



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

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

KA 521-06-20
August 18, 2006

RECEIVED

AUG 22 2006

BUREAU OF AIR REGULATION

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

RE: CEMEX Cement, Inc.
Brooksville Cement Plant
Indirect Firing Systems for Kilns No. 1 and 2

Dear Trina:

Enclosed please find four (4) copies of an application to install indirect firing systems on Kilns 1 and 2 at CEMEX Cement, Inc.'s Brooksville Cement Plant (Facility ID No. 0530010). The requested construction project was recently discussed with the Department in a meeting on August 9, 2006. The original responsible official signature page was submitted directly to Mr. Al Linero on August 18.

Please feel free to contact me at (352) 377-5822 or FBergem@kooglerassociates.com, or Mr. Charles Walz, CEMEX Cement Inc., at (352) 799-2011, if you have any questions regarding this submittal.

Very truly yours,

KOOGLER & ASSOCIATES

Fawn W. Bergen, P.E.
Project Engineer

FB

Enclosure: 4 copies-Air Construction Permit Application

cc: J. Gill, CEMEX
A. Linero, FDEP
C. Mulkey, FDEP
C. Walz, CEMEX
m. Noe ed. SWD



Department of Environmental Protection

RECEIVED

Division of Air Resource Management

AUG 22 2006

APPLICATION FOR AIR PERMIT - LONG FORM

DEPARTMENT OF AIR REGULATION

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

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

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

To ensure accuracy, please see form instructions.

Identification of Facility

| | |
|---|--|
| 1. Facility Owner/Company Name: CEMEX Cement, Inc. | |
| 2. Site Name: Brooksville Plant | |
| 3. Facility Identification Number: 0530010 | |
| 4. Facility Location...: Street Address or Other Locator: 1630 Ponce de Leon Blvd. City: Brooksville County: Hernando Zip Code: 34601 | |
| 5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

Application Contact

| | |
|--|--|
| 1. Application Contact Name: Fawn Bergen, PE, Project Engineer | |
| 2. Application Contact Mailing Address... Organization/Firm: Koogler & Associates, Inc. Street Address: 4014 N.W. 13th Street City: Gainesville State: Florida Zip Code: 32609 | |
| 3. Application Contact Telephone Numbers... Telephone: (352) 377-5822 ext.29 Fax: (352) 377-7158 | |
| 4. Application Contact Email Address: fbergen@kooglerassociates.com | |

Application Processing Information (DEP Use)

| | |
|------------------------------------|-----------------------|
| 1. Date of Receipt of Application: | 4-22-06 |
| 2. Project Number(s): | 0530010-024-Ae |
| 3. PSD Number (if applicable): | |
| 4. Siting Number (if applicable): | |

APPLICATION INFORMATION

Purpose of Application

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

Air Construction Permit

Air construction permit.

Air Operation Permit

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

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

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

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

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

Application Comment

This application is for a non-PSD Air Construction Permit to authorize the modification of the Cement Kilns Nos. 1 and 2 to utilize an indirect firing system. There will not be any changes to operating or production rates or changes to maximum potential emissions.

APPLICATION INFORMATION

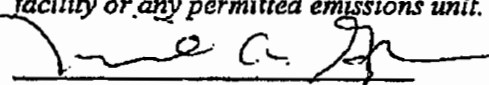
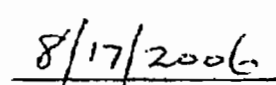
Scope of Application

| Emissions Unit ID Number | Description of Emissions Unit | Air Permit Type | Air Permit Proc. Fee |
|---------------------------------|--------------------------------------|------------------------|-----------------------------|
| 003 | No. 1 Cement Kiln | AC1B | |
| 014 | No. 2 Cement Kiln | AC1B | |
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Application Processing Fee

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

APPLICATION INFORMATION**Owner/Authorized Representative Statement****Complete if applying for an air construction permit or an initial FESOP.**

| |
|---|
| 1. Owner/Authorized Representative Name : Michael A. Gonzales, Plant Manager |
| 2. Owner/Authorized Representative Mailing Address... Organization/Firm: CEMEX Cement, Inc. Street Address: Post Office Box 6 City: Brooksville State: Florida Zip Code: 34605-0006 |
| 3. Owner/Authorized Representative Telephone Numbers... Telephone: (352) 799-2057 ext. Fax: (352) 754-9836 |
| 4. Owner/Authorized Representative Email Address: mike.gonzales@cemexusa.com |
| 5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.</i>  Signature  Date |

NOTE: Original to be provided under separate cover.

APPLICATION INFORMATION

Application Responsible Official Certification

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

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

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Fawn Bergen, P.E.**

Registration Number: **61614**

2. Professional Engineer Mailing Address...

Organization/Firm: **Koogler & Associates, Inc.**

Street Address: **4014 N.W. 13th Street**

City: **Gainesville**

State: **Florida**

Zip Code: **32609**

3. Professional Engineer Telephone Numbers...

Telephone: **(352) 377-5822**

ext. **29**

Fax: **(352) 377-7158**

4. Professional Engineer Email Address: **fbergen@kooglerassociates.com**

5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature

(Seal)

Date

8/18/06

* Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

| | | | |
|--|---|--|------------------------------------|
| 1. Facility UTM Coordinates... Zone 17 East (km) 356.9 North (km) 3169.0 | | 2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 28/38/34 Longitude (DD/MM/SS) 82/28/25 | |
| 3. Governmental Facility Code: 0 | 4. Facility Status Code: A | 5. Facility Major Group SIC Code: 32 | 6. Facility SIC(s): 3241 |
| 7. Facility Comment : | | | |

Facility Contact

| |
|--|
| 1. Facility Contact Name: Charles E. Walz, Environmental Manager |
| 2. Facility Contact Mailing Address... Organization/Firm: CEMEX Cement, Inc. Street Address: Post Office Box 6 <div style="display: flex; justify-content: space-between; margin-top: 5px;">City: BrooksvilleState: FloridaZip Code: 34605-0006</div> |
| 3. Facility Contact Telephone Numbers: Telephone: (352) 796-7241 ext. Fax: (352) 754-9836 |
| 4. Facility Contact Email Address: cwalz@cemexusa.com |

Facility Primary Responsible Official

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

| |
|--|
| 1. Facility Primary Responsible Official Name: |
| 2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: <div style="display: flex; justify-content: space-between; margin-top: 5px;">City:State:Zip Code:</div> |
| 3. Facility Primary Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () - |
| 4. Facility Primary Responsible Official Email Address: |

FACILITY INFORMATION

Facility Regulatory Classifications

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

| | |
|---|---|
| 1. <input type="checkbox"/> Small Business Stationary Source | <input checked="" type="checkbox"/> Unknown |
| 2. <input type="checkbox"/> Synthetic Non-Title V Source | |
| 3. <input checked="" type="checkbox"/> Title V Source | |
| 4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs) | |
| 5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs | |
| 6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs) | |
| 7. <input type="checkbox"/> Synthetic Minor Source of HAPs | |
| 8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60) | |
| 9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60) | |
| 10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63) | |
| 11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5)) | |
| 12. Facility Regulatory Classifications Comment: | |

FACILITY INFORMATION

List of Pollutants Emitted by Facility

| 1. Pollutant Emitted | 2. Pollutant Classification | 3. Emissions Cap [Y or N]? |
|----------------------|-----------------------------|-------------------------------|
| PM | A | N |
| PM ₁₀ | A | N |
| NO _x | A | N |
| SO ₂ | A | N |
| CO | A | N |
| VOC | A | N |
| HCl | A | N |
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FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

| |
|--|
| 1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>10/05</u> |
| 2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>10/05</u> |
| 3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>10/05</u> |

Additional Requirements for Air Construction Permit Applications

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

FACILITY INFORMATION

Additional Requirements for FESOP Applications

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

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
 Attached, Document ID: _____ Not Applicable (revision application)

