UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

FEB 13 1997

4APT-ARB

Mr. Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: PSD Permit Application from Tarmac America, Inc., Medley, Florida (PSD-FL-236)

Dear Mr. Fancy:

This is to acknowledge receipt of an application for a Prevention of Significant Deterioration (PSD) permit for a major modification to the above referenced facility submitted by a letter dated December 10, 1996, from Mr. Al Linero of your office. We have also received the revisions to this application which were submitted to the State on January 20, 1997. The application is for a proposal to process up to 300,000 tons per year of blast furnace slag from iron foundries at Tarmac's existing Portland cement plant. In order to process this raw material, a new dryer and conveying system will be installed. Below are comments regarding our review of the application package.

1. We agree with the selection of fabric filter control as Best Available Control Technology (BACT) for emissions from the new dryer. Tarmac has proposed an initial PM emission limit for the slag dryer of 0.04 gr/dscf and has proposed a performance testing program which is to be conducted following installation of the unit. The proposed emission limit is equivalent to the NSPS Subpart I emission standard for hot mix asphalt facilities, with which the manufacturer of the baghouse guarantees compliance. The purpose of the testing program would be to determine whether a lower emission limit should be established. Although we do not object to the use of a testing program for the purpose of establishing a more stringent emission limit, we recommend that the applicant further investigate the performance of similar types of operations to determine the feasibility of proposing a lower emission rate prior to permit issuance. The PM emission limits for baghouses on the conveying system at Tarmac are 0.01 gr/dscf. We have also been informed by

Mr. Willard Hanks of your office that actual test data from asphalt plants in Florida have indicated PM emissions below 0.01 gr/dscf. Based on a review of the RACT/BACT/LAER Clearinghouse (RBLC) database, BACT emission limits as low as 0.02 gr/dscf have been established for other drying operations with baghouse control, and BACT PM emission limits below 0.02 gr/dscf have been established for other types of operations.

2. The visible emission limit proposed for the new dryer should be lower than 20 percent opacity. The definition of BACT as provided in the regulations states that a visible emission standard is equivalent to an emission limitation, and emission limitations are to be based on the maximum degree of reduction achievable. Therefore, the proposed BACT visible emission standard needs to be compatible with the proposed PM emission limit. Since visible emissions of 20 percent opacity would clearly indicate compliance problems with a PM emission limit of 0.04 gr/dscf or less, an appropriate visible emissions limit needs to be proposed for BACT (i.e., no greater than 10 percent opacity). The relationship of visible emissions and concentration at asphalt plants is discussed in the document Plant Inspection and Evaluation Workshop: Opacity as an Indicator of Control Equipment Performance written by the U.S. EPA, Office of Air Quality Planning and Standards, Stationary Compliance Division (April 1979).

The NSPS regulations at 40 CFR Part 60, Subpart F - Standards of Performance for Portland Cement Plants were found to be applicable to the proposed new slag conveying system.

Thank you for the opportunity to review and comment on the application package. If you have any questions, please contact Mr. Keith Goff of my staff at (404)562-9137.

Sincerely yours,

Douglas Neeley

R. Douglas Neeley
Chief
Air and Radiation Technology Branch
Air, Pesticides, and Toxics Management Division

CC: W. Hanks, BAR
D. Buff, Golder Assoc.
J. Kahn, SED
P. Wong, DERM
J. Bunyak, NPS

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

Golder Associates

Letter of Transmittal

Date: 01/21/97

Project No.: 9651137-0900

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

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	Replacement Pages for Slag Dryer Permit Application
4	Electronic Submittal Disk (under separate cover)

These are transmitted:

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

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

Sender: Mark Aquilar/arz

Copy to: Scott Quaas, Tarmac (2)

9651137Y/F1/WP/6 01/21/97)

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

January 20, 1997

Mr. A.A. Linero
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: DEP File No. 0250020-001-AC, Tarmac Slag Dryer

Dear Mr. Linero:

Tarmac America has received your December 30, 1996 letter requesting additional information for the Slag Dryer permit application. On behalf of Tarmac America, please review the enclosed information in response to your requests as numbered below:

1. *The proposed baghouse appears undersized for this installation. The proposed baghouse is designed for 48,000 cubic feet per minute (cfm) with a 5.67:1 air-to-cloth ratio. Your application proposes to treat 54,600 acfm which results in an air-to-cloth ratio of 6.4:1. Baghouses such as those in this system typically have an air-to-cloth ratio of 4.5:1.*

After the application was submitted, additional discussions were held with the dryer manufacturer. The design features of air flow and capacity have been revised. The new proposed design has a hourly throughput of 125 TPH. The throughput rate described in the application was 150 TPH. The reduced hourly throughput directly affects the airflow rate. Therefore, the air-to-cloth ratio has been re-calculated as presented in Attachment A. The revised proposed air-to-cloth ratio is 4.5:1.

2. *Please investigate the use of a baghouse that can meet a particulate matter (PM) emission standard as low as 0.01 grains per dry standard cubic foot (gr/dscf). This standard will be met by existing filters on the slag handling system. Consider baghouses with a 5 to 1 or lower air-to-cloth ratio. Provide guarantees and/or other appropriate reasonable assurance of the lowest PM standard that can be met based on manufacturer's information or results from similar well-controlled operations. Revise the Best Available Control Technology (BACT) determination to include an economic analysis of the different size baghouses along with your BACT recommendation.*

As described above, the revised proposed baghouse will have an air-to-cloth ratio of 4.5 to 1. Based on our own investigation, and as indicated in the Department's letter, we believe this baghouse meets BACT based on its design. The baghouse manufacturer, Gencor, has provided a guarantee for the exhaust of the dryer baghouse of 0.04 gr/acf. The typical application of the Gencor dryers is an asphalt batch plant. The Gencor design is intended to meet the New Source Performance for Asphalt Plants (40 CFR 60 Subpart UU). The guarantee for the revised design is presented in the attachments.

9651137Y/4

While the Gencor does not guarantee an exhaust rate below 0.04 gr/acf, Tarmac is agreeable to a lower limit based on the tested performance of the installed dryer at the site. There remains certain unknowns in the drying of blast furnace slag (particle size, operating conditions to ensure proper drying, etc.) which can only be answered through a test program. A proposed test program to determine the actual emissions of the dryer is proposed as follows:

- tests will be performed bi-weekly
- a minimum of 3 tests will be performed
- three test runs will be performed per test
- EPA Method 5 will be utilized
- the testing program will conclude within 10 weeks after the source startup

Upon collection of the results of the testing program, Tarmac will propose an appropriate emissions limit for inclusion into an operating permit. If the tests do not show consistent performance below 0.04 gr/acf, the appropriate emission limit should be set as 0.04 gr/dscf.

Based on the information above, Tarmac does not believe a revision to the BACT is necessary. The proposed baghouse of a 4.5 to 1 air-to-cloth ratio remains as the proposed BACT. Until the testing program demonstrates a grain loading rate below 0.04 gr/dscf, Tarmac maintains the proposed BACT as 0.04 gr/dscf.

3. *The visible emission standard for a baghouse is typically 5 percent opacity. Please provide technical support for a higher standard if the visible emissions from the proposed baghouse will exceed 5 percent opacity.*

As mentioned above, certain unknowns such as particle size of the operation will not be answered until the test program. Pursuant to Rule 62-296.320, the applicable opacity limit is 20 percent. Tarmac will utilize Method 9 to measure opacity. Upon collection of the results of the testing program, Tarmac will propose an appropriate opacity limit for inclusion into an operating permit. Tarmac requests the opacity limit be 20 percent until test results are collected.

4. *Please describe the design and operation of the water application system that will be used to minimize fugitive emissions. Provide a general process flow diagram of the system.*

The facility currently operates several water trucks which spray the paved roads daily. To minimize fugitive emissions from the project, Tarmac will install covers on all conveyors which convey dry slag. The wet slag pile is not expected to generate significant emissions. Potential emissions by the slag pile as presented in the permit application are estimated to be 0.22 TPY. As stated in the permit application, Tarmac will use measured opacity as an indicator of fugitive emissions. If opacity is considered to be above 20 percent, additional measures will be applied. For example, if fugitive emissions are determined to be present by a front end loader, Tarmac may apply water manually in the area of the front end loader movement.

