpart LLL of 40 CFR 63.

The draft permit includes the following draft determinations of the Best Available Control Technology (BACT) for the new dry process pre-heater/precalciner rotary kiln system, which is the primary source of emissions: 2.90 lb CO per ton of clinker; 1.95 lb NOx per ton of clinker; 0.10 lb PM/PM10 per ton of dry preheater feed material and 10% opacity; 0.20 lb SO_2 per ton of clinker; and 0.12 lb VOC per ton of clinker. The BACT standards for CO and VOC emissions are based on a design providing sufficient time and temperature to oxidize these pollutants, good operating practices, and careful attention to the raw material mix. The BACT standard for NOx emissions is based on installing staged combustion in the calciner (SCC) and a Selective Non-Catalytic Reduction (SNCR) system. SCC and/or SNCR shall be used as necessary to achieve the NOx BACT standard. The BACT standard for PM/PM10 is based on a high-efficiency baghouse control system. The BACT standard for SO_2 emissions is based on careful selection and control of the raw materials and the injection of hydrated lime as necessary. Monitoring systems will be installed to demonstrate continuous compliance with the standard for stack opacity as well as the standards for CO, NOx, SO_2, and VOC emissions. In addition, the draft permit requires monitoring data to be submitted continuously to the Department's Northeast District Office as well periodic posting of the monitoring data to the company's web site. The permit specifies emissions standards and work practices that represent determinations of the Best Available Control Technology (BACT) for each of these pollutants.

I HEREBY CERTIFY *that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*

Jeffery J. Koerner 11-8-05

Jeffery F. Koerner, P.E. (Date)
Registration Number: 49441

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

7001 0320 0001 3692 1773

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total	

Postmark Here

Sent To: Mr. Tom Messer, Plant Manager
Suwannee American Cement, LLC
Street, or PO Box: Post Office Box 410
City, St: Branford, Florida 32008

PS Form 3800, January 2001 See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

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

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X P. Foster ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* P. Foster
C. Date of Delivery 10/6/05

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

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
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4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7001 0320 0001 3692 1773

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Charles W. Yagel, President
Suwannee Industrial Solution, LLC
26841 CR 49
Branford, Florida 32008

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X P. Foster ☐ Agent ☐ Addressee

B. Received by (Printed Name) P. FOSTER
C. Date of Delivery 11/16/05

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

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

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7001 0320 0001 3692 4163

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)

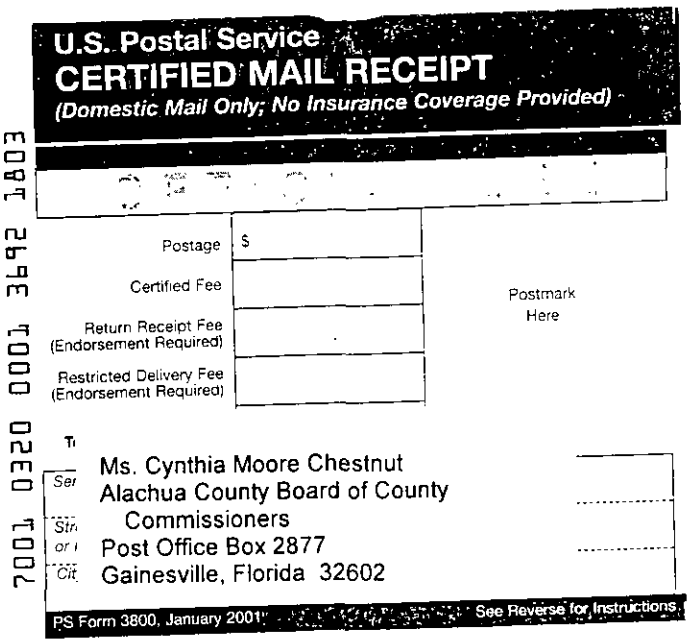
7001 0320 0001 3692 4163

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

Postmark Here

Sent To
Mr. Charles W. Yagel, President
Suwannee Industrial Solution, LLC
Street, Apt. No.; or PO Box No.
26841 CR 49
City, State, ZIP+4
Branford, Florida 32008

PS Form 3800, January 2001 See Reverse for Instructions



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

7001 0320 0001 3692 1803

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

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Ms. Cynthia Moore Chestnut
Alachua County Board of County
Commissioners
Post Office Box 2877
Gainesville, Florida 32602

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1. Article Addressed to:

Ms. Cynthia Moore Chestnut
Alachua County Board of County
Commissioners
Post Office Box 2877
Gainesville, Florida 32602

COMPLETE THIS

A. Signature
X Joseph Dall ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Joseph Dall C. Date of Delivery 11/14/05

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

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

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7001 0320 0001 3692 1803

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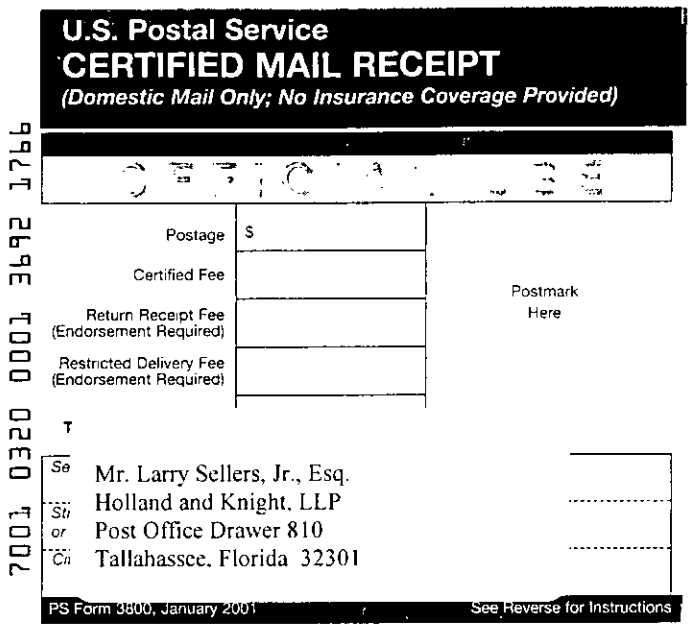

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7001 0320 0001 3692 1766

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

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Mr. Larry Sellers, Jr., Esq.
Holland and Knight, LLP
Post Office Drawer 810
Tallahassee, Florida 32301

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SENDER: *COMPLETE THIS SECTION*

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1. Article Addressed to:

Mr. Larry Sellers, Jr., Esq.
Holland and Knight, LLP
Post Office Drawer 810
Tallahassee, Florida 32301

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Chip Madden — C. Date of Delivery 11/10/15

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

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

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from s

PS Form 3811,

6

1540

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- 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. Tom Greenhalgh, P.G.
Florida Geological Survey
Hydrogeology Section
903 West Tennessee Street, MS#720
Tallahassee, Florida 32304-7700

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Susan Hornsby ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery 11-9-05

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

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

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7001 0320 0001 3692 1780

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7001 0320 0001 3692 1780

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

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Mr. Tom Greenhalgh, P.G.
Florida Geological Survey
Hydrogeology Section
903 West Tennessee Street, MS#720
Tallahassee, Florida 32304-7700

PS Form 3800, January 2001 See Reverse for Instructions

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

7001 0320 0001 3692 1810

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

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Ms. Patrice Boyes, Esq.
Boyes & Associates, PA
Post Office Box 358584
Gainesville, Florida 32635-8584

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SENDER: *COMPLETE THIS SECTION*

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1. Article Addressed to:

Ms. Patrice Boyes, Esq.
Boyes & Associates, PA
Post Office Box 358584
Gainesville, Florida 32635-8584

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Claudia Wesley ☒ Agent ☐ Addressee

B. Received by (Printed Name) N Wesley C. Date of Delivery

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

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

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7001 0320 0001 3692 1810

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

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CERTIFIED MAIL RECEIPT
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7001 0320 0001 3692 1797

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

Postmark Here

Mr. Frank Darabi, P.E.
President
Darabi & Associates, Inc.
730 NE Waldo Road, Bldg. A
Gainesville, Florida 32641

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SENDER: *COMPLETE THIS SECTION*

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- 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. Frank Darabi, P.E.
President
Darabi & Associates, Inc.
730 NE Waldo Road, Bldg. A
Gainesville, Florida 32641

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Sarah Francis ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Sarah Francis C. Date of Delivery

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

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

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7001 0320 0001 3692 1797

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