2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
 Attached, Document ID: _____
 Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
 Attached, Document ID: _____
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
 Attached, Document ID: _____
 Equipment/Activities On site but Not Required to be Individually Listed
 Not Applicable

5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
 Attached, Document ID: _____ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
 Attached, Document ID: _____ Not Applicable

Additional Requirements Comment

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Cement Kiln No. 1**

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

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

9. Package Unit:
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment: **There will not be any change in maximum permitted emission rates or production rates from the proposed project.**

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

016 – Baghouse – High Temperature (Fuller Draco Custom ID No. E-55)

018 – Baghouses (3) – Low Temperature (NEW)

205 – Low NO_x burners

032 – Ammonia injection (SNCR)

2. Control Device or Method Code(s): **016, 018, 205, 032**

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

| |
|---|
| 1. Maximum Process or Throughput Rate: 165 TPH, 1,300,000 TPY preheater feed (12-consecutive 12-month period) |
| 2. Maximum Production Rate: |
| 3. Maximum Heat Input Rate: 300 million Btu/hr |
| 4. Maximum Incineration Rate: pounds/hr tons/day |
| 5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year |
| 6. Operating Capacity/Schedule Comment: |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

| | | | |
|--|---|---|--|
| 1. Identification of Point on Plot Plan or Flow Diagram: No. 1 Kiln Stack | | 2. Emission Point Type Code: 3 | |
| 3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Kiln No. 1 Stack Pulverized Fuel Dust Collector FK Pump Hopper Vent Filter Clean Out Screw Hopper (fugitive) Pulverized Fuel Storage Bin Vent Filter | | | |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: | | | |
| 5. Discharge Type Code: V | 6. Stack Height: 150 feet | 7. Exit Diameter: 13.0 feet | |
| 8. Exit Temperature: 285°F | 9. Actual Volumetric Flow Rate: 315,00 acfm | 10. Water Vapor: % | |
| 11. Maximum Dry Standard Flow Rate: 195,785 dscfm | | 12. Nonstack Emission Point Height: feet | |
| 13. Emission Point UTM Coordinates... Zone: East (km): North (km): | | 14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS) | |
| 15. Emission Point Comment: Stack parameters shown above are for the No. 1 Kiln Stack. All other stack parameters are as follows: <u>Pulverized Fuel Dust Collector:</u> Discharge Type = V; H = 50 ft; D = 3.0 ft; T = 160°F ; Flow = 26,550 acfm, 21,200 dscfm; Moisture = 6.5% <u>FK Pump Hopper Vent:</u> Discharge Type = H; H = 40 ft; D = 0.5 ft; T = 100°F; Flow = 390 acfm, 360 dscfm; Moisture = 2.0% <u>Pulverized Fuel Storage Bin Vent:</u> Discharge Type = H; H = 60 ft; D = 1.0 ft; T = 150°F; Flow = 2,130 acfm, 1,800 dscfm; Moisture = 2.0% | | | |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 10

| | | |
|---|---|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln | | |
| 2. Source Classification Code (SCC): 3-05-006-22 | | 3. SCC Units: Tons Processed |
| 4. Maximum Hourly Rate: 165 | 5. Maximum Annual Rate: 1,300,000 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: N/A |
| 10. Segment Comment: Segment represents preheater feed rate. Annual rate based on 150 TPH and 8,760 hr/yr and an operating factor of 99%. Based on Permit No. 0530010-002-AV. | | |

Segment Description and Rate: Segment 2 of 10

| | | |
|--|---|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln | | |
| 2. Source Classification Code (SCC): 3-05-006-22 | | 3. SCC Units: Tons Clinker Produced |
| 4. Maximum Hourly Rate: 99.0 | 5. Maximum Annual Rate: 780,000 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: N/A |
| 10. Segment Comment: The maximum rates are based on the maximum preheater rates times 0.60: Maximum hourly rate = 165 TPH x 0.60 = 99.0 TPH Maximum annual rate = 1,300,000 TPY x 0.60 = 780,000 TPY | | |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)**Segment Description and Rate: Segment 3 of 10**

| | | |
|--|--|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 2); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-005-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 2.116 | 5. Maximum Annual Rate: 18,536.2 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 141.3 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

Segment Description and Rate: Segment 4 of 10

| | | |
|--|--|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 4); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-005-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 2.06 | 5. Maximum Annual Rate: 18,045.6 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 145.6 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

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

Segment Description and Rate: Segment 5 of 10

| | | |
|--|---|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Residual Oil (No. 5); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-004-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 2.016 | 5. Maximum Annual Rate: 17,660.16 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 148.8 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

Segment Description and Rate: Segment 6 of 10

| | | |
|--|---|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Residual Oil (No. 6); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-004-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 1.982 | 5. Maximum Annual Rate: 17,362.32 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 151.3 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

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

Segment Description and Rate: Segment 7 of 10

| | | |
|--|---|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Natural Gas; Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-006-02 | | 3. SCC Units: Million Cubic Feet Burned |
| 4. Maximum Hourly Rate: 0.293 | 5. Maximum Annual Rate: 2,563.9 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 1,025 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

Segment Description and Rate: Segment 8 of 10

| | | |
|--|---|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Bituminous Coal; Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-002-01 | | 3. SCC Units: Tons Burned |
| 4. Maximum Hourly Rate: 12.0 | 5. Maximum Annual Rate: 10,5120 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 25 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

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

Segment Description and Rate: Segment 9 of 10

| | | |
|---|--|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Solid Waste; Tires [Whole Tire-Derived Fuel (WTDF)] | | |
| 2. Source Classification Code (SCC): 3-90-012-99 | | 3. SCC Units: Tons Burned |
| 4. Maximum Hourly Rate: 2.14 | 5. Maximum Annual Rate: 18,746.4 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 28 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. The maximum utilization/firing rate of WTDF shall not exceed 20% of the total Btu heat input, or 2.14 TPH (daily average). | | |

Segment Description and Rate: Segment 10 of 10

| | | |
|--|---|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Liquid Waste – On-site Generate Non-Hazardous Waste Used Oil and Grease | | |
| 2. Source Classification Code (SCC): 3-90-013-89 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: | 5. Maximum Annual Rate: 5.0 (rolling-monthly basis) | 6. Estimated Annual Activity Factor: |
| 7. Maximum % Sulfur: | 8. Maximum % Ash: | 9. Million Btu per SCC Unit: |
| 10. Segment Comment: Maximum rate based on Permit No. 0530010-002-AV. | | |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

| 1. Pollutant Emitted | 2. Primary Control Device Code | 3. Secondary Control Device Code | 4. Pollutant Regulatory Code |
|----------------------|--------------------------------|----------------------------------|------------------------------|
| PM | 018 | | EL |
| PM ₁₀ | 018 | | EL |
| | | | |
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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

| | | | |
|---|--|--|--|
| 1. Pollutant Emitted: PM | | 2. Total Percent Efficiency of Control: | |
| 3. Potential Emissions: 2.0 lb/hour 8.8 tons/year | | 4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 5. Range of Estimated Fugitive Emissions (as applicable): to tons/year | | | |
| 6. Emission Factor: 0.01 gr/dscf for 3 new baghouses Reference: Proposed Permit Limit | | 7. Emissions Method Code: 0 | |
| 8. Calculation of Emissions: 0.01 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 2.0 lb/hr 2.0 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 8.4 TPY | | | |
| 9. Pollutant Potential/Estimated Fugitive Emissions Comment: Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM emissions represent the combined emissions from the 3 new baghouses only. | | | |

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EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

POLLUTANT DETAIL INFORMATION

Page [1] of [2]

Particulate Matter (PM)

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

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

Allowable Emissions Allowable Emissions 1 of 1

| | |
|---|---|
| 1. Basis for Allowable Emissions Code: OTHER | 2. Future Effective Date of Allowable Emissions: |
| 3. Allowable Emissions and Units: 0.01 gr/dscf | 4. Equivalent Allowable Emissions: 2.0 lb/hour 8.4 tons/year |
| 5. Method of Compliance: Annual compliance testing using EPA Method 9 in lieu of Method 5. | |
| 6. Allowable Emissions Comment (Description of Operating Method): Based on proposed permit limit. Represents the combined PM emissions from the three new baghouses associated with the indirect firing system. | |

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

| | | |
|--|---|--|
| 1. Pollutant Emitted: PM₁₀ | 2. Total Percent Efficiency of Control: | |
| 3. Potential Emissions: 1.4 lb/hour 6.1 tons/year | | 4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 5. Range of Estimated Fugitive Emissions (as applicable): to tons/year | | |
| 6. Emission Factor: 0.007 gr/dscf for 3 new baghouses Reference: Proposed Permit Limit | | 7. Emissions Method Code: 0 |
| 8. Calculation of Emissions: 0.007 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 1.4 lb/hr 1.4 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 5.9 TPY <p style="text-align: center;">6.7</p> | | |
| 9. Pollutant Potential/Estimated Fugitive Emissions Comment: Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM₁₀ emissions represent the combined emissions from the 3 new baghouses only. | | |

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -

ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

| | |
|--|---|
| 1. Basis for Allowable Emissions Code: OTHER | 2. Future Effective Date of Allowable Emissions: |
| 3. Allowable Emissions and Units: 0.007 gr/dscf | 4. Equivalent Allowable Emissions: 1.4 lb/hour 5.9 tons/year |
| 5. Method of Compliance: Annual compliance testing using EPA Method 9 in lieu of Method 5. | |
| 6. Allowable Emissions Comment (Description of Operating Method): Based on proposed permit limit. Represents the combined PM₁₀ emissions from the three new baghouses associated with the indirect firing system. | |

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

| | |
|--|--|
| 1. Visible Emissions Subtype: VE05 | 2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other |
| 3. Allowable Opacity: Normal Conditions: 5% Exceptional Conditions: 5% Maximum Period of Excess Opacity Allowed: 0 min/hour | |
| 4. Method of Compliance: Method 9 in lieu of Method 5 | |
| 5. Visible Emissions Comment: Based on Rule 62-297.620(4), F.A.C. | |

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

| | |
|---|---|
| 1. Visible Emissions Subtype: | 2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 3. Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour | |
| 4. Method of Compliance: | |
| 5. Visible Emissions Comment: | |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

| |
|--|
| 1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Flow Diagram <input type="checkbox"/> Previously Submitted, Date _____ |
| 2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date 10/05 |
| 3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Control Equipment <input type="checkbox"/> Previously Submitted, Date _____ |
| 4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application) |
| 5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date Unknown <input type="checkbox"/> Not Applicable |
| 6. Compliance Demonstration Reports/Records <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application. |
| 7. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

Additional Requirements for Air Construction Permit Applications

| |
|---|
| 1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

Additional Requirements for Title V Air Operation Permit Applications

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

EMISSIONS UNIT INFORMATION

Section [1] of [2]

Cement Kiln No. 1

Additional Requirements Comment

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Cement Kiln No. 2**

3. Emissions Unit Identification Number: **014**

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

9. Package Unit:
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment: **There will not be any changes to the maximum permitted emission rates or process/production rates due to the proposed project.**

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

Emissions Unit Control Equipment

2. Control Equipment/Method(s) Description:

016 – Baghouse – High Temperature (Fuller Draco Custom ID No. E-55)

018 – Baghouses (3) – Low Temperature (NEW)

205 – Low NO_x burners

032 – Ammonia injection (SNCR)

2. Control Device or Method Code(s): **016, 018, 205, 032**

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

| |
|---|
| 1. Maximum Process or Throughput Rate: 165 TPH, 1,300,000 TPY preheater feed (12-consecutive 12-month period) |
| 2. Maximum Production Rate: |
| 3. Maximum Heat Input Rate: 300 million Btu/hr |
| 4. Maximum Incineration Rate: pounds/hr tons/day N/A |
| 5. Requested Maximum Operating Schedule: hours/day days/week weeks/year 8,760 hours/year |
| 6. Operating Capacity/Schedule Comment: |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

| | | | |
|--|--|---|--|
| 1. Identification of Point on Plot Plan or Flow Diagram: No. 2 Kiln Stack | | 2. Emission Point Type Code: 3 | |
| 3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Kiln No. 2 Stack Pulverized Fuel Dust Collector FK Pump Hopper Vent Filter Clean Out Screw Hopper (fugitive) Pulverized Fuel Storage Bin Vent Filter | | | |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: | | | |
| 5. Discharge Type Code: V | 6. Stack Height: 105 feet | 7. Exit Diameter: 14.0 feet | |
| 8. Exit Temperature: 250°F | 9. Actual Volumetric Flow Rate: 315,000 acfm | 10. Water Vapor: % | |
| 11. Maximum Dry Standard Flow Rate: dscfm | | 12. Nonstack Emission Point Height: feet | |
| 13. Emission Point UTM Coordinates... Zone: East (km): North (km): | | 14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS) | |
| 15. Emission Point Comment: Stack parameters shown above are for the No. 2 Kiln Stack. All other stack parameters are as follows: <u>Pulverized Fuel Dust Collector:</u> Discharge Type = V; H = 50 ft; D = 3.0 ft; T = 160°F ; Flow = 26,550 acfm, 21,200 dscfm; Moisture = 6.5% <u>FK Pump Hopper Vent:</u> Discharge Type = H; H = 40 ft; D = 0.5 ft; T = 100°F; Flow = 390 acfm, 360 dscfm; Moisture = 2.0% <u>Pulverized Fuel Storage Bin Vent:</u> Discharge Type = H; H = 60 ft; D = 1.0 ft; T = 150°F; Flow = 2,130 acfm, 1,800 dscfm; Moisture = 2.0% | | | |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 10

| | | |
|--|---|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln | | |
| 2. Source Classification Code (SCC): 3-05-006-22 | | 3. SCC Units: Tons Processed |
| 4. Maximum Hourly Rate: 165 | 5. Maximum Annual Rate: 1,300,000 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: N/A |
| 10. Segment Comment: Segment represents preheater feed rate. Annual rate based on 150 TPH and 8,760 hr/yr and an operating factor of 99%. | | |

Segment Description and Rate: Segment 2 of 10

| | | |
|--|---|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln | | |
| 2. Source Classification Code (SCC): 3-05-006-22 | | 3. SCC Units: Tons Clinker Produced |
| 4. Maximum Hourly Rate: 99.0 | 5. Maximum Annual Rate: 780,000 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: N/A |
| 10. Segment Comment: The maximum rates are based on the maximum preheater rates times 0.60: Maximum hourly rate = 165 TPH x 0.60 = 99.0 TPH Maximum annual rate = 1,300,000 TPY x 0.60 = 780,000 TPY | | |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

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

Segment Description and Rate: Segment 3 of 10

| | | |
|--|--|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 2); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-005-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 2.116 | 5. Maximum Annual Rate: 18,536.2 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 141.3 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

Segment Description and Rate: Segment 4 of 10

| | | |
|--|--|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 4); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-005-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 2.06 | 5. Maximum Annual Rate: 18,045.6 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 145.6 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

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

Segment Description and Rate: Segment 5 of 10

| | | |
|--|---|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Residual Oil (No. 5); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-004-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 2.016 | 5. Maximum Annual Rate: 17,660.16 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 148.8 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

Segment Description and Rate: Segment 6 of 10

| | | |
|--|---|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Residual Oil (No. 6); Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-004-02 | | 3. SCC Units: 1,000 Gallons Burned |
| 4. Maximum Hourly Rate: 1.982 | 5. Maximum Annual Rate: 17,362.32 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 151.3 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

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

Segment Description and Rate: Segment 7 of 10

| | | |
|--|---|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Natural Gas; Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-006-02 | | 3. SCC Units: Million Cubic Feet Burned |
| 4. Maximum Hourly Rate: 0.293 | 5. Maximum Annual Rate: 2,563.9 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 1,025 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