Several pages in the permit application are revised to reflect the above information. Please find the following replacement pages attached (4 sets):

- Attachment A; including all emission tables
- Emission Unit 1; Sections C, D, F, and H
- Emission Unit 2; Sections C and F
- Appendix; Manufacturer Design and Guarantee Information

Tarmac believes the enclosed information provides the Department sufficient information for the completion of processing the permit application. Please contact me at (352) 336-5600 or Mr. Scott Quaas of Tarmac at (954) 425-4165 for further discussions.

Sincerely,

David A. Buff, P.E.
Principal Engineer

DB/arz

Enclosures

cc: Scott Quaas, Tarmac
File (2)

CC: W. Harko, BAR
P. Wong, DERM
J. Kahn, SED
EPA
NPS

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:		57	mmBtu/hr
2. Maximum Incineration Rate:	lbs/hr		tons/day
3. Maximum Process or Throughput Rate:		125	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

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:	**44,486** acfm
10. Percent Water Vapor:	**10** %
11. Maximum Dry Standard Flow Rate:	**27,820** 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): **3-05-006-13**	
3. SCC Units: **tons cement produced**	
4. Maximum Hourly Rate: **125**	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): **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): **3-05-900-01**	
3. SCC Units: **1000 gallons burned**	
4. Maximum Hourly Rate: **0.41**	5. Maximum Annual Rate: **1,281**
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:
0.057	**179**
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: **0.41**	5. Maximum Annual Rate: **1,281**
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):	

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: **10** lb/hour **15.6** 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 27,820 dscfm x 60 min/hr ÷ 7000 gr/lb = 9.54 lb/hr; 9.54 lb/hr x 3120 hr/yr ton/2000 lb = 14.9 TPY. Dry Slag Conveying System Baghouse = 0.43 lb/hr & 0.67 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:	**9.54** lb/hour	**14.9** 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:	**0.43** lb/hour	**0.67** 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: **10** lb/hour **15.6** 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 27,820 dscfm x 60 min/hr ÷ 7000 gr/lb = 9.54 lb/hr; 9.54 lb/hr x 3120 hr/yr ton/2000 lb = 14.9 TPY. Dry Slag Conveying System Baghouse = 0.43 lb.hr & 0.67 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:	9.54 lb/hour 14.9 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:	0.43 lb/hour 0.67 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: **11.7** lb/hour **18.2** 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): **410.6 gal/hr x 142(0.2) lb/1000 gal = 11.7 lb/hr; 11.7 lb/hr x 3,120 hr/yr x ton/2000 lb = 18.2 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: **8.21** lb/hour **12.8** tons/year
4. Synthetically Limited? [**X**] Yes [ ] No
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
6. Emission Factor: **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): **410.6 gal/hr x 20 lb/1000 gal = 8.21 lb/hr; 8.21 lb/hr x 3,120 hr/yr x ton/2000 lb = 12.8 TPY**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): **Slag dryer is limited to 3,120 hours per year.**

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: **2.1** lb/hour **3.2** 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): **410.6 gal/hr x 5 lb/1000 gal = 2.05 lb/hr; 2.05 lb/hr x 3,120 hr/yr x ton/2000 lb = 3.2 TPY**
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): **Slag dryer is limited to 3,120 hours per year.**

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:	213	TPH
4. Maximum Production Rate:		
5. Operating Capacity Comment (limit to 200 characters): **Maximum Process/Throughput Rate: 212.5 TPH (rounded to 213 TPH). Based on 87.5 TPH from Kiln #3, and 125 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

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:	5. Maximum Annual Rate:
212.5	**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:	5. Maximum Annual Rate:
125	**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.**

ATTACHMENT A

(Revised 1/20/97)

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. This attachment has been revised on January 16, 1997, to reflect a change in the design of the dryer.

