KBN
A GOLDER ASSOCIATES COMPANY

Letter of Transmittal

Date: 12/05/96

Project No.: 9651137-0900

To: A. A. Linero, P.E.
Florida Dept. of Env. Prot.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
DEC 6 1996
BUREAU OF
AIR REGULATION

Re: Tarmac America, Inc.
Deerfield Beach, Florida Facility

The following items are being sent to you: ☒ *with this letter* ☐ *under separate cover*

Copies	*Description*
4	Air Construction Permit Application - Slag Dryer
4	Electronic Submittal Disk (under separate cover)

These are transmitted:

☐ *As requested*
☐ *For review*
☐ *For review and comment*
☐ *For approval*
☐ *For your information*
☒ *For Submittal*

Remarks: The electronic submittal disks will follow under separate cover.

Sender: Mark Aquilar/arz

Copy to: Scott Quaas, Tarmac (2)

0250020 -001-AC
PSD-FL- 236

9651137Y/F1/WP/2 12/05/96/

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 352-336-5600 FAX 352-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910 FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street NW, Suite 350, Washington, DC 20036, 202-462-1100 FAX 202-462-2270

021759

BN ENGINEERING AND APPLIED SCIENCES, INC.

PLEASE DETACH AND RETAIN FOR YOUR RECORDS

INVOICE NUMBER	DATE		VOUCHER NO.	AMOUNT
	12/5/96	Permit Applcation	Fee	$7500.00

FOR SECURITY PURPOSES THE BORDER OF THIS DOCUMENT CONTAINS MICROPRINTING

KBN Engineering and Applied Sciences, Inc.
GENERAL DISBURSEMENT ACCOUNT
PH. 352-336-5600
6241 N.W. 23RD ST., SUITE 500
GAINESVILLE, FL 32653-1500

First Union National Bank of Florida
Gainesville, Florida 32605

63-2/630
Branch 311

021759

December 5 19 96

PAY **********7500*******DOLLARS AND 00 CENTS $**7500.00

TO THE ORDER OF Florida Dept. of Environmental Protection

KBN ENGINEERING AND APPLIED SCIENCES, INC.

David A. Biff
AUTHORIZED SIGNATURE

THE REVERSE SIDE OF THIS DOCUMENT INCLUDES AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW

⑈021759⑈ ⑆063000021⑆211100925716⑈

AIR CONSTRUCTION PERMIT APPLICATION FOR A REPLACEMENT SLAG DRYER SYSTEM TARMAC AMERICA, INC.

Prepared For:

Tarmac America, Inc.
455 Fairway Drive
Deerfield Beach, Florida 33441

Prepared By:

KBN Engineering and Applied Sciences, Inc.
6241 NW 23rd Street
Gainesville, Florida 32653-1500

December 1996
9651137Y/F1

I

APPLICATION INFORMATION

Department of
Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

This section of the Application for Air Permit form identifies the facility and provides general information on the scope and purpose of this application. This section also includes information on the owner or authorized representative of the facility (or the responsible official in the case of a Title V source) and the necessary statements for the applicant and professional engineer, where required, to sign and date for formal submittal of the Application for Air Permit to the Department. If the application form is submitted to the Department using ELSA, this section of the Application for Air Permit must also be submitted in hard-copy.

Identification of Facility Addressed in This Application

Enter the name of the corporation, business, governmental entity, or individual that has ownership or control of the facility; the facility site name, if any; and the facility's physical location. If known, also enter the facility identification number.

1. Facility Owner/Company Name: **Tarmac America, Inc.**	
2. Site Name: **Tarmac Pennsuco**	
3. Facility Identification Number: **0250020**	[ ] Unknown
4. Facility Location Information: Street Address or Other Locator: **11000 N.W. 121 Way** City: **Medley** County: **Dade** Zip Code: **33178**	
5. Relocatable Facility? [ ] Yes [X] No	6. Existing Permitted Facility? [X] Yes [ ] No

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	December 6, 1996
2. Permit Number:	0250020-001-AC
3. PSD Number (if applicable):	PSD-FL-236
4. Siting Number (if applicable):	

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:

Scott Quaas, Environmental Manager

2. Owner/Authorized Representative or Responsible Official Mailing Address:

Organization/Firm: **Tarmac America, Inc.**
Street Address: **455 Fairway Drive**
City: **Deerfield Beach** State: **FL** Zip Code: **33441**

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

Telephone: **(954) 425-4165** Fax: **(954) 480-9352**

4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative* of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this application, whichever is applicable. 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.

Signature

DEC 0 5 1996

Date

* Attach letter of authorization if not currently on file.

Scope of Application

This Application for Air Permit addresses the following emissions unit(s) at the facility. An Emissions Unit Information Section (a Section III of the form) must be included for each emissions unit listed.

Emissions Unit ID		Description of Emissions Unit	Permit Type
Unit #	Unit ID		
1R		Slag Dryer	AC1E
2R	009	Clinker Handling and Storage	AC1E
3R	013	Finish Mill #4	AC1E
4R	014	Cement Silos & Bulk Loadout	AC1E

See individual Emissions Unit (EU) sections for more detailed descriptions.
Multiple EU IDs indicated with an asterisk (*). Regulated EU indicated with an "R".

Purpose of Application and Category

Check one (except as otherwise indicated):

Category I: All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: _____

[ ] Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed: _____

[ ] Air operation permit revision for a Title V source to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: _____

Operation permit to be renewed: _____

[ ] Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. Also check Category III.

Operation permit to be revised/corrected: _____

_____

[ ] Air operation permit revision for a Title V source for reasons other than construction or modification of an emissions unit. Give reason for the revision e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit to be revised: _____

Reason for revision: _____

_____

Category II: All Air Construction Permit Applications Subject to Processing Under Rule 62-210.300(2)(b),F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial 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): _____

_____

[ ] Renewal air operation permit under Rule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed: _____

[ ] 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 to be revised: _____

Reason for revision: _____

_____

Category III: All Air Construction Permit Applications for All Facilities and Emissions Units.

This Application for Air Permit is submitted to obtain:

[x] Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source).

Current operation permit number(s), if any: _____

AO13-238048

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

Current operation permit number(s): _____

_____

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Application Processing Fee

Check one:

[X] Attached - Amount: $ $ 7,500.00 [ ] Not Applicable.

Construction/Modification Information

1. Description of Proposed Project or Alterations:

Project involves construction of new slag dryer system to replace existing slag dryer system. See Attachment A for futher information

2. Projected or Actual Date of Commencement of Construction :

1 Jan 1997

3. Projected Date of Completion of Construction :

31 Dec 1997

Professional Engineer Certification

1. Professional Engineer Name: **David A. Buff**
   Registration Number: **19011**

2. Professional Engineer Mailing Address:
   Organization/Firm: **KBN Eng and Applied Sciences**
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653-1500**

3. Professional Engineer Telephone Numbers:
   Telephone: **(352) 336-5600** Fax: **(352) 336-6603**

4. Professional Engineer's 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 a Title V source air operation permit (check here [ ] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is 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 [X] 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.

David A. Buff — Signature (seal)

12/5/96 — Date

* Attach any exception to certification statement.

Application Contact

1. Name and Title of Application Contact:
   Scott Quaas, Environmental Manager

2. Application Contact Mailing Address:

   Organization/Firm: **Tarmac America, Inc.**
   Street Address: **455 Fairway Drive**
   City: **Deerfield Beach** State: **FL** Zip Code: **33441**

3. Application Contact Telephone Numbers:

   Telephone: **(954) 425-4165** Fax: **(954) 480-9352**

Application Comment

The structure of this application compliments the Title V Operating Permit application submitted in June 1996. The grouping of emission points into emission units is consistent with the Title V application. Additional information is provided in Attachment A.

II

GENERAL FACILITY INFORMATION

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates:
   Zone: **17** East (km): **562.8** North (km): **2861.7**

2. Facility Latitude/Longitude:
   Latitude (DD/MM/SS): **25 / 52 / 30** Longitude: (DD/MM/SS): **80 / 22 / 30**

3. Governmental Facility Code:	4. Facility Status Code:	5. Facility Major Group SIC Code:	6. Facility SIC(s):
0	**A**	**32**	**3241, 3271, 3273**

7. Facility Comment (limit to 500 characters):

Facility Contact

1. Name and Title of Facility Contact:
   Scott Quaas, Environmental Manager

2. Facility Contact Mailing Address:
   Organization/Firm: **Tarmac America, Inc.**
   Street Address: **455 Fairway Drive**
   City: **Deerfield Beach** State: **FL** Zip Code: **33441**

3. Facility Contact Telephone Numbers:
   Telephone: **(954) 425-4165** Fax: **(954) 480-9352**

Facility Regulatory Classifications

1. Small Business Stationary Source? [ ] Yes [x] No [ ] Unknown
2. Title V Source? [x] Yes [ ] No
3. Synthetic Non-Title V Source? [ ] Yes, [x] No
4. Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)? [x] Yes [ ] No
5. Synthetic Minor Source of Pollutants Other than HAPs? [ ] Yes [x] No
6. Major Source of Hazardous Air Pollutants (HAPs)? [x] Yes [ ] No
7. Synthetic Minor Source of HAPs? [ ] Yes [x] No
8. One or More Emissions Units Subject to NSPS? [x] Yes [ ] No
9. One or More Emissions Units Subject to NESHAP? [ ] Yes [x] No
10. Title V Source by EPA Designation? [ ] Yes [x] No
11. Facility Regulatory Classifications Comment (limit to 200 characters):

B. FACILITY REGULATIONS

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

Not Applicable

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-212.400 PSD Review

C. FACILITY POLLUTANTS

Facility Pollutant Information

1. Pollutant Emitted		2. Pollutant Classification
PM	Particulate Matter - Total	A
NOX	Nitrogen Oxides	A
SO2	Sulfur Dioxide	A
SAM	Sulfuric Acid Mist	B
VOC	Volatile Organic Compounds	A
CO	Carbon Monoxide	A
PM10	Particulate Matter - PM10	A
H106	Hydrochloric acid	A

D. FACILITY POLLUTANT DETAIL INFORMATION

Facility Pollutant Detail Information:

1. Pollutant Emitted:		
2. Requested Emissions Cap:	(lb/hr)	(tons/yr)
3. Basis for Emissions Cap Code:		
4. Facility Pollutant Comment (limit to 400 characters):		

Facility Pollutant Detail Information:

1. Pollutant Emitted:		
2. Requested Emissions Cap:	(lb/hr)	(tons/yr)
3. Basis for Emissions Cap Code:		
4. Facility Pollutant Comment (limit to 400 characters):		

E. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements for All Applications

1. Area Map Showing Facility Location:
   [X] Attached, Document ID: Att. A, Fig 2-1
   [ ] Not Applicable [ ] Waiver Requested

2. Facility Plot Plan:
   [X] Attached, Document ID: Att. A, Fig 2-2
   [ ] Not Applicable [ ] Waiver Requested

3. Process Flow Diagram(s):
   [X] Attached, Document ID(s): Att. A, Fig 2-3
   [ ] Not Applicable [ ] Waiver Requested

4. Precautions to Prevent Emissions of Unconfined Particulate Matter:
   [X] Attached, Document ID: Att. A
   [ ] Not Applicable [ ] Waiver Requested

5. Fugitive Emissions Identification:
   [X] Attached, Document ID: Att. A
   [ ] Not Applicable [ ] Waiver Requested

6. Supplemental Information for Construction Permit Application:
   [X] Attached, Document ID: Att. A
   [ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

7. List of Proposed Exempt Activities:
   [ ] Attached, Document ID: _____
   [X] Not Applicable

8. List of Equipment/Activities Regulated under Title VI:
   [ ] Attached, Document ID: _____
   [ ] Equipment/Activities On site but Not Required to be Individually Listed
   [X] Not Applicable

9. Alternative Methods of Operation:
   [ ] Attached, Document ID: _____
   [X] Not Applicable

10. Alternative Modes of Operation (Emissions Trading):
    [ ] Attached, Document ID: _____
    [X] Not Applicable

11. Identification of Additional Applicable Requirements:
[ ] Attached, Document ID: _____
[x] Not Applicable

12. Compliance Assurance Monitoring Plan:
[ ] Attached, Document ID: _____
[x] Not Applicable

13. Risk Management Plan Verification:

[ ] Plan Submitted to Implementing Agency - Verification Attached
Document ID: _____

[ ] Plan to be Submitted to Implementing Agency by Required Date

[x] Not Applicable

14. Compliance Report and Plan
[ ] Attached, Document ID: _____
[x] Not Applicable

15. Compliance Statement (Hard-copy Required)
[ ] Attached, Document ID: _____
[x] Not Applicable

III

EMISSION UNIT INFORMATION

EMISSION UNIT 1

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L 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. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

A. TYPE OF EMISSIONS UNIT (Regulated and Unregulated Emissions Units)

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one:

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

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

2. Single Process, Group of Processes, or Fugitive Only? Check one:

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

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

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

B. GENERAL EMISSIONS UNIT INFORMATION (Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section (limit to 60 characters): **Slag Dryer / Conveying Sys., Storage Pile & #2 Fuel Oil Tank**		
2. Emissions Unit Identification Number: [X] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code: C	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: 32
6. Emissions Unit Comment (limit to 500 characters): **Fuel oil tank will be 10,000 gallons capacity, and not subject to NSPS.**		

Emissions Unit Control Equipment Information

A.

1. Description (limit to 200 characters):

Fabric Filter

2. Control Device or Method Code: 16

B.

1. Description (limit to 200 characters):

Fabric Filter

2. Control Device or Method Code: 18

C.

1. Description (limit to 200 characters):

2. Control Device or Method Code:

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Details

1. Initial Startup Date:	
2. Long-term Reserve Shutdown Date:	
3. Package Unit: Manufacturer:	Model Number:
4. Generator Nameplate Rating:	MW
5. Incinerator Information: Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:	°F seconds °F

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate:		72	mmBtu/hr
2. Maximum Incineration Rate:	lbs/hr		tons/day
3. Maximum Process or Throughput Rate:		150	tons/hr
4. Maximum Production Rate:			
5. Operating Capacity Comment (limit to 200 characters):			

Emissions Unit Operating Schedule

1. Requested Maximum Operating Schedule:			
	24 hours/day	7	days/week
	52 weeks/yr	3,120	hours/yr

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Rule Applicability Analysis (Required for Category II Applications and Category III applications involving non Title-V sources. See Instructions.)

Not Applicable

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-296.320(4)(a) Process Weight Table
62-296.320(4)(b) Visible Emissions

E. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: EU08	
2. Emission Point Type Code: [ ]1 [ ]2 [x]3 [ ]4	
3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Slag Dryer; Slag handling and storage operations	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:	
5. Discharge Type Code: [ ]D [ ]F [ ]H [ ]P [ ]R [x]V [ ]W	
6. Stack Height:	30 feet
7. Exit Diameter:	4 feet
8. Exit Temperature:	300 °F

9. Actual Volumetric Flow Rate:	**54,600**	acfm
10. Percent Water Vapor:	**10**	%
11. Maximum Dry Standard Flow Rate:	**34,100**	dscfm
12. Nonstack Emission Point Height:		feet

13. Emission Point UTM Coordinates:

Zone: East (km): North (km):

14. Emission Point Comment (limit to 200 characters):

Stack data representitive of slag dryer. See Attachment A for information on conveyor transfer point baghouse.

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 1 of 5

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Material Products; Cement Manufacturing Wet Process; Raw material grinding and drying**
2. Source Classification Code (SCC): **30500613**
3. SCC Units: **tons cement produced**

4. Maximum Hourly Rate:	5. Maximum Annual Rate:
150	**300,000**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:

9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters): **Raw material is blast furnace slag. Maximum rates reflect slag throughput.**

Segment Description and Rate: Segment 2 of 5

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Mineral Products; Fuel-Fired Equipment; Process Heaters; Distillate Oil**
2. Source Classification Code (SCC): **30590001**
3. SCC Units: **1000 gallons burned**

4. Maximum Hourly Rate: **0.514**	5. Maximum Annual Rate: **1,605**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: **0.2**	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: **140**	

10. Segment Comment (limit to 200 characters): **No. 2 fuel oil burning in slag dryer.**

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 3 of 5

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Material Products: Fuel-Fired Equipment; Process Heaters Natural Gas**
2. Source Classification Code (SCC): **3-05-900-03**
3. SCC Units: **Million Cubic Feet**

4. Maximum Hourly Rate:	5. Maximum Annual Rate:
0.072	**225**

6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:

9. Million Btu per SCC Unit: **1,000**
10. Segment Comment (limit to 200 characters): **Maximum Annual Rate = 224.6 (rounded to 225). Natural gas burning in slag dryer.**

Segment Description and Rate: Segment 4 of 5

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Petroleum Product Storage - Fixed Roof Tanks. Distillate Fuel #2 - Working Loss**
2. Source Classification Code (SCC): **4-03-010-21**
3. SCC Units: **1000 gallons throughput**

4. Maximum Hourly Rate: **0.514**	5. Maximum Annual Rate: **1,605**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters):	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 5 of 5

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Petroleum Product Storage - Fixed Roof Tanks. Distillate Fuel #2 - Breathing Loss**	
2. Source Classification Code (SCC): **4-03-010-19**	
3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate:	5. Maximum Annual Rate: **10**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters):	

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (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 Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	016		EL
PM10	016		EL
SO2			NS
NOx			NS
CO			NS

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM**

2. Total Percent Efficiency of Control: %

3. Potential Emissions: **12** lb/hour **20.4** tons/year

4. Synthetically Limited? [**X**] Yes [ ] No

5. Range of Estimated Fugitive/Other Emissions:

   [ ] 1 [ ] 2 [ ] 3 _____ to **1.775** tons/yr

6. Emission Factor:

   Reference: **See Attachment A**

7. Emissions Method Code:

   [**X**] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5

8. Calculation of Emissions (limit to 600 characters):

   Slag Dryer: 0.04 gr/dscf x 34,100 dscfm x 60 min/hr ÷ 7000 gr/lb = 11.7 lb/hr; 11.7 lb/hr x 3120 hr/yr ton/2000 lb = 18.2 TPY. Dry Slag Conveying System Baghouse = 0.26 lb/hr & 0.40 TPY. Fugitive emissions: estimated in Table 3-2, see Attachment A.

9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):

   Slag dryer is limited to 3,120 hours per year. Potential lb/hr emissions above do not include fugitives.

Emissions Unit Information Section 1 **of** 4

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:	**OTHER**
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	**0.04 gr/dscf**
4. Equivalent Allowable Emissions:	**11.7** lb/hour **18.24** tons/year
5. Method of Compliance (limit to 60 characters):	**EPA Method 9 and Method 5**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):	**Proposed BACT limit for slag dryer.**

B.

1. Basis for Allowable Emissions Code:	**OTHER**
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	**0.01 gr/dscf**
4. Equivalent Allowable Emissions:	**0.26** lb/hour **0.4** tons/year
5. Method of Compliance (limit to 60 characters):	**EPA Method 9**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):	**Based on baghouse design for conveyor transfer system baghouse.**

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM10**
2. Total Percent Efficiency of Control: %
3. Potential Emissions: **12** lb/hour **19.3** tons/year
4. Synthetically Limited? [**X**] Yes [ ] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to **0.625** tons/yr
6. Emission Factor: Reference: **See Attachment A**
7. Emissions Method Code: [**X**] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): **Slag Dryer: 0.04 gr/dscf x 34,100 dscfm x 60 min/hr ÷ 7000 gr/lb = 11.7 lb/hr; 11.7 lb/hr x 3120 hr/yr ton/2000 lb = 18.2 TPY. Dry Slag Conveying System Baghouse = 0.26 lb.hr & 0.40 TPY. Fugitive emissions are estimated in Table 3-2, Attachment A.**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): **Slag dryer is limited to 3,120 hours per year. Potential lb/hr emissions above do not include fugitives.**

Emissions Unit Information Section 1 **of** 4

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.04 gr/dscf**
4. Equivalent Allowable Emissions: **11.7** lb/hour **18.24** tons/year
5. Method of Compliance (limit to 60 characters): **EPA Method 9 and Method 5**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): **Proposed BACT limit for slag dryer.**

B.

1. Basis for Allowable Emissions Code: **OTHER**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.01 gr/dscf**
4. Equivalent Allowable Emissions: **0.26** lb/hour **0.4** tons/year
5. Method of Compliance (limit to 60 characters): **EPA Method 9**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): **Based on baghouse design for conveyor transfer system baghouse.**

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **SO2**
2. Total Percent Efficiency of Control: %
3. Potential Emissions: **14.6** lb/hour **22.8** tons/year
4. Synthetically Limited? [x] Yes [ ] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: **142 (S) lb/1000 gal** Reference: **AP-42**
7. Emissions Method Code: [ ] 0 [ ] 1 [ ] 2 [x] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): **514.3 gal/hr x 142(0.2) lb/1000 gal = 14.6 lb/hr; 14.6 lb/hr x 3,120 hr/yr x ton/2000 lb = 22.8 TPY**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): **Slag dryer is limited to 3,120 hours per year.**

Emissions Unit Information Section 1 of 4

Allowable Emissions (Pollutant identified on front page)

A.