Segment Description and Rate: Segment 8 of 10

| | | |
|--|---|---|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Bituminous Coal; Cement Kiln | | |
| 2. Source Classification Code (SCC): 3-90-002-01 | | 3. SCC Units: Tons Burned |
| 4. Maximum Hourly Rate: 12.0 | 5. Maximum Annual Rate: 10,5120 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 25 |
| 10. Segment Comment: Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. | | |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

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

Segment Description and Rate: Segment 9 of 10

| | | |
|---|--|--|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Solid Waste; Tires [Whole Tire-Derived Fuel (WTDF)] per Permit 0530010-022-AC | | |
| 2. Source Classification Code (SCC): 3-90-012-99 | 3. SCC Units: Tons Burned | |
| 4. Maximum Hourly Rate: 2.14 | 5. Maximum Annual Rate: 18,746.4 | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: N/A | 9. Million Btu per SCC Unit: 28 |
| 10. Segment Comment: Rates based on the current permitted rates (Permit No. 0530010-002-AV) for the Cement Kiln No. 1. The maximum utilization/firing rate of WTDF shall not exceed 20% of the total Btu heat input, or 2.14 TPH (daily average). | | |

Segment Description and Rate: Segment 10 of 10

| | | |
|--|---|--------------------------------------|
| 1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Liquid Waste – On-site Generate Non-Hazardous Waste Used Oil and Grease | | |
| 2. Source Classification Code (SCC): 3-90-013-89 | 3. SCC Units: 1,000 Gallons Burned | |
| 4. Maximum Hourly Rate: | 5. Maximum Annual Rate: 5.0 (rolling-monthly basis) | 6. Estimated Annual Activity Factor: |
| 7. Maximum % Sulfur: | 8. Maximum % Ash: | 9. Million Btu per SCC Unit: |
| 10. Segment Comment: Maximum rate based on Permit No. 0530010-002-AV. | | |

EMISSIONS UNIT INFORMATION

Section **[2]** of **[2]**

Cement Kiln No. 2

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

| 1. Pollutant Emitted | 2. Primary Control Device Code | 3. Secondary Control Device Code | 4. Pollutant Regulatory Code |
|------------------------|--------------------------------|----------------------------------|------------------------------|
| PM | 018 | | EL |
| PM₁₀ | 018 | | EL |
| | | | |
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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

| | | | |
|---|--|--|--|
| 1. Pollutant Emitted: PM | | 2. Total Percent Efficiency of Control: | |
| 3. Potential Emissions: 2.0 lb/hour 8.8 tons/year | | 4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 5. Range of Estimated Fugitive Emissions (as applicable): to tons/year | | | |
| 6. Emission Factor: 0.01 gr/dscf for 3 new baghouses Reference: Proposed Permit Limit | | 7. Emissions Method Code: 0 | |
| 8. Calculation of Emissions: 0.01 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 2.0 lb/hr 2.0 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 8.4 TPY | | | |
| 9. Pollutant Potential/Estimated Fugitive Emissions Comment: Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM emissions represent the combined emissions from the 3 new baghouses only. | | | |

EMISSIONS UNIT INFORMATION

Section [2] of [2]
Cement Kiln No. 2

POLLUTANT DETAIL INFORMATION

Page [1] of [2]
Particulate Matter (PM)

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

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

Allowable Emissions Allowable Emissions 1 of 1

| | |
|---|---|
| 1. Basis for Allowable Emissions Code: OTHER | 2. Future Effective Date of Allowable Emissions: |
| 3. Allowable Emissions and Units: 0.01 gr/dscf | 4. Equivalent Allowable Emissions: 2.0 lb/hour 8.4 tons/year |
| 5. Method of Compliance: Annual compliance testing using EPA Method 9 in lieu of Method 5. | |
| 6. Allowable Emissions Comment (Description of Operating Method): Based on proposed permit limit. Represents the combined PM emissions from the three new baghouses associated with the indirect firing system. | |

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

| | | | |
|--|--|--|--|
| 1. Pollutant Emitted: PM₁₀ | | 2. Total Percent Efficiency of Control: | |
| 3. Potential Emissions: 1.4 lb/hour 6.1 tons/year | | 4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 5. Range of Estimated Fugitive Emissions (as applicable): to tons/year | | | |
| 6. Emission Factor: 0.007 gr/dscf for 3 new baghouses Reference: Proposed Permit Limit | | 7. Emissions Method Code: 0 | |
| 8. Calculation of Emissions: 0.007 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 1.4 lb/hr 1.4 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 5.9 TPY | | | |
| 9. Pollutant Potential/Estimated Fugitive Emissions Comment: Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM₁₀ emissions represent the combined emissions from the 3 new baghouses only. | | | |

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

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

Allowable Emissions Allowable Emissions 1 of 1

| | |
|--|---|
| 1. Basis for Allowable Emissions Code: OTHER | 2. Future Effective Date of Allowable Emissions: |
| 3. Allowable Emissions and Units: 0.007 gr/dscf | 4. Equivalent Allowable Emissions: 1.4 lb/hour 5.9 tons/year |
| 5. Method of Compliance: Annual compliance testing using EPA Method 9 in lieu of Method 5. | |
| 6. Allowable Emissions Comment (Description of Operating Method): Based on proposed permit limit. Represents the combined PM₁₀ emissions from the three new baghouses associated with the indirect firing system. | |

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 1

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

| | |
|--|--|
| 1. Visible Emissions Subtype: VE05 | 2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other |
| 3. Allowable Opacity: Normal Conditions: 5% Exceptional Conditions: 5% Maximum Period of Excess Opacity Allowed: 0 min/hour | |
| 4. Method of Compliance: Method 9 in lieu of Method 5 | |
| 5. Visible Emissions Comment: Based on Rule 62-297.620(4), F.A.C. | |

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

| | |
|---|---|
| 1. Visible Emissions Subtype: | 2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour | |
| 4. Method of Compliance: | |
| 5. Visible Emissions Comment: | |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

| |
|--|
| 1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Flow Diagram <input type="checkbox"/> Previously Submitted, Date _____ |
| 2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date 10/05 |
| 3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: ControlEquipment <input type="checkbox"/> Previously Submitted, Date _____ |
| 4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date Unknown <input type="checkbox"/> Not Applicable (construction application) |
| 5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date Unknown <input type="checkbox"/> Not Applicable |
| 6. Compliance Demonstration Reports/Records <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application. |
| 7. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

Additional Requirements for Air Construction Permit Applications

| |
|---|
| 1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

Additional Requirements for Title V Air Operation Permit Applications

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

EMISSIONS UNIT INFORMATION

Section [2] of [2]

Cement Kiln No. 2

Additional Requirements Comment

Attachment A
Description of Proposed Project

**DOCUMENT IN SUPPORT OF
A PERMIT APPLICATION**

**CEMEX Cement, Inc.
Cement Plant
Brooksville, Hernando County, Florida**

August 18, 2006

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ATTACHMENTS

TABLE 1 – DUST COLLECTOR EMISSIONS SUMMARY

TABLE 2 – HISTORIC CLINKER PRODUCTION RECORDS FOR KILN 1 AND 2

TABLE 3 – SUMMARY OF PAST ACTUAL AND FUTURE ACTUAL EMISSIONS

ATTACHMENT 1 –BURNER SPECIFICATIONS

ATTACHMENT 2 – FLOW DIAGRAM

ATTACHMENT 3 – CONTROL EQUIPMENT

1.0 Applicant

CEMEX Cement, Inc.

Brooksville Cement Plant

PO Box 6

Brooksville, Florida 34605-0006

Responsible Official: Michael A. Gonzales, Plant Manager

Facility ID: 0530010

1.1 Project Overview

During or about April 2005, Cemex installed semi-direct firing systems on Kiln No. 1 and Kiln No. 2 at the Brooksville Cement Plant. The firing system included Pillard Rotoflam® burners and the associated cyclone, fans and fuel injectors. In October 2005, Cemex applied for an after-the-fact air construction permit for these burners. The application was assigned FDEP File No. 0530010-018-AC.