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 57.5 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 99 or equivalent. Revised data for the proposed slag dryer baghouse is as follows:

Air flow rate: 44,486 acfm (27,820 dscfm)

Gas temperature: 300°F

Cloth area: 9,896 ft^2

Air/cloth ratio: 4.5:1

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.

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 44,490 acfm at 300°F, the dry standard air flow rate is 27,820 dscfm (assuming about 10 percent moisture). Maximum operating hours for the dryer will be 3,120 hr/yr. Maximum PM emissions are therefore:

27,820 dscfm x 0.04 gr/dscf x 60 min/hr / 7000 gr/lb = 9.54 lb/hr

9.54 lb/hr x 3,120 hr/yr x ton/2,000 lb = 14.88 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 5,000 acfm, and the design outlet grain loading is 0.01 gr/acf. Therefore:

5,000 acfm x 0.01 gr/acf x 60 min/hr / 7000 gr/lb = 0.43 lb/hr

0.43 lb/hr x 3,120 hr/yr x ton/2,000 lb = 0.67 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 17.3 (14.88 + 0.67 + 1.8), and 16.2 (14.88 + 0.67 + 0.6) TPY, respectively.

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.

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 125 TPH, the process weight table would allow up to 37.5 lb/hr of PM emissions. However, Tarmac will limit PM emissions from the slag dryer to 9.54 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.

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 percent 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 percent, additional measures will be employed. These measures may include, but may not be limited to, use of a water application system (e.g., water trucks, water hoses) 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 percent 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 4.5:1, 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 concerning 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 believed that the baghouse serving the existing slag dryer is not operating properly. It is therefore believed that outlet dust loadings lower than 0.04 gr/dscf could be achievable by the new system; however, the actual performance cannot be accurately 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.

However, Tarmac is willing to conduct a testing program on the new slag dryer in order to set the appropriate BACT emission limit. As required by the existing slag dryer permit, a testing plan and protocol 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.

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	57.5 MMBtu/hr	57.5 MMBtu/hr
Heat Value	140,000 MMBtu/gal	1000 Btu/scf
Hourly Fuel Use	410.6 gal/hr	57.48 MMscf/hr
Annual Fuel Use	1,280,983 gal/yr	179,338 MMscf/yr
Max Sulfur Content	0.2 Wt%	0.01 gr/scf

	Fuel Oil			Natural Gas		
		Maximum Emissions			Maximum Emissions	
Pollutant	Emission Factor [b]	lb/hr	TPY	Emission Factor [b]	lb/hr	TPY
EMISSION DATA						
SO2	142*S lb/Mgal[c]	11.66	18.19	0.60 lb/MMscf	0.034	0.054
NOx	20 lb/Mgal	8.21	12.81	140.00 lb/MMscf	8.05	12.55
CO	5 lb/Mgal	2.05	3.20	35.00 lb/MMscf	2.01	3.14
NMVOC	0.2 lb/Mgal	0.082	0.13	3.83 lb/MMscf	0.22	0.34
Sulfuric Acid Mist	0.1225 lb/Mgal	0.050	0.08	NA	--	--
Lead-Total	8.9E-06 lb/MMBtu	5.12E-04	7.98E-04	NA	--	--
Mercury	3.0E-06 lb/MMBtu	1.72E-04	2.69E-04	NA	--	--
Beryllium	2.5E-06 lb/MMBtu	1.44E-04	2.24E-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)	NCONTROLLED 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	[b]	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.

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	125	27,820(a)	0.04 gr/dscf	9.54	3,120	14.88
EU 1	Dry Slag Conveying System								
	Conveyor/Transfer Tower	Unknown	Baghouse	125	5,000	0.01 gr/acf	0.43	3,120	0.67
EU 2	Clinker Handling System No. 3								
	Conveyor/Bucket Elevator	K-347	Baghouse	125	5,000	0.01 gr/acf	0.43	8,760	1.88
	Conveyor/Bucket Elevator	K-447	Baghouse	125	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	212.5	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 pump	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							8.53		51.03

Notes:
(a) Airflow reflects dscfm.