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

B.

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

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **NOx**
2. Total Percent Efficiency of Control: %
3. Potential Emissions: **10.3** lb/hour **16.1** tons/year
4. Synthetically Limited? [**X**] Yes [ ] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: **20 lb/1000 gal** Reference: **AP-42**
7. Emissions Method Code: [ ] 0 [ ] 1 [ ] 2 [**X**] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): **514.3 gal/hr x 20 lb/1000 gal = 10.3 lb/hr; 10.3 lb/hr x 3,120 hr/yr x ton/2000 lb = 16.1 TPY**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): **Slag dryer is limited to 3,120 hours per year.**

Emissions Unit Information Section 1 of 4
Allowable Emissions (Pollutant identified on front page)

A.

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

B.

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

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: CO
2. Total Percent Efficiency of Control: %
3. Potential Emissions: 2.6 lb/hour 4 tons/year
4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: 5 lb/1000 gal Reference: AP-42
7. Emissions Method Code: [ ] 0 [ ] 1 [ ] 2 [X] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): 514.3 gal/hr x 5 lb/1000 gal = 2.6 lb/hr; 2.6 lb/hr x 3,120 hr/yr x ton/2000 lb = 4.0 TPY
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): Slag dryer is limited to 3,120 hours per year.

Emissions Unit Information Section 1 of 4
Allowable Emissions (Pollutant identified on front page)

A.

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

B.

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

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitations: Visible Emissions Limitation 1 of 3

1.	Visible Emissions Subtype: **VE20**
2.	Basis for Allowable Opacity: [X] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: **EPA Method 9**
5.	Visible Emissions Comment (limit to 200 characters): **Rule 62-296.320(4)(b) - Applicable to Slag Dryer.**

Visible Emissions Limitations: Visible Emissions Limitation 2 of 3

1.	Visible Emissions Subtype: **VE5**
2.	Basis for Allowable Opacity: [X] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: **5** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: **EPA Method 9**
5.	Visible Emissions Comment (limit to 200 characters): **Rule 62-297.620(4) - Applicable to Conveyor Transfer System Baghouse.**

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitations: Visible Emissions Limitation 3 of 3

1.	Visible Emissions Subtype: VE10
2.	Basis for Allowable Opacity: [X] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: EPA Method 9
5.	Visible Emissions Comment (limit to 200 characters): 40 CFR 60, Subpart F, Section 60.62(c) - Applicable to Conveyor Transfer System Baghouse.

Visible Emissions Limitations: Visible Emissions Limitation _____ of _____

1.	Visible Emissions Subtype:
2.	Basis for Allowable Opacity: [ ] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance:
5.	Visible Emissions Comment (limit to 200 characters):

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Continuous Monitoring System Continuous Monitor _____ of _____

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

Continuous Monitoring System Continuous Monitor _____ of _____

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

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION
(Regulated and Unregulated Emissions Units)

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and the source consumes increment.

[X] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and the emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3.	Increment Consuming/Expanding Code:			
	PM	[X] C	[ ] E	[ ] Unknown
	SO_2	[X] C	[ ] E	[ ] Unknown
	NO_2	[X] C	[ ] E	[ ] Unknown
4.	Baseline Emissions:			
	PM	0 lb/hour	0 tons/year	
	SO_2	0 lb/hour	0 tons/year	
	NO_2		0 tons/year	
5.	PSD Comment (limit to 200 characters):			

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements for All Applications

1.	Process Flow Diagram	
	[X] Attached, Document ID: Att. A, Fig 2-3	
	[ ] Not Applicable	[ ] Waiver Requested
2.	Fuel Analysis or Specification	
	[X] Attached, Document ID: Attachment A	
	[ ] Not Applicable	[ ] Waiver Requested
3.	Detailed Description of Control Equipment	
	[X] Attached, Document ID: Attachment A	
	[ ] Not Applicable	[ ] Waiver Requested
4.	Description of Stack Sampling Facilities	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
5.	Compliance Test Report	
	[ ] Attached, Document ID: _____	[X] Not Applicable
	[ ] Previously Submitted, Date: _____	
6.	Procedures for Startup and Shutdown	
	[ ] Attached, Document ID: _____	[X] Not Applicable
7.	Operation and Maintenance Plan	
	[ ] Attached, Document ID: _____	[X] Not Applicable
8.	Supplemental Information for Construction Permit Application	
	[X] Attached, Document ID: Attachment A	[ ] Not Applicable
9.	Other Information Required by Rule or Statute	
	[ ] Attached, Document ID: _____	[X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [x] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [x] Not Applicable

12. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [x] Not Applicable

13. Compliance Assurance Monitoring Plan

[ ] Attached, Document ID: _____ [x] Not Applicable

14. Acid Rain Permit Application (Hard Copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[x] Not Applicable

EMISSION UNIT 2

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L 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. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

A. TYPE OF EMISSIONS UNIT (Regulated and Unregulated Emissions Units)

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one:

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

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

2. Single Process, Group of Processes, or Fugitive Only? Check one:

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

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

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

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
   Clinker Handling and Storage Silos - 21,22,23,26,27, and 28

2. Emissions Unit Identification Number: [ ] No Corresponding ID [ ] Unknown
   009

3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **32**

6. Emissions Unit Comment (limit to 500 characters):
   Only Clinker Handling System #3 and Clinker Silos 21,22,23,26,27, and 28 will be affected by the proposed slag dryer.

Emissions Unit Control Equipment Information

A.

1. Description (limit to 200 characters): **Baghouses (3)**
2. Control Device or Method Code: **18**

B.

1. Description (limit to 200 characters):
2. Control Device or Method Code:

C.

1. Description (limit to 200 characters):
2. Control Device or Method Code:

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Details

1. Initial Startup Date:	
2. Long-term Reserve Shutdown Date:	
3. Package Unit: Manufacturer:	Model Number:
4. Generator Nameplate Rating:	MW
5. Incinerator Information: Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:	 °F seconds °F

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate:		mmBtu/hr
2. Maximum Incineration Rate:	lbs/hr	tons/day
3. Maximum Process or Throughput Rate:	238	TPH
4. Maximum Production Rate:		
5. Operating Capacity Comment (limit to 200 characters): **Maximum Process/Throughput Rate: 237.5 TPH (rounded to 238 TPH). Based on 87.5 TPH from Kiln #3, and 150 TPH from slag dryer. See Attachment TA-E02-C5.**		

Emissions Unit Operating Schedule

1. Requested Maximum Operating Schedule:			
	24 hours/day		7 days/week
	52 weeks/yr		8,760 hours/yr

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Rule Applicability Analysis (Required for Category II Applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

40CFR60.11(b) General NSPS Requirements
40CFR60.11(c) General NSPS Requirements
40CFR60.11(d) General NSPS Requirements
40CFR60.12 General NSPS Requirements
40CFR60.19 General NSPS Requirements
40CFR60.62(c) Portland Cement Plant NSPS Requirement for non-kiln, non-cooler sources
40CFR60.7 General NSPS Requirements
40CFR60.8 General NSPS Requirements
62-296.320(4)(b) Visible Emissions

E. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: EU09	
2. Emission Point Type Code: [ ]1 [ ]2 [X]3 [ ]4	
3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Baghouses K-347, K-447 and K-633	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:	
5. Discharge Type Code: [ ]D [ ]F [X]H [ ]P [ ]R [ ]V [ ]W	
6. Stack Height:	160 feet
7. Exit Diameter:	1 feet
8. Exit Temperature:	77 °F

9. Actual Volumetric Flow Rate:	**5,000** acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	feet
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment (limit to 200 characters): **Data presented above reflects K-347 and K-447 baghouses. Refer to Attachment TA-E02-E3 for additional data.**	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Mineral Products; Cement Manufacturing: Wet Process; Clinker Transfer**	
2. Source Classification Code (SCC): **3-05-007-16**	
3. SCC Units: **Tons Cement Produced**	
4. Maximum Hourly Rate: **237.5**	5. Maximum Annual Rate: **1,066,500**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters): **Note: Maximum rates reflect transfer of clinker, and slag and associated operating hours. See Attachment TA-E02-C5.**	

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Clinker Storage Silos**	
2. Source Classification Code (SCC): **3-05-007-99**	
3. SCC Units: **tons cement produced**	
4. Maximum Hourly Rate: **150**	5. Maximum Annual Rate: **300,000**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters): **Rate represents tons of slag produced.**	

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018		NS
PM10	018		NS

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM**
2. Total Percent Efficiency of Control: %
3. Potential Emissions: **0.99** lb/hour **4.32** tons/year
4. Synthetically Limited? [ ] Yes [**X**] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: **0.01 gr/acf** Reference: **Manufacturer Design**
7. Emissions Method Code: [**X**] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): **Represents emissions from two identical baghouses: K-347 and K-447. See Table 3-4, Attachment A.**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):

Emissions Unit Information Section 2 of 4

Allowable Emissions (Pollutant identified on front page)

A.

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

B.

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

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM10**
2. Total Percent Efficiency of Control: %
3. Potential Emissions: **0.99** lb/hour **4.32** tons/year
4. Synthetically Limited? [ ] Yes [**X**] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: **0.01 gr/acf** Reference: **Manufacturer Design**
7. Emissions Method Code: [**X**] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): **Represents emissions from two identical baghouses: K-347 and K-447. See Table 3-4, Attachment A**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):

Emissions Unit Information Section 2 of 4

Allowable Emissions (Pollutant identified on front page)

A.

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

B.

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

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitations: Visible Emissions Limitation 1 of 2

1.	Visible Emissions Subtype: **VE10**
2.	Basis for Allowable Opacity: [ ] Rule [X] Other
3.	Requested Allowable Opacity Normal Conditions: **10** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: **Annual VE Test with EPA Method 9**
5.	Visible Emissions Comment (limit to 200 characters): **VE limit of 10% for Baghouses K-347 and K-447, based on 11/15/95 BACT determination.**

Visible Emissions Limitations: Visible Emissions Limitation 2 of 2

1.	Visible Emissions Subtype: **VE5**
2.	Basis for Allowable Opacity: [X] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: **5** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: **Annual VE test with EPA Method 9**
5.	Visible Emissions Comment (limit to 200 characters): **Applies to Baghouse K-633, based on 11/15/95 BACT determination.**

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Continuous Monitoring System Continuous Monitor _____ of _____

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

Continuous Monitoring System Continuous Monitor _____ of _____

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

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION
(Regulated and Unregulated Emissions Units)

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and the emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3.	Increment Consuming/Expanding Code:			
	PM	[X] C	[ ] E	[ ] Unknown
	SO_2	[ ] C	[ ] E	[ ] Unknown
	NO_2	[ ] C	[ ] E	[ ] Unknown
4.	Baseline Emissions:			
	PM	0 lb/hour	0 tons/year	
	SO_2	lb/hour	tons/year	
	NO_2		tons/year	
5.	PSD Comment (limit to 200 characters):			
	Emissions unit does not emit SO2 or NOX.			

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements for All Applications

1.	Process Flow Diagram	
	[X] Attached, Document ID: Attachment A	
	[ ] Not Applicable	[ ] Waiver Requested
2.	Fuel Analysis or Specification	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
3.	Detailed Description of Control Equipment	
	[X] Attached, Document ID: TA-E02-L3	
	[ ] Not Applicable	[ ] Waiver Requested
4.	Description of Stack Sampling Facilities	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
5.	Compliance Test Report	
	[ ] Attached, Document ID: _____	[X] Not Applicable
	[ ] Previously Submitted, Date: _____	
6.	Procedures for Startup and Shutdown	
	[ ] Attached, Document ID: _____	[X] Not Applicable
7.	Operation and Maintenance Plan	
	[ ] Attached, Document ID: _____	[X] Not Applicable
8.	Supplemental Information for Construction Permit Application	
	[ ] Attached, Document ID: _____	[X] Not Applicable
9.	Other Information Required by Rule or Statute	
	[ ] Attached, Document ID: _____	[X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [X] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [X] Not Applicable

12. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [X] Not Applicable

13. Compliance Assurance Monitoring Plan

[ ] Attached, Document ID: _____ [X] Not Applicable

14. Acid Rain Permit Application (Hard Copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[X] Not Applicable

Table TA-E02-C5. Maximum Process Rates for Clinker Handling/Storage Emission Unit 02, Tarmac America, Pennsuco

	Maximum Opacity	Throughput Maximum		
Source Description	Hours	(TPH)	(TPY)	Comment
Clinker Handling System - Kiln #3/Cooler #3	8760	87.5	766,500	Limited by Kiln #3
Slag Dryer Transfer	3120	150	300,000	Limited by Slag Dryer
Total		237.5	1,066,500	
Clinker Silos 21-23,26-28	8,760	NA	NA	

Table TA-E02-E3. Emission Point Detail Information for Clinker Handling and Storage, Emission Unit 02, Tarmac America, Pennsuco

Source	Service	Baghouse ID	Stack Ht (ft)	Estimated Stack Diam (ft)	Exit Temp. (F)	Flowrate (acfm)
Clinker Handling System #3	K3	K-347	160	1	77	5,000
Clinker Handling System #3	K3	K-447	160	1	77	5,000
Clinker Silos 21-23, 26-28	NA	K-633	130	1	77	1,500

Table TA-E02-L3. Control Equipment Information for Clinker Handling / Storage, Emission Unit 02. Tarmac America, Pennsuco

Source ID	Baghouse ID	Manufacturer	Model No.	Number of Bags	Flow Rate (acfm)	Cloth Area (ft^2)	Air to Cloth Ratio
Clinker Handling Line 3	K-347	Norblo	11-BE-88	88	5,000	1,100	4.5
Clinker Handling Line 3	K-447	Norblo	11-BE-88	88	5,000	1,100	4.5
Clinker Silo 21-23, 26-28	K-633	Norblo	HE-66	66	1,500	1,040	1.4

EMISSION UNIT 3

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L 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. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

A. TYPE OF EMISSIONS UNIT (Regulated and Unregulated Emissions Units)

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one:

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

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

2. Single Process, Group of Processes, or Fugitive Only? Check one:

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

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

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

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section (limit to 60 characters): **Finish Mill #4**		
2. Emissions Unit Identification Number: [ ] No Corresponding ID [ ] Unknown **013**		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **32**
6. Emissions Unit Comment (limit to 500 characters): **Only Finish Mill #4 will be affected by the proposed slag dryer. Orginal Arms ID is 013**		

Emissions Unit Control Equipment Information

A.

1. Description (limit to 200 characters): **Baghouses (5)**
2. Control Device or Method Code: **17**

B.

1. Description (limit to 200 characters):
2. Control Device or Method Code:

C.

1. Description (limit to 200 characters):
2. Control Device or Method Code:

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Details

1. Initial Startup Date:	
2. Long-term Reserve Shutdown Date:	
3. Package Unit: Manufacturer:	Model Number:
4. Generator Nameplate Rating:	MW
5. Incinerator Information: Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:	 °F seconds °F

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate:		mmBtu/hr
2. Maximum Incineration Rate:	lbs/hr	tons/day
3. Maximum Process or Throughput Rate:	150	TPH
4. Maximum Production Rate:		
5. Operating Capacity Comment (limit to 200 characters):		

Emissions Unit Operating Schedule

1. Requested Maximum Operating Schedule:			
	24 hours/day	7	days/week
	52 weeks/yr	8,760	hours/yr

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Rule Applicability Analysis (Required for Category II Applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

40CFR60.11(b) General NSPS Requirements
40CFR60.11(c) General NSPS Requirements
40CFR60.11(d) General NSPS Requirements
40CFR60.12 General NSPS Requirements
40CFR60.19 General NSPS Requirements
40CFR60.62(c) NSPS Subpart F
40CFR60.7 General NSPS Requirements
40CFR60.8 General NSPS Requirements
62-296.320(4)(a) Process Weight Standard

E. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: EU07	
2. Emission Point Type Code: [ ] 1 [ ] 2 [X] 3 [ ] 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **5 baghouses. Refer to Attachment TA-E03-E3.**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:	
5. Discharge Type Code: [ ] D [ ] F [ ] H [ ] P [ ] R [ ] V [X] W	
6. Stack Height:	**72** feet
7. Exit Diameter:	**1** feet
8. Exit Temperature:	**150** °F

9. Actual Volumetric Flow Rate:	**30,000** acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	feet
13. Emission Point UTM Coordinates:	
Zone: East (km):	North (km):
14. Emission Point Comment (limit to 200 characters):	

Data represent baghouse F-430. Refer to Attachment TA-E03-E3 for point specific data. Exit temperature may range from 100-200°F.

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Mineral Products; Cement Manufacturing; Wet Process; Clinker Grinding**
2. Source Classification Code (SCC): **3-05-007-17**
3. SCC Units: **Tons Cement Produced**

4. Maximum Hourly Rate:	5. Maximum Annual Rate:
150	**1,314,000**

6. Estimated Annual Activity Factor:

7. Maximum Percent Sulfur:	8. Maximum Percent Ash:

9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters): **Rates reflect Finish Mill #4 only.**

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (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 Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018		EL
PM10	018		NS

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM**
2. Total Percent Efficiency of Control: %
3. Potential Emissions: **5.75** lb/hour **25.14** tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: **0.01 gr/acf** Reference: **Manufacturer Design**
7. Emissions Method Code: [X] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): **Refer to Attachment A, Table 3-4.**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):

Emissions Unit Information Section 3 **of** 4

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:	RULE
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	See Comment
4. Equivalent Allowable Emissions:	5.75 lb/hour 25.14 tons/year
5. Method of Compliance (limit to 60 characters):	EPA Method 9
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):	Process Weight Table, Rule 62-296.320(4)(a). Limit applies to Finish Mill No.4 only per PSD-FL-28. Emissions limited to lesser of process weight table or 5.75 lb/hr.

B.

1. Basis for Allowable Emissions Code:	OTHER
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	0.01 gr/acf
4. Equivalent Allowable Emissions:	5.75 lb/hour 25.14 tons/year
5. Method of Compliance (limit to 60 characters):	EPA Method 9
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):	Limit applies to Finish Mill No. 4 only per PSD-FL-28. Emissions limited to lesser of process weight table or 5.75 lb/hr.

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM10**
2. Total Percent Efficiency of Control: %
3. Potential Emissions: **5.75** lb/hour **25.14** tons/year
4. Synthetically Limited? [ ] Yes [**X**] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: **0.01 gr/acf** Reference: **Manufacturer Design**
7. Emissions Method Code: [**X**] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
8. Calculation of Emissions (limit to 600 characters): **Refer to Attachment A, Table 3-4.**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):

Emissions Unit Information Section 3 **of** 4

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: RULE	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: See Comment	
4. Equivalent Allowable Emissions:	5.75 lb/hour 25.14 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 9	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Process Weight Table, Rule 62-296.320(4)(a). Limit applies to Finish Mill No. 4 only per PSD-FL-28. Emissions limited to lesser of process weight table or 5.75 lb/hr.	

B.

1. Basis for Allowable Emissions Code: OTHER	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 0.01 gr/acf	
4. Equivalent Allowable Emissions:	5.75 lb/hour 25.14 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 9	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Limit applies to Finish Mill No. 4 only per PSD-FL-28. Emissions limited to lesser of process weight table or 5.75 lb/hr.	

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitations: Visible Emissions Limitation 1 of 1

1.	Visible Emissions Subtype: VE05
2.	Basis for Allowable Opacity: [ ] Rule [X] Other
3.	Requested Allowable Opacity Normal Conditions: 5 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: Annual VE Test EPA Method 9
5.	Visible Emissions Comment (limit to 200 characters): BACT determination dated 11/15/79 applies to all Finish Mill No. 4 baghouses. BACT limit is more limiting than NSPS standard (40 CFR 60.62(c)) of 10%.

Visible Emissions Limitations: Visible Emissions Limitation _____ of _____

1.	Visible Emissions Subtype:
2.	Basis for Allowable Opacity: [ ] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance:
5.	Visible Emissions Comment (limit to 200 characters):

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Continuous Monitoring System Continuous Monitor _____ of _____

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

Continuous Monitoring System Continuous Monitor _____ of _____

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

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION
(Regulated and Unregulated Emissions Units)

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and the emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3.	Increment Consuming/Expanding Code:			
	PM	[X] C	[ ] E	[ ] Unknown
	SO_2	[ ] C	[ ] E	[ ] Unknown
	NO_2	[ ] C	[ ] E	[ ] Unknown
4.	Baseline Emissions:			
	PM	lb/hour		tons/year
	SO_2	lb/hour		tons/year
	NO_2			tons/year
5.	PSD Comment (limit to 200 characters):			
	Emission unit does not emit NOX or SO2. Baseline emissions unknown.			