Cemex has since decided to replace the semi-direct firing systems with indirect firing systems. The purpose of this application is to request approval for the installation of the indirect firing systems. By letter to the Department dated August 15, 2006, Cemex requested that the review of the semi-direct firing system under File 0530010-018-AC be discontinued upon receipt of this application.

The indirect firing systems for Kiln No. 1 and Kiln No. 2 will utilize the Pillard Rotoflam® burners installed as part of the semi-direct firing system. The specifications for these burners (from File 0530010-018-AC) are included as Attachment 1. The project will also involve the installation of two coal mill baghouses, two pulverized coal bins each with a baghouse dust collector, and two FK pumps to transfer the pulverized coal from the baghouses to the coal bins. Both pumps will have small baghouses associated with them. Details related to these Emission Points are included in Table 1 and Attachments 2 and 3.

The total expected increase in particulate matter (PM) emissions from these six emission points combined will be 16.8 tons per year and the increase in PM10 emissions is expected to be 11.8 tons per year (Table 1). There is expected to be no change in the emissions of regulated air pollutants from Kiln No. 1 and Kiln No. 2 as a result of the installation of the indirect firing systems. This project will be a non-PSD project. significan
?

1.2 Project Description

Cemex has made the decision to install indirect firing systems on Kiln No. 1 and Kiln No. 2 to improve the overall performance of the kilns while firing coal. The indirect firing systems will incorporate the Pillard Rotoflam® burners presently in place on both kilns.

Cement Kiln No. 1 is currently permitted to burn whole tire-derived fuel (WTDF), coal, Nos. 2, 4, 5, and 6 fuel oils, natural gas, and on-site generated non-hazardous waste used oil and grease. The maximum process preheater feed rate is 165 tons per hour (TPH), 1-hour maximum, and 150 TPH, rolling 30-calendar day average. The maximum heat input rate is 300 million British thermal units per hour (MMBtu/hr), daily average.

Cement Kiln No. 2 is currently permitted to burn coal, Nos. 2, 4, 5, and 6 fuel oils, natural gas, and on-site generated non-hazardous waste used oil and grease and a permit (0530010-022-AC) has just been issued for a trial period to evaluate the use of WTDF in Kiln No. 2. The maximum process preheater feed rate is 165 tons per hour (TPH), 1-hour maximum, and 150 TPH, rolling 30-calendar day average. The maximum heat input rate is 300 million British thermal units per hour (MMBtu/hr), daily average.

The maximum preheater feed rate of each kiln will remain at 165 TPH and the annual feed rate will remain at 1,300,000 TPY.

CEMEX recently installed selective non-catalytic reduction (SNCR) systems on Kiln No. 1 and Kiln No. 2. These systems will not be affected by the proposed indirect firing systems. The construction permit application in File 0530010-018-AC addresses the addition of the SNCR system.

It has been well established that indirect firing systems are the most efficient firing systems for rotary kilns. Some of the advantages of indirect firing are:

- The moisture from coal drying is no longer injected into the flame,
- Since the primary air flow is substantially less than with either direct firing or semi-direct firing, the peak flame temperature is reduced and the potential for thermal NOx generation is reduced,
- As the primary combustion air is reduced and the excess coal mill sweep air is replaced by hot clinker cooler air as secondary combustion air, the fuel consumption (mmBTU per ton of clinker) can be reduced by approximately 2-5 percent,
- As the indirect firing system includes a pulverized coal storage bin, the coal mill can be taken down for maintenance without shutting the kiln down,
- NOx emissions can be reduced as much as 30-35 percent over emissions from a typical direct fired, mono-channel burner,
- The indirect firing system coupled with a multi-channel burner can be adjusted to accommodate fuels of varying characteristics; i.e., coal and petroleum coke,
- The flame shaping with the multi-channel burner improves combustion efficiency and eliminates flame impingement on refractory.

In the following sections, rotary kiln firing systems are described, the multi-channel burner (as a pulverized solid fuel burner) is described, the effect of the indirect firing systems on emissions is described and historic plant operating records are documented.

2.0 Description of Rotary Kiln Firing Systems

The firing systems for rotary kilns at Portland cement plants typically fall into one of three categories:

- Direct firing systems with mono-channel burners,
- Semi-direct firing systems with multi-channel burners, and
- Indirect firing systems with multi-channel burners.

The direct firing systems were common in older cement plants such as the two Cemex kilns constructed in the 1970's and early 1980's. With new modern Portland cement plants, it is typical to have indirect firing systems because of the many advantages of this type of system. The semi-direct firing systems are systems installed at plants originally firing with direct firing systems as a means of taking advantage of the more efficient multi-channel burners without incurring the cost of switching entirely to an indirect firing system.

2.1 Direct Firing Systems

With direct firing systems, the coal or petroleum coke is dried, pulverized and classified in a continuous system and fired directly into the kiln through a mono-channel burner with all of the air used to sweep the coal mill introduced as primary combustion air. This leads to high levels of primary air being introduced with the fuel; 20-40 percent of the stoichiometric combustion air. The introduction of the high levels of primary air with fuel results in excessive axial momentum resulting in the entrainment of secondary air. As a result, the flame ignites further downstream in the kiln where the higher levels of entrained secondary air are present. This leads to higher thermal NO_x formation.

Additionally, the use of the mono-channel burner does not allow any flame shaping possibilities. This can result in isolated reducing zones, refractory wear and the potential for operating at higher levels of excess air to assure complete burnout of the fuel within the kiln.

Because of the characteristics of this type firing system, the use of the more efficient multi-channel burner is not possible.

2.2 Semi-Direct Firing Systems

To overcome many of the disadvantages of the direct firing system without incurring the cost of switching to indirect firing, semi-direct firing offers an alternative. One major advantage of the semi-direct firing system is the use of a multi-channel burner.

With semi-direct firing, all of the air that sweeps the coal mill is still fired to the kiln but the air and coal are separated with a high efficiency cyclone so that the coal can be delivered to the burner in a concentrated stream with only a small fraction of air from the cyclone. The remaining air from the cyclone is delivered to the other channels of a multi-channel burner and the excess air is fired as secondary air. The use of a multi-channel burner offers the advantages of better combustion control and flame shaping and, in most cases, a reduction in NOx emissions and an improvement in fuel use efficiency.

The conversion from direct firing to semi-direct firing involves the installation of a high efficiency cyclone to separate the pulverized coal from the air sweeping the coal mill. The air stream leaving the cyclone passes through a booster fan and is then split into multiple streams. One stream passes through a mixing injector where it picks up the pulverized coal from the cyclone and delivers it to the fuel channel of a multi-channel burner. Two other streams of the air leaving the cyclone pass through the swirl air channel and the axial air channel of the multi-channel burner. The remaining air from the cyclone is fired as secondary air.

This configuration allows the initial combustion of the fuel to occur under stabilized conditions near the burner. As the amount of air delivering the coal is much less than with the direct firing system, the coal stream momentum is easily controlled. The volume of air and the momentum of air introduced through the swirl air and axial air channels are also controlled for combustion efficiency and flame shaping.

With the semi-direct firing system, the primary air (that used to deliver the coal and that delivered through the swirl air and axial air channels) can be reduced to about 10 percent of the stoichiometric combustion air. This compares with a primary air flow of 20-40 percent with the direct firing system. The fact still remains however that all of the air used to sweep the coal mill is introduced to the kiln as combustion air. This air stream includes all of the moisture removed from the coal in the coal mill and the fraction of the air that is added as additional secondary air is at a relatively low temperature when compared to the alternative of using hot gases from the clinker cooler for secondary combustion air.

Regarding fuel efficiency, semi-direct firing should reduce the specific heat of production (mmBTU per ton of clinker) because of better combustion efficiency offered by the multi-channel burner. However, the relatively cool excess combustion air from the coal mill sweep prevents the full potential for fuel saving from being realized.

2.3 Indirect Firing Systems

In modern cement plants, indirect firing systems are most commonly used. With these systems, the coal is ground in the coal mill, it passes through a classifier and is delivered to a coal mill baghouse. The baghouse separates the pulverized coal from the air that sweeps the coal mill. The sweep air is discharged from the baghouse to the atmosphere while the coal is delivered to a pulverized coal silo. From the silo, the pulverized coal is delivered to a multi-channel burner with a controlled amount of air. As a result of the small amount of air introduced into the root of the flame, combustion will occur in an oxygen deficient environment; thereby reducing thermal NO_x formation. The remainder of the primary air is introduced through the swirl air and axial air channels under conditions dictated by fuel characteristics.

This process for coal grinding, coupled with a multi-channel burner, results in the volume of primary combustion air being reduced to 8-10 percent of the stoichiometric air. The remainder of the combustion air; the secondary air is derived from hot clinker cooler

gases thus improving the overall thermal efficiency of the combustion system. Various sources have reported fuel savings of 2-5 percent with indirect firing systems when compared with direct firing systems.

3.0 Multi-Channel Burner Technology

Multi-channel burners were introduced approximately 30 years ago for firing pulverized coal to steam boilers. The multi-channel burners were a departure from the traditional mono-channel burner where fuel and primary air were delivered through a single channel with secondary combustion air supplied elsewhere around the burner. With the mono-channeled burners, 20-40 percent of the combustion air was delivered as primary air with the fuel. Because of the volume and momentum of the primary combustion air, fuel ignition typically took place some distance from the burner thus allowing even more combustion air to be entrained into the flame. This burner configuration resulted in relatively high thermal NO_x formation and offered no opportunity for flame shaping.

With the multi-channel burner, the basic principles are to introduce the coal with a small amount of primary combustion air at a low injection velocity. The remainder of the primary air is then added through two other concentric channels. One channel delivers swirl or radial air and the other channel delivers axial air. Combined, the total primary air delivered to the multi-channel burner is 8-10 percent of the stoichiometric combustion air. This design allows for the initial combustion of coal to occur in an oxygen deficient environment close to the burner. The swirl air provides internal mixing of the flame, and the axial air allows for flame shaping.

The typical multi-channel burner is a three channel burner with the channels being concentric openings within the burner tube. The inner channel is the pulverized coal channel, the middle channel is where swirl or radial air is introduced, and the outer channel is for axial air. Typically, the outer wall of the burner tube (the outer wall of the axial air channel) extends beyond the burner face to prevent a rapid expansion of the axial air. This enables better flame shaping. With this design, the multi-channel burner allows for flame shaping, it minimizes the oxygen concentration at the flame root in order to lower thermal NO_x emissions, and it allows for variability in fuel characteristics without sacrificing performance and efficiency.

The aims of the multi-channel burner are achieved through the following design features:

- In the center of a coal/coke firing burner tube is a plug. This forms the inner wall of the fuel channel and functions to introduce recirculating core eddies at the root of the flame. These recirculating eddies promote the early ignition of the fuel in an oxygen deficient atmosphere. The early ignition was found to be important because as the flame propagates away from the burner face, more air is entrained and the potential for thermal NO_x generation is greater.
- Pulverized coal/coke is introduced through the inner channel with a minimal amount of air at a low injection velocity. The combination of volume and momentum can be varied to conform to fuel characteristics, but the overall purpose of the low flow/low momentum is to assure early ignition of the fuel and to minimize entrained oxygen thus minimizing the potential for thermal NO_x formation.
- The center channel of a three channel burner is for the introduction of swirl or radial air. The swirl motion created is by swirl vanes built into this channel. The purpose of this air component is to expand the pulverized fuel flow and stabilize the flame by generating an internal recirculation zone. This, in conjunction with the axial air component, makes it possible to control the flame shape. The swirl air volume and momentum can be varied depending on fuel characteristics.
- The outer air channel is the axial air channel. This channel is constructed with axial vanes; the purpose of which is to maintain the concentricity of the axial air flow. This promotes the recirculation of combustion gases (from within the flame) thus minimizing the free oxygen level. As with the swirl air, the volume and momentum of axial air can be controlled based on fuel characteristics.
- The outer wall of the burner tube, the outer wall of the axial air channel, extends beyond the face of the burner, preventing the premature mixing of the flame with hot secondary air introduced from the clinker cooler.

This overall design allows flame shaping with minimal primary air flow and maximum swirl air and axial air momentum. The design results in a primary air flow that is 8-10 percent of the stoichiometric combustion air requirement. These characteristics result in

the initial combustion occurring in an oxygen deficient atmosphere that reduces both the peak flame temperature and the potential for the formation of thermal NOx. The design also allows for flame shaping which eliminates flame impingement on the kiln refractory and results in a more even and better controlled heat distribution. And, as stated previously, the firing characteristics of a multi-channel burner can be altered to match the characteristics of the pulverized fuel being fired.

In addition to improving combustion characteristics, the multi-channel burner is quite effective in reducing thermal NOx emissions. Studies by Pillard and others have indicated that NOx emissions can potentially be reduced 30-35 percent over emissions from a mono-channel burner. This is achieved through the reduction in primary air and by controlling combustion as previously described. It should be noted that the reduction of primary air below 8-10 percent of stoichiometric combustion air is not practical as further reduction will result in kiln instability and overheating of the burner tip.

Improvements in the thermal efficiency of the multi-channel burner over a mono-channel burner result from the improved and controlled combustion process and from the fact that all secondary air is hot air from the clinker cooler. The moisture laden, relatively cool coal mill sweep air that is introduced with direct and semi-direct firing systems is no longer introduced to the kiln. Various reports have cited improvements in fuel use ranging from 2-5 percent.

4.0 Effect of Indirect Firing on Emissions and Kiln Production

The installation of the indirect firing systems on Kiln No. 1 and Kiln No. 2 is not expected to have any adverse effects on emissions from the two kilns or to increase the annual production rates of the two kilns. The only effect on emissions, as discussed in previous sections, will be an expected reduction in NO_x emissions.

4.1 Effect on Production

To establish base line production rates for the two kilns, production records for the past 10 years were reviewed. These records are documented in Table 2.

For the base line period, calendar years 1999 and 2000 were selected both kilns. During this two year period, the clinker production rate from Kiln No. 1 averaged 691,132 tons per year and the clinker production rate for Kiln No. 2 averaged 685,650 tons per year. The total average clinker production rate for the two kilns combined averaged 1,376,782 tons per year. For permitting purposes, it is requested that this total average production rate be divided equally between the two kilns as the production rates of the two kilns are within 0.4 percent of one another.

The resulting actual annual average base line production rate for the two kilns would be 688,391 tons per year. To this, a demand increase of 10 percent (68,839 tons per year) is added; making the total base line production plus demand increase equal to 757,230 tons of clinker per year for each kiln. This compares to the presently permitted clinker production rate of 780,000 tons of clinker per year, each kiln.

4.2 Effect on Emissions

The indirect firing systems are not expected to increase the emission rates of any regulated air pollutants. Conversely, the indirect firing is expected to reduce NO_x

emissions as described in preceding sections. The rationale for the statement that there will be no emission increases is set forth in the following paragraphs.

4.2.1 Nitrogen Oxides

As described in preceding sections, indirect firing could reduce NO_x emissions by as much as 30-35 percent over emission rate experienced with the direct firing systems. In addition to reductions in NO_x emissions that may result from indirect firing, Cemex has installed SCNR systems on both Kiln No. 1 and Kiln No. 2.

As a result of the indirect firing systems and SNCR, it is reasonable to expect that the past actual NO_x emissions from Kiln No. 1 and Kiln No. 2 will not exceed the future actual emissions. For purposes of this application, the future actual emissions are defined as the past actual emissions plus a 10 percent demand increase (See Table 3).