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)	(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	51.03	41.1	25	Yes
Particulate matter (PM10)	0.62	11.70	51.03	39.9	15	Yes
Sulfur dioxide	--	--	18.19	18.19	40	No
Nitrogen oxides	--	--	12.81	12.81	40	No
Carbon monoxide	--	--	3.20	3.20	100	No
Volatile organic compounds	--	--	0.34	0.34	40	No
Sulfuric acid mist	--	--	0.08	0.08	7	No
Total reduced sulfur	--	--	--	--	10	No
Lead	--	--	2.7E-04	2.7E-04	0.6	No
Mercury	--	--	2.2E-04	2.2E-04	0.1	No
Beryllium	--	--	0.0E+00	0.0E+00	4.0E-04	No
Fluorides	--	--	--	--	3	No
Asbestos	--	--	--	--	0.007	No
Vinyl Chloride	--	--	--	--	1	No

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.

APPENDIX

MANUFACTURER DESIGN AND GUARANTEE INFORMATION

6.9 EXTENDED WARRANTY TO THE ORIGINAL PURCHASER. In the event the contract specifies any of the equipment listed below, Gencor will extend the warranty on the items for the period indicated. Gencor will repair or replace the items in the event of premature wear only, provided the Purchaser furnishes documented proof of tonnage processed. In all cases, it will be the Purchaser's responsibility to pay for any disassembly, installation, and freight, F.O.B. factory, for the replacement of such components.

a. Standard Transfer Conveyor Chain - 750,000 ton prorated warranty on the double strand 4 in. pitch A3433 roller chain (rollers, bushings, and pins).

b. Standard Transfer Conveyor Slats - One million ton unconditional warranty on the 3/4 in. thick AR slats.

c. Single Piece Self-Erect Silo, Standard Slat Conveyor Floor System - One million ton unconditional warranty on the slat conveyor floor system. This warranty does not cover floor castings that are broken or otherwise damaged through abuse or misuse of the slat conveyor.

d. Single Piece Self-Erect Silo, Standard Heavy-Duty Main Slat Conveyor Chain - One million ton prorated warranty on the single strand 6 in. pitch 9856 roller chain (rollers, bushings, and pins).

e. Single Piece Self-Erect Silo, Standard Slats - One million ton unconditional warranty on the 3/4 in. thick AR slats.

f. Two Piece Self-Erect Silo, Standard Slat Conveyor Floor System - Two million tons or seven years, whichever occurs first, unconditional warranty on the slat conveyor floor system. This warranty does not cover floor castings that are broken or otherwise damaged through abuse or misuse of the slat conveyor.

g. Two Piece Self-Erect Silo, Standard Slats - One million ton unconditional warranty on the 3/4 in. thick AR slats.

h. Heavy-Duty Hot Mix Bucket Elevator, Chain - One million ton prorated warranty on the single or double strand 6" pitch, 9856 roller chain (rollers, bushings, and pins).

i. Heavy-Duty Hot Mix Bucket Elevator, Standard Bucket - One million ton prorated warranty on the bolt-on 3/8" abrasion steel buckets, provided the elevator is equipped with the standard cleanout system and the Purchaser has operated the cleanout system in the manner prescribed in the OSM manual.

j. Standard Heavy-Duty Main Slat Conveyor, Floor System - Three million tons or seven years, whichever occurs first, unconditional warranty on the slat conveyor floor system. This warranty does not cover floor castings that are broken or otherwise damaged through abuse or misuse of the slat conveyor.

k. Standard Heavy-Duty Main Slat Conveyor, Chain - One million ton prorated warranty on the single strand 6" pitch 9856 roller chain (rollers bushings, and pins).

l. Standard Heavy-Duty Main Slat Conveyor, Standard Slats - One million ton unconditional warranty on the 3/4 in. thick slats.

m. Medium-Duty Slat Conveyor, Standard Slats - One million ton unconditional warranty on the 3/4 in. thick slats.

n. Medium-Duty Slat Conveyor, Chain - 500,000 ton prorated warranty on the double strand 4" pitch A3433 roller chain (rollers, bushings, and pins).