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements for All Applications

1.	Process Flow Diagram	
	[X] Attached, Document ID: Attachment A	
	[ ] Not Applicable	[ ] Waiver Requested
2.	Fuel Analysis or Specification	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
3.	Detailed Description of Control Equipment	
	[X] Attached, Document ID: TA-E03-L3	
	[ ] Not Applicable	[ ] Waiver Requested
4.	Description of Stack Sampling Facilities	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
5.	Compliance Test Report	
	[ ] Attached, Document ID: _____	[X] Not Applicable
	[ ] Previously Submitted, Date: _____	
6.	Procedures for Startup and Shutdown	
	[ ] Attached, Document ID: _____	[X] Not Applicable
7.	Operation and Maintenance Plan	
	[ ] Attached, Document ID: _____	[X] Not Applicable
8.	Supplemental Information for Construction Permit Application	
	[ ] Attached, Document ID: _____	[X] Not Applicable
9.	Other Information Required by Rule or Statute	
	[ ] Attached, Document ID: _____	[X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [X] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [X] Not Applicable

12. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [X] Not Applicable

13. Compliance Assurance Monitoring Plan

[ ] Attached, Document ID: _____ [X] Not Applicable

14. Acid Rain Permit Application (Hard Copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[X] Not Applicable

Table TA-E03-E3. Emission Point Detail Information for Finish Mills, Emission Unit 03, Tarmac America, Pennsuco

Finish Mill	Baghouse ID	Stack Ht (ft)	Estimated Stack Diam (ft)	Exit Temp. (F)	Flowrate (acfm)
#4	F-430	72	1	150	30,000
#4	F-432	72	1	150	17,000
#4	F-603	72	1	77	8,000
#4	F-604	72	1	77	8,000
#4	F-605	72	1	77	4,000

Table TA-E03-L3. Control Equipment Information for Finish Mills, Emission Unit 03, Tarmac America, Pennsuco

Finish Mill	Baghouse ID	Manufacturer	Model No.	Number of Bags	Flow Rate (acfm)	Cloth Area (ft^2)	Air to Cloth Ratio
#4	F-430	Fuller	6 zone #96	576	30,000	6,028	5.0
#4	F-432	Fuller	5 zone #48	240	17,000	2,510	6.8
#4	F-603	Mikropul	121S-10-20	121	8,000	1,424	5.6
#4	F-604	Mikropul	121S-10-20	121	8,000	1424	5.6
#4	F-605	Mikropul	645-10-30	64	4,000	753	5.3

EMISSION UNIT 4

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L 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. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

A. TYPE OF EMISSIONS UNIT (Regulated and Unregulated Emissions Units)

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one:

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

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

2. Single Process, Group of Processes, or Fugitive Only? Check one:

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

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

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

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section (limit to 60 characters): **Cement Storage Silos 7,8, & 9 and Bulk Loadout Units 1 & 2**		
2. Emissions Unit Identification Number: [ ] No Corresponding ID [ ] Unknown **014,015**		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **32**
6. Emissions Unit Comment (limit to 500 characters): **Original ARMS ID Nos. 014 and 015, for the Cement Silos, and Bulk Loadout units Nos. 1, 2, 3, respectively. Only Cement Silos 7-9, and Bulk Loadout Units 1 and 2 are affected by the proposed project.**		

Emissions Unit Control Equipment Information

A.

1. Description (limit to 200 characters):

Baghouses (3)

2. Control Device or Method Code: **18**

B.

1. Description (limit to 200 characters):

2. Control Device or Method Code:

C.

1. Description (limit to 200 characters):

2. Control Device or Method Code:

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Details

1. Initial Startup Date:	
2. Long-term Reserve Shutdown Date:	
3. Package Unit: Manufacturer:	Model Number:
4. Generator Nameplate Rating:	MW
5. Incinerator Information: Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:	 °F seconds °F

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate:			mmBtu/hr
2. Maximum Incineration Rate:	lbs/hr		tons/day
3. Maximum Process or Throughput Rate:		300	TPH
4. Maximum Production Rate:			
5. Operating Capacity Comment (limit to 200 characters):			

Emissions Unit Operating Schedule

1. Requested Maximum Operating Schedule:			
	24 hours/day	7	days/week
	52 weeks/yr	8,760	hours/yr

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Rule Applicability Analysis (Required for Category II Applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

40CFR60.11(b) General NSPS Requirements
40CFR60.11(c) General NSPS Requirements
40CFR60.11(d) General NSPS Requirements
40CFR60.12 General NSPS Requirements
40CFR60.19 General NSPS Requirements
40CFR60.62(c) Portland Cement Plant NSPS Requirement for non-kiln, non-cooler sources
40CFR60.7 General NSPS Requirements
40CFR60.8 General NSPS Requirements
62-296.320(4)(b) Visible Emissions

E. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: EU12
2. Emission Point Type Code: [ ] 1 [ ] 2 [X] 3 [ ] 4
3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Refer to Attachment TA-E04-E3
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
5. Discharge Type Code: [ ] D [ ] F [X] H [ ] P [ ] R [ ] V [ ] W
6. Stack Height: 200 feet
7. Exit Diameter: 1.1 feet
8. Exit Temperature: 77 °F

9. Actual Volumetric Flow Rate:	**10,000** acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	feet
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment (limit to 200 characters): **Data refer to baghouse F-512. Refer to Attachment TA-E04-E3 for point-specific data.**	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters):

Mineral Products; Cement Manufacturing Wet Process; Cement storage silos

2. Source Classification Code (SCC):

3-05-007-18

3. SCC Units:

tons cement produced

4. Maximum Hourly Rate:	5. Maximum Annual Rate:
500	**4,380,000**

6. Estimated Annual Activity Factor:

7. Maximum Percent Sulfur:	8. Maximum Percent Ash:

9. Million Btu per SCC Unit:

10. Segment Comment (limit to 200 characters):

Rate refers to combined rate to all cement silos as stated in permit AC13-21098.

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): **Mineral Products; Cement Manufacturing Wet Process; Cement Loadout**
2. Source Classification Code (SCC): **3-05-007-19**
3. SCC Units: **Tons cement produced**

4. Maximum Hourly Rate:	5. Maximum Annual Rate:
300	**3,008,760**

6. Estimated Annual Activity Factor:

7. Maximum Percent Sulfur:	8. Maximum Percent Ash:

9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters): **Maximum rates refer to Cement Bulk Loadout Units 1 and 2.**

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018		NS
PM10	018		NS

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM**

2. Total Percent Efficiency of Control: %

3. Potential Emissions: **1.4** lb/hour **6.01** tons/year

4. Synthetically Limited? [ ] Yes [**X**] No

5. Range of Estimated Fugitive/Other Emissions:

   [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr

6. Emission Factor: **0.01 gr/acf**

   Reference: **Manufacturer Design**

7. Emissions Method Code:

   [**X**] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5

8. Calculation of Emissions (limit to 600 characters):

   Emissions from Baghouses F-512, B-110 and B-210; see Table 3-4, Attachment A.

9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):

Emissions Unit Information Section 4 **of** 4

Allowable Emissions (Pollutant identified on front page)

A.

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

B.

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

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: **PM10**

2. Total Percent Efficiency of Control: **99.9** %

3. Potential Emissions: **0.86** lb/hour **3.75** tons/year

4. Synthetically Limited? [ ] Yes [X] No

5. Range of Estimated Fugitive/Other Emissions:

[ ]1 [ ]2 [ ]3 _____ to _____ tons/yr

6. Emission Factor: **0.01 gr/acf**

Reference: **Manufacturer Design**

7. Emissions Method Code:

[ ]0 [ ]1 [ ]2 [ ]3 [ ]4 [X]5

8. Calculation of Emissions (limit to 600 characters):

Emissions from Baghouses F-512, B-110 and B-210; see Table 3-4, Attachment A.

9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):

Emissions Unit Information Section 4 of 4
Allowable Emissions (Pollutant identified on front page)

A.

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

B.

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

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitations: Visible Emissions Limitation 1 of 2

1.	Visible Emissions Subtype: **VE20**
2.	Basis for Allowable Opacity: [X] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: **Annual VE test, EPA Method 9**
5.	Visible Emissions Comment (limit to 200 characters): **Rule 62-296.320(4)(b) General Visible Emission Standard, only for Cement Silos 7-9.**

Visible Emissions Limitations: Visible Emissions Limitation 2 of 2

1.	Visible Emissions Subtype: **VE10**
2.	Basis for Allowable Opacity: [X] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: **10** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: **Annual VE Test, EPA Method 9**
5.	Visible Emissions Comment (limit to 200 characters): **Applies to Bulk Cement Loadout Units 1 and 2. Based on NSPS 40 CFR 60.62(c).**

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Continuous Monitoring System Continuous Monitor _____ of _____

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

Continuous Monitoring System Continuous Monitor _____ of _____

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

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION
(Regulated and Unregulated Emissions Units)

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and the emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3.	Increment Consuming/Expanding Code:			
	PM	[X] C	[ ] E	[ ] Unknown
	SO_2	[ ] C	[ ] E	[ ] Unknown
	NO_2	[ ] C	[ ] E	[ ] Unknown
4.	Baseline Emissions:			
	PM	lb/hour		tons/year
	SO_2	lb/hour		tons/year
	NO_2			tons/year
5.	PSD Comment (limit to 200 characters):			
	Emission unit does not emit SO2 or NOX. Baseline emissions are unknown.			

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements for All Applications

1.	Process Flow Diagram	
	[X] Attached, Document ID: Attachment A	
	[ ] Not Applicable	[ ] Waiver Requested
2.	Fuel Analysis or Specification	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
3.	Detailed Description of Control Equipment	
	[X] Attached, Document ID: TA-E04-L3	
	[ ] Not Applicable	[ ] Waiver Requested
4.	Description of Stack Sampling Facilities	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
5.	Compliance Test Report	
	[ ] Attached, Document ID: _____	[ ] Not Applicable
	[X] Previously Submitted, Date: _____	
6.	Procedures for Startup and Shutdown	
	[ ] Attached, Document ID: _____	[X] Not Applicable
7.	Operation and Maintenance Plan	
	[ ] Attached, Document ID: _____	[X] Not Applicable
8.	Supplemental Information for Construction Permit Application	
	[ ] Attached, Document ID: _____	[X] Not Applicable
9.	Other Information Required by Rule or Statute	
	[ ] Attached, Document ID: _____	[X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [X] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [X] Not Applicable

12. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [X] Not Applicable

13. Compliance Assurance Monitoring Plan

[ ] Attached, Document ID: _____ [X] Not Applicable

14. Acid Rain Permit Application (Hard Copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[X] Not Applicable

Table TA-E04-E3. Emission Point Detail Information for Cement Storage/Loadout, Emission Unit 04, Tarmac America, Pennsuco

Source	Baghouse ID	Stack Ht (ft)	Estimated Stack Diam (ft)	Exit Temp. (F)	Flowrate (acfm)
Cement Silos 7-9	F-512	200	1	77	10,000
Bulk Loadout Unit 1	B-110	30	1	77	3,000
Bulk Loadout Unit 2	B-210	30	1	77	3,000

Table TA-E04-L3. Control Equipment Information for Cement Storage/Loadout , Emission Unit 04. Tarmac America, Pennsuco

Source ID	Baghouse ID	Manufacturer	Model No.	Number of Bags	Flow Rate (acfm)	Cloth Area (ft^2)	Air to Cloth Ratio
Cement Silos 7-9	F-512	Norblo	156 AMT	156	10,000	2142	4.7
Bulk Loadout Unit 1	B-110	Norblo	120 AMT	120	3,000	1650	1.8
Bulk Loadout Unit 2	B-210	Norblo	120 AMT	120	3,000	1650	1.8

ATTACHMENT A

ATTACHMENT A

1.0 INTRODUCTION

Tarmac America, Inc. (Tarmac), is proposing to process up to 300,000 tons per year of blast furnace slag at its existing Portland cement plant located in Medley, Florida. In order to process this raw material, a dryer will be installed and fueled by low sulfur fuel oil or natural gas. The slag material will be brought to the facility by truck, dried, and then conveyed via a new conveying system to the existing cement plant clinker handling system and storage silos. The dried slag will be ground and stored in the existing silos for shipment. The slag will be shipped to concrete batch plants for use as a raw material in concrete.

In August 1995, Tarmac submitted an air construction (AC) permit application for a slag dryer. Permit AC13-273887 (PSD-FL-230) was issued on October 27, 1995. The existing slag dryer and baghouse were fabricated in 1971. Unfortunately, the existing slag dryer has not demonstrated successful performance. Therefore, Tarmac is applying for a new replacement slag dryer. Tarmac has discussed the air permitting requirements with FDEP. Pursuant to those discussions, the permit application approach is to consider the existing slag dryer as not yet constructed, and therefore not part of the source's baseline emissions. This approach is reasonable when considering that no permit to operate the existing slag dryer has been issued and that the existing dryer will be shut down. The existing slag dryer will be shut down permanently and Permit AC13-273887 (PSD-FL-230) will be surrendered once the proposed new slag dryer becomes operational.

A description of the proposed project is presented in Section 2.0. Existing and future maximum air emissions from affected emissions units at the facility are described in Section 3.0. Air quality regulations applicable to the proposed project are described in Section 4.0. Based on this analysis, the project will be subject to prevention of significant deterioration (PSD) review. However, since the proposed project will utilize best available control technology (BACT), and the increase in emissions of all regulated pollutants due to the project will be less than 50 TPY, the project is exempt from all PSD new source review requirements except application of BACT. The BACT analysis is presented in Section 5.0.

2.0 PROJECT DESCRIPTION

Tarmac, currently operates a portland cement plant located in Medley, Dade County, Florida (refer to Figures 2-1 and 2-2). A single air operating permit (AO13-238048, issued Dec. 17, 1993) regulates air emissions from the cement plant.

Tarmac is proposing to process blast furnace slag from iron foundries into an alternative cement type product. It is currently anticipated that up to 300,000 tons per year (TPY) of slag could be processed. The slag will be delivered to the facility via truck (refer to flow diagram, Figure 2-3). The delivered slag is wet, typically in the range of 15 to 18 percent moisture, hence the need to dry the slag prior to use. The slag will be delivered to an open storage area within the existing cement plant (see Figure 2-3). As needed, it will then be picked up by front end loader and fed into a hopper, onto a conveyor, and then into the proposed slag dryer. The slag dryer will dry the slag to approximately 3 to 5 percent moisture. The maximum process rate for the dryer will be 150 tons per hour (TPH) of wet slag into the dryer.

From the dryer, the slag falls onto a new conveying system and is transferred to the clinker handling system (see Figure 2-4). The new conveying system for the dried slag will be controlled by a new baghouse. The slag will be delivered to the existing Clinker Silos 21, 22, 23, 26, 27 and/or 28. From the silos, the slag will be ground in Finish Mill #4. The ground slag will then be transferred and stored in the existing Cement Silos 7, 8 and/or 9, and then shipped out via the existing Bulk Cement Loadout Units 1 and 2.

Tarmac will utilize a new slag dryer fabricated by Gencor or equivalent. The dryer will burn natural gas or No. 2 fuel oil with a maximum sulfur content of 0.2 percent. Maximum heat input to the dryer will be 72 MMBtu/hr. A 10,000 gallon fuel oil storage tank will be installed to store the fuel oil. The unit includes a new baghouse for particulate matter (PM) control. The baghouse for the slag dryer will be a Gencor Model N85 or equivalent. Pertinent data for the proposed slag dryer baghouse is as follows:

Air flow rate: 54,600 acfm (34,100 dscfm)

Gas temperature: 300°F

Cloth area: 8,482 ft^2

Air/cloth ratio: 6.4:1

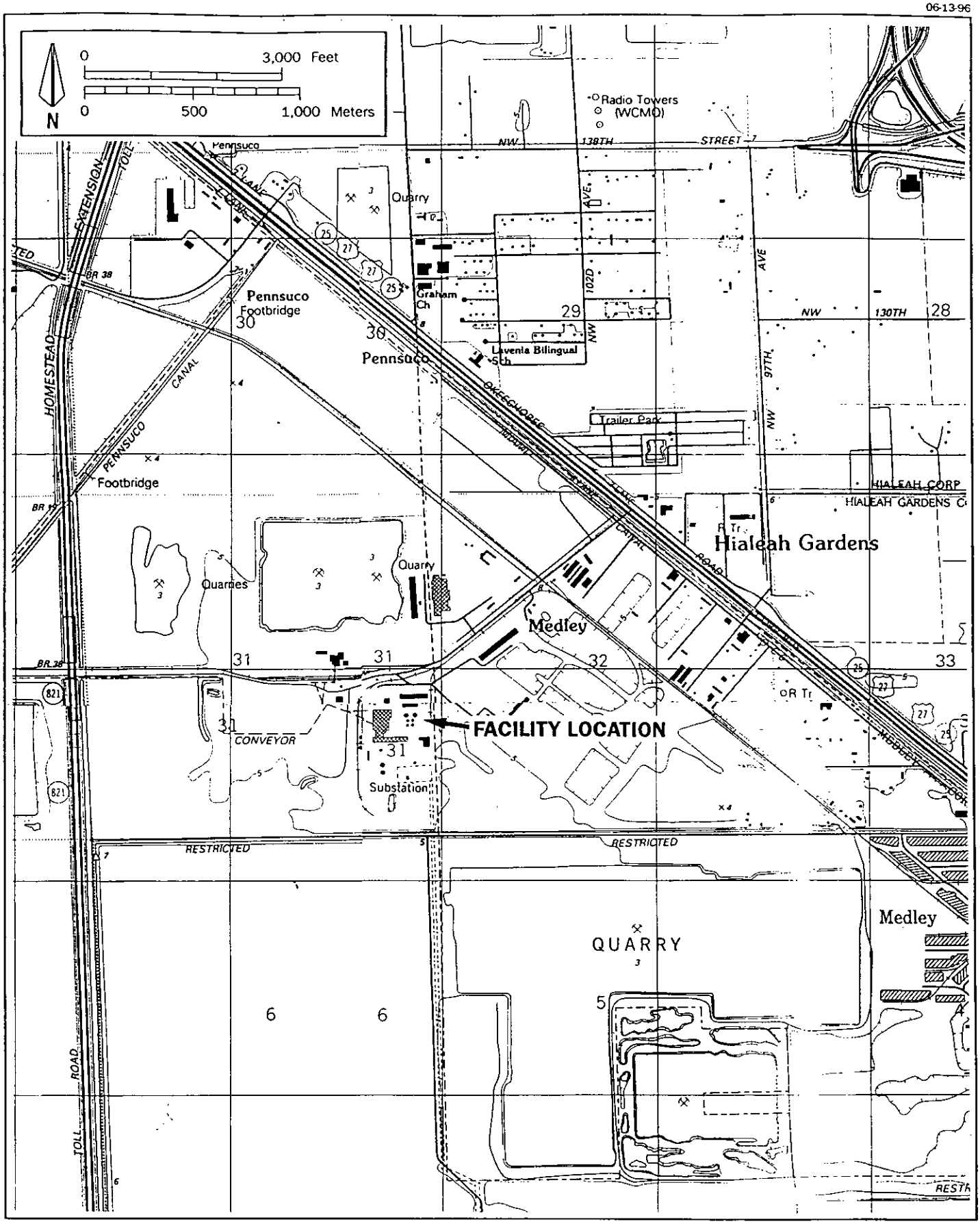


Figure 2-1
Area Map, TARMAC America, Pennsuco Cement Plant

Sources: USGS, 1988; KBN, 1996.

KBN
A GOLDER ASSOCIATES COMPANY

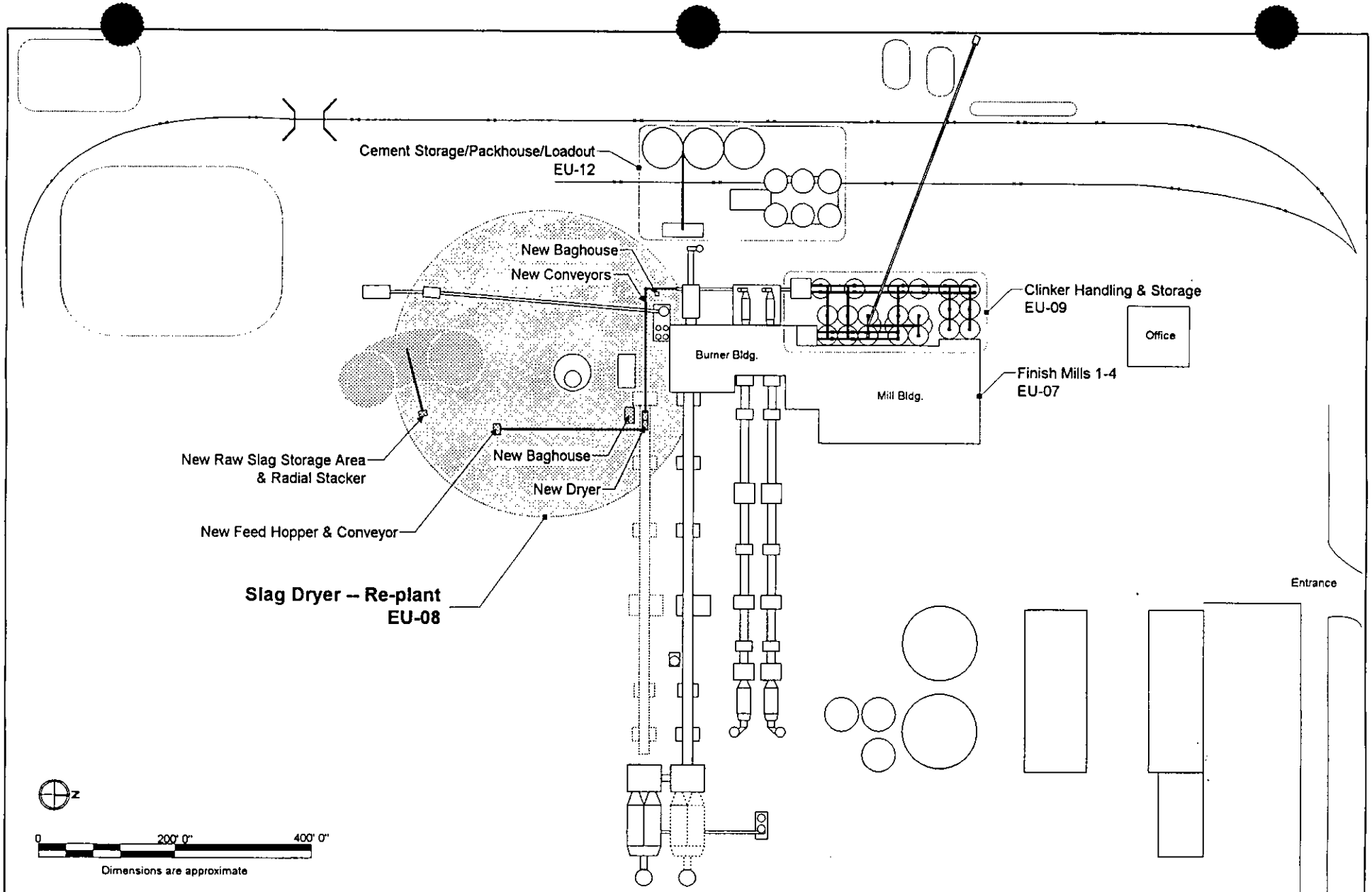


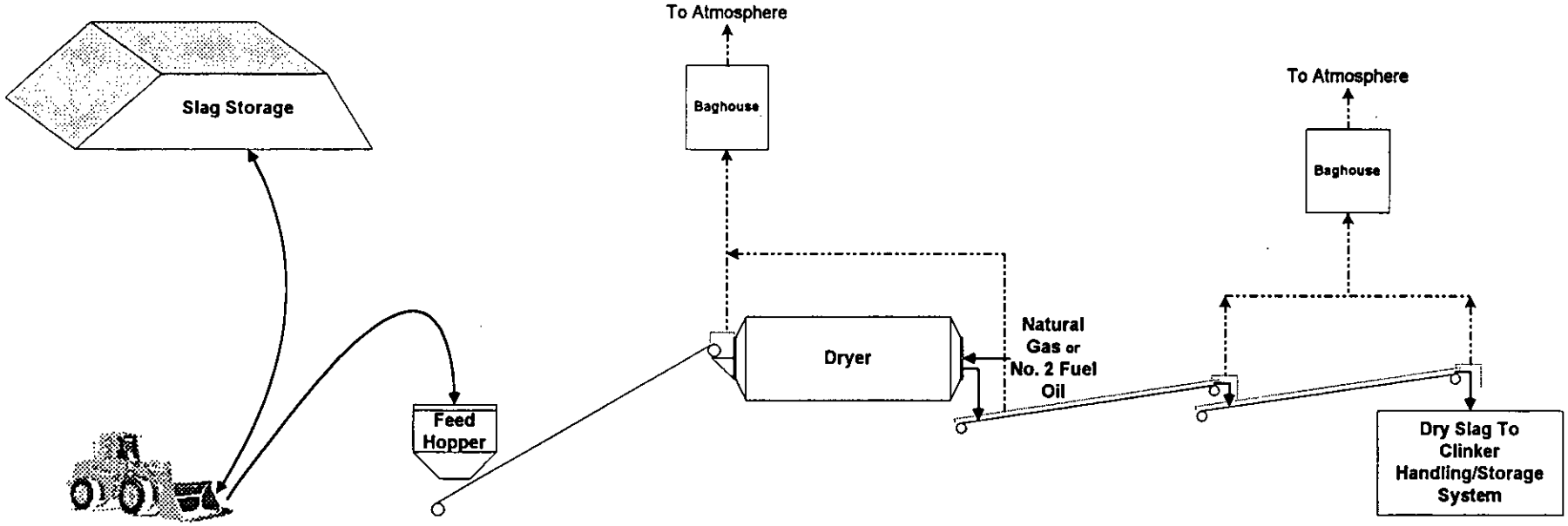
FIGURE 2-2
Slag Dryer - Re-plant
Facility Plot Plan

FACILITY:
Pennsuco Cement

ID #	FacID #	DATE
0250020	FL007-04	Dec 1996

Tarmac

Tarmac America, Inc.
455 Fairway Drive
Deerfield Beach, FL 33441



Process Flow Legend

Solid/Liquid ——→

Gas - - - - →

FIGURE 2-3

Slag Dryer -- Re-plant Process Flow Diagram

FACILITY: Pennsuco Cement

ID #	FacID #	DATE
0250020	FL007-04	Dec 1996

Tarmac

Tarmac America, Inc.
455 Fairway Drive
Deerfield Beach, FL 33441

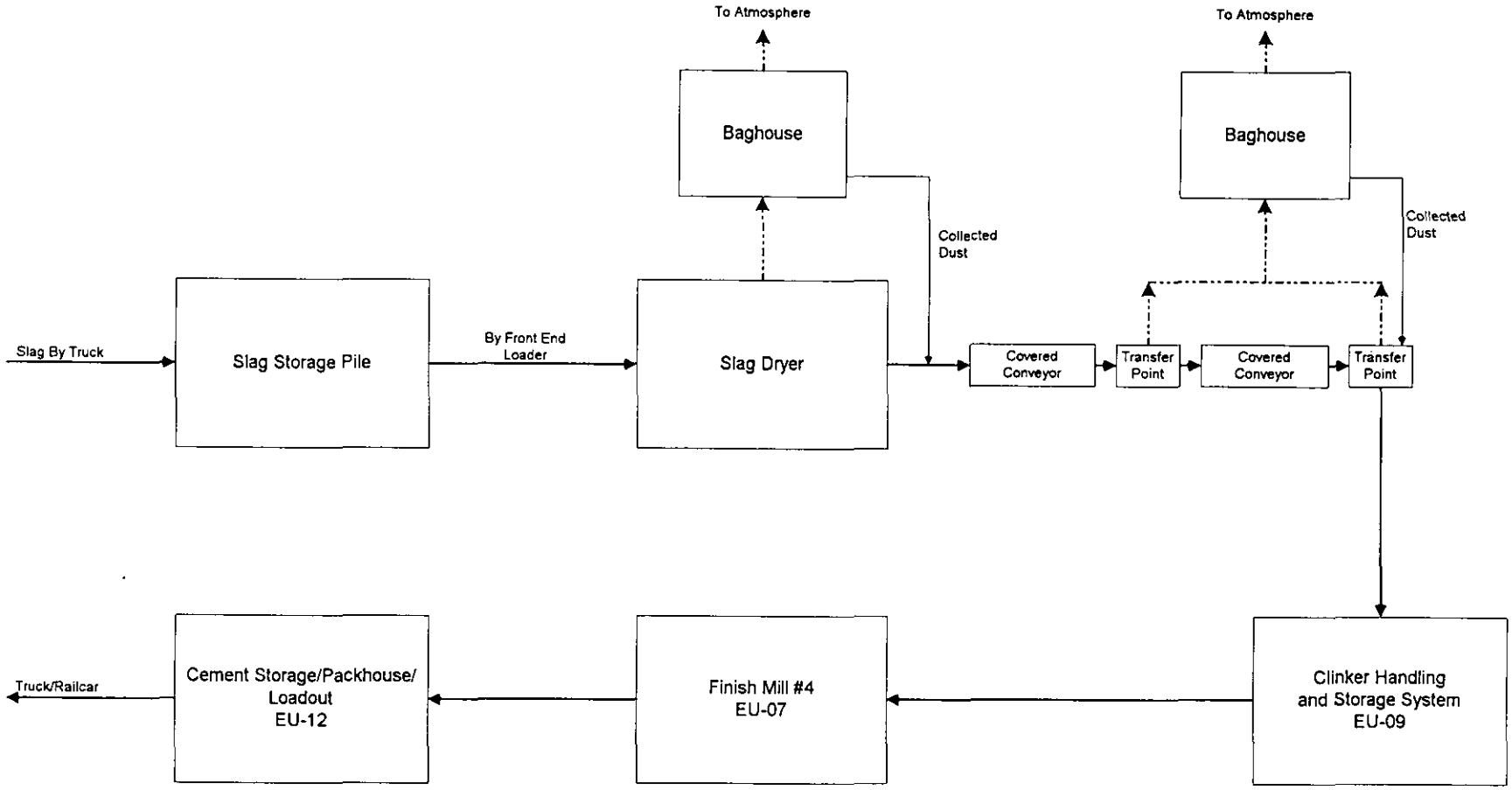


FIGURE 2-4 **Slag Dryer -- Re-plant Process Flow Diagram**	FACILITY: Pennsuco Cement		
	ID # 0250020	FacID # FL007-04	DATE Dec 1996

Tarmac

Tarmac America, Inc.
455 Fairway Drive
Deerfield Beach, FL 33441

Cloth type: 14 oz. nomex felt

Cleaning method: Pulse jet

Outlet grain loading: vendor guarantee maximum of 0.04 gr/dscf

A typical analysis of iron slag is presented in Table 2-1. As shown, the slag is primarily composed of calcium oxide (lime) and silicon oxides, with smaller amounts of aluminum oxide.

Table 2-1. Analysis of Iron Slag

Parameter	Composition (% by weight, wet)
Silicon Oxide	33.0
Aluminum Oxide	14.3
Iron Oxide	1.9
Calcium Oxide	40.0
Sulfur Trioxide	1.8
Moisture	9.0

Source: Tarmac America, 1995.

3.0 AIR EMISSIONS

3.1 EMISSION UNIT 1: SLAG DRYER AND HANDLING OPERATIONS

The maximum PM emissions from the slag dryer are based on an outlet dust loading from the baghouse of 0.04 gr/dscf. Based on the maximum air flow rate of approximately 54,600 acfm at 300°F, the dry standard air flow rate is 34,100 dscfm (assuming about 10 percent moisture). Maximum operating hours for the dryer will be 3,120 hr/yr. Maximum PM emissions are therefore:

34,100 dscfm x 0.04 gr/dscf x 60 min/hr / 7000 gr/lb = 11.7 lb/hr

11.7 lb/hr x 3,120 hr/yr x ton/2,000 lb = 18.24 TPY

PM10 emissions are assumed to be equal to PM emissions.

The potential emissions from the new baghouse serving the proposed conveying system are estimated in a similar manner. The design airflow is 3,000 acfm, and the design outlet grain loading is 0.01 gr/acf. Therefore:

3,000 acfm x 0.01 gr/acf x 60 min/hr / 7000 gr/lb = 0.26 lb/hr

0.26 lb/hr x 3,120 hr/yr x ton/2,000 lb = 0.40 TPY

Emissions of other pollutants from the slag dryer are due to fuel combustion and are presented in Table 3-1. The emissions are based on AP-42 emission factors for fuel oil and natural gas combustion. Potential emissions are presented for both natural gas and No. 2 fuel oil firing.

The slag dryer system will include a transfer point along a new conveying system. PM emissions from the transfer point will be controlled as described previously. The estimated fugitive PM emissions from remaining transfer operations are quantified in Table 3-2. Also included in Table 3-2 are fugitive PM emissions due to wet slag handling, storage, and potential wind erosion from the wet slag storage pile. The derivation of the emissions due to wind erosion are presented in the Appendix.

The maximum PM emissions from the handling sources are 1.8 and 0.6 TPY of PM and PM10, respectively. Therefore, the total potential PM and PM10 emissions from the new equipment are 20.4 (18.24 + 0.40 + 1.8), and 19.2 (18.24 + 0.40 + 0.6) TPY, respectively.

Table 3-1. Maximum Emissions Due to Fuel Combustion for Proposed Slag Dryer, Tarmac America

Parameter	No. 2 Fuel Oil		Natural Gas	
OPERATING DATA[a]				
Operating Time	3,120	hr/yr	3,120	hr/yr
Heat Input Rate	72.0	MMBtu/hr	72.0	MMBtu/hr
Heat Value	140,000	MMBtu/gal	1000	Btu/scf
Hourly Fuel Use	514.3	gal/hr	72.00	MMscf/hr
Annual Fuel Use	1,604,521	gal/yr	224,633	MMscf/yr
Max Sulfur Content	0.2	Wt%	0.01	gr/scf

Pollutant	Fuel Oil Emission Factor [b]		Maximum Emissions lb/hr	Maximum Emissions TPY	Natural Gas Emission Factor [b]		Maximum Emissions lb/hr	Maximum Emissions TPY
EMISSION DATA								
SO2	142*S	lb/Mgal[c]	14.61	22.78	0.60	lb/MMscf	0.043	0.067
NOx	20	lb/Mgal	10.29	16.05	140.00	lb/MMscf	10.08	15.72
CO	5	lb/Mgal	2.57	4.01	35.00	lb/MMscf	2.52	3.93
NMVOC	0.2	lb/Mgal	0.103	0.16	3.83	lb/MMscf	0.28	0.43
Sulfuric Acid Mist	0.1225	lb/Mgal	0.063	0.10	NA		--	--
Lead-Total	8.9E-06	lb/MMBtu	6.41E-04	1.00E-03	NA		--	--
Mercury	3.0E-06	lb/MMBtu	2.16E-04	3.37E-04	NA		--	--
Beryllium	2.5E-06	lb/MMBtu	1.80E-04	2.81E-04	NA		--	--

Note: NA = not applicable.

[a] Fuel oil use is based on 140,000 Btu/gal for 0.2% S oil. Heat Input Rate is based on 0.48 MMBtu/ton and 150 ton/hr throughput

[b] Emission factors are based on AP-42 5th Edition, Tables 1.3-2, 1.3-4, and 1.3-11 for oil use and and 1.4-1 and 1.4-3 for gas. NMVOC factor for gas is reduced by 34% to reflect presence of methane.

[c] "S" denotes the weight % sulfur in fuel oil; max sulfur content = 0.2%

Table 3-2. Fugitive Dust Emission Estimates For Slag Project,Tarmac America, Inc.

SOURCE	TYPE OF OPERATION	M MOISTURE CONTENT (%)	U WIND SPEED (MPH)	UNCONTROLLED EMISSION FACTOR[a] (LB/TON)	CONTROL	CONTROL EFFICIENCY (%)	CONTROLLED EMISSION FACTOR (LB/TON)	MAXIMUM THROUGHPUT (TPY)	MAXIMUM ANNUAL PM(TSP) EMISSIONS (TPY)	PM10 SIZE MULT.	MAXIMUM ANNUAL PM10 EMISSIONS (TPY)
TRUCK DUMP/RADIAL STACKER	BATCH DROP	3	9	0.00389	NONE	0	0.00389	300,000	0.584	0.35	0.204
FRONT-END LOADER-TO-HOPPER	BATCH DROP	3	9	0.00389	NONE	0	0.00389	300,000	0.584	0.35	0.204
HOPPER-TO-BELT	CONTINUOUS DROP	3	9	0.00389	NONE	0	0.00389	300,000	0.584	0.35	0.204
SLAG STORAGE PILE	WIND EROSION	--	--	--	NONE	0	--	--	0.022	0.5	0.011
TOTAL									1.775		0.625

Notes:

[a] Batch Drop and Continuous Drop Emission Factors are computed from AP-42 (USEPA, 1988), Section 11.2.3:

$E = 0.0032 \times (U/5)^{1.3} / (M/2)^{1.4}$ lb/ton

[b] Refer to Appendix for derivation.

3.2 EMISSION UNITS 2, 3, AND 4: CLINKER/CEMENT STORAGE AND HANDLING SOURCES

The existing facilities affected by the slag utilization consists of Clinker Storage Silos 21, 22, 23, 26, 27 and 28; Finish Mill #4; Cement Silos 7-9; and the Bulk Cement Loadout Units 1 and 2. All of these sources are controlled by baghouses. The current existing PM emissions for these sources, based on average operating hours for 1994-1995, are presented in Table 3-3. The proposed maximum PM emissions from each of these sources is shown in Table 3-4, based on future maximum operating hours of 8,760 hr/yr for clinker and cement production sources and 3,120 hr/yr slag for the dryer system.

In the case of Finish Mill #4, the PM emissions are currently limited by the process weight table according to operating permit AO13-157297. However, the process weight table severely overestimates the actual emissions from these baghouse controlled sources. The baghouse on Finish Mill #4 is designed to achieve an outlet dust loading of 0.01 gr/acf. Therefore, Tarmac is proposing to lower the allowable PM emissions from Finish Mill #4 to 0.01 gr/acf, based on baghouse design.

Table 3-3. Actual 1994-1995 Particulate Emissions From Affected Point Sources, Tarmac America, Inc.

Application Unit ID	Emission Unit/Point	Emission Point ID	Control Equipment Type	Maximum Process Rate (TPH)	Air Flow Rate (cfm)	PM/PM10 Emission Factor	PM/PM10 Emissions (lb/hr)	(hr/yr)[a]	(TPY)
EU 2	Clinker Handling System								
	Conveyor/Bucket Elevator	K-447/K347	Baghouse	300	5,000	0.01 gr/acf	0.43	7,425	1.59
EU 2	Clinker Storage Silos								
	Clinker silos 21, 22, 23, 26, 27 & 28	K-633	Baghouse	300	1,500	0.01 gr/acf	0.13	7,425	0.48
EU 3	Finish Mill #4								
	Ball mill/mill sweep	F-430	Baghouse	150	30,000	0.01 gr/acf	2.57	2,240	2.88
	Belt conveyor/separator/cement pump	F-432	Baghouse	150	17,000	0.01 gr/acf	1.46	2,240	1.63
	Clinker/gypsum conveyors	F-603	Baghouse	150	8,000	0.01 gr/acf	0.69	2,240	0.77
	Clinker/gypsum conveyors	F-604	Baghouse	150	8,000	0.01 gr/acf	0.69	2,240	0.77
	Clinker/gypsum conveyors	F-605	Baghouse	150	4,000	0.01 gr/acf	0.34	2,240	0.38
EU 4	Cement Storage Silos 1-9								
	Cement Silos 7-9	F-512	Baghouse	150	10,000	0.01 gr/acf	0.86	5,973	2.56
EU 5	Bulk Cement Loadout Units 1 & 2								
	Railcar/Truck Unit 1	B-110	Baghouse	300	3,000	0.01 gr/acf	0.26	2,512	0.32
	Truck Unit 2	B-210	Baghouse	300	3,000	0.01 gr/acf	0.26	2,512	0.32
TOTAL						TOTAL =	7.67		11.70

[a] Reflects the average of annual hours of operation during 1994 and 1995.

Table 3-4. Future Maximum Particulate Emissions From Affected Point Sources, Tarmac America, Inc.