Not evaluated
this now.

4.2.2 Carbon Monoxide

Carbon monoxide emissions from cement kilns is a function of the excess air (excess oxygen) in the kiln and, in particular, at the kiln exit. Additionally, carbon monoxide can result from carbonaceous material in the kiln feed. Fortunately, plants in Florida operate with feed materials that historically have been very low in carbonaceous material.

The carbon monoxide emissions from the two kilns can be controlled by raw material selection and by controlling the oxygen levels in the kilns. These emissions from both kilns will be controlled so that past actual emissions plus a 10 percent demand increase will not be exceeded in the future (See Table 3).

4.2.3. Particulate Matter and PM10

Particular matter (PM) and PM10 emissions from cement kilns are a function of recirculating kiln dust and dust from the raw mill. The PM/PM10 emissions are not a function of fuel or firing systems. Both PM and PM10 emissions will be controlled so that past actual emissions plus a demand increase of 10 percent will not be exceeded in the future (See Table 3).

4.2.4 Sulfur Dioxide and VOC

It has been established that with fuel sulfur levels experienced at Cemex, and with efficient combustion in the pyroprocessing system (as offered by the indirect firing systems), both SO₂ and VOC emissions from Florida cement plants are a function of sulfur bearing materials and organic materials in the kiln feed. The emission rate of neither SO₂ nor VOC is a function of kiln fuel or the kiln firing system.

The SO₂ and VOC emissions will be controlled by raw material selection so that the past actual emissions plus a 10 percent demand increase will not be exceeded in the future (See Table 3).

4.2.5 Emission Summary

A summary of past actual emissions and future actual emissions (defined as past actual emissions plus a demand increase) is presented in Table 3 for Kiln No. 1 and Kiln No. 2. The past actual emission rates shown in Table 3 are the emission rates for Kiln No. 1 and Kiln No. 2 that were included in the air construction permit application that is now part of File 0530010-018-AC.

PM/PM10 emissions from the baghouses associated with the indirect firing systems are addressed in the permit application.

Table 1
BROOKSVILLE CEMENT PLANT
Brooksville, Florida

DUST COLLECTOR EMISSIONS SUMMARY

$$E = \frac{FR \times EF \times 60 \text{ min/hour} \times OP}{7000 \text{ grains/lb} \times 2000 \text{ lbs/ton}}$$

where:

- E = Emission rate (tons/year)
- FR = flow rate (acfm)
- EF = emission factor grain loading (grain/scf)
- OP = operational time (hours/year)

| EPN | Activity | Flow Rate (dscfm) | Emission Factor (grains/scf) | Annual Hours of Operation (hours) | PM Annual Emissions (tons/yr) | PM ₁₀ Annual Emissions (tons/yr) |
|-------|-----------------------|-------------------|------------------------------|-----------------------------------|-------------------------------|---|
| PS-01 | #1 Coal Mill Baghouse | 21,200 | 0.01 | 8,400 | 7.63 | 5.34 |
| PS-02 | #2 Coal Mill Baghouse | 21,200 | 0.01 | 8,400 | 7.63 | 5.34 |
| PS-03 | #1 FK Pump Baghouse | 360 | 0.01 | 8,400 | 0.13 | 0.09 |
| PS-04 | #2 FK Pump Baghouse | 360 | 0.01 | 8,400 | 0.13 | 0.09 |
| PS-05 | #1 Coal Meal Bin | 1,800 | 0.01 | 8,400 | 0.65 | 0.45 |
| PS-06 | #2 Coal Meal Bin | 1,800 | 0.01 | 8,400 | 0.65 | 0.45 |
| | | | | Total = | 16.82 | 11.77 |

.00\

Table 2
HISTORIC CLINKER PRODUCTION RECORDS FOR KILN No. 1 AND KILN No. 2

| CLINKER PRODUCTION FOR KILNS (Tons/year) | | | | | | |
|---|---------------|---------------|----------------|--|--|--|
| Year | KILN 1 | KILN 2 | Totals | COMMENTS | | |
| 1995 | 560,457 | 572,742 | 1,133,199 | Florida Sales Market Conditions poor, weather wet, kiln feed supply problems | | |
| 1996 | 607,055 | 619,556 | 1,226,611 | Ran normal | | |
| 1997 | 590,900 | 638,286 | 1,229,186 | Ran normal | | |
| 1998 | 574,256 | 672,606 | 1,246,862 | Most Kiln System improvements completed for Kiln #2 in March and by December on Kiln #1. | | |
| 1999 | 698,700 | 676,345 | 1,375,045 | Second Best Production | | |
| 2000 | 683,564 | 694,955 | 1,378,519 | Best production | | |
| Average | 691,132 | 685,650 | 1,376,782 | | | |
| Avg each Kiln | | | 688,391 | | | |
| Demand Increase @ 10% | | | 68,839 | | | |
| Total Baseline + Demand Increase, each Kiln | | | 757,230 | Total Baseline + Demand Increase, each Kiln | | |
| 2001 | 618,572 | 589,000 | 1,207,572 | Experiencing Kiln feed problems, Premature failures of kiln brick, kilns down for brick repairs. | | |
| 2002 | 488,014 | 485,768 | 973,782 | Kiln #1 preheater tower failure. Both kilns down November and December. Experienced Kiln feed problems, Premature failures of kiln brick | | |
| 2003 | 381,572 | 600,728 | 982,300 | Kiln #1 down until May, Both Kilns experiencing feed problems, Dioxin Furan Testing, low kiln feed inventory due to testing with raw mills down. Numerous kiln outages for brick | | |
| 2004 | 512,253 | 416,554 | 928,807 | Both Kilns experiencing feed problems, Dioxin Furan Testing. Kiln feed supply problems testing raw mills down. Poor refractory life. Numerous kiln outages for brick | | |
| 2005 | 490,007 | 453,637 | 943,644 | Both Kilns experiencing feed problems, Poor refractory life. Numerous kiln outages for brick | | |

Table 3. Summary of Past Actual and Future Actual Emissions and PSD Applicability Analysis

| | Annual Emissions (TPY) | | | | | |
|--------------------------------|------------------------|-----------------|--------------|------------------|-----------------|--------------|
| | CO | NO _x | PM | PM ₁₀ | SO ₂ | VOC |
| Past Actual | | | | | | |
| Kiln No. 1 | 666.5 | 715.0 | 35.5 | 30.0 | 6.0 | 45.3 |
| Kiln No. 2 | 620.0 | 819.5 | 54.0 | 45.0 | 6.0 | 47.2 |
| Total Past Actual | 1,286.5 | 1,534.5 | 89.5 | 75.0 | 12.0 | 92.5 |
| Demand Increase | 128.7 | 153.5 | 9.0 | 7.5 | 1.2 | 9.3 |
| <i>Increase from Project</i> | | | <i>16.82</i> | <i>11.77</i> | | |
| Future Actual, Total | 1,415.2 | 1,688.0 | 98.5 | 82.5 | 13.2 | 101.8 |
| Future Actual, per Kiln | 707.6 | 844.0 | 49.2 | 41.3 | 6.6 | 50.9 |

16.82

Attachment 1
Burner Specifications



PILLARD

COMBUSTION EQUIPMENT & CONTROL SYSTEMS

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CEMEX - USA

BROOKSVILLE

USA

Quotation n° 040194 Rev. 2
dated October 5, 2004

PILLARD 13, rue Raymond Teissère - 13272 Marseille Cedex 8 - France
Phone (33) 4 91 80 90 21 - Fax (33) 4 91 25 72 71 - E-mail : info@pillard.com - Web <http://www.pillard.com>

| |
|----------------------------|
| Chapter 2 - SPECIFICATIONS |
|----------------------------|

Each system comprising:

ONE (1) ROTAFLAM® ROTARY KILN BURNER FOR COAL/PETCOKE FIRING.