6.10 USED EQUIPMENT - WARRANTY DISCLAIMER. Applicable to all used equipment sold without exception. All used equipment is sold strictly "As Is - Where Is". With the exception of title warranty, there are not other warranties given, expressed, or implied, including the implied warranty or merchantability or fitness for use. Any damage or loss whatsoever, of any kind or nature, including but not limited to any consequential or incidental damages, are the responsibility of the Purchaser. Seller specifically disclaims all liability claims, including but not limited to claims made pursuant to section 402A of restatement of "Torts".

Purchaser has the sole responsibility to provide the necessary labor and supervision to properly match-mark the plant components during the dismantling process and, to see that said used equipment is properly handled, dismantled and loaded - irrespective of whether it is the Seller, its agents, or third parties actually performing the dismantling and loading - and to provide the correct tractor - trailer haul units to remove component on a timely basis.

7. EMISSION CONTROL WARRANTY

Gencor provides this warranty with the purchase of pollution control equipment, either a baghouse (BH), or a venturi wet scrubber (VWS) when used in the wet mode for use with a Gencor asphalt plant (Plant). This emission control warranty is not offered on the above pollution control equipment if it is not interfaced with a Gencor burner, control and other related equipment. Terms which are not otherwise defined herein are used as defined in the Sales Order.

ALL STATES, INCLUDING CANADA:

Gencor warrants to Purchaser that with proper use and subject to the conditions described below, the Plant, when equipped with a properly sized Gencor supplied BH or VWS, will operate in compliance with the U.S. Environmental Protection Agency (EPA) standards for asphalt concrete plants of .04 GR/DSCF particulate emission and 20 percent opacity (40 C.F.R. 60.90 (a) (1) and (2)).

This warranty is strictly conditioned upon the following:

7.1 Compliance with federal EPA particulate standards shall be determined by a performance evaluation test (the "Test") which shall be conducted within ninety days of shipment from Gencor's factory or sixty days from initial firing, whichever comes first, of the BH or VWS. Failure to conduct the tests in a timely fashion will void this warranty.

7.2 The Test shall only be conducted by professional, licensed personnel approved by Gencor. For baghouses, the Test shall include at least one black light test prior to any tests. On either baghouses or wet scrubbers there will be at least one preliminary test for particulates using the standard EPA method 5 test procedure conducted at least one full day prior to the official EPA test. All tests are to be observed by the Gencor Service Engineer.

7.3 Results of the preliminary Test must be available within twelve hours prior to the time the official Test is taken.

7.4 All costs associated with all tests including the preliminary and official EPA Tests, including plant preparation, clearing, permits, and necessary adjustments will be paid by the Purchaser.

7.5 All scheduling of the preliminary and official EPA Tests will be the responsibility of the Purchaser.

7.6 All costs associated with cancellations and/or rescheduling, regardless of the cause, will be the responsibility of the Purchaser.

7.7 A service engineer, provided by Gencor, shall be on site for the duration of the Test. The cost of the Service Engineer will be borne by Gencor for the original tests for a period up to three man-days in one trip. If it becomes necessary for additional tests to be run at a later date for any reason, the purchaser will pay the costs for the service engineer using standard Gencor service rates in effect at the time. Gencor shall be notified of the scheduled Test at least seven days in advance of the Test date. Any change in the Test schedule shall be at Purchaser's expense. This warranty will be null and void if the test is not conducted within sixty days after initial firing of the plant or ninety days after shipment from Gencor, whichever comes first. The purchaser will be responsible for placing the equipment in an as new condition prior to the test.

7.8 Gencor will accept only an established, credible testing firm which has high quality, portable testing equipment. It will be the responsibility of the appointed testing laboratory to have the capabilities of analyzing the preliminary and official test results on-site.

7.9 The Plant shall be prepared by the Purchaser's employees at the Purchaser's expense, maintained, and operated in accordance with Gencor's written and verbal instruction to Purchaser and within the parameters indicated on Gencor's specification sheet.

7.10 The Test shall only be conducted with one group of materials which shall be a) all virgin materials OR b) a minimum of 50% virgin materials and a maximum of 50% recycle materials.

