

PROJECT No.
0250020-013-AV

Department of
Environmental Protection
Division of Air Resources Management

RECEIVED Working Copy
JUN 12 2002

APPLICATION FOR AIR PERMIT - TITLE V SOURCE
See Instructions for Form No. 62-210.900(1)

Air Quality
Management Division

I. APPLICATION INFORMATION

Identification of Facility

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

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 Processing Information (DEP Use)

| | |
|------------------------------------|--|
| 1. Date of Receipt of Application: | |
| 2. Permit Number: | |
| 3. PSD Number (if applicable): | |
| 4. Siting Number (if applicable): | |

Purpose of Application

Air Operation Permit Application

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

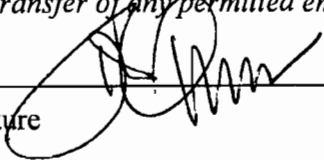
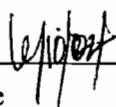
- Initial Title V air operation permit for an existing facility which is classified as a Title V source.
- Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.
Current construction permit number: _____
- Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.
Current construction permit number: _____
Operation permit number to be revised: _____
- Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)
Operation permit number to be revised/corrected: _____
- Title V air operation permit revision 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 number to be revised: 0250020-011-AV
Reason for revision: Designate facility as non-major for HAPs

Air Construction Permit Application

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

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

Owner/Authorized Representative or Responsible Official

| |
|--|
| 1. Name and Title of Owner/Authorized Representative or Responsible Official: Hardy Johnson, President, Florida Division |
| 2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Tarmac America, LLC Street Address: 455 Fairway Drive City: Deerfield Beach State: FL Zip Code: 33441 |
| 3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (954) 481 - 2800 Fax: (954) 421 - 0296 |
| 4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative*(check here [], if so) or the responsible official (check here [X], if so) 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.</i>  _____ Signature  _____ Date |

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

| |
|---|
| 1. Professional Engineer Name: David A. Buff Registration Number: 19011 |
| 2. Professional Engineer Mailing Address: Organization/Firm: Golder Associates Inc. 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 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 [X], 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 [], 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

6/8/2002

Date

(seal)

* Attach any exception to certification statement.

Scope of Application

| Emissions Unit ID | Description of Emissions Unit | Permit Type | Processing Fee |
|--------------------------|--------------------------------------|--------------------|-----------------------|
| All | Facility | | |
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Application Processing Fee

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

Construction/Modification Information

1. Description of Proposed Project or Alterations:

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|--|
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|--|

2. Projected or Actual Date of Commencement of Construction:

3. Projected Date of Completion of Construction:

Application Comment

The purpose of this application is to designate the Tarmac America Inc. Pennsuco cement plant as a non-major source of hazardous air pollutants (HAPs). This determination is based on recent source testing conducted by Tarmac on the Pennsuco cement kilns. As a non-major source of HAPs, the Pennsuco facility will not be subject to certain provisions of the MACT standards for portland cement plants, promulgated under 40 CFR 63 Subpart LLL.

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: 0 | 4. Facility Status Code: A | 5. Facility Major Group SIC Code: 32 | 6. Facility SIC(s): 3241, 3271, 3273, 1422, 1442 |
| 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

Check all that apply:

| | |
|--|----------------------------------|
| 1. <input type="checkbox"/> Small Business Stationary Source? | <input type="checkbox"/> Unknown |
| 2. <input checked="" type="checkbox"/> Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)? | |
| 3. <input type="checkbox"/> Synthetic Minor Source of Pollutants Other than HAPs? | |
| 4. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)? | |
| 5. <input type="checkbox"/> Synthetic Minor Source of HAPs? | |
| 6. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS? | |
| 7. <input checked="" type="checkbox"/> One or More Emission Units Subject to NESHAP? | |
| 8. <input type="checkbox"/> Title V Source by EPA Designation? | |
| 9. Facility Regulatory Classifications Comment (limit to 200 characters): | |
| <p>Facility is an area source for HAPs emissions, and is therefore subject to certain provisions of the MACT standards for portland cement manufacturing plants, 40 CFR 63 Subpart LLL.</p> | |

List of Applicable Regulations

| | |
|---|--|
| 62-210.700(1) Excess Emissions | |
| 62-210.700(4) Excess Emissions | |
| 62-210.700(5) Excess Emissions | |
| 62-210.700(6) Excess Emissions | |
| 62-296.320(4) General Visible Emissions Std. | |
| 62-296.320(4)(c) - Unconfined Emissions | |
| Dade County - See 24-17 | |
| Title V Core List dated 3/27/02 | |
| | |

B. FACILITY POLLUTANTS

List of Pollutants Emitted

| 1. Pollutant Emitted | 2. Pollutant Classif. | 3. Requested Emissions Cap | | 4. Basis for Emissions Cap | 5. Pollutant Comment |
|----------------------|-----------------------|----------------------------|-----------|----------------------------|-------------------------------------|
| | | lb/hour | tons/year | | |
| PM | A | | | | Particulate Matter-Total |
| NO _x | A | | | | Nitrogen Oxides |
| SO ₂ | A | | | | Sulfur Dioxide |
| SAM | B | | | | Sulfuric Acid Mist |
| VOC | A | | | | Volatile Organic Compounds |
| CO | A | | | | