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Kleinfelder.com

June 30, 2008

Ms. Nancy E. Knight  
Air Permit Engineer Specialist  
Florida Department of Environmental Protection (FDEP)  
13051 North Telecom Parkway  
Temple Terrace, Florida 33637-0926

**Subject: Response to Request for Additional Information  
Air Operation Permit  
Permit Project No.: 1190045-002-AO  
Eagle Roofing Products Florida, LLC**

Dept. of Environmental  
Protection  
JUL 08 2008  
Southwest District

Dear Ms. Knight:

On behalf of Eagle Roofing Products Florida LLC, (Eagle Florida), Kleinfelder is providing this response to your May 22, 2008 letter request for information regarding the above-referenced air permit application. We have provided modified forms, calculations and additional supporting information in the attachments. The following details the information requested in the order presented in your letter. For convenience, we have provided the FDEP's request in ***bold italics***, followed by a response from Kleinfelder, on behalf of Eagle Florida:

**1. General Facility Information**

***The application states that standard tiles are made of plaster sand and gray cement and lightweight tiles are made of shale and gray cement. During a site visit by DEP personnel on May 19, 2008, it was noted that white cement is also used and that the shale is actually aggregate. Please confirm that the more accurate description of the raw material called shale in the construction permit would be to call it aggregate.***

Eagle Florida was required to use alternate aggregate (W-10) with sand due to unanticipated conditions at the site. W-10 aggregate was required in addition to sand because the local sands have a different gradation, which affects the tile making process. We request that shale remain in the permit for future manufacturing of light weight tiles along with the sand and W-10 aggregate. White cement was needed in addition to gray cement to address the Florida market demand for certain colored tiles.

There is no change in expected maximum emissions as a result of using these alternate materials.

The modified permit application forms for EU 001 through EU 004 provided in Attachment 1 reference W-10 aggregate and white cement (in addition to shale, gray cement and plaster sand).

Dept. of Environmental  
Protection  
JUL 08 2008

Southwest District

2. Emission Unit Comment, Page 20

*The application states grey cement is pneumatically loaded...  
description to describe the product in this silo.*

The description of the silo was modified in the forms to include white cement (Attachment 1).

3. Emission Unit Comment, Page 37

*The application states there are four production lines... Only three of the  
lines have been constructed. "Four production lines" should be changed to  
"three production lines" anywhere in the application it is appropriate.*

We have referenced three production lines in lieu of four production lines in the permit application, including the Emission Unit Information Form and Attachment 2: Emission Calculations.

Eagle anticipates constructing the fourth production line in the future and requests to extend the expiration of the current construction permit, 1190045-001-AC until December 31, 2011. The "Permit Processing Fees" section to follow includes a discussion of fees included with this submittal (construction permit extension, construction permit application for EU 005 modification, and operating permit refund).

4. Emission Unit Control Equipment, Page 47

*This section is not complete. Describe the dust collection system that controls  
particulate matter emissions for EUs 001, 005 and 006, to include airflow and  
control efficiency. List each emission point that is controlled by this dust  
collection system.*

As you have recommended during your site visit, we request that the reject tile recycling crushing system (EU 005) and the crushed tile storage bin (EU 006) be combined as one emission unit (EU 005). Particulate emissions from both sources are conveyed to the same dust collector. A revised description of the system that details the dust collector specifications is provided on page 46 and 47. The figures included in Attachment 3 (construction permit application) provide a flow diagram, process layout, emission points that are controlled by the dust collection system and air flow rates.

*primary control is wet product  
but there are pickup points*

For clarification, please note that EU 001 does not require a dust collection system as referenced in your comment. Emissions are minimal because the sand, shale and W-10 aggregate must be maintained at high moisture content (6 to 18%) for the manufacturing process. Particulate emissions from the conveying of the material to screening, storage and processing areas are further minimized by the use of enclosures that cover the conveyors and equipment.

5. Emissions Unit Control Equipment, Page 55

*The application states that the 100 ton bulk crushed tile storage bin/hopper (EU 006) is equipped with a baghouse filter to control particulate matter emissions. During the site visit it was observed that this emission unit does not have a separate baghouse. Revise this section to describe how the particulate matter emissions are actually controlled. Include the impact of adding this emission unit to the dust collection system for EUs 001 and 005. Since this emission unit does not have its own control device, the crushed tile storage bin/hopper could be included in EU 005.*

The 100-ton bulk crushed tile storage bin/hopper (EU 006) is conveyed to the baghouse that also controls dust from EU 005. The information above addresses this comment. Attachment 1 provides the modified application forms (pages 46 through 53) that reference both emission sources.

6. Specific Condition A20 of Construction Permit 1190045-001-AC

*The application states that the 100 ton bulk crushed tile storage bin/hopper (EU 006) is equipped with a baghouse filter to control particulate matter emissions. During the site visit it was observed that this emission unit does not have a separate baghouse. Revise this section to describe how the particulate matter emissions are actually controlled. Include the impact of adding this emission unit to the dust collection system for EUs 001 and 005. Since this emission unit does not have its own control device, the crushed tile storage bin/hopper could be included in EU 005.*

*This specific condition requires that test reports and 2 months of recordkeeping be submitted with the operation permit application. These documents were submitted with the application, but were not complete.*

a. *The test reports did not include the following:*

EU 001

*copy of the daily log for the test day;  
total quantity of material transferred during VE test (in tons);  
description of how the quantity of materials transferred is determined;*

EU 004

*actual combined sand and cement transfer rate during emissions testing; total quantity of sand transferred during test (in tons);  
total quantity of cement transferred during test (in tons);*

b. *The recordkeeping records did not include the following:*

EU 001 - daily

*quantity of sand transferred (in tons);*

*quantity of shale transferred (in tons);  
quantity of recycled material transferred (in tons);  
description of how the quantity of materials transferred is  
determined; total quantity of material transferred (in tons);  
total hours of operation;*

**EU 001 - monthly**

*quantity of shale transferred during the month (in tons);  
quantity of recycled material transferred during the month (in tons);  
total quantity of material transferred during the month (in tons);  
total quantity of material transferred during the last 12 consecutive  
month period (in tons);*

**EUs 002 and 003**

*description of how the quantity of cement loaded is determined;  
total quantity of cement loaded for the facility during the month (in  
tons);  
total quantity of cement loaded for the facility during the last 12  
consecutive (in tons).*

**EU 004**

*The VOC records stated 0.0 VOCs were emitted during January and  
February  
2008, while mold release compound was used. See Specific Condition  
D7 as to what VOC records should have been submitted with the  
permit application*

**EU 005**

*See Specific Condition E9 as to the information required in the  
records for this emission unit.*

***Please submit the missing information.***

Each of the records listed above are provided in Attachment 4.

**7. Construction Permit Requirement**

***A construction permit application is required to remove the baghouse from  
Emission Unit 006 and possibly include the silo with Emission Unit 005. This  
construction permit will be processed concurrently with the operation permit.***

***If you would like to extend the expiration date of the current construction  
permit, 1190045-001-AC, to allow more time to build the forth tile production  
line, please submit a letter requesting such along with a check for \$50.00.***

A construction permit application is provided in Attachment 3 for the removal of the baghouse from the 100 ton crushed tile storage bin and combining this source with EU 005. Emissions from this storage bin is controlled by wetting the material with water during the time the material is conveyed to the hopper and as needed to maintain moisture.

Attachment 3 also includes a construction permit application for two additional bin vents that will be installed at each of the 60-ton surge hoppers located at EU 004. These surge hoppers commonly feed cement to lines #17, 18, 19 (and in the future line #20 after it is installed). The bin vents will be used to prevent cross-contamination of white to gray cement when the use of these two raw materials is switched.

### **Timeline of Construction Activities**

As verbally requested by Ms. Danielle Henry of FDEP, Kleinfelder is providing a timeline of facility construction activities as prepared by Eagle Florida including information related to submittal of the operating permit application after the 180-day timeframe provided in Condition A20 of the permit. This timeline is provided below.

The schedule for commissioning of the Eagle Florida facility was as follows:

1. December 27, 2006 : commissioned production line #17
2. January 11, 2007: commissioned production line #19
3. February 14, 2007: commissioned production line #18
4. June 19, 2007: commissioned the crusher system (began regular operation). VE testing was conducted on June 12 and 13, 2007.

Eagle Florida advised the FDEP that it conducted all the final testing for emission units #4, #5, #6 on June 27, 2007.

After commissioning the crusher in June 2007, Eagle Florida continued to work on the plant by installing the following equipment associated with emission unit #4:

1. Pneumatic system for the white and grey cements
2. Alar system and dryer for processing of industrial water
3. Finishing curing chambers for lines 17, 18 and 19
4. Installation of auto packagers on line 17 and 18
5. Production lines wet mix material recycling belts and systems
6. Due to the market slowdown, Eagle Florida shipped some of the components and systems for production line #20 back to California.
7. Finished black top of yard and storage areas.

Eagle Roofing assumed that the deadline for submitting the operating permit application was the construction permit expiration date of November 30, 2008, and the focus was on submitting the operating permit application package for the entire constructed facility before this deadline. The intention was to complete construction of the facility by early 2008 so that the operation permit application submittal could include all as-built construction information in one package, rather than several submittals. As discussed with Ms. Henry, Eagle Florida regrets this unintentional oversight regarding the construction permit expiration versus the 180-day time limit.

Eagle strives to remain compliant with all air permit conditions and meets this issue with the serious attention it deserves. The company has implemented a system for ensuring that plant personnel involved in modifying or constructing new equipment include the two required deadlines in their project schedules.

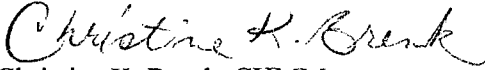
### Permit Processing Fees


Per our discussion, Eagle Florida requests to rescind EU 006 as a separate emission unit. Therefore, the company is owed a refund in the amount of \$1,500 which represents the operating permit processing fee that was paid to FDEP for this emission unit. As detailed in this submittal, Eagle Florida requests a construction permit extension for the fourth tile production line (\$50.00 processing fee) and a Construction Permit Application for modifying EU 004 and EU 005 (\$250 processing fee). We understand that FDEP can refund the difference of what is owed to the facility minus the new processing fees for ease of processing (total refund = \$1,200).

### CLOSING

Following this letter you will find the Professional Engineer Certification Statement for this response. If you have any questions, please contact Ms. Christine Brenk of Kleinfelder at 704.598.1049 or Mr. Victor Torcat at 909.822.6000.

Sincerely,  
**KLEINFELDER**

  
Christine K. Brenk, CHMM  
Senior Professional

  
Eric Carlson  
Project Engineer

cc: Mr. Victor Torcat, Eagle Roofing Products, LLC

- Attachment 1: Permit application forms
- Attachment 2: Revised emission calculations
- Attachment 3: Construction Permit Application for EU 004 and EU 005
- Attachment 4: Records

4. 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.*

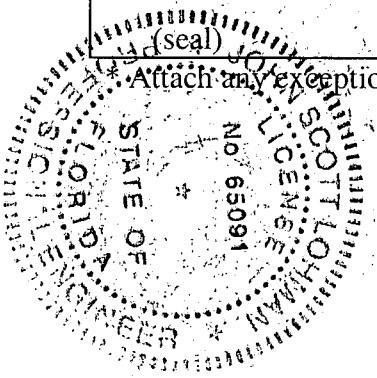
*If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [  ], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me 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.*

*If the purpose of this application is to obtain an initial air operation permit or operation permit revision 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.*

*John S. John*  
Signature

*6/23/08*  
Date

*Attach any exception to certification statement.*



Dept. of Environmental  
Protection

JUL 28 2008

Southwest District

**Owner/Authorized Representative**

|  |
|--|
| 1. Name and Title of Owner/Authorized Representative:<br>Seamus Burlingame, CEO  |
| 2. Owner/Authorized Representative Mailing Address:<br>Organization/Firm: Eagle Roofing Products Florida LLC<br>Street Address: 3546 N. Riverside Avenue<br>City: Rialto State:CA Zip Code:92377   |
| 3. Owner/Authorized Representative Telephone Numbers:<br>Telephone: (909)822-6000 X 301 - Fax: (909)822-5761   |
| 4. Owner/Authorized Representative Statement:<br><i>I, the undersigned, am the owner or authorized representative* of the facility addressed in this 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. 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 any permitted emissions unit.</i><br><br>Signature: _____ Date: <u>06/30/08</u> |

\* Attach letter of authorization if not currently on file.

**Professional Engineer Certification**

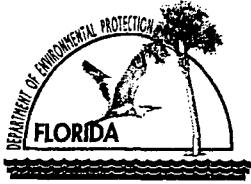
|  |
|--|
| 1. Professional Engineer Name: John Lohman<br>Registration Number: 65091   |
| 2. Professional Engineer Mailing Address:<br>Organization/Firm: Kleinfelder<br>Street Address: 3601 Manor Road<br>City: Austin State: TX Zip Code: 78723 |
| 3. Professional Engineer Telephone Numbers:<br>Telephone: (512)926-6650 Fax: (512)926-3312   |

Dept. of Environmental  
Protection



ATTACHMENT 1  
REVISED PERMIT APPLICATION FORMS

1190045-002-A0



# Department of Environmental Protection

## Division of Air Resources Management

### APPLICATION FOR AIR PERMIT - NON-TITLE V SOURCE

See Instructions for Form No. 62-210.900(3)

#### I. APPLICATION INFORMATION

##### Identification of Facility

|   |  |
|---|--|
| 1. Facility Owner/Company Name:<br>Eagle Roofing Products Florida LLC   |  |
| 2. Site Name:<br>Eagle Roofing Products Florida LLC   |  |
| 3. Facility Identification Number: <span style="float: right;"><input checked="" type="checkbox"/> Unknown</span>   |  |
| 4. Facility Location:<br>Street Address or Other Locator: 1575 East County Road 470<br>City: Sumterville <span style="margin-left: 100px;">County: Sumter</span> <span style="margin-left: 100px;">Zip Code: 33585</span> |  |
| 5. Relocatable Facility?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   | 6. Existing Permitted Facility?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

##### Application Contact

|   |  |
|---|--|
| 1. Name and Title of Application Contact: Mr. Robert Sena, Plant Manager  |  |
| 2. Application Contact Mailing Address:<br>Organization/Firm:<br>Street Address: 1575 East County Road 470<br>City: Sumterville <span style="margin-left: 150px;">State: FL</span> <span style="margin-left: 100px;">Zip Code: 33585</span> |  |
| 3. Application Contact Telephone Numbers:<br>Telephone: (877) 300-3248 <span style="margin-left: 150px;">Fax: (877) 300-3248</span>   |  |

##### Application Processing Information (DEP Use)

|                                    |  |
|------------------------------------|--|
| 1. Date of Receipt of Application: |  |
| 2. Permit Number:                  |  |

**Purpose of Application**

**Air Operation Permit Application**

This Application for Air Permit is submitted to obtain: (Check one)

- Initial non-Title V air operation permit for one or more existing, but previously unpermitted, emissions units.
- Initial non-Title V air operation permit for one or more newly constructed or modified emissions units.

Current construction permit number: 1190045-001-AC

- Non-Title V air operation permit revision to address one or more newly constructed or modified emissions units.

Current construction permit number: \_\_\_\_\_

Operation permit number to be revised: \_\_\_\_\_

- Initial non-Title V air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s):  
\_\_\_\_\_

- Non-Title V air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g., to address one or more newly constructed or modified emissions units.

Operation permit number to be revised: \_\_\_\_\_

Reason for revision: \_\_\_\_\_

**Air Construction Permit Application**

This Application for Air Permit is submitted to obtain: (Check one)

- Air construction permit to construct or modify one or more emissions units.
- Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.
- Air construction permit for one or more existing, but unpermitted, emissions units.

**Owner/Authorized Representative**

|  |
|--|
| 1. Name and Title of Owner/Authorized Representative:<br><u>Seamus Burlingame, CEO</u>   |
| 2. Owner/Authorized Representative Mailing Address:<br>Organization/Firm: Eagle Roofing Products Florida LLC<br>Street Address: 3546 N. Riverside Avenue<br>City: Rialto                      State:CA                      Zip Code:92377   |
| 3. Owner/Authorized Representative Telephone Numbers:<br>Telephone: (909)822-6000 X 301                      -                      Fax: (909)822-5761   |
| 4. Owner/Authorized Representative Statement:<br><br><i>I, the undersigned, am the owner or authorized representative* of the facility addressed in this 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. 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 any permitted emissions unit.</i><br><br><br>Signature _____<br><br>Date <u>06/30/08</u> _____ |

\* Attach letter of authorization if not currently on file.

**Professional Engineer Certification**

|  |
|--|
| 1. Professional Engineer Name: John Lohman<br>Registration Number: 65091   |
| 2. Professional Engineer Mailing Address:<br>Organization/Firm: Kleinfelder<br>Street Address: 3601 Manor Road<br>City: Austin                      State: TX                      Zip Code: 78723 |
| 3. Professional Engineer Telephone Numbers:<br>Telephone: (512)926-6650                      Fax: (512)926-3312  |

4. 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.*

*If the purpose of this application is to obtain an air construction permit 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.*

*If the purpose of this application is to obtain an initial air operation permit or operation permit revision 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

6/23/08  
Date

(seal)

\* Attach any exception to certification statement.



**Construction/Modification Information**

|  |
|--|
| 1. Description of Proposed Project or Alterations:           |
| 2. Projected or Actual Date of Commencement of Construction: |
| 3. Projected Date of Completion of Construction:             |

**Application Comment**

|  |
|--|
|  |
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**Facility Regulatory Classifications**

**Check all that apply:**

|  |                                  |
|--|----------------------------------|
| 1. <input type="checkbox"/> Small Business Stationary Source?  | <input type="checkbox"/> Unknown |
| 2. <input checked="" type="checkbox"/> Synthetic Non-Title V Source? ? 1190045-001-AC 12/22/2006   |                                  |
| 3. <input checked="" type="checkbox"/> Synthetic Minor Source of Pollutants Other than HAPs  |                                  |
| 4. <input type="checkbox"/> Synthetic Minor Source of HAPs?  |                                  |
| 5. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS?  |                                  |
| 6. <input type="checkbox"/> One or More Emission Units Subject to NESHAP Recordkeeping or Reporting?   |                                  |
| 7. Facility Regulatory Classifications Comment (limit to 200 characters):<br><br>The facility is a non-Title V source based upon potential-to-emit with federally enforceable requirements pertaining to particulate and VOC emissions. Particulate emission limits associated with certain control devices are in accordance with 40 CFR 60 Subpart OOO. The facility is a true minor for all other regulated pollutants. |                                  |

**Rule Applicability Analysis**

|   |
|---|
| See Attachment 5 previously submitted with construction permit application. |
|---|

## B. FACILITY POLLUTANTS

### List of Pollutants Emitted

| 1. Pollutant Emitted | 2. Pollutant Classif. | 3. <u>Requested Emissions Cap</u> |           | 4. Basis for Emissions Cap | 5. Pollutant Comment |
|----------------------|-----------------------|-----------------------------------|-----------|----------------------------|----------------------|
|                      |                       | lb/hour                           | tons/year |                            |                      |
| PM                   | SM                    |                                   |           |                            |                      |
| VOC                  | SM                    |                                   |           |                            |                      |
| SO2                  | B                     |                                   |           |                            |                      |
| NOx                  | B                     |                                   |           |                            |                      |
| CO                   | B                     |                                   |           |                            |                      |
| PM10                 | SM                    |                                   |           |                            |                      |
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### C. FACILITY SUPPLEMENTAL INFORMATION

#### Supplemental Requirements

|  |
|--|
| 1. Area Map Showing Facility Location:<br>[X ] Attached, Document ID: Fig 1 Att 1 [ ] Not Applicable [ ] Waiver Requested  |
| 2. Facility Plot Plan:<br>[X ] Attached, Document ID: Fig 2 Att 1 [ ] Not Applicable [ ] Waiver Requested  |
| 3. Process Flow Diagram(s):<br>[X ] Attached, Document ID: _Att 1 ___ [ ] Not Applicable [ ] Waiver Requested  |
| 4. Precautions to Prevent Emissions of Unconfined Particulate Matter:<br>[ ] Attached, Document ID: _____ [ ] Not Applicable [ ] Waiver Requested  |
| 5. Supplemental Information for Construction Permit Application:<br>[ ] Attached, Document ID: _____ [ ] Not Applicable  |
| 6. Supplemental Requirements Comment:<br><br>Attachments are provided to supplement this permit application with detailed source information. Attachment 1 provides facility figures and process flow diagrams; Attachment 2 provides emissions calculations; Attachment 3 provides the performance test reports; and Attachment 4 provides the records requested in the construction permit application.<br><br>According to 62-210.900(3) – Instructions, if any item of supplemental information requested in this subsection has been submitted to the Department within previous five years and would not be altered as a result of this permit application, it need not be resubmitted. Therefore, Attachments 2 (Process description at the facility), 4 (MSDS and vendor information) and 5 (regulatory applicability analysis) previously submitted with construction permit application will not be resubmitted. |

**III. EMISSIONS UNIT INFORMATION**

A separate Emissions Unit Information Section (including subsections A through G as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Emissions Unit Description and Status**

|   |   |  |
|---|---|--|
| <p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> 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.</p> <p><input checked="" type="checkbox"/> 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.</p> |   |  |
| <p>2. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>Sand and shale receiving and handling system</p>   |   |  |
| <p>3. Emissions Unit Identification Number:</p> <p>ID: 001</p>  |   | <p><input type="checkbox"/> No ID</p> <p><input type="checkbox"/> ID Unknown</p> |
| <p>4. Emissions Unit Status Code:</p> <p>A</p>  | <p>5. Initial Startup Date:</p> <p>12/27/2006</p> | <p>6. Emissions Unit Major Group SIC Code:</p> <p>32</p>                         |
| <p>7. Emissions Unit Comment: (Limit to 500 Characters)</p> <p>This emission unit consists of sand and W-10 Aggregate receiving and handling equipment. Shale may also be used in the equipment in the future. The sand, W-10 aggregate and shale is delivered to one of twelve enclosed 220 ton receiving hoppers by the bottom dump trucks and is conveyed from the receiving hoppers to a transfer tower, a screen tower and a two-compartment storage bin via a series of covered conveyor belts. A conveyor from the crushed tile storage bin/hopper also feeds the emission unit.</p> <p>This emission unit has a maximum throughput rate of 384 tons/hour which includes both truck receiving and reject recycle tile material feeds.</p>  |   |  |

**Emissions Unit Control Equipment**

|   |
|---|
| <p>1. Control Equipment/Method Description (limit to 200 characters per device or method):</p> <p>The conveyor system is equipped with water spray nozzles, to be used on an as-needed basis to maintain sand and aggregate moisture at 6 to 8 percent, and shale moisture content at 17 to 18 percent for the reduction of dust emissions. Also, the conveyors are covered. The screening process is controlled by the dust collection system, which is exhausted through a baghouse with a control efficiency of 99.9%.</p> |
| <p>2. Control Device or Method Code(s): 018, 054, 061</p>   |

**Emissions Unit Details**

|                                      |  |               |
|--------------------------------------|--|---------------|
| 1. Package Unit:                     |  |               |
| Manufacturer:                        |  | Model Number: |
| 2. Generator Nameplate Rating:       |  | MW            |
| 3. Incinerator Information:          |  |               |
| Dwell Temperature:                   |  | °F            |
| Dwell Time:                          |  | seconds       |
| Incinerator Afterburner Temperature: |  | °F            |

**Emissions Unit Operating Capacity and Schedule**

|  |  |                 |
|--|--|-----------------|
| 1. Maximum Heat Input Rate:  |  | mmBtu/hr        |
| 2. Maximum Incineration Rate:  | lb/hr  | tons/day        |
| 3. Maximum Process or Throughput Rate:                                   | 1.18 MM tons/year (Limited by tile production) |                 |
| 4. Maximum Production Rate:  |  |                 |
| 5. Requested Maximum Operating Schedule:                                 |  |                 |
|  | 24 hours/day                                   | 7 days/week     |
|  | 52 weeks/year                                  | 8760 hours/year |
| 6. Operating Capacity/Schedule Comment (limit to 200 characters):        |  |                 |
| <p>The emission unit has a maximum throughput rate of 384 tons/hour.</p> |  |                 |

**B. EMISSION POINT (STACK/VENT) INFORMATION**

**Emission Point Description and Type**

|  |                                    |  |                         |
|--|------------------------------------|--|-------------------------|
| 1. Identification of Point on Plot Plan or Flow Diagram? Emission Unit 1   |                                    | 2. Emission Point Type Code:<br>4              |                         |
| 3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):<br>Material transfer points from bulk delivery, conveyor drop points, screening and storage transfer.   |                                    |  |                         |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:<br>Units 005 and 006   |                                    |  |                         |
| 5. Discharge Type Code:<br>F   | 6. Stack Height:<br>NA             | feet   | 7. Exit Diameter:<br>NA |
|  |                                    |  | feet                    |
| 8. Exit Temperature:<br>77°F   | 9. Actual Volumetric Flow Rate: NA | acfm   | 10. Water Vapor:<br>NA  |
|  |                                    |  | %                       |
| 11. Maximum Dry Standard Flow Rate:<br>dscfm   |                                    | 12. Nonstack Emission Point Height:<br>0 to 50 |                         |
|  |                                    |  | feet                    |
| 13. Emission Point UTM Coordinates:<br>Zone: 17                      East (km): 394.482                      North (km): 3178.653  |                                    |  |                         |
| 14. Emission Point Comment (limit to 200 characters):<br><br>The emission points consist of the following material transfer points: truck deliveries to the 12 receiving hoppers; receiving hoppers to 4 belt conveyor drop points; 10 conveyor drop points; screening process; and one 200-ton storage bin. |                                    |  |                         |

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

**Segment Description and Rate:** Segment  1  of  4

|  |  |   |
|--|--|---|
| 1. Segment Description (Process/Fuel Type) (limit to 500 characters):<br><br>Sand, W-10 aggregate and shale delivery to drive over storage (Grizzly). The Grizzly contains 12 hoppers at 220 ton capacity each totaling 2,640 tons total storage capacity. Annual sand, W-10 aggregate and shale throughput tonnage is dependent upon tile production.<br><br>*shale is currently not in use but will be used in the future. |  |   |
| 2. Source Classification Code (SCC): NA  |  | 3. SCC Units: Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>384 tons/hour   | 5. Maximum Annual Rate:<br>1.18 MM tons/year | 6. Estimated Annual Activity Factor: NA   |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA                      | 9. Million Btu per SCC Unit:<br>NA        |
| 10. Segment Comment (limit to 200 characters):<br><br>Loading and transfer rates are a function of delivery schedule and tile production.  |  |   |

**Segment Description and Rate:** Segment  2  of  4

|  |  |   |
|--|--|---|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters):<br><br>Material transfer from storage hoppers through conveyors.<br>Sand, shale and W-10 aggregate tonnage is dependent upon tile production. |  |   |
| 2. Source Classification Code (SCC): NA  |  | 3. SCC Units: Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>384 tons/hour   | 5. Maximum Annual Rate:<br>1.18 MM tons/year | 6. Estimated Annual Activity Factor: NA   |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA                      | 9. Million Btu per SCC Unit:<br>NA        |
| 10. Segment Comment (limit to 200 characters):<br><br>Transfer rate is a function of tile production rate and schedule.  |  |   |

**Emissions Unit Information Section   1   of   6**

**Segment Description and Rate: Segment   3   of   4**

|  |  |   |
|--|--|---|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters):<br><br>Sand, W-10 aggregate and/or shale screening is dependent upon tile production. |  |   |
| 2. Source Classification Code (SCC): NA  |  | 3. SCC Units: Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>384 tons/hour   | 5. Maximum Annual Rate:<br>1.18 MM tons/year | 6. Estimated Annual Activity Factor: NA   |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA                      | 9. Million Btu per SCC Unit:<br>NA        |
| 10. Segment Comment (limit to 200 characters):<br><br>Transfer rate is a function of tile production rate and schedule.                                      |  |   |

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

|  |  |   |
|--|--|---|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters):<br><br>Screened sand/shale/W-10 aggregate transfer to/from 200 ton storage structure. |  |   |
| 2. Source Classification Code (SCC): NA  |  | 3. SCC Units: Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>384 tons/hour   | 5. Maximum Annual Rate:<br>1.18 MM tons/year | 6. Estimated Annual Activity Factor: NA   |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA                      | 9. Million Btu per SCC Unit:<br>NA        |
| 10. Segment Comment (limit to 200 characters):<br><br>Transfer rate is a function of tile production rate and schedule.                                      |  |   |



**D. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION**

**Potential Emissions**

|   |  |  |                                  |
|---|--|--|----------------------------------|
| 1. Pollutant Emitted: PM10  |  | 2. Pollutant Regulatory Code: EL                         |                                  |
| 3. Primary Control Device<br>Code: 054 (screen)                                 | 4. Secondary Control Device<br>Code: 018 | 5. Total Percent Efficiency<br>of Control:99.9% (screen) |                                  |
| 6. Potential Emissions:<br>1.00 lb/hour   |  | 1.54 tons/year   | 7. Synthetically Limited?<br>[ ] |
| 8. Emission Factor: See Attachment 2<br>Reference: See Attachment 2             |  | 9. Emissions Method Code:<br>3                           |                                  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |  |  |                                  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |  |  |                                  |

**Potential Emissions**

|   |  |  |                                  |
|---|--|--|----------------------------------|
| 1. Pollutant Emitted: PM  |  | 2. Pollutant Regulatory Code: EL                         |                                  |
| 3. Primary Control Device<br>Code: 054 (screen)                                 | 4. Secondary Control Device<br>Code: 018 | 5. Total Percent Efficiency<br>of Control:99.9% (screen) |                                  |
| 6. Potential Emissions:<br>2.37 lb/hour   |  | 3.64 tons/year   | 7. Synthetically Limited?<br>[ ] |
| 8. Emission Factor: See Attachment 2<br>Reference: See Attachment 2             |  | 9. Emissions Method Code:<br>3                           |                                  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |  |  |                                  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |  |  |                                  |

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

|   |  |
|---|--|
| 1. Basis for Allowable Emissions Code:  | 2. Future Effective Date of Allowable Emissions:                             |
| 3. Requested Allowable Emissions and Units:   | 4. Equivalent Allowable Emissions:<br>lb/hour                      tons/year |
| 5. Method of Compliance (limit to 60 characters):                                     |  |
| 6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): |  |

**E. VISIBLE EMISSIONS INFORMATION**  
(Only Emissions Units Subject to a VE Limitation)

**Visible Emissions Limitation:** Visible Emissions Limitation  1  of  1

|   |  |
|---|--|
| 1. Visible Emissions Subtype: VE15  | 2. Basis for Allowable Opacity:<br><input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other |
| 3. Requested Allowable Opacity:<br>Normal Conditions:                      %                      Exceptional Conditions:                      %<br>Maximum Period of Excess Opacity Allowed:                      min/hour |  |
| 4. Method of Compliance: Visible Emissions Evaluation (Method 9)  |  |
| 5. Visible Emissions Comment (limit to 200 characters):<br><br>Visible emissions will be limited per 40 CFR 60 (subpart OOO) requirements.  |  |

**F. CONTINUOUS MONITOR INFORMATION**  
**(Only Emissions Units Subject to Continuous Monitoring)**

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

|   |  |
|---|--|
| 1. Parameter Code:  | 2. Pollutant(s):   |
| 3. CMS Requirement:                                       | <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 4. Monitor Information:<br>Manufacturer:<br>Model Number: | Serial Number:   |
| 5. Installation Date:                                     | 6. Performance Specification Test Date:                      |
| 7. Continuous Monitor Comment (limit to 200 characters):  |  |

**G. EMISSIONS UNIT SUPPLEMENTAL INFORMATION**

**Supplemental Requirements**

|   |
|---|
| 1. Process Flow Diagram<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 1</u> <input type="checkbox"/> Not Applicable  |
| 2. Fuel Analysis or Specification<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 3. Detailed Description of Control Equipment<br><input checked="" type="checkbox"/> Attached, Document ID: <u>previously submitted Att 2, 4</u> <input type="checkbox"/> Not Applicable                       |
| 4. Description of Stack Sampling Facilities<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested             |
| 5. Compliance Test Report<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 3</u><br><input type="checkbox"/> Previously submitted, Date: _____<br><input type="checkbox"/> Not Applicable |
| 6. Procedures for Startup and Shutdown<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                  |
| 7. Operation and Maintenance Plan<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 8. Supplemental Information for Construction Permit Application<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable                                   |
| 9. Other Information Required by Rule or Statute<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable  |
| 10. Supplemental Requirements Comment:<br><br><p>Attachment 4 is the daily and monthly records requested in the construction permit.</p>  |

**III. EMISSIONS UNIT INFORMATION**

A separate Emissions Unit Information Section (including subsections A through G as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Emissions Unit Description and Status**

|   |   |  |
|---|---|--|
| <p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p> |   |  |
| <p>2. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>Cement Storage Silo West</p>   |   |  |
| <p>3. Emissions Unit Identification Number:</p> <p>ID: 002</p>  |   | <p><input type="checkbox"/> No ID</p> <p><input type="checkbox"/> ID Unknown</p> |
| <p>4. Emissions Unit Status Code:</p> <p>A</p>  | <p>5. Initial Startup Date:</p> <p>12/27/2006</p> | <p>6. Emissions Unit Major Group SIC Code:</p> <p>32</p>                         |
| <p>6. Emissions Unit Comment: (Limit to 500 Characters)</p> <p>Gray or white cement is pneumatically loaded from trucks into the silo where it is stored and later transferred through an enclosed screw conveyor into its own 60 ton hopper located in the sand/shale/W-10 aggregate/cement mixing area. A baghouse located on top of the silo captures cement dust from the displaced air.</p>  |   |  |

**Emissions Unit Control Equipment**

|  |
|--|
| 1. Control Equipment/Method Description (limit to 200 characters per device or method):<br><br>Displaced air is passed through a baghouse to remove cement dust. |
| 2. Control Device or Method Code(s):018, 054   |

**Emissions Unit Details**

|   |                       |
|---|-----------------------|
| 1. Package Unit:<br>Manufacturer: Cyclonaire      | Model Number:84-DC-25 |
| 2. Generator Nameplate Rating:                    | MW                    |
| 3. Incinerator Information:<br>Dwell Temperature: | °F                    |
| Dwell Time:                                       | seconds               |
| Incinerator Afterburner Temperature:              | °F                    |

**Emissions Unit Operating Capacity and Schedule**

|   |                   |
|---|-------------------|
| 1. Maximum Heat Input Rate:   | mmBtu/hr          |
| 2. Maximum Incineration Rate:   | lb/hr tons/day    |
| 3. Maximum Process or Throughput Rate:  | 147,825 tons/year |
| 4. Maximum Production Rate:   |                   |
| 5. Requested Maximum Operating Schedule:  |                   |
| 24hours/day   | 7 days/week       |
| 52 weeks/year   | 8760 hours/year   |
| 7. Operating Capacity/Schedule Comment (limit to 200 characters):<br><br>Loading rate is dependent on truck unloading rate, and is somewhat variable. Removal rate is dependent upon roofing tile production rate. Total annual tonnage of cement is estimated based on quantity of cement needed to produce maximum volume of tiles. |                   |

**B. EMISSION POINT (STACK/VENT) INFORMATION**

**Emission Point Description and Type**

|  |   |                                |  |
|--|---|--------------------------------|--|
| 1. Identification of Point on Plot Plan or Flow Diagram? Emission Unit 2   |   | 2. Emission Point Type Code: 1 |  |
| 3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):<br><br>Cement silo baghouse exhaust |   |                                |  |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:<br><br>No other common emission points                                 |   |                                |  |
| 5. Discharge Type Code:<br>P   | 6. Stack Height:<br>NA                  | feet                           | 7. Exit Diameter:<br>NA                    |
|  |   |                                | feet                                       |
| 8. Exit Temperature:<br>77°F   | 9. Actual Volumetric Flow Rate:<br>2685 | acfm                           | 10. Water Vapor:<br>NA                     |
|  |   |                                | %  |
| 11. Maximum Dry Standard Flow Rate:<br>2685  |   | dscfm                          | 12. Nonstack Emission Point Height:<br>~50 |
|  |   |                                | feet                                       |
| 13. Emission Point UTM Coordinates:<br>Zone: 17                      East (km):394.627                      North (km):3178.584                            |   |                                |  |
| 14. Emission Point Comment (limit to 200 characters):<br><br>The emission point is the cement silo baghouse vent.  |   |                                |  |

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

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

|  |  |  |
|--|--|--|
| 1. Segment Description (Process/Fuel Type) (limit to 500 characters):<br><br>Cement is pneumatically loaded from closed delivery trucks to the cement storage silo. Cement tonnage is dependent upon delivery schedule and tile production rate. |  |  |
| 2. Source Classification Code (SCC):<br>NA   |  | 3. SCC Units:<br>Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>22.5 tons/hour  | 5. Maximum Annual Rate:<br>147,825 tons/year | 6. Estimated Annual Activity Factor:NA       |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA                      | 9. Million Btu per SCC Unit:<br>NA           |
| 10. Segment Comment (limit to 200 characters):<br><br>Loading rate is a function of delivery schedule.   |  |  |

**Segment Description and Rate:** Segment   of

|  |                         |                                      |
|--|-------------------------|--------------------------------------|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters): |                         |                                      |
| 2. Source Classification Code (SCC):                                   |                         | 3. SCC Units:                        |
| 4. Maximum Hourly Rate:  | 5. Maximum Annual Rate: | 6. Estimated Annual Activity Factor: |
| 7. Maximum % Sulfur:   | 8. Maximum % Ash:       | 9. Million Btu per SCC Unit:         |
| 10. Segment Comment (limit to 200 characters):                         |                         |                                      |



**D. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION**

**Potential Emissions**

|   |                                       |   |  |
|---|---------------------------------------|---|--|
| 1. Pollutant Emitted: PM10  |                                       | 2. Pollutant Regulatory Code: EL            |  |
| 3. Primary Control Device Code: 018   | 4. Secondary Control Device Code: 054 | 5. Total Percent Efficiency of Control:99.9 |  |
| 6. Potential Emissions:<br>0.01 lb/hour          0.03 tons/year                 |                                       | 7. Synthetically Limited?<br>[ ]            |  |
| 8. Emission Factor:0.46 lb/ton<br>Reference: USEPA AP-42 Ch 11.12               |                                       | 9. Emissions Method Code:<br>3              |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |                                       |   |  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |                                       |   |  |

**Potential Emissions**

|   |                                       |   |  |
|---|---------------------------------------|---|--|
| 1. Pollutant Emitted: PM  |                                       | 2. Pollutant Regulatory Code: EL            |  |
| 3. Primary Control Device Code: 018   | 4. Secondary Control Device Code: 054 | 5. Total Percent Efficiency of Control:99.9 |  |
| 6. Potential Emissions:<br>0.01 lb/hour          0.05 tons/year                 |                                       | 7. Synthetically Limited?<br>[ ]            |  |
| 8. Emission Factor:0.46 lb/ton<br>Reference: USEPA AP-42 Ch 11.12               |                                       | 9. Emissions Method Code:<br>3              |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |                                       |   |  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |                                       |   |  |

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

|   |  |
|---|--|
| 1. Basis for Allowable Emissions Code:  | 2. Future Effective Date of Allowable Emissions:                             |
| 3. Requested Allowable Emissions and Units:   | 4. Equivalent Allowable Emissions:<br>lb/hour                      tons/year |
| 5. Method of Compliance (limit to 60 characters):                                     |  |
| 6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): |  |



**G. EMISSIONS UNIT SUPPLEMENTAL INFORMATION**

**Supplemental Requirements**

|   |
|---|
| 1. Process Flow Diagram<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 1</u> <input type="checkbox"/> Not Applicable  |
| 2. Fuel Analysis or Specification<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 3. Detailed Description of Control Equipment<br><input checked="" type="checkbox"/> Attached, Document ID: <u>previously submitted Att 2, 4</u> <input type="checkbox"/> Not Applicable                       |
| 4. Description of Stack Sampling Facilities<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested             |
| 5. Compliance Test Report<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 3</u><br><input type="checkbox"/> Previously submitted, Date: _____<br><input type="checkbox"/> Not Applicable |
| 6. Procedures for Startup and Shutdown<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                  |
| 7. Operation and Maintenance Plan<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 8. Supplemental Information for Construction Permit Application<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable                                   |
| 9. Other Information Required by Rule or Statute<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable  |
| 10. Supplemental Requirements Comment:<br><br>Attachment 4 is the daily and monthly records requested in the construction permit.   |