7.11 The asphaltic concrete ingredients utilized during the Test and preliminary Test shall be:

a. Aggregate which is natural, clean, and normal for asphalt concrete production.

b. Asphalt cement which is of a type having a low paraffin content and high temperature smoke point.

IMPORTANT - It will be the Purchaser's responsibility to provide asphalt cement which is of a type having a low paraffin content and high temperature smoke point. The smoke point must be a minimum of 20 degrees Fahrenheit above the mix discharge temperature.

c. The materials should also conform to the following criteria:
   1. The total fines in aggregates on a dry basis less than 200 mesh will be 5% or less.
   2. The total fines less than 10 microns (approximately 2000 mesh equivalent) will be no greater than 1% of the total fines less than 200 mesh.
   3. The aggregates processed do not contain any constituents (less than .01% by weight) other than water that can be volatilized at less than 1000°F.
   4. The baghouse differential pressure must be maintained between 2.5 and 3.5" wc during the testing period.

If, with satisfaction of the above conditions, the BH or VWS equipped Plant fails to perform in accordance with this warranty, Gencor will, at its option, take one or more of the following actions.

1. Recommend the changes, adjustments, and repairs necessary for either the BH or DC or VWS to fulfill this warranty.

2. Provide modification of or a like replacement of either the BH or VWS upon return of the BH or DC or VWS F.O.B. Gencor's designated shipping destination.

If the BH or DC or VWS equipped Plant passes the Test on either all virgin materials or with recycled materials (50% maximum), the Plant shall be deemed to comply with and Gencor shall be deemed to have fulfilled its obligations under this warranty.

THE WARRANTY AND LIABILITIES OF GENCOR SET FORTH HEREIN ARE EXCLUSIVE OF ANY OTHER REPRESENTATIONS REGARDING EMISSIONS, POLLUTION CONTROL, OR OTHER ENVIRONMENTAL REQUIREMENTS. THIS WARRANTY SUPPLEMENTS, AND, UNLESS OTHERWISE EXPRESSLY PROVIDED FOR HEREIN, IS SUBJECT TO ALL CONDITIONS STATED IN, THE STANDARD GENCOR CORPORATION WARRANTY WHICH IS ATTACHED HERETO.

MEMORANDUM

To: Willard Hanks
DARM

From: Ewart Anderson
DERM

Date: January 2, 1997

Subject: Tarmac America, Inc
Replacement Slag Dryer

We have reviewed the Tarmac America, Inc. permit application, 0250020-001 AC, for constructing a replacement slag dryer at the Pennsuco cement plant in Dade County and offer the following comments.

- The applicant has requested a limit of 3120 hours per year operation for the slag dryer. It is therefore necessary that the operating permit, when issued, include provisos for reporting and recordkeeping.

- The submittal does not reference the federal regulation Subpart F, Standards of Performance for Portland Cement Plants, which in Section 40 CFR 60.62(c) states that, a portland cement plant component facilities other than kilns and clinker coolers must meet an opacity limit of 10%. Please request an explanation as to why an opacity limit of 20% is stated for the slag dryer.

- Tarmac proposes a PM emissions limit of 0.04 gr./dscf as BACT for the slag dryer. Their rationale is that the operation is similar to that of an asphalt plant. We disagree with this reasoning because an asphalt plant's process materials contain more moisture than that of slag, thereby resulting in a lesser potential for PM emissions. We feel that the PM emissions BACT of 0.025 gr./dscf established for the Englehard Calciner/Spray Dryer shown in Table 5-1 of the application is appropriate and that that limit should be the maximum allowed. It should noted that the production rate of the Englehard facility is one fifth of that proposed for the slag dryer.

- Annual fugitive dust emissions estimates are indicated as being 1.775 TPY for PM and 0.625 TPY for PM10. The factors used for these calculations were obtained from the 1988 issue of AP42. In the 1995 issue of AP42, Table 12.5-4 lists the emissions factor of 0.26 lb./ton for batch handling operations utilizing front end loaders to work high silt slag piles. For this project, using the updated factor and given the proposed slag throughput of 300,000 TPY, particulate emissions would exceed 11 TPY.