Application Unit ID	Emission Unit/Point	Emission Point ID	Control Equipment Type	Maximum Process Rate (TPH)	Air Flow Rate (cfm)	PM/PM10 Emission Factor	PM/PM10 Emissions (lb/hr)	PM/PM10 Emissions (hr/yr)a	PM/PM10 Emissions (TPY)
EU 1	Slag Dryer	SLAG	Baghouse	150	34,100(a)	0.04 gr/dscf	11.69	3,120	18.24
EU 1	Dry Slag Conveying System								
	Conveyor/Transfer Tower	Unknown	Baghouse	150	3,000	0.01 gr/acf	0.26	3,120	0.40
EU 2	Clinker Handling System No. 3								
	Conveyor/Bucket Elevator	K-347	Baghouse	150	5,000	0.01 gr/acf	0.43	8,760	1.88
	Conveyor/Bucket Elevator	K-447	Baghouse	150	5,000	0.01 gr/acf	0.43	8,760	1.88
EU 2	Clinker Storage Silos								
	Clinker silos 21, 22, 23, 26, 27 & 28	K-633	Baghouse	237.5	1,500	0.01 gr/acf	0.13	8,760	0.56
EU 3	Finish Mill #4								
	Ball mill/mill sweep	F-430	Baghouse	150	30,000	0.01 gr/acf	2.57	8,760	11.26
	Belt conveyor/separator/cement	F-432	Baghouse	150	17,000	0.01 gr/acf	1.46	8,760	6.38
	Clinker/gypsum conveyors	F-603	Baghouse	150	8,000	0.01 gr/acf	0.69	8,760	3.00
	Clinker/gypsum conveyors	F-604	Baghouse	150	8,000	0.01 gr/acf	0.69	8,760	3.00
	Clinker/gypsum conveyors	F-605	Baghouse	150	4,000	0.01 gr/acf	0.34	8,760	1.50
EU 4	Cement Storage Silos 1-9								
	Cement Silos 7-9	F-512	Baghouse	150	10,000	0.01 gr/acf	0.86	8,760	3.75
EU 4	Bulk Cement Loadout Units 1 & 2								
	Railcar/Truck Unit 1	B-110	Baghouse	300	3,000	0.01 gr/acf	0.26	8,760	1.13
	Truck Unit 2	B-210	Baghouse	300	3,000	0.01 gr/acf	0.26	8,760	1.13
TOTAL							8.36		54.12

Notes:
(a) Airflow reflects dscfm.

4.0 REGULATORY APPLICABILITY

4.1 PSD NEW SOURCE REVIEW

A comparison of the net increase in emissions of regulated PSD pollutants due to the proposed project is presented in Table 4-1. The current actual emissions are based on existing facilities which will be affected by the project, i.e., the cement production facilities. The future maximum emissions include emissions due to both new facilities and the existing facilities which will be affected. The PSD significant emission rates are also shown in Table 4-1.

As shown, the net increase in PM and PM10 emissions will exceed the PSD significant emission rate of 25 and 15 TPY, respectively. Therefore, the proposed project is subject to PSD review for PM/PM10. However, because the net increase in emissions for each pollutant due to the proposed project are less than 50 TPY, the proposed modification is exempt from several of the requirements under PSD new source review [F.A.C. Rule 62-212.400(3)(d)]. The project is exempt from the requirements of Rule 62-212.400(5)(d), (e), (f) and (g), which are the requirements for ambient impact analysis, additional impact analysis, preconstruction air quality monitoring analysis, and post construction monitoring. Therefore, the proposed project is only subject to the control technology review requirements under PSD rules [62-212.400(5)(b) and (c)]. The control technology analysis for PM/PM10 is presented in Section 5.0.

4.2 STATE OF FLORIDA EMISSION STANDARDS

The State of Florida emission limiting standards for aggregate dryers consist of a PM limit based on the process weight table, and a visible emissions limitation, [Rule 62-296.320(4)(a) and (b), F.A.C.]. Based on a maximum process weight input rate of 150 TPH, the process weight table would allow up to 38.6 lb/hr of PM emissions. However, Tarmac will limit PM emissions from the slag dryer to 11.7 lb/hr based on fabric filter control technology (i.e., 0.04 gr/dscf). The regulations limit visible emissions from the dryer and materials handling operations to no more than 20 percent opacity.

Table 4-1. Emissions Increase Associated With Slag Project, Tarmac America, Inc.

Regulated Pollutant	(A) Fugitives From Slag Handling (TPY)	Affected Point Sources (B) Current Actuals (TPY)	Affected Point Sources (C) Future Maximums (TPY)	(A-B+C) Net Increase In Emissions (TPY)	PSD Significant Emission Rate (TPY)	PSD Review Applies?
Particulate matter (TSP)	1.78	11.70	54.12	44.2	25	Yes
Particulate matter (PM10)	0.62	11.70	54.12	43.0	15	Yes
Sulfur dioxide	--	--	--	22.78	40	No
Nitrogen oxides	--	--	--	16.05	40	No
Carbon monoxide	--	--	--	4.01	100	No
Volatile organic compounds	--	--	--	0.43	40	No
Sulfuric acid mist	--	--	--	0.10	7	No
Total reduced sulfur	--	--	--	--	10	No
Lead	--	--	--	1.0E-03	0.6	No
Mercury	--	--	--	3.4E-04	0.1	No
Beryllium	--	--	--	2.8E-04	4.0E-04	No
Fluorides	--	--	--	--	3	No
Asbestos	--	--	--	--	0.007	No
Vinyl Chloride	--	--	--	--	1	No

Fugitive PM emissions are associated with this project. Pursuant to Rule 62-296 the State of Florida requires reasonable precautions be applied for unconfined emissions of PM, [Rule 62-296.320(4)(c), F.A.C.]. Tarmac will employ reasonable precautions to prevent fugitive dust emissions in regards to the slag drying operation. Tarmac will control dust by covering conveying systems, applying baghouses on transfer points and storing dried slag in silos. Watering will be performed as needed on the wet slag storage pile. Tarmac will use the visible emissions standard of 20% as a guide in determining when to employ watering to the storage pile, slag loading hopper, and conveyors/transfer points.

After startup of the operation, if these measures are not sufficient to maintain visible emissions below 20%, additional measures will be employed. These measures may include, but may not be limited to, installation of a permanent water application system and additional enclosures to reduce entrainment of dust by wind.

4.3 FEDERAL NEW SOURCE PERFORMANCE STANDARDS

Federal new source performance standards (NSPS) have been promulgated by the U.S. EPA for Portland Cement Plants (Subpart F), Volatile Organic Liquid Storage Vessels (Subpart Kb), nonmetallic mineral processing plants (40 CFR 60, Subpart OOO) and for dryers and calciners in the mineral industries (40 CFR 60, Subpart UUU). Tarmac has reviewed the potentially applicable NSPS contained in 40 CFR 60, and has concluded that Subpart F will apply to one baghouse, and Subparts Kb, OOO, and UUU will not apply to any part of the project. Each potentially applicable NSPS, and the rationale for non-applicability, is discussed below.

In this discussion, the concept of "modification" as defined by the NSPS is referred to. Modification is defined as any physical or operational change to an existing facility which increases emissions of the NSPS-regulated pollutant on a lb/hr basis. However, the following by themselves are not considered to be modifications:

1. An increase in the production rate, if that increase can be accomplished without a capital expenditure on the facility.
2. An increase in the hours of operation.
3. Use of alternative raw material, if the facility was designed to accommodate that alternative use prior to the applicability date.

4.3.1 Subpart F - Portland Cement Plants

This subpart applies to affected facilities in Portland cement plants, including finish mill systems, finished product storage, conveyor transfer points, and bulk loading systems. These facilities are the potentially affected facilities within the Tarmac cement plant in regards to the slag dryer project.

In regard to the existing conveying system which conveys clinker, the processing of slag could potentially increase the particulate matter (PM) emissions on a lb/hr basis. However, no capital expenditure on the conveying system is necessary to accommodate the slag, and the slag is a raw material that the facility was designed to accommodate as of August 17, 1971 (the cement plant raw material conveying system was built prior to August 17, 1971). The conveyor transfer points associated with the new conveying system for the slag from the pile through the dryer and into the clinker handling systems will be required to meet 10% opacity limits.

In regard to the existing finish mill (Finish Mill #4), finished product storage and conveying, and bulk loading and conveying systems, the processing of slag would not result in any increase in PM emissions on a lb/hr basis, since finished Portland cement and the slag will have similar particle size and moisture characteristics. Hourly production rates will not increase above current rates, no capital expenditure on the systems are necessary to accommodate the slag, and the slag is a material that the facility was designed to accommodate as of August 17, 1971 (the cement plant raw material conveying system was built prior to August 17, 1971). It is noted that Clinker Silos 21-23 & 26-28, Finish Mill 4, and Bulk Cement Loadout Units 1-2 are already subject to Subpart F.

In conclusion, the slag project will not change the current Subpart F designations for the existing equipment at the cement plant. The proposed slag conveying system, however, will be subject to NSPS requirements.

4.3.2 Subpart Kb - Volatile Organic Liquid Storage Vessels

Tarmac will be constructing a 10,000 gallon fuel oil storage tank. The minimum size tank covered by Subpart Kb is 40 m^3, which is 10,568 gallons. Therefore, the Tarmac tank will be below the applicable size threshold.

4.3.3 Subpart UUU - Calciners And Dryers in Mineral Industries

This subpart applies to dryers at mineral processing plants. Mineral processing plants are facilities that produce or process any of the following minerals, their concentrates, or any mixture the majority (>50%) of which is any of the following materials, or a combination of these materials. For clarification, a description of each material is provided, taken from the Background Information Document (BID) on the proposed standards:

Alumina- material chemically extracted from bauxite
Ball clay- material composed primarily of kaolinite and quartz
Bentonite- clay consisting primarily of smectite materials
Diatomite- Chalky, sedimentary rock formed by diatoms
Feldspar- Ingenous rocks consisting mainly of aluminum silicates
Fire Clay- Composed of hydrous silicates of aluminum
Fuller's earth- Composed mainly of nonplastic clay or clay like materials
Gypsum- Calcium sulfate dihydrate (occurring naturally)
Industrial sand- Naturally occurring rock particles, 4.8 mm to 74 μm in size
Kaolin- Clay composed primarily of kaolinite
Lightweight aggregate- Calcined clay, shale or slate
Magnesium compounds- From natural brine solutions, magnesite deposits
Perlite- Volcanic rock
Roofing granules- Rock of fired clay used in making roofing shingles
Talc- A hydrous magnesium silicate material
Titanium dioxide- Pigments produced by the chloride or sulfate process
Vermiculite- Aluminum-iron-magnesium silicates that resemble mica

Nearly all of these materials are naturally occurring and are obtained through mining operations.

Tarmac will not process any of these materials in the slag dryer. In the case of the lightweight aggregate category, some clarification is warranted. The BID states that the lightweight aggregate (LWA) industry encompasses the processing of clay-like materials into low density product (see attached excerpt from the BID). LWA is produced by calcining clay, shale or slate. The BID mentions that substitutes for the more common raw materials in the production of LWA products are natural pumice and blast furnace slag. However, the BID only addresses calciners used to

produce LWA, and does not address dryers used to only dry LWA, nor does it address processing of the alternative raw materials. Considering the above aspects, it is concluded that Subpart UUU does not apply to the proposed Tarmac slag dryer. Excerpts from the BID are presented in the Appendix.

4.3.4 Subpart OOO - Nonmetallic Mineral Processing Plants

This subpart applies to certain processing operations at nonmetallic mineral processing plants. Nonmetallic mineral processing plants are facilities that crush or grind any nonmetallic mineral, wherever located, including at Portland cement plants. Tarmac operates a nonmetallic mineral processing plant adjacent to the existing cement plant. However, the proposed project will be located at the cement plant and no construction or change in the method of operation will take place at the adjacent nonmetallic mineral processing plant. Portions of the adjacent plant are already subject to the Subpart OOO standards. Included in Subpart OOO is a list of covered nonmetallic minerals. This list is similar to the minerals listed under Subpart UUU. Blast furnace slag is not included in this list (nor is lightweight aggregate). As a result, it is concluded that Subpart OOO does not apply to the proposed Tarmac slag dryer.

5.0 BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

5.1 REQUIREMENTS

The 1977 Clean Air Act Amendments established requirements for the approval of preconstruction permit applications under the PSD program. One of these requirements is that the best available control technology (BACT) be installed for applicable pollutants. BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA developed the so called "top-down" approach to BACT determinations. As mentioned previously, this approach has been challenged in court and a settlement agreement reached which requires EPA to initiate formal rulemaking on the top down approach. Nonetheless, in the absence of formal rules related to this approach, the "top-down" approach is followed in the Tarmac BACT analysis.

The first step in a top-down BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of control is not feasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy, or environmental consideration.

In the case of the proposed modification at Tarmac, PM(TSP)/PM10 require BACT analysis. Only the slag dryer system requires BACT analysis as this is the only emissions units being added or physically modified as part of the project. The following sections present the BACT analysis.

5.2 BACT ANALYSIS FOR PM EMISSIONS

5.2.1 Slag Dryer

Tarmac is proposing a PM emission limit of 0.04 gr/dscf as BACT. This limit is equivalent to the new source performance standards (NSPS) which have been promulgated for asphalt concrete plants (40 CFR 60, Subpart I). The asphalt plant NSPS is based on fabric filter or venturi scrubber control technology, although fabric filter technology has been found to more consistently achieve the NSPS level. A second review of the asphalt plant NSPS conducted by EPA in 1985 demonstrated that fabric filter control technology was the best demonstrated technology to comply

with the NSPS. Of 26 plants surveyed with fabric filter control, the typical air to cloth ratio was 6:1, and the most common filter fabric was 14 ounce weight nomex.

The new Tarmac slag dryer and baghouse serving the slag dryer will be fabricated by Gencor, or equivalent. The dryer is designed on the basis of an asphaltic concrete or aggregate dryer with fabric filter control. The air to cloth ratio is approximately 6.4:1, and 14 ounce nomex bags (or equivalent) will be used. Therefore, it is believed that the asphalt NSPS of 0.04 gr/dscf can be achieved by the Tarmac system, although the drying of slag could cause higher inlet dust loadings to the fabric filter compared to an asphaltic dryer.

Currently, the only information available conerning slag dryers is that from the existing Tarmac slag dryer installation. It is known that this existing system has experienced PM emission rates of approximately 0.04 gr/dscf. It is also beleived that the baghouse serving the existing slag dryer is not operating properly. It is therfore beleived that outlet dust loadings lower than 0.04 gr/dscf could be achievalbe by the new system; however, the actual performance cannot be acurrately predicted based on existing information. Gencor has based their emission guarantee on the asphalt plant NSPS of 0.04 gr/dscf.

A review of previous BACT determinations for PM emissions from asphaltic dyers and similar materials dryers was conducted. The results of this review is presented in Table 5-1. It is noted that all determinations found were issued prior to 1991. However, all previous BACT determinations for asphalt plants were equal to the NSPS of 0.04 gr/dscf and were based on baghouse control technology. This demonstrates that baghouse technology is the best technology for application on asphalt plants and similar dryers.

A number of other determinations were found in the BACT Clearinghouse for various material dryers. However, many of these were expressed in terms not readily converted to a grain loading. In addition, these dryers were for materials other than slag, and the differences and/or similarities between these facilities and Tarmac are not readily definable.

In conclusion, Tarmac's proposed PM emission limit of 0.04 gr/dscf is equivalent to all previous BACT determinations for asphalt plant dryers. Considering the uncertainty associated with actual emissions from the drying of wet slag, a lower PM limit cannot be proposed at this time.

Table 5-1. Summary of BACT Determinations for PM Emissions From Dryers of Aggregates/Non-Metallic Minerals

Plant Type/Company	Comments	State	Permit #	Permit Issue Date	New Source? (a)	Throughput	Emission Limit	Control Equipment
Asphalt Plants								
Lee Hy Paving Corp.		VA	50060	27-Jan-89	Yes	240,000 ton/yr	0.04 GR/DSCF	Baghouse
Lee Hy Paving Corp.		VA	(5)40031	14-Nov-86	Yes	200 ton/hr	0.04 GR/DSCF	Baghouse
B.P. Short & Sons Paving Co.		VA	50041	15-Apr-87	Yes	250 ton/yr	0.04 GR/DSCF	Baghouse
Blakemore Construction Corp.		VA	(3)40766	24-Jun-88	Yes	300 ton/yr	0.04 GR/DSCF	Baghouse
Concrete Plant								
Quikrete Co.		CT	145-0017	5-May-89	No	100,000 lb/hr	0.015 lb/hr	Baghouse
Lime Plants								
Austinville Limestone Co.		VA	10213	16-Sep-87	Yes	315,000 ton/yr	10.5 lb/hr	Fabric Filter
Dan River, Inc.		VA	30242	03-Dec-87	Yes	0	1.62 lb/hr	Baghouse
Stone Crushing Plant								
Luck Stone Corp.	Dryer Overhead Vent (2)	VA	50429	15-Aug-85	Yes	11,025 ton/yr	4.33 ton/yr (each)	Baghouse
	Dryer Bottom Vent (4)					11,025 ton/yr	3.3 ton/yr (each)	Baghouse
Miscellaneous Plants								
Englehard Corp.	Calciner/Spray Dryer	GA	3295-158-4632-0	18-Nov-87	No	20 ton/hr	0.025 GR/DSCF	Baghouse after start-up
Manville Sales Corp., PLT #1		OH	04-545	N/A	Yes	2,600 lb/hr	0.37 lb/hour	Fabric Filter
Kyanite Mining Corp.		VA	30677	10-Jul-85	Yes	48 MMBtu/hr	30.91 ton/yr	N/A
ICI Americas, Inc.		VA	50418	26-Jan-89	Yes	1 ton/hr	0.004 lb/hr	Bagfilters
Omya, Inc.	Dryers, Spray, (2)	VT	VT-009	27-Jul-90	No	20 ton/hr (each	1.32 lb/hr	Multiple Cyclones
	Dryers, Flash, (2)					6 ton/hr (each	0.02 GR/DSCF	Fabric Filter
Corona Ind.	Sand Dryer	CA	147795	25-Nov-86	Yes	100 ton/hr	72 lb/day	Cyclone Seperator & Scrubber
Ocean Salt Co., Inc.	Salt Dryer	CA	157476	N/A	No	200 ton/day	26 lb/day	Scrubbers
Beadex MFG Co., Inc.	Calcium Carbonate Dryer	CA	183480	18-Sep-89	Yes	406,000 lb/day	150 lb/day	Baghouse

(a) Indicates if emission unit subject to BACT was new construction (yes) or a modification (no).

Source: BACT/RACT/LAER Clearinghouse Database, June 1995.

However, Tarmac is willing to conduct a testing program on the new slag dryer in order to set the appropraite BACT emission limit. As required by the the existing slag dryer permit, a testing plan and protoclo will be submitted to FDEP for approval prior to conducting the test program.

The proposed VE limitation is 20 percent opacity, which is equivalent to the NSPS limit for asphalt plants. This opacity limitation is also equivalent to the State of Florida limitation contained in F.A.C. 62-296.310.

5.2.2 Materials Handling Operations

Tarmac will employ reasonable precautions to prevent fugitive emissions from the handling and storage of slag. These measures will include use of enclosures were feasible, and watering as needed to minimize fugitive dust emissions.

The existing materials handling system to be used for slag conveying and transfer are not being physically modified. Therefore, according to 40 CFR 52.21, BACT does not apply to these emission units.

APPENDIX

AP-42 SECTIONS

AP-42
Fourth Edition
September 1985

COMPILATION OF AIR POLLUTANT EMISSION FACTORS

Volume I: Stationary Point And Area Sources

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office Of Air And Radiation
Office Of Air Quality Planning And Standards
Research Triangle Park, North Carolina 27711

September 1985

11.2.1 UNPAVED ROADS

11.2.1.1 General

Dust plumes trailing behind vehicles traveling on unpaved roads are a familiar sight in rural areas of the United States. When a vehicle travels an unpaved road, the force of the wheels on the road surface causes pulverization of surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle continues to act on the road surface after the vehicle has passed.

11.2.1.2 Emissions Calculation And Correction Parameters

The quantity of dust emissions from a given segment of unpaved road varies linearly with the volume of traffic. Also, field investigations have shown that emissions depend on correction parameters (average vehicle speed, average vehicle weight, average number of wheels per vehicle, road surface texture and road surface moisture) that characterize the condition of a particular road and the associated vehicle traffic.[1-4]

Dust emissions from unpaved roads have been found to vary in direct proportion to the fraction of silt (particles smaller than 75 micrometers in diameter) in the road surface materials.[1] The silt fraction is determined by measuring the proportion of loose dry surface dust that passes a 200 mesh screen, using the ASTM-C-136 method. Table 11.2.1-1 summarizes measured silt values for industrial and rural unpaved roads.

The silt content of a rural dirt road will vary with location, and it should be measured. As a conservative approximation, the silt content of the parent soil in the area can be used. However, tests show that road silt content is normally lower than in the surrounding parent soil, because the fines are continually removed by the vehicle traffic, leaving a higher percentage of coarse particles.

Unpaved roads have a hard, generally nonporous surface that usually dries quickly after a rainfall. The temporary reduction in emissions caused by precipitation may be accounted for by not considering emissions on "wet" days (more than 0.254 millimeters [0.01 inches] of precipitation).