**Emissions Unit Description and Status**

|   |  |   |
|---|--|---|
| <p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p> |  |   |
| <p>2. Description of Emissions Unit Addressed in This Section (limit to 60 characters):<br/>Cement Storage Silo East</p>  |  |   |
| <p>3. Emissions Unit Identification Number: ID: 003</p> <p style="text-align: right;"><input type="checkbox"/> No ID<br/><input type="checkbox"/> ID Unknown</p>  |  |   |
| <p>4. Emissions Unit Status Code:<br/>A</p>   | <p>5. Initial Startup Date:<br/>12/27/2006</p> | <p>6. Emissions Unit Major Group SIC Code:<br/>32</p> |
| <p>8. Emissions Unit Comment: (Limit to 500 Characters)</p> <p>Gray or white cement is pneumatically loaded from trucks into the silo where it is stored and later transferred through an enclosed screw conveyor into its own 60 ton hopper located in the sand/shale/W-10 aggregate/cement mixing area. A baghouse located on top of the silo captures cement dust from the displaced air.</p>  |  |   |

**Emissions Unit Control Equipment**

|  |
|--|
| 1. Control Equipment/Method Description (limit to 200 characters per device or method):<br><br>Displaced air is passed through a baghouse to remove cement dust. |
| 2. Control Device or Method Code(s):018, 054   |

**Emissions Unit Details**

|   |                       |
|---|-----------------------|
| 1. Package Unit:<br>Manufacturer: Cyclonaire      | Model Number:84-DC-25 |
| 2. Generator Nameplate Rating:                    | MW                    |
| 3. Incinerator Information:<br>Dwell Temperature: | °F                    |
| Dwell Time:                                       | seconds               |
| Incinerator Afterburner Temperature:              | °F                    |

**Emissions Unit Operating Capacity and Schedule**

|  |                   |
|--|-------------------|
| 1. Maximum Heat Input Rate:  | mmBtu/hr          |
| 2. Maximum Incineration Rate:  | lb/hr tons/day    |
| 3. Maximum Process or Throughput Rate:   | 197,100 tons/year |
| 4. Maximum Production Rate:  |                   |
| 5. Requested Maximum Operating Schedule:<br>24hours/day  | 7 days/week       |
| 52 weeks/year  | 8760 hours/year   |
| 6. Operating Capacity/Schedule Comment (limit to 200 characters):<br><br>Loading rate is dependent on truck unloading rate, and is somewhat variable. Removal rate is dependent upon roofing tile production rate. Total annual tonnage of cement is estimated based on quantity of cement needed to produce maximum volume of tiles.. |                   |

**B. EMISSION POINT (STACK/VENT) INFORMATION**

**Emission Point Description and Type**

|  |   |  |  |
|--|---|--|--|
| 1. Identification of Point on Plot Plan or Flow Diagram? Emission Unit 3   |   | 2. Emission Point Type Code: 1                     |  |
| 3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):<br><br>Cement silo baghouse exhaust |   |  |  |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:<br><br>No other common emission points                                 |   |  |  |
| 5. Discharge Type Code:<br>P   | 6. Stack Height:<br>NA<br>feet                  | 7. Exit Diameter:<br>NA<br>feet                    |  |
| 8. Exit Temperature:<br>77°F   | 9. Actual Volumetric Flow Rate:<br>2685<br>acfm | 10. Water Vapor:<br>NA<br>%                        |  |
| 11. Maximum Dry Standard Flow Rate:<br>2685<br>dscfm   |   | 12. Nonstack Emission Point Height:<br>~50<br>feet |  |
| 13. Emission Point UTM Coordinates:<br>Zone: 17                      East (km):394.627                      North (km):3178.584                            |   |  |  |
| 14. Emission Point Comment (limit to 200 characters):<br><br>The emission point is the cement silo baghouse vent.  |   |  |  |

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

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

|  |  |  |
|--|--|--|
| 1. Segment Description (Process/Fuel Type) (limit to 500 characters):<br><br>Cement is pneumatically loaded from closed delivery trucks to the cement storage silo. Cement tonnage is dependent upon delivery schedule and tile production rate. |  |  |
| 2. Source Classification Code (SCC):<br>NA   |  | 3. SCC Units:<br>Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>22.5 tons/hour  | 5. Maximum Annual Rate:<br>147,825 tons/year | 6. Estimated Annual Activity Factor:<br>NA   |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA                      | 9. Million Btu per SCC Unit:<br>NA           |
| 10. Segment Comment (limit to 200 characters):<br><br>Loading rate is a function of delivery schedule.   |  |  |

**Segment Description and Rate:** Segment   of

|  |                         |                                      |
|--|-------------------------|--------------------------------------|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters): |                         |                                      |
| 2. Source Classification Code (SCC):                                   |                         | 3. SCC Units:                        |
| 4. Maximum Hourly Rate:  | 5. Maximum Annual Rate: | 6. Estimated Annual Activity Factor: |
| 7. Maximum % Sulfur:   | 8. Maximum % Ash:       | 9. Million Btu per SCC Unit:         |
| 10. Segment Comment (limit to 200 characters):                         |                         |                                      |



**D. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION**

**Potential Emissions**

|   |                                       |   |  |
|---|---------------------------------------|---|--|
| 1. Pollutant Emitted: PM10  |                                       | 2. Pollutant Regulatory Code: EL            |  |
| 3. Primary Control Device Code: 018   | 4. Secondary Control Device Code: 054 | 5. Total Percent Efficiency of Control:99.9 |  |
| 6. Potential Emissions:<br>0.01 lb/hour      0.03 tons/year                     |                                       | 7. Synthetically Limited?<br>[ ]            |  |
| 8. Emission Factor:0.46 lb/ton<br>Reference: USEPA AP-42 Ch 11.12               |                                       | 9. Emissions Method Code:<br>3              |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |                                       |   |  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |                                       |   |  |

**Potential Emissions**

|   |                                       |   |  |
|---|---------------------------------------|---|--|
| 1. Pollutant Emitted: PM  |                                       | 2. Pollutant Regulatory Code: EL            |  |
| 3. Primary Control Device Code: 018   | 4. Secondary Control Device Code: 054 | 5. Total Percent Efficiency of Control:99.9 |  |
| 6. Potential Emissions:<br>0.01 lb/hour      0.05 tons/year                     |                                       | 7. Synthetically Limited?<br>[ ]            |  |
| 8. Emission Factor:0.46 lb/ton<br>Reference: USEPA AP-42 Ch 11.12               |                                       | 9. Emissions Method Code:<br>3              |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |                                       |   |  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |                                       |   |  |

Emissions Unit Information Section  3  of  6

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

|   |  |
|---|--|
| 1. Basis for Allowable Emissions Code:  | 2. Future Effective Date of Allowable Emissions:                             |
| 3. Requested Allowable Emissions and Units:   | 4. Equivalent Allowable Emissions:<br>lb/hour                      tons/year |
| 5. Method of Compliance (limit to 60 characters):                                     |  |
| 6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): |  |



**G. EMISSIONS UNIT SUPPLEMENTAL INFORMATION**

**Supplemental Requirements**

|   |
|---|
| 1. Process Flow Diagram<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 1</u> <input type="checkbox"/> Not Applicable  |
| 2. Fuel Analysis or Specification<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 3. Detailed Description of Control Equipment<br><input checked="" type="checkbox"/> Attached, Document ID: <u>previously submitted Att 2, 4</u> <input type="checkbox"/> Not Applicable                       |
| 4. Description of Stack Sampling Facilities<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested             |
| 5. Compliance Test Report<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 3</u><br><input type="checkbox"/> Previously submitted, Date: _____<br><input type="checkbox"/> Not Applicable |
| 6. Procedures for Startup and Shutdown<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                  |
| 7. Operation and Maintenance Plan<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 8. Supplemental Information for Construction Permit Application<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable                                   |
| 9. Other Information Required by Rule or Statute<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable  |
| 10. Supplemental Requirements Comment:<br><br>Attachment 4 is the daily and monthly records requested in the construction permit.   |

**III. EMISSIONS UNIT INFORMATION**

A separate Emissions Unit Information Section (including subsections A through G as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Emissions Unit Description and Status**

|   |  |   |
|---|--|---|
| <p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p> |  |   |
| <p>2. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>This emission unit includes several activities occurring within the Tile Production Building. The activities include:</p> <ol style="list-style-type: none"> <li>1. W-10 aggregate/cement mixing</li> <li>2. Pigment mixing</li> <li>3. Tile production</li> </ol>   |  |   |
| <p>3. Emissions Unit Identification Number:<br/>ID:004</p>  |  | <p><input type="checkbox"/> No ID<br/><input type="checkbox"/> ID Unknown</p> |
| <p>4. Emissions Unit Status<br/>Code: A</p>   | <p>5. Initial Startup Date:<br/>12/27/2006</p> | <p>6. Emissions Unit Major Group SIC Code:<br/>32</p>                         |

**Emissions Unit Information Section 4 of 6**

7. Emissions Unit Comment: (Limit to 500 Characters)
1. W-10 aggregate/cement mixing: This part of emission unit consists of activities associated with sand, W-10 aggregate, shale and cement mixing. These materials are conveyed from emission units 001, 002 and 003 and are mixed together within an enclosed building. Three baghouse dust collectors are used to control particulate matter emissions resulting from filling the cement hoppers, mixing activities and production line raw material feeds. One of the dust collectors is currently idle pending the future construction of the 4<sup>th</sup> tile manufacturing line. In addition, the two cement surge hoppers are each equipped with a bin vent.
  2. Pigment mixing: This part of emission unit consists of eight pigment mixing vats (five 800 gallon tanks and three 500 gallon tanks). Bagged dry pigment is added to the vats as needed and mixed with water. A dust collector system with baghouse is used to control the dust emissions.
  3. Tile production area: This part of the emission unit combines sand/W-10 aggregate and cement. There are three production lines which run in parallel. Each line can produce up

**Emissions Unit Control Equipment**

1. Control Equipment/Method Description (limit to 200 characters per device or method):
- The W-10 aggregate/cement mixing process is housed within a building and includes dust collectors with baghouses.
- The cement surge hoppers are equipped with bin vents.
- The pigment mixing vats are enclosed within the production building which are also controlled with a dust collector system with baghouse.
- For the tile production area, dry cement/W-10 aggregate (and future potential shale) enters the production area where it is mixed with water and pigment mix is added. Fugitive VOC
2. Control Device or Method Code(s): 018, 054

**Emissions Unit Details**

|                                |                                      |               |
|--------------------------------|--------------------------------------|---------------|
| 1. Package Unit:               |                                      |               |
| Manufacturer:                  |                                      | Model Number: |
| 2. Generator Nameplate Rating: |                                      | MW            |
| 3. Incinerator Information:    |                                      |               |
|                                | Dwell Temperature:                   | °F            |
|                                | Dwell Time:                          | seconds       |
|                                | Incinerator Afterburner Temperature: | °F            |

**Emissions Unit Operating Capacity and Schedule**

|                               |       |          |
|-------------------------------|-------|----------|
| 1. Maximum Heat Input Rate:   |       | mmBtu/hr |
| 2. Maximum Incineration Rate: | lb/hr | tons/day |

**Emissions Unit Information Section 4 of 6**

|  |                 |
|--|-----------------|
| 3. Maximum Process or Throughput Rate: 1.18 MM tons/yr (aggregate mix); 5913 tons/yr(pigment mix); 236.5 MM tiles/yr (tile production)   |                 |
| 4. Maximum Production Rate: NA (aggregate mix); NA (pigment mix); 600 tiles/minute(tile production)  |                 |
| 5. Requested Maximum Operating Schedule:   |                 |
| 24 hours/day   | 7 days/week     |
| 52 weeks/year  | 8760 hours/year |
| 6. Operating Capacity/Schedule Comment (limit to 200 characters):  |                 |
| <p>For aggregate mix, capacity is dependent upon roofing tile production rate.<br/>For pigment mix, pigment usage is a direct function of roof tile production.<br/>For tile production, there are three production lines which run in parallel and each line can produce up to 150 tiles per minute. A fourth line is expected to be constructed in the near future based on market demand.</p> |                 |





Emissions Unit Information Section 4 of 6

C. SEGMENT (PROCESS/FUEL) INFORMATION

**Segment Description and Rate:** Segment 1 of 4

|   |   |  |
|---|---|--|
| 1. Segment Description (Process/Fuel Type) (limit to 500 characters):<br>Aggregate/cement mixing                    |   |  |
| 2. Source Classification Code (SCC):<br>NA  |   | 3. SCC Units:<br>Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>135 tons/hr  | 5. Maximum Annual Rate:<br>1.18 MMTons/year | 6. Estimated Annual Activity Factor: NA      |
| 7. Maximum % Sulfur:<br>NA  | 8. Maximum % Ash:<br>NA                     | 9. Million Btu per SCC Unit:<br>NA           |
| 10. Segment Comment (limit to 200 characters):<br><br>Total tonnage transferred is the sum of aggregate and cement. |   |  |

**Segment Description and Rate:** Segment 2 of 4

|  |   |   |
|--|---|---|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters):<br><br>Pigment transfer to vats is directly related to tile production. |   |   |
| 2. Source Classification Code (SCC):<br>NA   |   | 3. SCC Units:<br>Tons used              |
| 4. Maximum Hourly Rate:<br>0.67 tons/hour  | 5. Maximum Annual Rate:<br>5913 tons/year | 6. Estimated Annual Activity Factor: NA |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA                   | 9. Million Btu per SCC Unit:<br>NA      |
| 10. Segment Comment (limit to 200 characters):<br><br>Transfer rate is a direct function of roof tile production rate.                         |   |   |

**Emissions Unit Information Section 4 of 6**

**Segment Description and Rate: Segment 3 of 4**

|   |  |  |
|---|--|--|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters):<br><br>Molds are sprayed with a mold release oil prior to extruding concrete on the mold. Evaporation of the mold release oil is considered to be the emission unit segment. |  |  |
| 2. Source Classification Code (SCC):<br>NA  | 3. SCC Units:<br>Units processed             |  |
| 4. Maximum Hourly Rate:<br>27,000 tiles   | 5. Maximum Annual Rate:<br>236,520,000 tiles | 6. Estimated Annual Activity Factor:<br>NA |
| 7. Maximum % Sulfur:<br>NA  | 8. Maximum % Ash:<br>NA                      | 9. Million Btu per SCC Unit:<br>NA         |
| 10. Segment Comment (limit to 200 characters):<br><br>The maximum production rate is 450 tiles per minute total.  |  |  |

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

|  |                               |  |
|--|-------------------------------|--|
| 1. Segment Description (Process/Fuel Type ) (limit to 500 characters):<br><br>The surface of the cured tiles is coated with an acrylic sealer. |                               |  |
| 2. Source Classification Code (SCC):<br>NA   | 3. SCC Units: Gallons used    |  |
| 4. Maximum Hourly Rate:<br>NA  | 5. Maximum Annual Rate:<br>NA | 6. Estimated Annual Activity Factor:<br>NA |
| 7. Maximum % Sulfur:<br>NA   | 8. Maximum % Ash:<br>NA       | 9. Million Btu per SCC Unit:<br>NA         |
| 10. Segment Comment (limit to 200 characters):<br><br>Sealer usage is a direct function of the tile production rate.                           |                               |  |

**D. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION**

**Potential Emissions**

|  |                                       |   |  |
|--|---------------------------------------|---|--|
| 1. Pollutant Emitted: PM10   |                                       | 2. Pollutant Regulatory Code: WP, EL                              |  |
| 3. Primary Control Device Code: 054  | 4. Secondary Control Device Code: 018 | 5. Total Percent Efficiency of Control: 99.9                      |  |
| 6. Potential Emissions:<br>0.14 lb/hour                      0.74 tons/year (aggregate mix)<br>0.31 lb/hour                      1.36 tons/year (pigment mix)<br>0.45 lb/hour                      2.1 tons/year (total) |                                       | 7. Synthetically Limited?<br>[.]                                  |  |
| 8. Emission Factor: See Attachment 2 (for aggregate mix)<br>0.46 lb/ton (for pigment mix)<br>Reference: USEPA AP-42 11.12 and Attachment 2   |                                       | 9. Emissions Method Code:<br>4 (aggregate mix)<br>4 (pigment mix) |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2  |                                       |   |  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):   |                                       |   |  |

**Potential Emissions**

|   |                                   |   |  |
|---|-----------------------------------|---|--|
| 1. Pollutant Emitted: VOC   |                                   | 2. Pollutant Regulatory Code: WP, EL    |  |
| 3. Primary Control Device Code:   | 4. Secondary Control Device Code: | 5. Total Percent Efficiency of Control: |  |
| 6. Potential Emissions:<br>1.47 lb/hour                      6.46 tons/year     |                                   | 7. Synthetically Limited?<br>[X]        |  |
| 8. Emission Factor: See Attachment 2  |                                   | 9. Emissions Method Code:<br>2          |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |                                   |   |  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |                                   |   |  |

**Emissions Unit Information Section 4 of 6**

**Potential Emissions**

|  |                                      |                                      |   |
|--|--------------------------------------|--------------------------------------|---|
| 1. Pollutant Emitted: PM   |                                      | 2. Pollutant Regulatory Code: WP, EL |   |
| 3. Primary Control Device Code:054   | 4. Secondary Control Device Code:018 |                                      | 5. Total Percent Efficiency of Control: 99.9 (pigment mix)        |
| 6. Potential Emissions:<br>0.28 lb/hour                      1.6 tons/year (aggregate mix)<br>0.49 lb/hour                      2.13 tons/year (pigment mix)<br>0.77 lb/hour                      3.73 tons/year (total) |                                      |                                      | 7. Synthetically Limited?<br>[ ]                                  |
| 8. Emission Factor: See Attachment 3 (for aggregate mix)<br>0.72 lb/ton (for pigment mix)<br>Reference: USEPA AP-42 11.12 and Attachment 2   |                                      |                                      | 9. Emissions Method Code:<br>4 (aggregate mix)<br>4 (pigment mix) |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2  |                                      |                                      |   |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):   |                                      |                                      |   |

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

|   |  |  |
|---|--|--|
| 1. Basis for Allowable Emissions Code:  | 2. Future Effective Date of Allowable Emissions:                                 |  |
| 3. Requested Allowable Emissions and Units:   | 4. Equivalent Allowable Emissions:<br><br>lb/hour                      tons/year |  |
| 5. Method of Compliance (limit to 60 characters):                                     |  |  |
| 6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): |  |  |



**G. EMISSIONS UNIT SUPPLEMENTAL INFORMATION**

**Supplemental Requirements**

|   |
|---|
| 1. Process Flow Diagram<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 1</u> <input type="checkbox"/> Not Applicable  |
| 2. Fuel Analysis or Specification<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 3. Detailed Description of Control Equipment<br><input checked="" type="checkbox"/> Attached, Document ID: <u>previously submitted Att 2, 4</u> <input type="checkbox"/> Not Applicable                       |
| 4. Description of Stack Sampling Facilities<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested             |
| 5. Compliance Test Report<br><input checked="" type="checkbox"/> Attached, Document ID: <u>Att 3</u><br><input type="checkbox"/> Previously submitted, Date: _____<br><input type="checkbox"/> Not Applicable |
| 6. Procedures for Startup and Shutdown<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                  |
| 7. Operation and Maintenance Plan<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                       |
| 8. Supplemental Information for Construction Permit Application<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable                                   |
| 9. Other Information Required by Rule or Statute<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable  |
| 10. Supplemental Requirements Comment:<br><br><p>Attachment 4 is the daily and monthly records requested in the construction permit.</p>  |

**III. EMISSIONS UNIT INFORMATION**

A separate Emissions Unit Information Section (including subsections A through G as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Emissions Unit Description and Status**

|   |   |  |
|---|---|--|
| <p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p> |   |  |
| <p>2. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>Reject tile recycling crusher system containing storage bins, conveyors, crushers and screens.</p>   |   |  |
| <p>3. Emissions Unit Identification Number: <span style="float: right;"><input type="checkbox"/> No ID</span></p> <p>ID: 005 <span style="float: right;"><input type="checkbox"/> ID Unknown</span></p>   |   |  |
| <p>4. Emissions Unit Status<br/>Code: A</p>   | <p>5. Initial Startup Date:<br/>6/19/2007</p> | <p>6. Emissions Unit Major<br/>Group SIC Code:32</p> |
| <p>7. Emissions Unit Comment: (Limit to 500 Characters)</p> <p>The reject tile recycling system takes the non-sellable tiles and processes them through a Jaw crusher followed by a vertical shaft impactor (VSI). The crushed material is then sent to an enclosed 2-deck shaker screen. Oversized material is sent back to the VSI and undersized material is transferred by the conveyor belt to the 100 ton bulk crushed tile storage bin/hopper where it is eventually conveyed back to sand and shale handling system (EU 001) as raw aggregate. A dust collection system is used to control particulate matter emissions from each of these sources.</p>   |   |  |

**Emissions Unit Control Equipment**

|   |
|---|
| <p>1. Control Equipment/Method Description (limit to 200 characters per device or method):</p> <p>Enclosures, baghouse dust collector and water are used with the storage bins, conveyors, crushers and screen.</p> |
| <p>2. Control Device or Method Code(s):018, 054</p>   |

**Emissions Unit Details**

|                                      |  |               |
|--------------------------------------|--|---------------|
| 1. Package Unit:                     |  |               |
| Manufacturer:                        |  | Model Number: |
| 2. Generator Nameplate Rating:       |  | MW            |
| 3. Incinerator Information: NA       |  |               |
| Dwell Temperature:                   |  | °F            |
| Dwell Time:                          |  | seconds       |
| Incinerator Afterburner Temperature: |  | °F            |

**Emissions Unit Operating Capacity and Schedule**

|   |                                |                     |
|---|--------------------------------|---------------------|
| 1. Maximum Heat Input Rate:   | NA                             | mmBtu/hr            |
| 2. Maximum Incineration Rate:   | NA                             | lb/hr      tons/day |
| 3. Maximum Process or Throughput Rate:  | 30 tons/hour, 59,130 tons/year |                     |
| 4. Maximum Production Rate:   | NA                             |                     |
| 5. Requested Maximum Operating Schedule:  |                                |                     |
|   | 24 hours/day                   | 7 days/week         |
|   | 52 weeks/year                  | 8760 hours/year     |
| 6. Operating Capacity/Schedule Comment (limit to 200 characters):   |                                |                     |
| <p>System operating capacity is limited by the quantity of reject tiles processed. It is assumed a maximum of 5% of the tiles are reject totaling 59,130 tons/year.</p> |                                |                     |



**B. EMISSION POINT (STACK/VENT) INFORMATION**

**Emission Point Description and Type**

|  |  |   |                         |
|--|--|---|-------------------------|
| 1. Identification of Point on Plot Plan or Flow Diagram? Emission Unit 5   |  | 2. Emission Point Type Code:<br>3                 |                         |
| 3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):<br><br>Emission points are the conveyor drop points, crushers, screen and storage bin hoppers. All points are controlled. |  |   |                         |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:<br><br>EU 001  |  |   |                         |
| 5. Discharge Type Code:<br>F   | 6. Stack Height:<br>NA                                   | feet  | 7. Exit Diameter:<br>NA |
|  |  |   | feet                    |
| 8. Exit Temperature:<br>77 °F  | 9. Actual Volumetric Flow Rate:3,500 (baghouses)<br>acfm | 10. Water Vapor:<br>%                             |                         |
| 11. Maximum Dry Standard Flow Rate:<br>3,500(baghouses) dscfm  |  | 12. Nonstack Emission Point Height:<br>0 to 50 ft |                         |
| 13. Emission Point UTM Coordinates:<br>Zone:17 East (km):394.399 North (km):3178.620   |  |   |                         |
| 14. Emission Point Comment (limit to 200 characters):<br><br>This process will produce fugitives at each conveyor drop point, crushing unit, screening unit and storage hoppers.   |  |   |                         |

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

**Segment Description and Rate:** Segment  1  of  2

|   |                                   |   |
|---|-----------------------------------|---|
| 1. Segment Description (Process/Fuel Type) (limit to 500 characters):<br><br>The initial tile crushing unit takes cracked and broken tiles and reduces them to large rubble.                                    |                                   |   |
| 2. Source Classification Code (SCC): NA   |                                   | 3. SCC Units: Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>30   | 5. Maximum Annual Rate:<br>59,130 | 6. Estimated Annual Activity Factor: NA   |
| 7. Maximum % Sulfur: NA   | 8. Maximum % Ash: NA              | 9. Million Btu per SCC Unit:<br>NA        |
| 6. Segment Comment (limit to 200 characters):<br><br>The recycle tile quantity generated is a function of the tile production rate and process quality control. Maximum capacity is limited by the VSI crusher. |                                   |   |

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

|  |                                  |   |
|--|----------------------------------|---|
| 1. Segment Description (Process/Fuel Type) (limit to 500 characters):<br><br>The secondary tile crushing unit takes the large rubble from the initial crushing unit and reduces it to fine material.             |                                  |   |
| 2. Source Classification Code (SCC):NA   |                                  | 3. SCC Units: Tons transferred or handled |
| 4. Maximum Hourly Rate:<br>30  | 5. Maximum Annual Rate:<br>59130 | 6. Estimated Annual Activity Factor: NA   |
| 7. Maximum % Sulfur: NA  | 8. Maximum % Ash: NA             | 9. Million Btu per SCC Unit:<br>NA        |
| 10. Segment Comment (limit to 200 characters):<br><br>The recycle tile quantity generated is a function of the tile production rate and process quality control. Maximum capacity is limited by the VSI crusher. |                                  |   |

**D. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION**

**Potential Emissions**

|   |                                       |  |  |
|---|---------------------------------------|--|--|
| 1. Pollutant Emitted: PM10  |                                       | 2. Pollutant Regulatory Code: WP             |  |
| 3. Primary Control Device Code: 054   | 4. Secondary Control Device Code: 018 | 5. Total Percent Efficiency of Control: 99.9 |  |
| 6. Potential Emissions:<br>0.50 lb/hr      0.50 tons/yr                         |                                       | 7. Synthetically Limited?<br>[ ]             |  |
| 8. Emission Factor: See attachment 2<br>Reference: Attachment 2                 |                                       | 9. Emissions Method Code:<br>3               |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |                                       |  |  |
| 11. Pollutant Potential Emissions Comment (limit to 200 characters):            |                                       |  |  |

**Potential Emissions**

|   |                                       |  |  |
|---|---------------------------------------|--|--|
| 1. Pollutant Emitted: PM  |                                       | 2. Pollutant Regulatory Code: WP             |  |
| 3. Primary Control Device Code: 054   | 4. Secondary Control Device Code: 018 | 5. Total Percent Efficiency of Control: 99.9 |  |
| 6. Potential Emissions:<br>1.28 lb/hr      1.26 tons/yr                         |                                       | 7. Synthetically Limited?<br>[ ]             |  |
| 8. Emission Factor: See attachment 2<br>Reference: Attachment 2                 |                                       | 9. Emissions Method Code:<br>3               |  |
| 10. Calculation of Emissions (limit to 600 characters):<br><br>See Attachment 2 |                                       |  |  |