- It is necessary that the slag be stored on an impervious bed to preclude the leaching of contaminants into the groundwater. The opacity limit for the slag piles should be 10%. Also, a permanent dust suppressant system, such as a water sprinkling system, should be provided. Trafficked areas should be paved.

- The applicant should be advised that additional local permits are required for the fuel tankage and slag storage operations. The DERM Waste Management Division should be contacted.

cc: Al Linero, P.E., DARM
Joe Kahn, P.E., FDEP, West Palm Beach

DERM 248955
METROPOLITAN DADE COUNTY, FLORIDA
ENVIRONMENTAL RESOURCES MANAGEMENT
AIR QUALITY MANAGEMENT DIVISION
33 SW 2nd AVENUE SUITE 900
MIAMI FLORIDA 33130-1540
161 01-37 9/96

MR. AL LINERO
CHIEF, AIR SECTION
BUREAU OF AIR REGULATION
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 23299-2400

AUTO 32399

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

December 30, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Scott Quaas
Environmental Manager
Tarmac America, Inc.
455 Fairway Drive
Deerfield Beach, Florida 33441

Re: DEP File No. 0250020-001-AC
Tarmac Slag Dryer System

Dear Mr. Quaas:

The Department has reviewed your application for permit to construct a new blast furnace slag drying and handling system at your plant in Medley, Dade County, Florida. Pursuant to Rule 62-4.070, F.A.C., additional information is needed to process this application. Please provide responses to the following comments.

The proposed baghouse appears undersized for this installation. The proposed baghouse is designed for 48,000 cubic feet per minute (cfm) with a 5.67:1 air to cloth ratio. Your application proposes to treat 54,600 acfm which results in an air to cloth ration of 6.4:1. Baghouses such as those in this system typically have an air to cloth ratio of 4.5:1.

Please investigate the use of a baghouse that can meet a particulate matter (PM) emission standard as low as 0.01 grains per dry standard cubic foot (gr/dscf). This standard will be met by existing filters on the slag handling system. Consider baghouses with a 5 to 1 or lower air to cloth ratio. Provide guarantees and/or other appropriate reasonable assurance of the lowest PM standard that can be met based on manufacturer's information or results from similar well-controlled operations. Revise the Best Available Control Technology (BACT) determination to include an economic analysis of the different size baghouses along with your BACT recommendation.

The visible emission standard for a baghouse is typically 5 percent opacity. Please provide technical support for a higher standard if the visible emissions from the proposed baghouse will exceed 5 percent opacity.

Please describe the design and operation of the water application system that will be used to minimize fugitive emissions. Provide a general process flow diagram of the system.

The Department will resume processing this application after receipt of the requested information. If you have any questions on this matter, please call Willard Hanks at 904/488-1344.

Sincerely,

A. A. Linero, P.E., Administrator
New Source Review Section

AAL/wh

cc: Pat Wong, DERM
Brian Beals, EPA
John Bunyak, NPS
Joe Kahn, SED
David Buff, KBN

Fold at line over top of envelope to the right of the return address

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Scott Quaas, Env. Mgr.
Yanmar America, Ind.
455 Fairway Dr.
Deerfield Bch, Fl
33441

4a. Article Number
P 265 659 122

4b. Service Type
☐ Registered ☑ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
1/3/97

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

P 265 659 122

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Scott Quaas	
Street & Number Yanmar America	
Post Office, State, & ZIP Code Deerfield Bch, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 12-30-96	
0250020-001-AC	

PS Form **3800**, April 1995

0250020-001-AC
PSD-FL-236

KBN
A GOLDER ASSOCIATES COMPANY

Letter of Transmittal

RECEIVED
DEC 10 1996
BUREAU OF AIR REGULATION

RECEIVED
1996
BUREAU OF AIR REGULATION

Date: 12/09/96

Project No.: 9651137-0900

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

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	Electronic Submittal Disks
4	Permit Application(sent previously under separate cover)

These are transmitted:

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

Remarks: The application have been sent under separate cover.

Sender: Mark Aguilar/arz

Copy to: Scott Quaas, Tarmac (2)

9651137Y/F1/WP/3 12/09/96)

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