The following empirical expression may be used to estimate the quantity of size specific particulate emissions from an unpaved road, per vehicle kilometer traveled (VKT) or vehicle mile traveled (VMT), with a rating of A:

$$E = k(1.7)\left(\frac{s}{12}\right)\left(\frac{S}{48}\right)\left(\frac{W}{2.7}\right)^{0.7}\left(\frac{w}{4}\right)^{0.5}\left(\frac{365-p}{365}\right) \quad \text{(kg/VKT)}$$

$$E = k(5.9)\left(\frac{s}{12}\right)\left(\frac{S}{30}\right)\left(\frac{W}{3}\right)^{0.7}\left(\frac{w}{4}\right)^{0.5}\left(\frac{365-p}{365}\right) \quad \text{(lb/VMT)}$$

TABLE 11.2.1-1. TYPICAL SILT CONTENT VALUES OF SURFACE MATERIAL ON INDUSTRIAL AND RURAL UNPAVED ROADS[a]

Industry	Road use or surface material	Plant sites	Test samples	Silt (wgt. %) Range	Silt (wgt. %) Mean
Copper smelting	Plant road	1	3	15.9 - 19.1	17.0
Iron and steel production	Plant road	9	20	4.0 - 16.0	8.0
Sand and gravel processing	Plant road	1	3	4.1 - 6.0	4.8
Stone quarrying and processing	Plant road	1	5	10.5 - 15.6	14.1
Taconite mining and processing	Haul road	1	12	3.7 - 9.7	5.8
	Service road	1	8	2.4 - 7.1	4.3
Western surface coal mining	Access road	2	2	4.9 - 5.3	5.1
	Haul road	3	21	2.8 - 18	8.4
	Scraper road	3	10	7.2 - 25	17
	Haul road (freshly graded)	2	5	18 - 29	24
Rural roads	Gravel	1	1	NA	5.0
	Dirt	2	5	5.8 - 68	28.5
	Crushed limestone	2	8	7.7 - 13	9.6

[a]References 4-11. NA = Not available.

where: E = emission factor
k = particle size multiplier (dimensionless)
s = silt content of road surface material (%)
S = mean vehicle speed, km/hr (mph)
W = mean vehicle weight, Mg (ton)
w = mean number of wheels
p = number of days with at least 0.254 mm (0.01 in.) of precipitation per year

The particle size multiplier, k, in the equation varies with aerodynamic particle size range as follows:

Aerodynamic Particle Size Multiplier For Equation

≤30 um[a]	≤30 um	≤15 um	≤10 um	≤5um	≤2.5 um
1.0	0.80	0.50	0.36	0.20	0.095

[a] Stokes diameter

The number of wet days per year, p, for the geographical area of interest should be determined from local climatic data. Figure 11.2.1-1 gives the geographical distribution of the mean annual number of wet days per year in the United States.

The equation retains the assigned quality rating, if applied within the ranges of source conditions that were tested in developing the equation, as follows:

Ranges Of Source Conditions For Equation

Road silt content (wgt. %)	Mean vehicle weight		Mean vehicle speed		mean no. of wheels
	Mg	ton	km/hr	mph	
4.3 - 20	2.7 - 142	3 - 157	21 - 64	13 - 40	4 - 13

Also, to retain the quality rating of the equation when addressing a specific unpaved road, it is necessary that reliable correction parameter values be determined for the road in question. The field and laboratory procedures for determining road surface silt content are given in Reference 4. In the event that site specific values for correction parameters cannot be obtained, the appropriate mean values from Table 11.2.1-1 may be used, but the quality rating of the equation is reduced to B.

The equation was developed for calculating annual average emissions, and thus, is to be multiplied by annual vehicle distance traveled (VDT). Annual average values for each of the correction parameters are to be substituted for the equation. Worst case emissions, corresponding to dry road conditions, may be calculated by setting p = 0 in the equation (equivalent to dropping the last

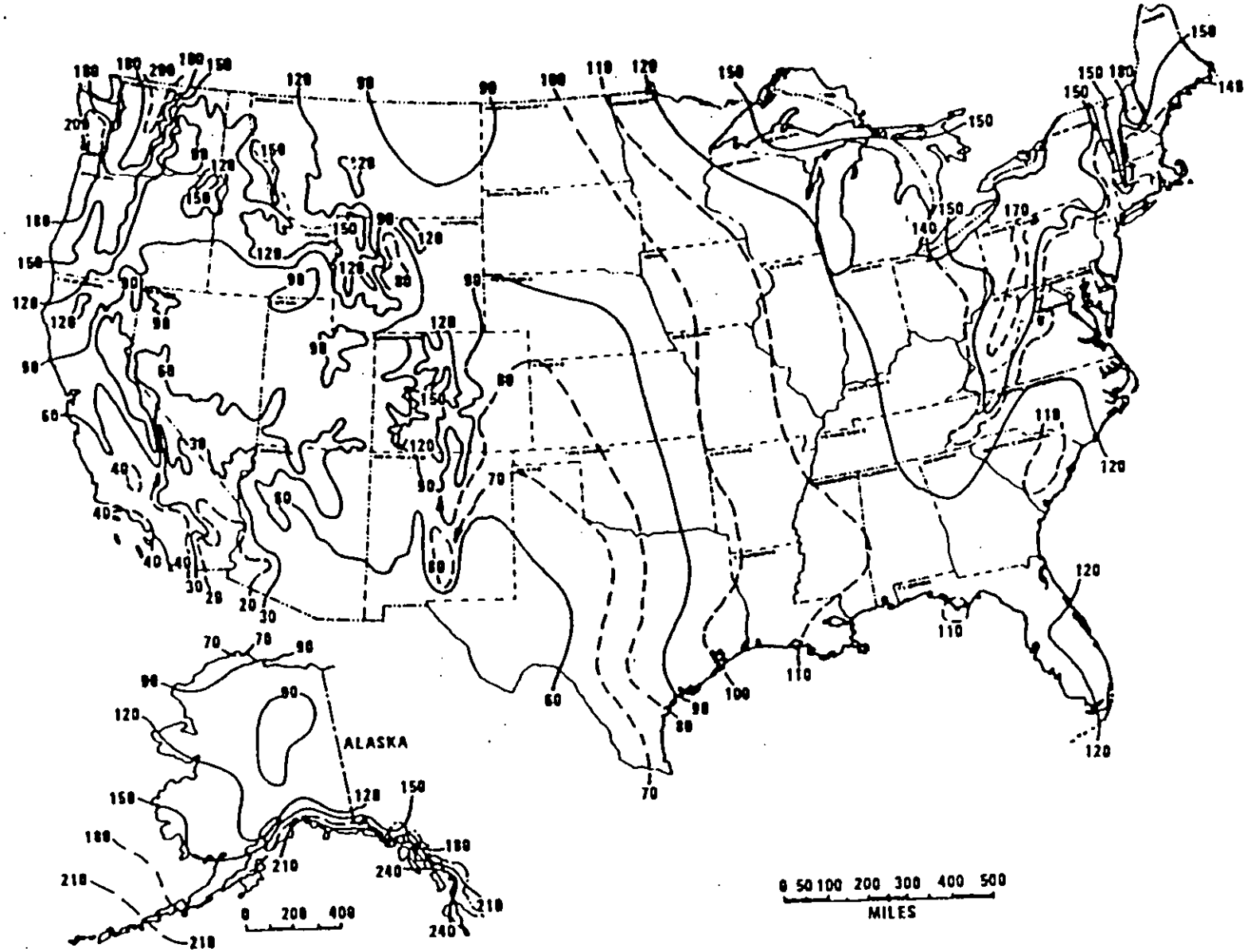


Figure 11.2.1-1. Mean number of days with 0.01 inch or more of precipitation in United States.[10]

term from the equation). A separate set of nonclimatic correction parameters and a higher than normal VDT value may also be justified for the worst case average period (usually 24 hours). Similarly, in using the equation to calculate emissions for a 91 day season of the year, replace the term (365-p)/365 with the term (91-p)/91, and set p equal to the number of wet days in the 91 day period. Also, use appropriate seasonal values for the nonclimatic correction parameters and for VDT.

11.2.1.3 Controls

Common control techniques for unpaved roads are paving, surface treating with penetration chemicals, working into the roadbed of stabilization chemicals, watering, and traffic control regulations. Chemical stabilizers work either by binding the surface material or by enhancing moisture retention. Paving, as a control technique, is often not economically practical. Surface chemical treatment and watering can be accomplished with moderate to low costs, but frequent retreatments are required. Traffic controls, such as speed limits and traffic volume restrictions, provide moderate emission reductions but may be difficult to enforce. The control efficiency obtained by speed reduction can be calculated using the predictive emission factor equation given above.

The control efficiencies achievable by paving can be estimated by comparing emission factors for unpaved and paved road conditions, relative to airborne particle size range of interest. The predictive emission factor equation for paved roads, given in Section 11.2.6, requires estimation of the silt loading on the traveled portion of the paved surface, which in turn depends on whether the pavement is periodically cleaned. Unless curbing is to be installed, the effects of vehicle excursion onto shoulders (berms) also must be taken into account in estimating control efficiency.

The control efficiencies afforded by the periodic use of road stabilization chemicals are much more difficult to estimate. The application parameters which determine control efficiency include dilution ratio, application intensity (mass of diluted chemical per road area) and application frequency. Other factors that affect the performance of chemical stabilizers include vehicle characteristics (e. g., traffic volume, average weight) and road characteristics (e. g., bearing strength).

Besides water, petroleum resin products have historically been the dust suppressants most widely used on industrial unpaved roads. Figure 11.2.1-2 presents a method to estimate <u>average</u> control efficiencies associated with petroleum resins applied to unpaved roads. Several items should be noted:

1. The term "ground inventory" represents the total volume (per unit area) of petroleum resin concentrate (<u>not solution</u>) applied since the start of the dust control season.

2. Because petroleum resin products must be periodically reapplied to unpaved roads, the use of a time-averaged control efficiency value is appropriate. Figure 11.2.1-2 presents control efficiency values averaged over two common application intervals, two weeks and one month. Other application intervals will require interpolation.

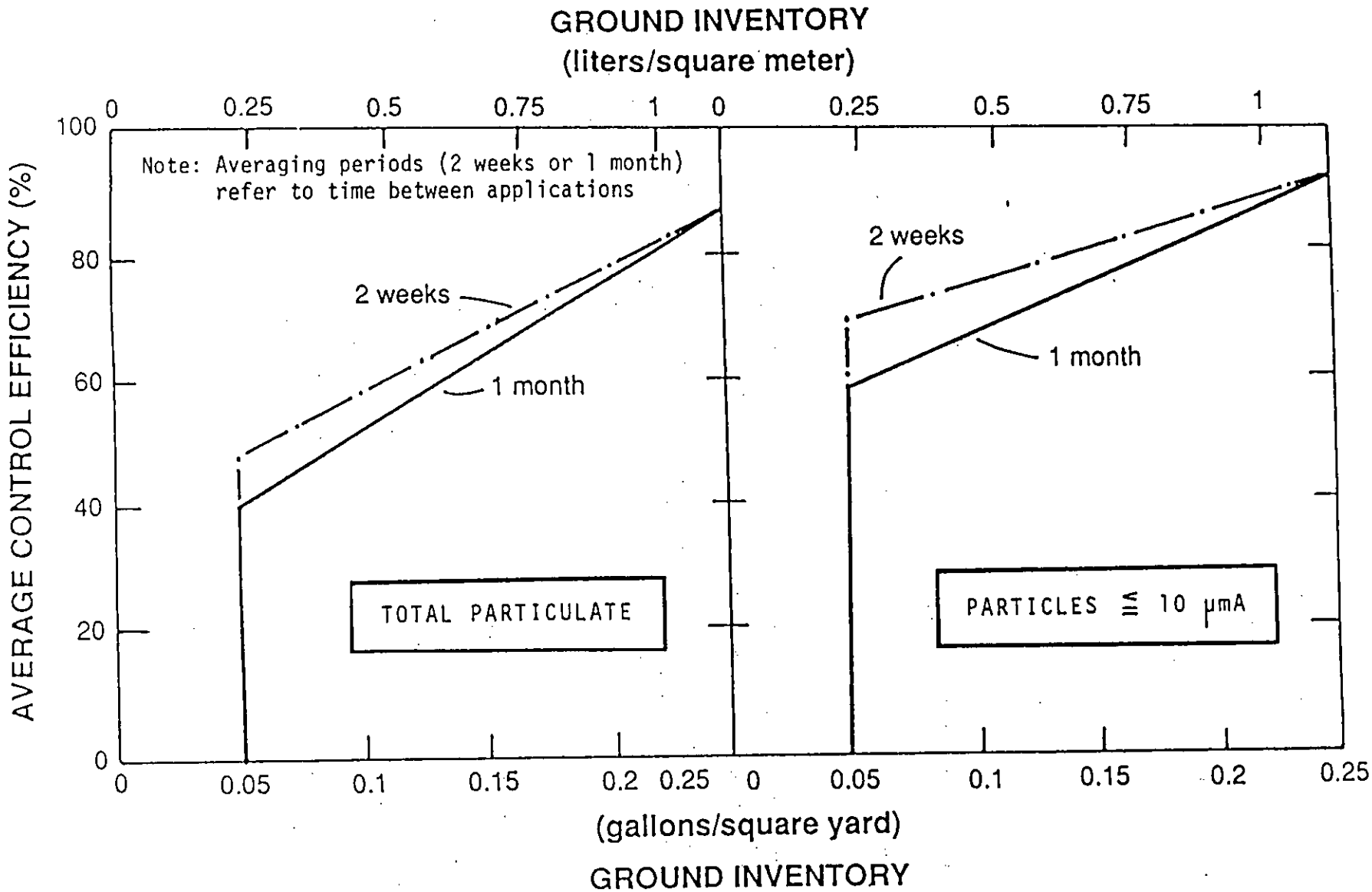


Figure 11.2.1-2. Average control efficiencies over common application intervals.

3. Note that zero efficiency is assigned until the ground inventory reaches 0.2 liters per square meter (0.05 gallons per square yard).

As an example of the use of Figure 11.2.1-2, suppose that the equation has been used to estimate an emission factor of 2.0 kilograms per vehicle kilometer traveled for particles equal to or less than 10 microns from a particular road. Also, suppose that, starting on May 1, the road is treated with 1 liter per square meter of a (1 part petroleum resin to 5 parts water) solution on the first of each month until October. Then, the following average controlled emission factors are found:

Period	Ground Inventory (L/m^2)	Average Control Efficiency[a] (%)	Average Controlled Emission Factor (kg/VKT)
May	0.17	0	2.0
June	0.33	62	0.76
July	0.50	68	0.64
August	0.67	74	0.52
September	0.83	80	0.40

[a]From Figure 11.2.1-2, $\leq$ 10 um. Zero efficiency assigned if ground inventory is less than 0.2 L/m^2 (0.05 gal/yd^2).

Newer dust suppressants have been successful in controlling emissions from unpaved roads. Specific test results for those chemicals, as well as for petroleum resins, are provided in References 14 through 16.

References for Section 11.2.1

1. C. Cowherd, Jr., et al., Development Of Emission Factors For Fugitive Dust Sources, EPA-450/3-74-037, U. S. Environmental Protection Agency, Research Triangle Park, NC, June 1974.

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8. T. Cuscino, Jr., et al., Taconite Mining Fugitive Emissions Study, Minnesota Pollution Control Agency, Roseville, MN, June 1979.

9. K. Axetell and C. Cowherd, Jr., Improved Emission Factors For Fugitive Dust From Western Surface Coal Mining Sources, 2 Volumes, EPA Contract No. 68-03-2924, PEI, Inc., Kansas City, MO, July 1981.

10. T. Cuscino, Jr., et al., Iron And Steel Plant Open Source Fugitive Emission Control Evaluation, EPA-600/2-83-110, U. S. Environmental Protection Agency, Cincinnati, OH, October 1983.

11. J. Patrick Reider, Size Specific Emission Factors For Uncontrolled Industrial and Rural Roads, EPA Contract No. 68-02-3158, Midwest Research Institute, Kansas City, MO, September 1983.

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11.2.3 AGGREGATE HANDLING AND STORAGE PILES

11.2.3.1 General

Inherent in operations that use minerals in aggregate form is the maintenance of outdoor storage piles. Storage piles are usually left uncovered, partially because of the need for frequent material transfer into or out of storage.

Dust emissions occur at several points in the storage cycle, such as during material loading onto the pile, disturbances by strong wind currents, and loadout from the pile. The movement of trucks and loading equipment in the storage pile area is also a substantial source of dust.

11.2.3.2 Emissions And Correction Parameters

The quantity of dust emissions from aggregate storage operations varies with the volume of aggregate passing through the storage cycle. Also, emissions depend on three parameters of the condition of a particular storage pile: age of the pile, moisture content and proportion of aggregate fines.

When freshly processed aggregate is loaded onto a storage pile, its potential for dust emissions is at a maximum. Fines are easily disaggregated and released to the atmosphere upon exposure to air currents, either from aggregate transfer itself or from high winds. As the aggregate weathers, however, potential for dust emissions is greatly reduced. Moisture causes aggregation and cementation of fines to the surfaces of larger particles. Any significant rainfall soaks the interior of the pile, and the drying process is very slow.

Silt (particles equal to or less than 75 microns in diameter) content is determined by measuring the portion of dry aggregate material that passes through a 200 mesh screen, using ASTM-C-136 method. Table 11.2.3-1 summarizes measured silt and moisture values for industrial aggregate materials.

11.2.3.3 Predictive Emission Factor Equations

Total dust emissions from aggregate storage piles are contributions of several distinct source activities within the storage cycle:

1. Loading of aggregate onto storage piles (batch or continuous drop operations).
2. Equipment traffic in storage area.
3. Wind erosion of pile surfaces and ground areas around piles.
4. Loadout of aggregate for shipment or for return to the process stream (batch or continuous drop operations).

Adding aggregate material to a storage pile or removing it both usually involve dropping the material onto a receiving surface. Truck dumping on the pile or loading out from the pile to a truck with a front end loader are examples of batch drop operations. Adding material to the pile by a conveyor stacker is an example of a continuous drop operation.

TABLE 11.2.3-1. TYPICAL SILT AND MOISTURE CONTENT VALUES OF MATERIALS AT VARIOUS INDUSTRIES

Industry	Material	Silt (%)			Moisture (%)		
		No. of test samplers	Range	Mean	No. of test samplers	Range	Mean
Iron and steel production[a]	Pellet ore	10	1.4 - 13	4.9	8	0.64 - 3.5	2.1
	Lump ore	9	2.8 - 19	9.5	6	1.6 - 8.1	5.4
	Coal	7	2 - 7.7	5	6	2.8 - 11	4.8
	Slag	3	3 - 7.3	5.3	3	0.25 - 2.2	0.92
	Flue dust	2	14 - 23	18.0	0	NA	NA
	Coke breeze	1		5.4	1		6.4
	Blended ore	1		15.0	1		6.6
	Sinter	1		0.7	0	NA	NA
	Limestone	1		0.4	0	NA	NA
Stone quarrying and processing[b]	Crushed limestone	2	1.3 - 1.9	1.6	2	0.3 - 1.1	0.7
Taconite mining and processing[c]	Pellets	9	2.2 - 5.4	3.4	7	0.05 - 2.3	0.9
	Tailings	2	NA	11.0	1		0.35
Western surface coal mining[d]	Coal	15	3.4 - 16	6.2	7	2.8 - 20	6.9
	Overburden	15	3.8 - 15	7.5	0	NA	NA
	Exposed ground	3	5.1 - 21	15.0	3	0.8 - 6.4	3.4
Coal fired power generation[e]	Coal	60	0.6 - 4.8	2.2	59	2.7 - 7.4	4.5

[a] References 2-5. NA = not applicable.
[b] Reference 1.
[c] Reference 6.
[d] Reference 7.
[e] Reference 8. Values reflect "as received" conditions of a single power plant.

The quantity of particulate emissions generated by either type of drop operation, per ton of material transferred, may be estimated, with a rating of A, using the following empirical expression[2]:

$$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (kg/Mg)}$$

$$E = k(0.0032) \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (lb/ton)}$$

where: E = emission factor
k = particle size multiplier (dimensionless)
U = mean wind speed, m/s (mph)
M = material moisture content (%)

The particle size multiplier, k, varies with aerodynamic particle diameter, as shown in Table 11.2.3-2.

TABLE 11.2.3-2. AERODYNAMIC PARTICLE SIZE MULTIPLIER (k)

<30 um	<15 um	<10 um	<5 um	<2.5 um
0.74	0.48	0.35	0.20	0.11

The equation retains the assigned quality rating if applied within the ranges of source conditions that were tested in developing the equation, as given in Table 11.2.3-3. Note that silt content is included in Table 11.2.3-3, even though silt content does not appear as a correction parameter in the equation. While it is reasonable to expect that silt content and emission factors are interrelated, no significant correlation between the two was found during the derivation of the equation, probably because most tests with high silt contents were conducted under lower winds, and vice versa. It is recommended that estimates from the equation be reduced one quality rating level, if the silt content used in a particular application falls outside the range given in Table 11.2.3-3.