| | | |
|---|---------------------|--------|
| - Burner output | MW max. | 83.1 |
| | MMBtu/hr | 283.6 |
| - Burner hot end length | m | 5 |
| | Ft | 16.4 |
| - Total length (approx.) | m | 10.5 |
| | Ft | 34.44 |
| - Weight with refractory lining (approx.) | kg | 8 000 |
| | Lb | 17 637 |
| - Refractory lining (recommended thickness) | mm | 80 |
| | In | 3.15 |
| - Total combustion air flow | Nm ³ /hr | 89 242 |
| | SCFM | 48 847 |
| - Coal flow rate | kg/hr max. | 11 000 |
| | Lb/hr | 24 250 |
| - Petcoke flow rate | kg/hr max. | 9 300 |
| | Lb/hr | 20 500 |

comprising :

- One burner with swirl, axial, central primary air and coal streams. The outer firing tube hot end is easily replaceable.
- The relative position of axial air and radial air pipes is adjustable so as to be able to modify the tip flow rate of each stream and hence enable flame shaping to suit the kiln (jacks are supplied for axial and radial air circuits).
- Burner tips made out of heat resisting cast iron, and easily replaceable.
- Coal inlet section complete with interchangeable wear insert.
- Throttle valves for swirl/axial/central air adjustment during start-up only, with locking device.
- Air flow measuring elements for total, axial and radial primary air amount delivered loose, to be installed by others on the primary air ducts.
- One (1) set of pressure gauges for primary air, and coal conveying air.
- One (1) central jacket tube with internal diameter 70mm for water injection. Water lance is to be supplied by others.
- One (1) central jacket tube for ignitor.
- One (1) central jacket tube with swirling device for solid alternative fuels injection with internal diameter 100mm. The existing oil gun will be fitted inside this jacket tube for burner start-up operation.
- Anchors and refractory lining of outer pipe are to be supplied and installed by others. PILLARD to provide full specification and drawings for installation at site.

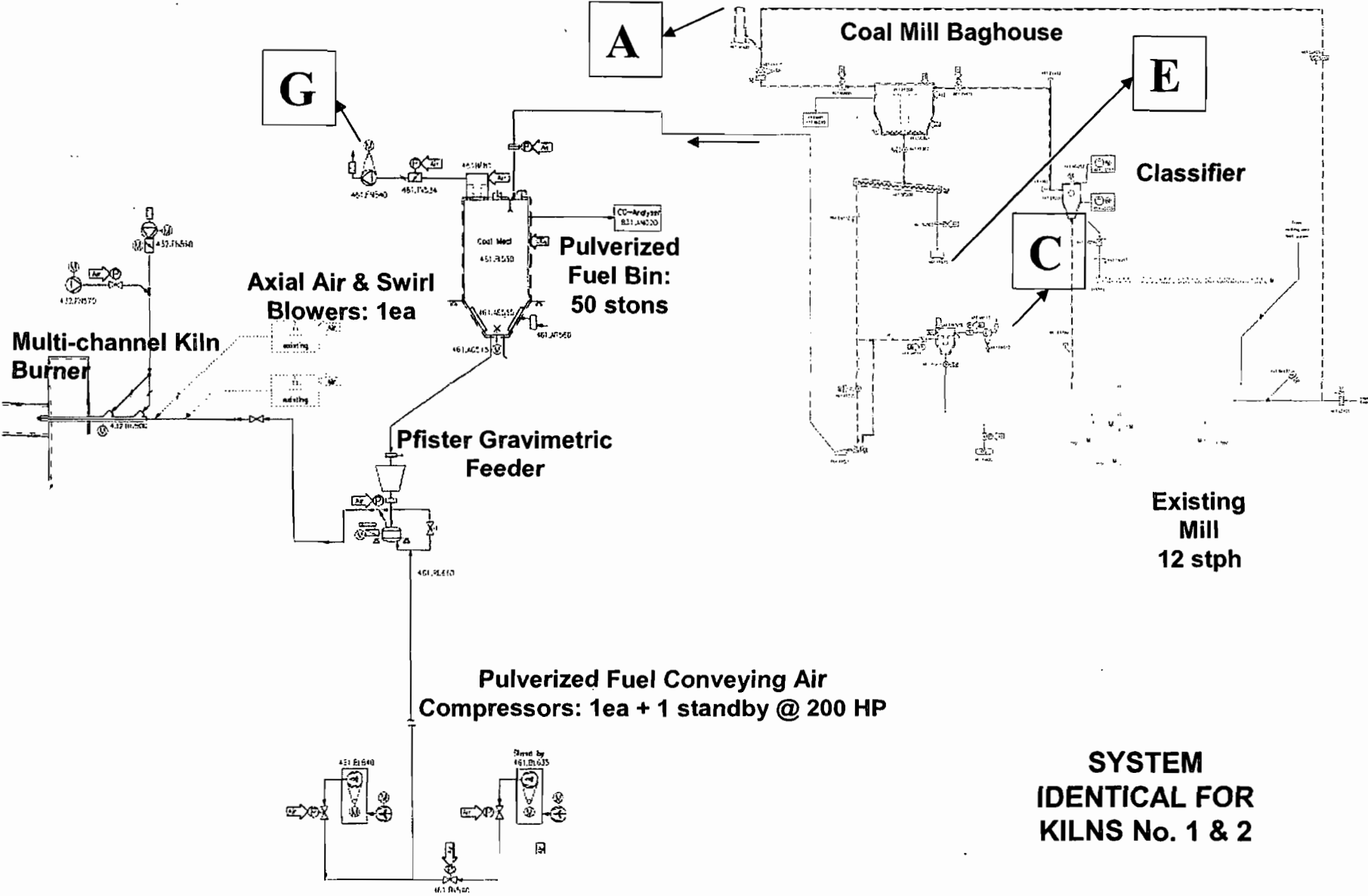
ONE (1) GAS ELECTRIC IGNITOR

- One (1) gas/electric ignitor with :
 - one (1) HT transformer.
 - two (2) flexible hoses for gas and air
 - one (1) ionization rod c/w flame relay
 - one (1) ignition electrode.
 - one (1) manual isolating valve at gas line inlet
 - one (1) Y filter.
 - one (1) hand operated pressure control valve
 - one (1) pressure indicator
 - two (2) 2-way safety shut-off valves
 - one (1) control panel including :
 - * circuit breaker on power supply
 - * two (2) push buttons : stop and start
 - * two (2) lights : flame detection and power on
 - * one (1) set of terminal strips for connection of instruments and interfaces

The ignitor panel is supplied internally wired and shop tested. All the internal wiring is tagged.

Attachment 2 - Flow Diagram
Process Flow Diagram - Indirect Firing System

Indirect Firing System Flow Sheet



Attachment 3 - Control Equipment
Description of Control Equipment

Indirect Firing System Emissions Potential

Emissions for each of two Identical Mills

✓ Point A Emission Potential

Each Stack - Pulverized Fuel Dust Collector

- Min Stack Height: 50ft above grade
- Filter Inlet Design: 11.8 m³/s (25,000 ACFM)
- Filter Outlet Loading: 25 mg/Nm³ dry (.01 gr/dscf)
- Filter Fan Design : 21,200 dscfm
- CO₂ vapor after inerting for fire suppression

✓ Point C Emission Potential

Each FK Pump Hopper Vent Filter

- Filter Fan Design : 360 dscfm
- Filter Outlet Loading: 25 mg/Nm³ dry (.01 gr/dscf)
- CO₂ vapor after inerting for fire suppression

Point E Emission Potential

Each Clean Out Screw Hopper

- Fugitive dust – Water spray for dust suppression. Screw only used during malfunction to clean out dust collector

Point G Emission Potential ✓

Pulverized Fuel Storage Bin Vent Filter

- Filter Fan Design : 1800 dscfm
- Filter Outlet Loading: 25 mg/Nm³ dry (.01 gr/dscf)
- CO₂ vapor for inerting during continuous operation & malfunction