Emissions Unit Information Section  5  of  6

11. Pollutant Potential Emissions Comment (limit to 200 characters):

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

|   |  |
|---|--|
| 1. Basis for Allowable Emissions Code:  | 2. Future Effective Date of Allowable Emissions:                             |
| 3. Requested Allowable Emissions and Units:   | 4. Equivalent Allowable Emissions:<br>lb/hour                      tons/year |
| 5. Method of Compliance (limit to 60 characters):                                     |  |
| 6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): |  |

**E. VISIBLE EMISSIONS INFORMATION  
(Only Emissions Units Subject to a VE Limitation)**

**Visible Emissions Limitation:** Visible Emissions Limitation  1  of  1

|   |   |
|---|---|
| 1. Visible Emissions Subtype: VE15  | 2. Basis for Allowable Opacity:<br>[X] Rule [ ] Other |
| 3. Requested Allowable Opacity: See item 5 comment.<br>Normal Conditions: % Exceptional Conditions: %<br>Maximum Period of Excess Opacity Allowed: min/hour |   |
| 4. Method of Compliance: Visible emissions evaluation (Method 9)  |   |
| 4. Visible Emissions Comment (limit to 200 characters):<br><br>Visible emissions will be limited per 40 CFR 60 Subpart OOO requirements.                    |   |

**F. CONTINUOUS MONITOR INFORMATION  
(Only Emissions Units Subject to Continuous Monitoring)**

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

|  |   |
|--|---|
| 1. Parameter Code:   | 2. Pollutant(s):                        |
| 3. CMS Requirement:  | [ ] Rule [ ] Other                      |
| 4. Monitor Information:<br>Manufacturer:<br>Model Number: Serial Number: |   |
| 5. Installation Date:  | 6. Performance Specification Test Date: |
| 7. Continuous Monitor Comment (limit to 200 characters):                 |   |

**G. EMISSIONS UNIT SUPPLEMENTAL INFORMATION**

**Supplemental Requirements**

|   |
|---|
| 1. Process Flow Diagram<br>[X] Attached, Document ID: <u>Att 1</u> [ ] Not Applicable   |
| 2. Fuel Analysis or Specification<br>[ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested                       |
| 3. Detailed Description of Control Equipment<br>[X] Attached, Document ID: <u>previously submitted Att 2, 4</u> [ ] Not Applicable  |
| 4. Description of Stack Sampling Facilities<br>[ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested             |
| 5. Compliance Test Report<br>[X] Attached, Document ID: <u>Att 3</u><br>[ ] Previously submitted, Date: _____<br>[ ] Not Applicable |
| 6. Procedures for Startup and Shutdown<br>[ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested                  |
| 7. Operation and Maintenance Plan<br>[ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested                       |
| 8. Supplemental Information for Construction Permit Application<br>[ ] Attached, Document ID: _____ [X] Not Applicable              |
| 9. Other Information Required by Rule or Statute<br>[ ] Attached, Document ID: _____ [X] Not Applicable                             |
| 10. Supplemental Requirements Comment:<br><br>Attachment 3 provides daily and monthly records requested in the construction permit. |

**ATTACHMENT 2  
REVISED EMISSION CALCULATIONS**

### Annual Facility-wide Emissions Summary

| Pollutant | Potential To Emit |         |
|-----------|-------------------|---------|
|           | lbs/hr            | tons/yr |
| Total PM  | 4.57              | 8.38    |
| PM-10     | 2.09              | 4.40    |
| VOC       | 1.77              | 7.77    |
| SO2       | 0.01              | 0.07    |
| NO2       | 0.26              | 1.13    |
| CO        | 0.63              | 2.76    |



PM-10 EMISSION RATE CALCULATIONS

Much of the emissions from the sources shown below are generally collected (such as by an enclosure or dust collector vent) and then sent to a control device (such as a baghouse). Therefore, the following emission calculations are conservative estimates of potential to emit and reflect higher emissions than are actually anticipated. The calculation of the PTE is based on a two part equation. The first part of the equation addresses emissions that are directly emitted to the atmosphere (i.e. uncollected and uncontrolled). The second part of the equation accounts for the portion of emissions that are collected and sent to a control device (if federally enforceable). The equation is as follows:

$$PTE = (PR \times EF \times UCE) + (PR \times EF \times (1-UCE) \times (1-CE))$$

Where:

- PTE = Potential To Emit (lb/hr or ton/yr) -with control efficiency taken into account when a federally enforceable control limit applies
- PR = Process Rate (tons/hr or tons/yr)
- EF = Emission Factor
- UCE = Fraction of UnCollected Emissions that are emitted directly to the atmosphere
- 1-UCE = Fraction of Collected Emissions that are ducted to a control device
- CE = Control Efficiency (where 1-CE is the fraction that passes through the control device)

An example of the application of this equation using the Emission Unit 1 Screen is as follows:

- PR = 1,112,760 tons/yr
- EF = 0.0087 lbs PM-10/ton (Uncontrolled emission factor from AP-42 for screening)
- UCE = 10% (assumes that 10% of the dust is directly emitted to the atmosphere with the remaining 90% being collected by a dust collector)
- CE = 99.9% (based on vendor specification for dust control through a baghouse filter)
- Therefore, PTE = (1,112,760 tons/yr x 0.0087 lbs PM-10/ton x 10%) + (1,112,760 tons/yr x 0.0087 lbs PM-10/ton x 90% x 0.01%)
- Or PTE of the Emission Unit 1 Screen is 0.49 tons of PM-10/yr

| Source  | Material Handling Capacities |                 | Emission Type           | Uncontrolled Emission Factor | Control Device (Shown for reference purposes and may not be credited in the PTE calculations as noted) | Fraction of Emissions Considered Uncollected for purposes of estimating PTE (i.e. directly emitted to atmosphere) (%) | Fraction of Collected Emissions (sent to a control device) (%) | Control Device Efficiency (%) | PM10 Potential To Emit |         | Notes |
|---|------------------------------|-----------------|-------------------------|------------------------------|--|---|--|-------------------------------|------------------------|---------|-------|
|   | Hourly                       | Annual          |                         |                              |  |   |  |                               | (ton/yr)               | (lb/hr) |       |
| <b>Emission Unit 1</b>                                |                              |                 |                         |                              |  |   |  |                               |                        |         |       |
| Sand/Shale Delivery/Handling (underground or outdoor) |                              |                 |                         |                              |  |   |  |                               |                        |         |       |
| Plaster Sand  |                              |                 |                         |                              |  |   |  |                               |                        |         |       |
| Truck Unloading to Grizzly (drive over hoppers)       | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| Hoppers to BC-1,-2,-3,-4                              | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| BC-1,-1,-2,-4 to BC-5                                 | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| BC-5 to BC-6  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| BC-6 to Screen  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| Screening   | 384 tons/hr                  | 886,950 tons/yr | Screening               | 8.70E-03 lb PM-10/ton        | Dust Collector/Baghouse  | 10%   | 90%  | 99.9%                         | 0.39                   | 0.34    | 2, 10 |
| Screen to BC-7  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| BC-7 to 200T Bins                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| 200T Bins to BC-8                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
| BC-8 to BC-9,-10                                      | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.91E-04 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                   | 0.07    | 1, 10 |
|   |                              |                 |                         |                              |  |   |  |                               | 1.15                   | 1.00    |       |
| Shale   |                              |                 |                         |                              |  |   |  |                               |                        |         |       |
| Truck Unloading to Grizzly (drive over hoppers)       | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| Hoppers to BC-1,-2,-3,-4                              | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| BC-1,-1,-2,-4 to BC-5                                 | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| BC-5 to BC-6  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| BC-6 to Screen  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| Screening   | 384 tons/hr                  | 886,950 tons/yr | Screening               | 8.70E-03 lb PM-10/ton        | Enclosure/Water Spray  | 10%   | 90%  | 99.9%                         | 0.39                   | 0.34    | 2, 10 |
| Screen to BC-7  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| BC-7 to 200T Bins                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| 200T Bins to BC-8                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
| BC-8 to BC-9,-10                                      | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 8.18E-05 lb PM-10/ton        | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.04                   | 0.03    | 1, 10 |
|   |                              |                 |                         |                              |  |   |  |                               | 0.72                   | 0.62    |       |
| <b>Unit 1 Total</b>                                   |                              |                 |                         |                              |  |   |  |                               | 1.15                   | 1.00    | 3     |
| <b>Emission Units 2 &amp; 3</b>                       |                              |                 |                         |                              |  |   |  |                               |                        |         |       |
| Cement Deliveries to Silos 1 and 2                    |                              |                 |                         |                              |  |   |  |                               |                        |         |       |
| Cement Delivery to Silo 1                             | 16.875 tons/hr               | 147,825 tons/yr | Material Transfer Point | 0.46 lb PM-10/ton            | Silo w/ Baghouse   | 0%  | 100%   | 99.9%                         | 0.03                   | 0.01    | 4, 10 |
| Cement Delivery To Silo 2                             | 16.875 tons/hr               | 147,825 tons/yr | Material Transfer Point | 0.46 lb PM-10/ton            | Silo w/ Baghouse   | 0%  | 100%   | 99.9%                         | 0.03                   | 0.01    | 4, 10 |
| <b>Units 2 &amp; 3 Total</b>                          |                              |                 |                         |                              |  |   |  |                               | 0.05                   | 0.01    |       |

| Eagle Roofing, FL<br><br>Source                 | Material Handling Capacities |                   | Emission Type                  | Uncontrolled Emission Factor | Control Device (Shown for reference purposes and may not be credited in the PTE calculations as noted) | Fraction of Emissions Considered Uncollected for purposes of estimating PTE (i.e., directly emitted to atmosphere)<br>(%) | Fraction of Collected Emissions (sent to a control device)<br>(%) | Control Device Efficiency<br>(%) | Att 3-1.1 PM-10 PTE                |         | Notes      |
|---|------------------------------|-------------------|--------------------------------|------------------------------|--|---|---|----------------------------------|------------------------------------|---------|------------|
|   | Hourly                       | Annual            |                                |                              |  |   |   |                                  | PM10 Potential To Emit<br>(ton/yr) | (lb/hr) |            |
| <b>Emission Unit 4</b>                          |                              |                   |                                |                              |  |   |   |                                  |                                    |         |            |
| Sand/Shale/Cement Mixing Area (indoor)          |                              |                   |                                |                              |  |   |   |                                  |                                    |         |            |
| BC-9 to sand/shale hopper bin 1                 | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building   | 100.0%  | 0%  | 0.0%                             | 0.11                               | 0.02    | 1,3,5,10   |
| Sand/Shale Hopper Bin 1 to FC-17,-18,-19        | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building   | 100.0%  | 0%  | 0.0%                             | 0.11                               | 0.02    | 1,3,5,10   |
| BC-10 to sand/shale hopper bin 2                | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building   | 100.0%  | 0%  | 0.0%                             | 0.11                               | 0.02    | 1,3,5,10   |
| Sand/Shale Hopper Bin 2 to FCB-17,-18,-19       | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building   | 100.0%  | 0%  | 0.0%                             | 0.11                               | 0.02    | 1,3,5,10   |
| SC-1 to cement hopper 1                         | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building/Dust Collectors   | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.00    | 1,3,5,6,10 |
| Cement Hopper Bin 1 to FC-17,-18,-19            | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building/Dust Collectors   | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.00    | 1,3,5,6,10 |
| SC-2 to cement hopper 2                         | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building/Dust Collectors   | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.00    | 1,3,5,6,10 |
| Cement Hopper Bin 2 to FC-17,-18,-19            | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building/Dust Collectors   | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.00    | 1,3,5,6,10 |
| FC-17,-18,-19,-20 to Inline Mixers -17,-18,-19  | 118.125 tons/hr              | 1,408,410 tons/yr | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building/Dust Collectors   | 100.0%  | 0%  | 0.0%                             | 0.13                               | 0.02    | 1,3,5,6,10 |
| Inline Mixers -17,-18,-19,-20 to BC -17,-18,-19 | 118.125 tons/hr              | 1,408,410 tons/yr | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Inside of Building/Dust Collectors   | 100.0%  | 0%  | 0.0%                             | 0.13                               | 0.02    | 1,3,5,6,10 |
| Pigment Mixing Area (indoor)                    | 0.675 tons/hr                | 5913 tons/yr      | Material Transfer Point        | 0.46 lb PM-10/ton            | Enclosure/Dust Collectors  | 100.0%  | 0%  | 99.9%                            | 1.36                               | 0.31    | 7,10       |
| <b>Unit 4 Total</b>                             |                              |                   |                                |                              |  |   |   |                                  | 2.11                               | 0.45    |            |
| <b>Emission Unit 5</b>                          |                              |                   |                                |                              |  |   |   |                                  |                                    |         |            |
| Reject Tile Crushing/Handling (outdoor)         |                              |                   |                                |                              |  |   |   |                                  |                                    |         |            |
| Primary Hopper                                  | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 8.18E-05 lb PM-10/ton        | Water Spray  | 100.0%  | 0%  | 0.0%                             | 0.00                               | 0.00    | 8,10       |
| Primary Hopper to BC-21                         | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 8.18E-05 lb PM-10/ton        | Wet Material   | 100.0%  | 0%  | 0.0%                             | 0.00                               | 0.00    | 8,10       |
| BC-21 to BC-22                                  | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 1.91E-04 lb PM-10/ton        | Covered Conveyor/wet material  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 8,10       |
| * BC-22 to Jaw Crusher                          | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 8,10       |
| * Jaw Crusher                                   | 30 tons/hr                   | 59,130 tons/yr    | Crushing                       | 2.40E-03 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.07                               | 0.07    | 9,10       |
| * Jaw Crusher to BC-23                          | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| * BC-23 to VSI                                  | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| * Vertical Shaft Impactor                       | 30 tons/hr                   | 59,130 tons/yr    | Crushing                       | 2.40E-03 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.07                               | 0.07    | 9,10       |
| * VSI to BC-24                                  | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| Fine Material Loading Hopper                    | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 8.18E-05 lb PM-10/ton        | Water Spray  | 100.0%  | 0%  | 0.0%                             | 0.00                               | 0.00    | 1,10       |
| Fine Hopper to BC-28                            | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 8.18E-05 lb PM-10/ton        | Water  | 100.0%  | 0%  | 0.0%                             | 0.00                               | 0.00    | 1,10       |
| * BC-28 to BC-24                                | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| * BC-24 to Shaker Screen                        | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| * 2-Deck Shaker Screen                          | 30 tons/hr                   | 59,130 tons/yr    | Screening                      | 8.70E-03 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.26                               | 0.26    | 2,10       |
| * Shaker Screen to BC-25                        | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| * Shaker Screen to BC-26                        | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| * BC-25 to BC-23                                | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| * BC-26 to 100 Ton Crushed Material Hopper Bin  | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| 100T Hopper to BC-27                            | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| BC-27 to BC-5 (to EU 001)                       | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| BC-5 to BC-6 (part of EU 001)                   | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 1.91E-04 lb PM-10/ton        | Dust Collector/baghouse  | 100.0%  | 0%  | 0.0%                             | 0.01                               | 0.01    | 1,10       |
| <b>Unit 5 Total</b>                             |                              |                   |                                |                              |  |   |   |                                  | 0.48                               | 0.49    |            |

**PM-10 Emissions Summary**

| Emission Unit                                    | Potential To Emit |            |
|--|-------------------|------------|
|  | lbs/hr            | tons/yr    |
| Unit 1- Sand/Shale Receiving/Storage/Handling    | 1.00              | 1.15       |
| Unit 2- Cement Storage Silo 1                    | 0.01              | 0.03       |
| Unit 3- Cement Storage Silo 2                    | 0.01              | 0.03       |
| Unit 4- Sand/Shale/Cement Mix & Pigment Mix Room | 0.45              | 2.11       |
| Unit 5- Reject Tile Recycle/Handling System      | 0.49              | 0.48       |
| <b>TOTAL</b>                                     | <b>1.94</b>       | <b>3.8</b> |

**Notes:**

1. U.S. EPA, AP-42, Section 13.2.4.3. Based on available wind speed data supplied by U.S. EPA, 4.19 mph average wind speed (from 1992 data for Tampa, FL). Assumes 6 percent moisture in sand and 11 percent moisture in shale as delivered.
2. U.S. EPA, AP-42, Section 11.19.2. Based on uncontrolled Screening emission factor for PM-10.
3. The actual quantity of material handled would typically be a total of sand and shale. However, the maximum emissions from either sand or shale (e.g. "worst case") was determined from the calculations for Emission Unit 1, and the amount recorded above as "Unit 1 Total". As can be seen, sand was highest, due to its lower moisture content, and the emission factor for sand was used in all further calculations.
4. U.S. EPA, AP-42, Section 11.12. Based on cement unloading to elevated storage silo.
5. Processes performed inside a building. Fifty percent of the particulate are assumed to be deposited to the floor of the building, and fifty percent released to the ambient air. However, for PTE estimates, no capture was credited.
6. 99.9 percent control for baghouse based on vendor specifications. However, for PTE estimates shown, no control credit was applied.
7. U.S. EPA, AP-42, Section 11.12. Based on the cement unloading to elevated storage silo uncontrolled emission factor due to pigment having a similar material consistency.
8. Emissions from uncrushed reject tiles considered negligible since reject tiles consist of large solid pieces.
9. U.S. EPA, AP-42, Section 11.19.2. Based on crushing emission factor for tertiary crushing.
10. For purposes of estimating uncontrolled PTE, only federally enforceable emission limits or controls are credited as indicated by the collection efficiency and control efficiency.

PM EMISSION RATE CALCULATIONS

Much of the emissions from the sources shown below are generally collected (such as by an enclosure or dust collector vent) and then sent to a control device (such as a baghouse)

Therefore, the following emission calculations are conservative estimates of potential to emit and reflect higher emissions than are actually anticipated.

The calculation of the PTE is based on a two part equation. The first part of the equation addresses emissions that are directly emitted to the atmosphere (i.e. uncollected and uncontrolled).

The second part of the equation accounts for the portion of emissions that are collected and sent to a control device (if federally enforceable)

The equation is as follows:

$$PTE = (PR \times EF \times UCE) + (PR \times EF \times (1-UCE) \times (1-CE))$$

Where:

PTE = Potential To Emit (lb/hr or ton/yr) -with control efficiency taken into account when a federally enforceable control limit applies

PR = Process Rate (tons/hr or tons/yr)

EF = Emission Factor

UCE = Fraction of UnCollected Emissions that are emitted directly to the atmosphere

1-UCE = Fraction of Collected Emissions that are ducted to a control device

CE = Control Efficiency (where 1-CE is the fraction that passes through the control device)

An example of the application of this equation using the Emission Unit 1 Screen is as follows:

PR = 1,112,760 tons/yr

EF = 0.0250 lbs PM/ton (Uncontrolled emission factor from AP-42 for screening)

UCE = 10% (assumes that 10% of the dust is directly emitted to the atmosphere with the remaining 90% being collected by a dust collector)

CE = 99.9% (based on vendor specification for dust control through a baghouse filter)

Therefore, PTE = (1,112,760 tons/yr x 0.025 lbs PM/ton x 10%) + (1,112,760 tons/yr x 0.025 lbs PM/ton x 90% x 0.01%)

Or PTE of the Emission Unit 1 Screen is 1.40 tons of PM/yr

| Source  | Material Handling Capacities |                 | Emission Type           | Uncontrolled Emission Factor | Control Device (Shown for reference purposes and may not be credited in the PTE calculations as noted) | Fraction of Emissions Considered Uncollected for purposes of estimating PTE (i.e. directly emitted to atmosphere) (%) | Fraction of Collected Emissions (sent to a control device) (%) | Control Device Efficiency (%) | PM                         |         | Notes |
|---|------------------------------|-----------------|-------------------------|------------------------------|--|---|--|-------------------------------|----------------------------|---------|-------|
|   | Hourly                       | Annual          |                         |                              |  |   |  |                               | Potential To Emit (ton/yr) | (lb/hr) |       |
| <b>Emission Unit 1</b>                                |                              |                 |                         |                              |  |   |  |                               |                            |         |       |
| Sand/Shale Delivery/Handling (underground or outdoor) |                              |                 |                         |                              |  |   |  |                               |                            |         |       |
| Plaster Sand  |                              |                 |                         |                              |  |   |  |                               |                            |         |       |
| Truck Unloading to Grizzly (drive over hoppers)       | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| Hoppers to BC-1,-2,-3,-4                              | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| BC-1,-1,-2,-4 to BC-5                                 | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| BC-5 to BC-6  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| BC-6 to Screen  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| Screening   | 384 tons/hr                  | 886,950 tons/yr | Screening               | 2.50E-02 lb PM/ton           | Dust Collector/Baghouse  | 10%   | 90%  | 99.9%                         | 1.12                       | 0.97    | 2, 10 |
| Screen to BC-7  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| BC-7 to 200T Bins                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| 200T Bins to BC-8                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
| BC-8 to BC-9,-10                                      | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.18                       | 0.16    | 1, 10 |
|   |                              |                 |                         |                              |  |   |  |                               | 2.73                       | 2.37    |       |
| Shale   |                              |                 |                         |                              |  |   |  |                               |                            |         |       |
| Truck Unloading to Grizzly (drive over hoppers)       | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| Hoppers to BC-1,-2,-3,-4                              | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| BC-1,-1,-2,-4 to BC-5                                 | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| BC-5 to BC-6  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| BC-6 to Screen  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| Screening   | 384 tons/hr                  | 886,950 tons/yr | Screening               | 2.50E-02 lb PM/ton           | Enclosure/Water Spray  | 10%   | 90%  | 99.9%                         | 1.12                       | 0.97    | 2, 10 |
| Screen to BC-7  | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| BC-7 to 200T Bins                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| 200T Bins to BC-8                                     | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
| BC-8 to BC-9,-10                                      | 384 tons/hr                  | 886,950 tons/yr | Material Transfer Point | 1.73E-04 lb PM/ton           | Enclosure/Water Spray  | 100%  | 0%   | 0.0%                          | 0.08                       | 0.07    | 1, 10 |
|   |                              |                 |                         |                              |  |   |  |                               | 1.81                       | 1.57    |       |
| <b>Unit 1 Total</b>                                   |                              |                 |                         |                              |  |   |  |                               | 2.73                       | 2.37    | 3     |
| <b>Emission Units 2 &amp; 3</b>                       |                              |                 |                         |                              |  |   |  |                               |                            |         |       |
| Cement Deliveries to Silos 1 and 2                    |                              |                 |                         |                              |  |   |  |                               |                            |         |       |
| Cement Delivery to Silo 1                             | 16.875 tons/hr               | 147,825 tons/yr | Material Transfer Point | 0.72 lb PM/ton               | Silo w/ Baghouse   | 0%  | 100%   | 99.9%                         | 0.04                       | 0.01    | 4, 10 |
| Cement Delivery To Silo 2                             | 16.875 tons/hr               | 147,825 tons/yr | Material Transfer Point | 0.72 lb PM/ton               | Silo w/ Baghouse   | 0%  | 100%   | 99.9%                         | 0.04                       | 0.01    | 4, 10 |
| <b>Units 2 &amp; 3 Total</b>                          |                              |                 |                         |                              |  |   |  |                               | 0.08                       | 0.02    |       |

| Eagle Roofing, FL                               |                              |                   |                                |                              |  |  |  |                               |                   | PM Att 3-1.1a PM PTE |            |
|---|------------------------------|-------------------|--------------------------------|------------------------------|--|--|--|-------------------------------|-------------------|----------------------|------------|
| Source  | Material Handling Capacities |                   | Emission Type                  | Uncontrolled Emission Factor | Control Device (Shown for reference purposes and may not be credited in the PTE calculations as noted) | Fraction of Emissions Considered Uncollected for purposes of estimating PTE (i.e., directly emitted to atmosphere) (%) | Fraction of Collected Emissions (sent to a control device) (%) | Control Device Efficiency (%) | Potential To Emit |                      | Notes      |
|   | Hourly                       | Annual            |                                |                              |  |  |  |                               | (ton/yr)          | (lb/hr)              |            |
| <b>Emission Unit 4</b>                          |                              |                   |                                |                              |  |  |  |                               |                   |                      |            |
| Sand/Shale/Cement Mixing Area (indoor)          |                              |                   |                                |                              |  |  |  |                               |                   |                      |            |
| BC-9 to sand/shale hopper bin 1                 | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building   | 100.0%   | 0%   | 0.0%                          | 0.22              | 0.04                 | 1,3,5,10   |
| Sand/Shale Hopper Bin 1 to FC-17,-18,-19        | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building   | 100.0%   | 0%   | 0.0%                          | 0.22              | 0.04                 | 1,3,5,10   |
| BC-10 to sand/shale hopper bin 2                | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building   | 100.0%   | 0%   | 0.0%                          | 0.22              | 0.04                 | 1,3,5,10   |
| Sand/Shale Hopper Bin 2 to FCB-17,-18,-19       | 101.25 tons/hr               | 1,112,760 tons/yr | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building   | 100.0%   | 0%   | 0.0%                          | 0.22              | 0.04                 | 1,3,5,10   |
| SC-1 to cement hopper 1                         | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building/Dust Collectors   | 100.0%   | 0%   | 0.0%                          | 0.03              | 0.01                 | 1,3,5,6,10 |
| Cement Hopper Bin 1 to FC-17,-18,-19            | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building/Dust Collectors   | 100.0%   | 0%   | 0.0%                          | 0.03              | 0.01                 | 1,3,5,6,10 |
| SC-2 to cement hopper 2                         | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building/Dust Collectors   | 100.0%   | 0%   | 0.0%                          | 0.03              | 0.01                 | 1,3,5,6,10 |
| Cement Hopper Bin 2 to FC-17,-18,-19            | 16.875 tons/hr               | 147,825 tons/yr   | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building/Dust Collectors   | 100.0%   | 0%   | 0.0%                          | 0.03              | 0.01                 | 1,3,5,6,10 |
| FC-17,-18,-19,-20 to Inline Mixers -17,-18,-19  | 118.125 tons/hr              | 1,408,410 tons/yr | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building/Dust Collectors   | 100.0%   | 0%   | 0.0%                          | 0.28              | 0.05                 | 1,3,5,6,10 |
| Inline Mixers -17,-18,-19,-20 to BC -17,-18,-19 | 118.125 tons/hr              | 1,408,410 tons/yr | Material Transfer Point        | 4.04E-04 lb PM/ton           | Inside of Building/Dust Collectors   | 100.0%   | 0%   | 0.0%                          | 0.28              | 0.05                 | 1,3,5,6,10 |
| Pigment Mixing Area (indoor)                    | 0.675 tons/hr                | 5913 tons/yr      | Material Transfer Point        | 0.72 lb PM/ton               | Enclosure/Dust Collectors  | 100.0%   | 0%   | 99.9%                         | 2.13              | 0.49                 | 7,10       |
| <b>Unit 4 Total</b>                             |                              |                   |                                |                              |  |  |  |                               | 3.72              | 0.77                 |            |
| <b>Emission Unit 5</b>                          |                              |                   |                                |                              |  |  |  |                               |                   |                      |            |
| Reject Tile Crushing/Handling (outdoor)         |                              |                   |                                |                              |  |  |  |                               |                   |                      |            |
| Primary Hopper                                  | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 4.04E-04 lb PM/ton           | Water spray  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 8,10       |
| Primary Hopper to BC-21                         | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 4.04E-04 lb PM/ton           | Watered material   | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 8,10       |
| BC-21 to BC-22                                  | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 4.04E-04 lb PM/ton           | Enclosure/moist material   | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 8,10       |
| BC-22 to Jaw Crusher                            | 30 tons/hr                   | 59,130 tons/yr    | Uncrushed reject tile transfer | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 8,10       |
| Jaw Crusher                                     | 30 tons/hr                   | 59,130 tons/yr    | Crushing                       | 5.40E-03 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.16              | 0.16                 | 9, 10      |
| Jaw Crusher to BC-23                            | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| BC-23 to VSI                                    | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| Vertical Shaft Impactor                         | 30 tons/hr                   | 59,130 tons/yr    | Crushing                       | 5.40E-03 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.16              | 0.16                 | 9, 10      |
| VSI to BC-24                                    | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| Fine Material Loading Hopper                    | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Water Spray  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| Fine Hopper to BC-28                            | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Watered material   | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| BC-28 to BC-24                                  | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| BC-24 to Shaker Screen                          | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| 2-Deck Shaker Screen                            | 30 tons/hr                   | 59,130 tons/yr    | Screening                      | 2.50E-02 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.74              | 0.75                 | 2,10       |
| Shaker Screen to BC-25                          | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| Shaker Screen to BC-26                          | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| BC-25 to BC-23                                  | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| BC-26 to 100 Ton Crushed Material Hopper Bin    | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Dust Collector/baghouse  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| 100T Hopper to BC-27                            | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| BC-27 to BC-5 (to Emission Unit 1)              | 30 tons/hr                   | 59,130 tons/yr    | Material Transfer Point        | 4.04E-04 lb PM/ton           | Enclosure/Water Spray  | 100.0%   | 0%   | 0.0%                          | 0.01              | 0.01                 | 1,10       |
| <b>Unit 5 Total</b>                             |                              |                   |                                |                              |  |  |  |                               | 0.00              | 1.26                 | 1.28       |

**PM Emissions Summary**

| Emission Unit                                    | Potential To Emit |            |
|--|-------------------|------------|
|  | lbs/hr            | tons/yr    |
| Unit 1- Sand/Shale Receiving/Storage/Handling    | 2.37              | 2.73       |
| Unit 2- Cement Storage Silo 1                    | 0.01              | 0.04       |
| Unit 3- Cement Storage Silo 2                    | 0.01              | 0.04       |
| Unit 4- Sand/Shale/Cement Mix & Pigment Mix Room | 0.77              | 3.72       |
| Unit 5- Reject Tile Recycle/Handling System      | 1.28              | 1.26       |
| <b>TOTAL</b>                                     | <b>4</b>          | <b>7.8</b> |

**Notes:**

- U.S. EPA, AP-42, Section 13.2.4.3. Based on available wind speed data supplied by U.S. EPA, 4.19 mph average wind speed (from 1992 data for Tampa, FL). Assumes 6 percent moisture in sand and 11 percent moisture in shale as delivered.
- U.S. EPA, AP-42, Section 11.19.2. Based on uncontrolled Screening emission factor for PM.
- The actual quantity of material handled would typically be a total of sand and shale. However, the maximum emissions from either sand or shale (e.g. "worst case") was determined from the calculations for Emission Unit 1, and the amount recorded above as "Unit 1 Total". As can be seen, sand was highest, due to its lower moisture content, and the emission factor for sand was used in all further calculations.
- U.S. EPA, AP-42, Section 11.12. Based on cement unloading to elevated storage silo.
- Processes performed inside a building. Fifty percent of the particulate are assumed to be deposited to the floor of the building, and fifty percent released to the ambient air. However, for PTE estimates, no capture was credited.
- 99.9 percent control for baghouse based on vendor specifications. However, for PTE estimates shown, no control credit was applied.
- U.S. EPA, AP-42, Section 11.12. Based on the cement unloading to elevated storage silo uncontrolled emission factor due to pigment having a similar material consistency.
- Emissions from uncrushed reject tiles considered negligible since reject tiles consist of large solid pieces.
- U.S. EPA, AP-42, Section 11.19.2. Based on crushing emission factor for tertiary crushing.
- For purposes of estimating uncontrolled PTE, only federally enforceable emission limits or controls are credited as indicated by the collection efficiency and control efficiency.

**Sand/Shale, Cement/Fly Ash and Pigment Material Quantifications****Tile Manufacturing Data**

150 Maximum line speed production rate (tiles/minute)  
 3 production lines  
 24 Maximum operating time (hrs/day)  
 365 Maximum operating time (day/yr)  
 10 lbs/tile  
 25% Percent Wt. as Cement/Fly Ash  
 75% Percent Wt. as Sand/shale  
 0.005 pound pigment per pound tile  
 5% Maximum percent of anticipated reject tiles (typical range is 1 to 3%)

**Cement Silo Filling Data**

20 minutes per cement delivery  
 26 tons cement per delivery  
 0.77 minutes cement silo baghouse operation per ton cement  
 1.54 minutes cement silo baghouse operation per ton cement for 2 Silos with baghouses

The following calculated values were derived based on the maximum potential operations which are limited to the maximum tile production line speed  
 This speed is based on the physical limits of the system.

**Cement Material Quantification**

1125 lbs cement/minute  
 67500 lbs cement/hr  
 33.75 tons cement/hr  
 295650 tons cement/yr

**Sand Material Quantification (at Unit 4)**

3375 lbs sand/minute  
 202500 lbs sand/hr  
 101.25 tons sand/hr  
 886950 tons sand/yr

**Sand Material Quantification (at Unit 1)**

No more sand would be conveyed to the storage bins than is used in the process at max operation as calculated above  
 886950 tons sand/yr

The Unit 1 conveying system will be capable of handling more sand on a short term basis than the production requires. Therefore, it will operate intermittently as needed.  
 For Max hourly emissions, the max conveyor capacity was used.

384 tons sand/hr

**Pigment Quantification**

1350 lbs/hr  
 0.675 tons/hr  
 5913 tons/yr

**Reject Tiles (Unit 8)**

The tile recycling system will operate intermittently when sufficient reject tile quantity is available to warrant running the crushers and screen.  
 Therefore, max hourly rate is based on the physical limits of the VSI crusher since it is the slowest operation in the system.

30 ton/hr maximum system capacity  
 59130 ton/yr (based on 5% maximum reject tile quantity)

**Mold Oil Quantification**

0.0093 lb/tile average oil usage

**Tile Production**  
 24,300 Field Tiles Produced/hr  
 2,700 Trim Tiles Produced/hr  
 583,200 Field Tiles Produced/day  
 64,800 Trim Tiles Produced/day  
 212,868,000 Field Tiles/year  
 23,652,000 Trim Tiles/year  
 236,520,000 Tiles produced/year

## Pigment Usage

Based on a high production month at a six line facility, Pigment use is estimated as follows:

April '04

47245

474760

278630

298430

52910

1,151,975 FeO2 total 6 lines per month

16.00 tons FeO2 per day

79350 TiO2 total 6 lines per month

1.10 tons FeO2 per day

1,231,325 total april 04 pigment use

41,044.17 total estimated sck pigment use per day (lbs) at 150 & 24 hr

20.52 total estimated sck pigment use per day (tons) at 150 & 24 hr

21 tons per day pigment - through color

**Mold Oil Usage**

**Mold Oil Calculation Basis:**

24,300 Field Tiles Produced/hr  
 2,700 Trim Tiles Produced/hr  
 583,200 Field Tiles Produced/day  
 64,800 Trim Tiles Produced/day  
 212,868,000 Field Tiles/year  
 23,652,000 Trim Tiles/year  
 236,520,000 Total Tiles Produced/year  
 0.0093 lb/tile average oil usage

**Estimated Emissions from Mold Oil Usage**

| Mold Oil             | Pollutant | Avg. Mold Oil Usage |         | VOC Content (%) | Emission Rate |               |             |
|----------------------|-----------|---------------------|---------|-----------------|---------------|---------------|-------------|
|                      |           |                     |         |                 | lb/hr         | lb/yr         | ton/yr      |
| E-46, E-48 or E-50 * | VOC       | 0.0093              | lb/tile | 0.55%           | 1.243         | 10,888        | 5.44        |
| Eagle Blend #3 **    | VOC       | 0.0093              | lb/tile | 0.92%           | 0.23          | 2,024         | 1.01        |
| <b>Total:</b>        |           |                     |         |                 | <b>1.47</b>   | <b>12,912</b> | <b>6.46</b> |

Note:

\*Currently, only E-48 is being used at the facility. This oil has the highest VOC content of 0.55% by weight.

\*\* Eagle Blend #3 Oil may be used for trim tiles in the future, and is included in the VOC estimate as a worst-case scenario.

## MISCELLANEOUS PROJECT-RELATED EMISSION CALCULATIONS

**(1) Estimated Propane Gas Use in Curing Enclosures:**

240 cf/hr burner rating  
 600 Equivalent Natural Gas Volume (cf/hr)  
 3 Production Lines  
 10 Burners/line  
 24 hr/day  
 365 day/yr  
 157.68 MMCF/yr (NG)  
 1,020 MMBTU/MMCF (NG)  
 160,834 MMBTU/yr (NG) 18.36

**(2) Estimated Emission Rates for Curing Enclosures:**

| Pollutant    | Emission Factor <sup>1</sup> | Emission Rate |          |        | Reference |
|--------------|------------------------------|---------------|----------|--------|-----------|
|              |                              | lb/hr         | lb/yr    | ton/yr |           |
| VOC          | 7 lb/MMCF                    | 0.126         | 1103.76  | 0.55   | 2         |
| NOx          | 0.014 lb/MMBTU               | 0.257         | 2,251.67 | 1.13   | 3         |
| SOx          | 0.83 lb/MMCF                 | 0.015         | 130.8744 | 0.07   | 2         |
| CO           | 35 lb/MMCF                   | 0.630         | 5518.8   | 2.76   | 2         |
| PM           | 7.5 lb/MMCF                  | 0.135         | 1182.6   | 0.59   | 2         |
| Benzene      | 0.008 lb/MMCF                | 0.000         | 1.26144  | 0.00   | 2         |
| Formaldehyde | 0.017 lb/MMCF                | 0.000         | 2.68056  | 0.00   | 2         |
| PAH          | 0.0004 lb/MMCF               | 0.000         | 0.063072 | 0.00   | 2         |

**Notes:**

- (1) Emissions for Propane are assumed to be equivalent to Natural Gas using the equivalent volume of natural gas to obtain the same energy quantity.
- (2) South Coast Air Quality Management District, 2002. Default Emission Factors for Natural Gas Combustion.
- (3) Burner-specific emission rate, based on emission testing performed at Burlingame Industries' Rialto, California site.

**(3) VOC Emissions from Use of Acrylic Sealer**

VOC Content (Including Acetone) 0.0049 lbs/gal  
 2-Ethylhexyl acrylate content in acrylic sealer 0.02 percent  
 Tile Production Rate per Line 150 per minute  
 Production Lines 3  
 Sealer Used per Tile 5 grams  
 Estimated Peak Daily VOC Emission Rate 0.17 lb/hr  
 Estimated Peak Daily 2-ethylhexyl Emission Rate 0.06 lb/hr  
 Estimated Annual VOC Emission Rate 1515 lb/yr  
 Estimated Annual VOC Emission Rate 0.76 ton/yr  
 Estimated Annual 2-ethylhexyl Emission Rate 521 lb/yr  
 Estimated Annual 2-ethylhexyl Emission Rate 0.26 ton/yr



## Storage Tanks

### Assessment of the bulk material storage tanks

There will be 4 tanks as follows:

|           |                         |
|-----------|-------------------------|
| Tanks 1-2 | Mold Release Oil (E-46) |
| Tank 3    | Calcium Chloride        |
| Tank 4    | Acrylic Sealer tank     |

The tanks will be vertical fixed roof tanks with approximately 8,000 gallons each

Tanks 1-2 containing the E-46 mold oil will have negligible emissions due to extremely low vapor pressure and VOC content of the oil.

Tank 3 does not contain a material considered to be a regulated compound for purposes of air quality emissions.

Tank 4 containing the acrylic sealer has an organic compound considered a VOC (2-ethylhexyl acrylate).

This has been evaluated with the EPA TANKS v4.0.9 modeling program as summarized below:

- 15.25 Shell Height (ft)
- 10 diameter (ft)
- 13.75 max liquid ht (ft)
- 7.5 ave liquid ht (ft)
- 8078 working volume (gal)
- 75 turnovers/yr
- 600,000 throughput (gal/yr)
- Grey/medium Color Shade
- 10 Default dome radius
- 0.03/0.03 Default vacuum settings
- Partial speciation of ethylhexyl acrylate was assessed
  - 0.01 % of Ethylhexyl acrylate (per MSDS-see attachment 4)
  - 0.12 Organic content partial pressure (mmHG at 20C)

The Tanks output is as follows:

- 3.46 Working Loss (lbs/yr)
- 6.198 Breathing Loss (lbs/yr)
- 9.65 Total (lbs/yr)