TABLE 11.2.3-3. RANGES OF SOURCE CONDITIONS FOR EQUATION 1

Silt Content	Moisture Content	Wind Speed (m/s)	Wind Speed (mph)
0.44 - 19	0.25 - 4.8	0.6 - 6.7	1.3 - 15

Also, to retain the equation's quality rating when applied to a specific facility, it is necessary that reliable correction parameters be determined for the specific sources of interest. The field and laboratory procedures for aggregate sampling are given in Reference 3. In the event that site specific values for correction parameters cannot be obtained, the appropriate mean values from Table 11.2.3-1 may be used, but, in that case, the quality rating of the equation is reduced by one level.

For emissions from equipment traffic (trucks, front end loaders, dozers, etc.) traveling between or on piles, it is recommended that the equations for vehicle traffic on unpaved surfaces be used (see Section 11.2.1). For vehicle travel between storage piles, the silt value(s) for the areas among the piles (which may differ from the silt values for the stored materials) should be used.

Worst case emissions from storage pile areas occur under dry windy conditions. Worst case emissions from materials handling operations may be calculated by substituting into the equation appropriate values for aggregate material moisture content and for anticipated wind speeds during the worst case averaging period, usually 24 hours. The treatment of dry conditions for vehicle traffic (Section 11.2.1), centering on parameter p, follows the methodology described in Section 11.2.1. Also, a separate set of nonclimatic correction parameters and source extent values corresponding to higher than normal storage pile activity may be justified for the worst case averaging period.

11.2.3.4 Controls

Watering and chemical wetting agents are the principal means for control of aggregate storage pile emissions. Enclosure or covering of inactive piles to reduce wind erosion can also reduce emissions. Watering is useful mainly to reduce emissions from vehicle traffic in the storage pile area. Watering of the storage piles themselves typically has only a very temporary slight effect on total emissions. A much more effective technique is to apply chemical wetting agents for better wetting of fines and longer retention of the moisture film. Continuous chemical treatment of material loaded onto piles, coupled with watering or treatment of roadways, can reduce total particulate emissions from aggregate storage operations by up to 90 percent.[9]

References for Section 11.2.3

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CONTROL EFFICIENCY REFERENCES

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(DE85010939)

TECHNICAL GUIDE FOR ESTIMATING FUGITIVE DUST IMPACTS FROM COAL HANDLING OPERATIONS

By
George C. Howroyd

September 1984

Work Performed Under Contract No. AC01-80RG10312

Dames & Moore
Atlanta, Georgia

Technical Information Center
Office of Scientific and Technical Information
United States Department of Energy

TABLE 4-9

ESTIMATED DUST CONTROL EFFICIENCIES FOR FUGITIVE DUST EMISSIONS FROM LIMESTONE HANDLING AND STORAGE OPERATIONS

Activity	Control Method	Estimated Control Efficiencies (%)	References
A. Load-In	- water sprays	75	Bohn, et al. (1978)
		40	EPA (1977b)
	- chemicals	<99	EPA (1977b)
		80-90	Jutze, et al. (1977)
	* - enclosure	70-90	Jutze, et al. (1977)
	- enclosure with chemical wetting	95	Davis, et al. (1981)
	* - partial enclosure with telescopic chute	90	TRW (1982)
	- wind guards	50	Bohn, et al. (1978)
	- stone ladder	80	Bohn, et al. (1978)
	- telescopic chutes	75	Bohn, et al. (1978)
			Jutze, et al. (1977)
	- stacker spreader	25	Bohn, et al. (1978)
	- micron-sized foam spray	99	Cole & Ayers (1983)
	- micron-droplet spray	90	Kretch (1983)
B. Pile Traffic & Maintenance	- carryover of water/chemical from load-in	60	Davis, et al. (1981)
C. Wind Erosion	- water sprays	50	Bohn, et al. (1978)
	- chemical	70	Bohn, et al. (1978)
	- water/chemical carryover from load-in	80	Davis, et al. (1978)
	- wind breaks/fences	30	Bohn, et al. (1978)
	- vegetative cover	70	Bohn, et al. (1978)
	- partial enclosure - active pile	70	TRW (1982)

TABLE 4-9 (Continued)

Activity	Control Method	Estimated Control Efficiencies (%)	References
D. Load-Out	- water sprays	40	EPA (1977b)
	- chemicals	<99	EPA (1977b)
*	- water sprays	80	Bohn, et al. (1978)
		50	Jutze, et al. (1977)
	- enclosure with bag filter	99	Bohn, et al. (1978), TRW (1982)
	- enclosure with chemical wetting	99	Davis, et al. (1981)
	- telescopic chute with dust suppressant carryover from storage pile	75	Davis, et al. (1981)
	- stacker/reclaimer	40	Jutze et al. (1977)
*	- under-pile conveyor	80	Jutze et al. (1977)
	- micron-sized foam spray	99	Cole & Ayers (1983)
	- micron droplet spray	90	Kretch (1983)

WIND EROSION CALCULATIONS

WIND EROSION FROM SLAG PILE

Spreadsheet as of 14:34:03 on 11-22-1996

Input Filename: tslagnew.epc
Inventory area: Tarmac Slag Pile 1
Source ID: Tslag1 Filename: A:\Tslag1.EPC

Emissions estimate year: 1996
Based on wind data year: 1990
Fastest mile filename: miami90.met
System of units: English
Source life (inclusive days of year)
Start day: 1
End day: 346
F=flat area, PC=conical pile, PO=oval pile: PC
Pile height (ft) : 32.5
Pile diameter (ft) : 86
Area (sq ft): 7277.628
Material description: Slag
Percent moisture content: 6
Percent silt content: 5
Threshold friction velocity, U*t, (cm/sec): 102
Roughness height (cm): 0.1
Mode (mm) of size distribution 2.844418# (# denotes calculated value)
Lc value (cf. Fig. 6-3 of reference manual):

Frequency of disturbance information :
Us/Ur = .9 -- subarea # 1 -- 50 % of regime disturbed every 1 day(s)
Us/Ur = .9 -- subarea # 2 -- 50 % of regime disturbed every 1 day(s)
Us/Ur = .6 -- subarea # 1 -- 50 % of regime disturbed every 1 day(s)
Us/Ur = .6 -- subarea # 2 -- 50 % of regime disturbed every 1 day(s)
Us/Ur = .2 -- subarea # 1 -- 50 % of regime disturbed every 1 day(s)
Us/Ur = .2 -- subarea # 2 -- 50 % of regime disturbed every 1 day(s)

Total emissions emitted over the period: 20351.43 g

Threshold velocity = 102 cm/s
Control: Effective windspeed ratio = 1

Us/Ur = .9 Disturbance interval = 1 days

Period	25 - 26	high on	26	1.062787	m/s	23.84973	g emitted
Period	26 - 27	high on	26	1.062787	m/s	23.84973	g emitted
Period	41 - 42	high on	42	1.062787	m/s	23.84973	g emitted
Period	42 - 43	high on	42	1.062787	m/s	23.84973	g emitted
Period	45 - 46	high on	46	1.062787	m/s	23.84973	g emitted
Period	46 - 47	high on	46	1.062787	m/s	23.84973	g emitted
Period	52 - 53	high on	53	1.232833	m/s	161.2095	g emitted
Period	53 - 54	high on	53	1.232833	m/s	161.2095	g emitted
Period	56 - 57	high on	57	1.232833	m/s	161.2095	g emitted
Period	57 - 58	high on	57	1.232833	m/s	161.2095	g emitted
Period	58 - 59	high on	58	1.190322	m/s	120.4915	g emitted
Period	61 - 62	high on	62	1.020276	m/s	.1399041	g emitted
Period	62 - 63	high on	62	1.020276	m/s	.1399041	g emitted
Period	65 - 66	high on	66	1.190322	m/s	120.4915	g emitted
Period	66 - 67	high on	66	1.190322	m/s	120.4915	g emitted
Period	74 - 75	high on	75	1.062787	m/s	23.84973	g emitted
Period	75 - 76	high on	75	1.062787	m/s	23.84973	g emitted
Period	80 - 81	high on	81	1.020276	m/s	.1399041	g emitted
Period	81 - 82	high on	81	1.020276	m/s	.1399041	g emitted
Period	88 - 89	high on	89	1.105299	m/s	51.8116	g emitted
Period	89 - 90	high on	89	1.105299	m/s	51.8116	g emitted
Period	92 - 93	high on	93	1.190322	m/s	120.4915	g emitted
Period	93 - 94	high on	93	1.190322	m/s	120.4915	g emitted

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Period  104 - 105  high on  105   1.105299  m/s  51.8116  g emitted
Period  105 - 106  high on  105   1.105299  m/s  51.8116  g emitted
Period  108 - 109  high on  109   1.062787  m/s  23.84973  g emitted
Period  109 - 110  high on  109   1.062787  m/s  23.84973  g emitted
Period  143 - 144  high on  144   1.020276  m/s  .1399041  g emitted
Period  144 - 145  high on  144   1.020276  m/s  .1399041  g emitted
Period  145 - 146  high on  146   1.190322  m/s  120.4915  g emitted
Period  146 - 147  high on  146   1.190322  m/s  120.4915  g emitted
Period  147 - 148  high on  147   1.105299  m/s  51.8116  g emitted
Period  151 - 152  high on  152   1.827994  m/s  1177.726  g emitted
Period  152 - 153  high on  152   1.827994  m/s  1177.726  g emitted
Period  159 - 160  high on  160   1.020276  m/s  .1399041  g emitted
Period  160 - 161  high on  160   1.020276  m/s  .1399041  g emitted
Period  161 - 162  high on  162   1.105299  m/s  51.8116  g emitted
Period  162 - 163  high on  162   1.105299  m/s  51.8116  g emitted
Period  179 - 180  high on  180   1.062787  m/s  23.84973  g emitted
Period  180 - 181  high on  180   1.062787  m/s  23.84973  g emitted
Period  189 - 190  high on  190   1.062787  m/s  23.84973  g emitted
Period  190 - 191  high on  190   1.062787  m/s  23.84973  g emitted
Period  192 - 193  high on  193   1.062787  m/s  23.84973  g emitted
Period  193 - 194  high on  193   1.062787  m/s  23.84973  g emitted
Period  198 - 199  high on  199   1.232833  m/s  161.2095  g emitted
Period  199 - 200  high on  199   1.232833  m/s  161.2095  g emitted
Period  204 - 205  high on  205   1.487902  m/s  494.8102  g emitted
Period  205 - 206  high on  205   1.487902  m/s  494.8102  g emitted
Period  250 - 251  high on  251   1.487902  m/s  494.8102  g emitted
Period  251 - 252  high on  252   1.572925  m/s  640.0269  g emitted
Period  252 - 253  high on  252   1.572925  m/s  640.0269  g emitted
Period  273 - 274  high on  274   1.062787  m/s  23.84973  g emitted
Period  274 - 275  high on  274   1.062787  m/s  23.84973  g emitted
Period  281 - 282  high on  282   1.360368  m/s  308.8757  g emitted
Period  282 - 283  high on  282   1.360368  m/s  308.8757  g emitted
Period  283 - 284  high on  283   1.190322  m/s  120.4915  g emitted
Period  302 - 303  high on  303   1.275344  m/s  206.1794  g emitted
Period  303 - 304  high on  303   1.275344  m/s  206.1794  g emitted
Period  305 - 306  high on  306   1.020276  m/s  .1399041  g emitted
Period  306 - 307  high on  306   1.020276  m/s  .1399041  g emitted

Summary for Us/Ur =  .9      Disturbance Interval =  1
 8874.609  Total g emitted over  1  -  346
------------------------------------------------------------------
Us/Ur =  .9    Disturbance interval = 1  days

Period  25 - 26  high on  26   1.062787  m/s  23.84973  g emitted
Period  26 - 27  high on  26   1.062787  m/s  23.84973  g emitted
Period  41 - 42  high on  42   1.062787  m/s  23.84973  g emitted
Period  42 - 43  high on  42   1.062787  m/s  23.84973  g emitted
Period  45 - 46  high on  46   1.062787  m/s  23.84973  g emitted
Period  46 - 47  high on  46   1.062787  m/s  23.84973  g emitted
Period  52 - 53  high on  53   1.232833  m/s  161.2095  g emitted
Period  53 - 54  high on  53   1.232833  m/s  161.2095  g emitted
Period  56 - 57  high on  57   1.232833  m/s  161.2095  g emitted
Period  57 - 58  high on  57   1.232833  m/s  161.2095  g emitted
Period  58 - 59  high on  58   1.190322  m/s  120.4915  g emitted
Period  61 - 62  high on  62   1.020276  m/s  .1399041  g emitted
Period  62 - 63  high on  62   1.020276  m/s  .1399041  g emitted
Period  65 - 66  high on  66   1.190322  m/s  120.4915  g emitted
Period  66 - 67  high on  66   1.190322  m/s  120.4915  g emitted
Period  74 - 75  high on  75   1.062787  m/s  23.84973  g emitted
Period  75 - 76  high on  75   1.062787  m/s  23.84973  g emitted
Period  80 - 81  high on  81   1.020276  m/s  .1399041  g emitted
Period  81 - 82  high on  81   1.020276  m/s  .1399041  g emitted
Period  88 - 89  high on  89   1.105299  m/s  51.8116  g emitted
Period  89 - 90  high on  89   1.105299  m/s  51.8116  g emitted
Period  92 - 93  high on  93   1.190322  m/s  120.4915  g emitted
Period  93 - 94  high on  93   1.190322  m/s  120.4915  g emitted
Period  104 - 105  high on  105   1.105299  m/s  51.8116  g emitted
Period  105 - 106  high on  105   1.105299  m/s  51.8116  g emitted
Period  108 - 109  high on  109   1.062787  m/s  23.84973  g emitted
Period  109 - 110  high on  109   1.062787  m/s  23.84973  g emitted
Period  143 - 144  high on  144   1.020276  m/s  .1399041  g emitted
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Period  144 - 145  high on  144   1.020276  m/s  .1399041  g emitted
Period  145 - 146  high on  146   1.190322  m/s  120.4915  g emitted
Period  146 - 147  high on  146   1.190322  m/s  120.4915  g emitted
Period  147 - 148  high on  147   1.105299  m/s  51.8116  g emitted
Period  151 - 152  high on  152   1.827994  m/s  1177.726  g emitted
Period  152 - 153  high on  152   1.827994  m/s  1177.726  g emitted
Period  159 - 160  high on  160   1.020276  m/s  .1399041  g emitted
Period  160 - 161  high on  160   1.020276  m/s  .1399041  g emitted
Period  161 - 162  high on  162   1.105299  m/s  51.8116  g emitted
Period  162 - 163  high on  162   1.105299  m/s  51.8116  g emitted
Period  179 - 180  high on  180   1.062787  m/s  23.84973  g emitted
Period  180 - 181  high on  180   1.062787  m/s  23.84973  g emitted
Period  189 - 190  high on  190   1.062787  m/s  23.84973  g emitted
Period  190 - 191  high on  190   1.062787  m/s  23.84973  g emitted
Period  192 - 193  high on  193   1.062787  m/s  23.84973  g emitted
Period  193 - 194  high on  193   1.062787  m/s  23.84973  g emitted
Period  198 - 199  high on  199   1.232833  m/s  161.2095  g emitted
Period  199 - 200  high on  199   1.232833  m/s  161.2095  g emitted
Period  204 - 205  high on  205   1.487902  m/s  494.8102  g emitted
Period  205 - 206  high on  205   1.487902  m/s  494.8102  g emitted
Period  250 - 251  high on  251   1.487902  m/s  494.8102  g emitted
Period  251 - 252  high on  252   1.572925  m/s  640.0269  g emitted
Period  252 - 253  high on  252   1.572925  m/s  640.0269  g emitted
Period  273 - 274  high on  274   1.062787  m/s  23.84973  g emitted
Period  274 - 275  high on  274   1.062787  m/s  23.84973  g emitted
Period  281 - 282  high on  282   1.360368  m/s  308.8757  g emitted
Period  282 - 283  high on  282   1.360368  m/s  308.8757  g emitted
Period  283 - 284  high on  283   1.190322  m/s  120.4915  g emitted
Period  302 - 303  high on  303   1.275344  m/s  206.1794  g emitted
Period  303 - 304  high on  303   1.275344  m/s  206.1794  g emitted
Period  305 - 306  high on  306   1.020276  m/s  .1399041  g emitted
Period  306 - 307  high on  306   1.020276  m/s  .1399041  g emitted

Summary for Us/Ur =  .9      Disturbance Interval =  1
 8874.609  Total g emitted over  1  -  346
------------------------------------------------------------------
Us/Ur =  .6    Disturbance interval = 1  days

Period  151 - 152  high on  152   1.218663  m/s  588.6575  g emitted
Period  152 - 153  high on  152   1.218663  m/s  588.6575  g emitted
Period  251 - 252  high on  252   1.048617  m/s  61.89622  g emitted
Period  252 - 253  high on  252   1.048617  m/s  61.89622  g emitted

Summary for Us/Ur =  .6      Disturbance Interval =  1
 1301.108  Total g emitted over  1  -  346
------------------------------------------------------------------
Us/Ur =  .6    Disturbance interval = 1  days

Period  151 - 152  high on  152   1.218663  m/s  588.6575  g emitted
Period  152 - 153  high on  152   1.218663  m/s  588.6575  g emitted
Period  251 - 252  high on  252   1.048617  m/s  61.89622  g emitted
Period  252 - 253  high on  252   1.048617  m/s  61.89622  g emitted

Summary for Us/Ur =  .6      Disturbance Interval =  1
 1301.108  Total g emitted over  1  -  346
------------------------------------------------------------------
Us/Ur =  .2    Disturbance interval = 1  days


Summary for Us/Ur =  .2      Disturbance Interval =  1
 0  Total g emitted over  1  -  346
------------------------------------------------------------------
Us/Ur =  .2    Disturbance interval = 1  days


Summary for Us/Ur =  .2      Disturbance Interval =  1
 0  Total g emitted over  1  -  346
------------------------------------------------------------------
Summary for entire source:  20351.43   g emitted over period  1  -  346
NOTE: For a variety of reasons given in the user manual, the erosion estimates
      presented above may be considered as CONSERVATIVELY HIGH.  See the
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user manual for more information.

EXCERPTS FROM SUBPART UUU BID

EPA-450/3-85-025a

Calciners and Dryers in Mineral Industries— Background Information for Proposed Standards

Emission Standards and Engineering Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

October 1985

Coating-grade clays are those with all particles smaller than 15 μm (6×10^{-4} in.) and at least 70 percent of the particles less than 2 μm (8×10^{-5} in.). These clays also have 50 percent or more of the particles smaller than 1 μm (4×10^{-5} in.) in size. The extremely fine grades of coating clay currently being produced approach the range of 100 percent minus 2 μm (8×10^{-5} in.).[82]

3.2.10.4 Calcining. Because kaolin consists primarily of the mineral kaolinite, it is considered to be a fire clay. Low-temperature calcining produces a kaolin used for filler. High-temperature calcining produces a kaolin for use in the refractory industry. Section 3.2.6 (Fire clay) discusses kaolin use as a refractory material. Multiple hearth furnaces are the most common type of calciner; however, flash and rotary calciners are also used. Multiple hearth furnaces require less space and maintenance than flash calciners although they have a longer startup time.

3.2.11 Lightweight Aggregate

3.2.11.1 Background. The lightweight aggregate (LWA) industry encompasses the processing of clay-like materials into a low-density product. Lightweight aggregate is produced by calcining clay, shale, or slate. The raw materials used to produce LWA are chosen for their bloating properties when heated. When these materials are heated to temperatures of about 1000°C (1800°F), they become plastic and begin to flow like a viscous fluid.[90] As the plastic state is achieved, carbonaceous compounds in the material form gas bubbles, the material begins to expand, and the gas bubbles are trapped in the viscous plastic material. The material is then cooled in the expanded condition to form a porous, solid LWA. Substitutes for the more common raw materials in the production of LWA products are natural pumice and blast furnace slag.

Lightweight aggregate is used principally for the manufacture of structural concrete products such as concrete blocks and prestressed structural units. Concrete made with LWA has about the same strength and approximately two-thirds the weight of concrete made with natural aggregate. Other properties of concrete made with LWA, such as fire resistance and thermal and accoustical insulating qualities, make it

desirable as a building material. Lightweight aggregate is a substitute for more dense, naturally occurring aggregate (granite, limestone) and is used by companies that further process the material into other products. Other applications of LWA include accoustical plaster, roofing granules, highway surfacing, insulating fills, horticulture applications, and running tracks.[91] The end uses of LWA in 1980 were: concrete block (65 percent), structural concrete (25 percent), highway surfacing (6.5 percent), and other uses (3.5 percent).[92] Fine, medium, and coarse grades of LWA are available, ranging in diameter from dust to 3.8 cm (1.5 in.). Seven companies produce approximately 50 percent of the LWA processed in the United States. Typically, LWA cannot be economically shipped beyond approximately a 480-km (300-mi) radius of the production facility. Local demand for LWA may be greater in areas where natural aggregates are scarce.

The U.S. Bureau of Mines (BOM) categorizes the raw materials used to produce LWA as clays and stone. Clays are classified as kaolin, ball clay, fire clay, bentonite, fuller's earth, and common clay and shale. Approximately 11 percent of the clays mined in the U.S. in 1980 were used for the production of LWA.[91] Crushed slate is the only stone used in LWA production. Approximately 0.05 percent of the crushed stone mined in the U.S. in 1980 was used for the production of LWA.[91] Lightweight aggregate was produced at 34 plants in 24 States in 1981. The BOM estimated that consumption of clay and shale used in the production of LWA was 4.4 $x10^6$ Mg (4.9 $x10^6$ tons) in 1981, compared to 2.15 $x10^5$ Mg (2.4 $x10^5$ tons) of slate and 7.3 $x10^5$ Mg (8.0 $x10^5$ tons) of slag.[91]

Two methods are used to produce LWA. The rotary kiln method is used by approximately 88 percent (30 of 34) of the operating plants in the United States. The remaining 12 percent of the operating plants use the traveling-grate method, or process naturally occurring LWA. Because of the energy intensive nature of the traveling-grate process, no future growth in the use of this process for LWA production is anticipated.

3.2.11.2 Process Description.

3.2.11.2.1 General. The operations involved in producing LWA are quarrying or mining, crushing and screening, calcining or sintering, product cooling, and materials handling and storage. Figure 3-27 shows

a diagram of a typical LWA plant. Raw material is usually strip-mined from open fields by earth movers. Cone crushers, jaw crushers, hammermills, or pugmills are used to reduce the size of the raw material, which is then passed through screens. Any oversize material that does not pass through the screens initially may be returned to the crushers for secondary crushing. Material passing through the screens (about minus 3.8 cm [1.5 in.] in diameter) is transferred by conveyor belts to feed hoppers for charging to the calciner.

3.2.11.2.2 Rotary calciners. Rotary calciners are fired from the discharge end with fuel oil, natural gas, or coal. As the cost of fuel oil and natural gas increases, the trend is toward the use of pulverized coal. The burner used to fire the calciner is installed in the center of a fixed or movable calciner hood. The pilot flame of the burner is normally fueled by natural gas.

Rotary calciner production capacities range from 230 to 910 Mg (250 to 1,000 tons) per day per calciner.[90] Lightweight aggregate plants typically have two or three rotary calciners. One manufacturer of rotary calciners states that the smallest rotary calciner considered to be economical for LWA production in the U.S. is one that produces 450 Mg (500 tons) per day and that is approximately 3.4 m (11 ft) in diameter and 50 m (175 ft) long.[93]

Normal feed sizes range from 2.4 mm (8 mesh) to 33 mm (1.5 in.).[90] When the clay, shale, or slate is not closely screened, segregation of the various size chunks of raw material occurs as the calciner rotates. This segregation of particles is avoided by some calciner operators who screen the feed material so that a narrow range of particle sizes is fed to the calciner.[92] The fines are calcined by direct solid-to-solid heat transfer from the calciner walls, and the larger (coarser) particles are calcined by solid-to-gas heat transfer from the hot gas. The intermediate-size particles are protected from the heat by the layers of fine and coarse particles and may not be completely calcined.

3.2.12 Magnesium Compounds

3.2.12.1 Background. Natural brine solutions, such as sea, lake, and wellwaters are the primary source of domestically produced magnesium compounds. Magnesium compounds are also produced from natural magnesite

GENCOR STATIONARY 150 TPH BATCH DRUM

The BATCH DRUM is capable of producing 150 U.S. tons per hour at a discharge temperature of 200 degrees Fahrenheit (200 degrees Fahrenheit heat rise) utilizing a standard type surface mix with uniformly graded virgin aggregates with a maximum of 10% total moisture content in the virgin aggregate feed.

The performance of the BATCH DRUM is based on operation at elevations up to 1000 feet. For elevations above 1000 feet, derate the plant performance by 3% per 1000 feet of elevation. Variations in atmospheric conditions, fuel type, and aggregate gradations may result in a plus or minus 10% variation in this performance.

DRUM AND DRUM DRIVE AND FRAME

The 89 in. diameter x 27 ft. long drum is constructed of 3/8 in. INX 50 and mounted on a one piece frame. Stiff legs are provided for support on the burner end of the drum. The drum rotates on 16 in. diameter x 8-3/4 in. wide heat treated trunnions with shafts mounted on factory aligned adjustable bearing pads.

The drum drive is friction type with four trunnions that are individually driven by 625 TXT torque arm shaft mounted reducers with sheaves, belts, and belt guard and each powered by a 20 HP, 1,800 RPM, ODP electric motor.

FEED HOOD

Feed hood is low feed entrance type, expanded to provide a knockout chamber equipped with high temperature rubber drum seal and access door.

DISCHARGE HOOD

Discharge hood is sweeper plate type with side discharge.

AGGREGATE DRYING ZONE

The aggregate BATCH DRUM inlet spiral flights assure a continuous flow of the virgin aggregate into the abrasion resistant steel Ultra flights. The flights create a continuous veiling of the aggregate across the diameter of the drum allowing the aggregate to be efficiently dried and heated to a predetermined temperature.

COMBUSTION ZONE

The combustion zone is equipped with Ultra insulating Genco spiral and "T" flights. These flights insulate the drum shell as they heat the aggregate and move it through the combustion zone.

GENCOR 48,000 CFM PORTABLE BAGHOUSE

MODEL NO. N85

The Gencor portable baghouse is the heaviest-built baghouse in the industry and has a rated capacity of 48,000 CFM at 5.67:1 air to cloth ratio. The baghouse is 24 ft. 4 in. long x 14 ft. wide with a travel height of 14 ft. 5 in. and has a total volume of 5,687 cu. ft. There are 648 size 10 ft. bags, with a total cloth area of 8,482 sq. ft.

The inlet end of the baghouse is equipped with a built-in primary collector. The baghouse frame is constructed using 12 in. x 4 in. x 1/4 in. rectangular tubing, and the sidewalls are reinforced 1/8 in. steel sheet. The main baghouse frame and sidewall sections are continuously welded together in a jig form.

FILTER BAGS

The filter bags are of 14 oz., 100% aramid fiber (also known as nomex or conex) with snap bands sewn into the top of the bag. The cages are made of ten 11 gage vertical galvanized wires. The bottom pan is stamped steel and the rolled flanged top has a built-in venturi section. There is 7 in. spacing between each bag center and 8 in. center-to-center row spacing.

Because of the close spacing of the horizontal wires of the cages, the "sagging" of the bag cloth is eliminated, thus contributing to longer bag life and reduced pressure drop across the baghouse. The wide spacing permits maximum cleaning efficiency and eliminates the possibility of the dust cake bridging between bags.

UPPER/CLEAN AIR SECTION

This section has 9 tube sheets of 3/16 in. steel sheets welded in place. The sidewalls are 1/8 in. steel sheets. The roof section is built of 4 in. x 5.4 lb. "C" channel butt welded together and supported by an inverted steel truss system.

The roof inspection doors are made of 11 gage steel. The door seals are of 1/2 in. x 3 in. EPDM high temperature rubber, glued to the "C" channel. The doors are locked down by an exclusive wedge type door locking mechanism.

The double diaphragm valves are mounted on the outside of the clean air section. The 1-1/2 in. diameter blowpipe nipple is plumbed through the baghouse sidewall and then welded in place. The blowpipe extensions are 1-1/2 in. diameter x 11 ft. 10-1/4 in. pipe that extend across the row of bags. The extensions are bolted to a welded angle iron support.

The wedge type locking system eliminates the problem of hinges becoming rusted.

Even at high operating temperatures, the rubber gasket system provides an airtight seal for the inspection doors.

The pulse jet cleaning action is provided by the double diaphragm pulse valves that provide 100 to 125 psi millisecond airblasts. The compressed air is provided by a 30 HP, 120 ACFM rotary compressor to produce a sharp, crisp bag expansion that quickly breaks the accumulated dust cake from the side of the bag. Less horsepower is required to operate the rotary compressor than conventional piston compressors.

LOWER/HOPPER SECTION

The lower/hopper section has smooth sides with a 60 degree slope and flat welded steel bottom of 1/4 AR support by 3 in. channel.

There are four 20 in. x 35 in. inspection doors with silicone rubber seals, two on each side. The doors have swing-down bottom hinges and are held closed by two screw type locks on each door.

All collected dust is moved to the discharge auger end of the collection hopper by a 2 in. high slat on 26 in. centers bolted to A-22 attachment.

Solid hub chain sprockets are mounted on shafts and turn in roller bearings.

The chain is tensioned by an easily adjustable take-up with indicator gauge.

The collected dust slat conveyor moves approximately 40 ft. per minute across the bottom wear bars and is driven by a gear reducer using a belt drive covered with expanded metal guards and powered by a 5 HP, 1,800 RPM, ODP (440V-220V) electric motor. The large inspection doors provide easy access to the slats and the AS436 chain for easy maintenance and inspection. The 10 in. diameter 3 HP cross auger feeds dust to the center incline 7.5 HP discharge auger.

ARCH DUCT WORK

The arch duct work is a round exhaust duct fabricated from 7 gauge (3/16 in.) steel and has an unrestricted cross sectional opening of 12 sq. ft. The primary high temperature probe is inserted in the arch duct work. Our exclusive double ring, turntable style dust seal eliminates the need for exact alignment of the baghouse and drum for a secure fit. The duct work is secured to the drum knockout box outlet and baghouse inlet elbow by easily operated chain and screw type ratchets. The chain and ratchet hold-down, combined with the hydraulic slope control on the drum, make the changing of the drum slope a simple task.

EXHAUST FAN ASSEMBLY MODEL 445BC

The exhaust fan assembly is a backward slope fan blade design, rated at 48,000 CFM at 14 in. static pressure and air temperature of 300 degrees Fahrenheit at sea level. The fan is mounted on the gooseneck and powered by a 150 HP, 1,800 RPM, ODP electric motor. The fan shaft, bearings, drive, and driven sheaves are oversized to reduce premature wearing of the belts and assure no belt slippage.

The fan outlet is fitted with an opposed blade louver type damper controlled by a 1,500 ft. lb. 812 electromechanical actuator. The louver is automatically opened or closed by AR7, ADP that measures the pressure drop across the burner bulkhead. The opposed blade louver damper, when closed, allows easy starting of the exhaust fan and is automatically opened or closed to maintain the necessary CFM of air to maintain burner efficiency under varying moisture and temperature conditions.

The exhaust stack is fabricated into bolt-together 8 ft. long sections from 11 gauge (1/8 in.) steel. The upper bolt-on section has 4 in. diameter test ports platform with safety railing and is equipped with an access ladder from the roof of the collector. The secondary high temperature sensor is contained in the outlet ductwork. When the exhaust temperature nears the danger level, the burner will be switched off, the exhaust fan will stop, and the exhaust louver damper will close. This safety feature is designed to reduce the possibility of baghouse incineration.

The collector travel dimensions are 60 ft. 2 in. long x 14 ft. wide x 14 ft. 6 in. high with a tandem axle assembly and Budd wheels with 11:00 x 22.5 12-ply minimum tires. The gooseneck is equipped with a weld-on fifth wheel attachment and crank down truck dolly. The weld-on rear bumper has DOT approved taillights and combination turn and brake lights included. The collector is equipped with an air brake booster tank and preplumbed with color coded air lines with "glad hands" and six wire "pigtail" with plug-in type male trailer plug.

BAGHOUSE CONTROLS

The controls include a 16 station pulse card with three pulse rate ranges provided by a photohelic which senses the pressure drop across the house. The two setpoint indicators on the photohelic determine which rate potentiometer controls the time between each bag-cleaning pulse.

The transition between rates is automatic and helps to provide maximum plant efficiency. The controls will be installed in a NEMA 1 enclosure to be mounted by customer indoor. Cable between the control and the baghouse will be provided by Gencor.

GENCOR MODEL TS-100 CONTROL SYSTEM

FOR AUTOMATIC CONTROL OF THE BURNER

The control system is supplied in a streamline tabletop model cabinet which can also be wall-mounted and incorporates the following:

- Pushbutton start/stop
- Main burner switch
- Manual/automatic switch
- Manual control switch
- Manual burner control
- Aggregate temperature indicator
- Automatic temperature control
- Gas temperature limit interlock
- Exit gas temperature limit control
- Burner position indicator
- Indicator lights
- Flame safeguards
- LED readout to check system status
- Interconnecting cables

Optional

- Recorder

GENCO ULTRA II-85 OIL/GAS FIRED BURNER

The Genco Ultra II-85 for your drum mix asphalt plant with high turndown and low excess air capability, has been designed to overcome high maintenance costs, energy losses, and high noise levels associated with open air burners. With the combination of total air control and high pressure turbo blower air, the burner achieves complete combustion with minimal combustion volume requirements.

Fuel oil specifications are based on utilizing standard API grades of oils. Reconstituted, blended, waste oils, and other non-API grades of fuel oils will cause variations, improper performance, and very possibly serious hazards with the combustion system covered herein. Use of such nonstandard fuel oils must be cleared through our Engineering Department before you can commence use.

The Genco Ultra II burner is the latest development in combustion technology, and, when using standard commercial grades of fuel, the system will allow you to obtain the full capacity of your plant up to the limit of your exhaust system or other plant limitation.

The Genco Ultra II burner uses an integral, high efficiency, centrifugal axial flow blower design which supplies all the secondary air required for combustion. Incorporated on this unit is a turbo-blower. This high pressure primary air flows through the core of the burner where a conventional fuel oil/gas, high efficiency Astraflame burner head is situated.

Since the burner is sealed into the dryer breeching, very quiet operation is obtained. Inlet attenuator for turbo blower is available if required. Horsepower is 40 and 15.

On oil fired units, a high efficiency internal mix nozzle specially designed for fine atomization and flame shape control. An air purge system cleans the oil gun at shutdown for ease of start-up when utilizing

heavy oils. Compressed air, to be supplied by others, provides the atomization at low capacity on oil firing. At the nozzle, oil supply pressure of 160 PSIG at 100 SSU viscosity is required.

On LP units, the fuel is fired as a liquid through a central gun assembly. Liquid LP should be supplied to the burner at 40 PSIG over tank pressure.

On natural gas fired units, the Ultra II peripheral gas header is utilized for even distribution and efficient mixing at a low 5 PSIG maximum pressure to the head. Actual pressure required depends on capacity required.

Any of these fuels can be added in the future with the appropriate conversion package.

The fuel train is prepiped at the factory on the burner body. Genco modulating drive motors handle the control functions of automatic air and fuel modulation. Automatic valves and drive motors come prewired from the factory, providing a very neat and compact package for quick installation.

Other outstanding features include:

- Adjustable members which allow flame shaping to fill the individual requirements of particular dryers.
- Genco ultraviolet, self-contained flamescanners provided with each unit used with Gencor controls.
- The option to fire two fuels simultaneously with purchase of the dual fuel controller.
- No refractory is required for efficient, low maintenance operation.
- The Genco designed gas/electric ignition system, ensuring positive fuel ignition. A regulator and pressure gage are included (pilot system).
- High turndown ratio capability is standard.
- Fuel safety shutoff valving and sensors to allow system compliance with NFPA 86 standards included on oil and LP fuel trains unless otherwise noted. Gas NFPA fuel train included.*.

*Gas regulator, gas trap, manual shut-off valve not included.

GENCO BURNER FUEL PUMP PALLET MODEL 13

The fuel pump pallet provides continuous circulation of either light or heavy fuels. The pump is pallet mounted, preplumbed with a strainer assembly, and supplied with 1-1/4 in. flexible supply and return lines. The pump is powered by a 3 HP, 1,800 RPM, TEFC electric motor. The pump pallet assures uniform oil pressure and volume that is critical to efficient burner operation.

WIRING

SO type cables will be provided for all equipment supplied by Gencor and will have power and/or control plugs. Power and/or control receptacles will be shipped to the customer for field installation by others.

Table 1. Future Maximum Particulate Emissions From Affected Point Sources

FACILITY ID NUMBER: 0250020

Permittee:

Tarmac America, Inc., Pennsuco Cement Plant

Permit No.: 0250020-001-AC, PSD-FL-236

E.U. ID#	Emission Unit/ Point	Emission Point ID	Control Equip. Type	Maximum Process Rate (TPH)	Air Flow Rate (CFM)a	PM/PM10 Emission Factor	PM/PM10 Emissions (lb/hr)	PM/PM10 Emissions (hr/yr)	PM/PM10 Emissions (TPY)
EU 1	Slag Dryer	SLAG	Baghouse	125.0	34,100	0.02 gr/acf	5.75	3,120	9.12
EU 2	Clinker Handling System No. 3								
	Conveyor/Bucket Elevator	K-347	Baghouse	125.0	5,000	0.01 gr/acf	0.43	8,760	1.88
	Conveyor/Bucket Elevator	K-447	Baghouse	125.0	5,000	0.01 gr/acf	0.43	8,760	1.88
EU 2	Clinker Storage Silos								
	Clinker Silos 21,22,23,26,27,28	K-633	Baghouse	237.5	1,500	0.01 gr/acf	0.13	8,760	0.56
EU 3	Finish Mill #4								
	Ball mill/mill sweep	F-430	Baghouse	125.0	30,000	0.01 gr/acf	2.57	8,760	11.26
	Belt conveyor/separator/cement	F-432	Baghouse	125.0	17,000	0.01 gr/acf	1.46	8,760	6.38
	Clinker/gypsum conveyors	F-603	Baghouse	125.0	8,000	0.01 gr/acf	0.69	8,760	3.00
	Clinker/gypsum conveyors	F-604	Baghouse	125.0	8,000	0.01 gr/acf	0.69	8,760	3.00
	Clinker/gypsum conveyors	F-605	Baghouse	125.0	4,000	0.01 gr/acf	0.34	8,760	1.50
EU 4	Cement Storage Silos 1-9								
	Cement Silos 7-9	F-512	Baghouse	125.0	10,000	0.01 gr/acf	0.86	8,760	3.75
EU 4	Bulk Cement Loadout Units 1 & 2								
	Railcar/Truck Unit 1	B-110	Baghouse	250.0	3,000	0.01 gr/acf	0.26	8,760	1.13
	Truck Unit 2	B-210	Baghouse	250.0	3,000	0.01 gr/acf	0.26	8,760	1.13
						TOTALS	13.87		44.59

Note a: Airflow reflects dscfm

c) Bulk Cement (railcar/truck) Loadout Unit 1, Bulk Cement (truck) Loadout Unit 2 and Transfer Pump Hopper (under Silos 10-12), equipped with Baghouses B-110, B-210, and B-323 respectively, exhaust particulate emissions to the interior of enclosed areas. Fugitive emissions shall be contained in this manner so as not to exceed 5% opacity from the vents, doors, etc.

d) Water sprinklers and wind breaks, enclosures, or covers shall be used to control unconfined PM emissions from the yard.

A DERM license may be required for the slag storage operation.

A.9 Visible emissions from the blast furnace slag processing facility shall not exceed any of the following:

a) Yard Storage/Handling Fugitive dust shall not be observed leaving the plant area.

b)	Each Clinker/Cement silo:	5% opacity
c)	Each Conveyer:	10% opacity
d)	No. 4 Finish Mill	5% opacity
e)	Bulk Cement Loadout Units 1 & 2:	10% opacity
f)	Slag dryer:	10% opacity

VE limits

Operation Limitations

A.10 The maximum wet blast furnace slag input rate to the dryer shall not exceed 125 TPH. The permittee shall install equipment or otherwise measure to the Department's satisfaction the process rate of the dryer and shall maintain records of the quantity of slag processed each day.

A.11 The facility shall not process more than 300,000 tons of blast furnace slag during any calendar year.

A.13 Only natural gas and low sulfur No. 2 fuel oil shall be burned in the blast furnace slag dryer. The sulfur content of the fuel shall not exceed 0.2 percent. The maximum heat input to the dryer shall not exceed 57.5 MMBtu/hr (approximately 410.6 GPH of oil or 57,000 CFH of gas). The maximum fuel consumption shall not exceed 1,281,000 GPY of oil or 178 MMCFPY of gas.

A.14 The dryer shall not operate more than 3,120 hours per calendar year. The permittee shall maintain records of the hours of operation for the dryer each day.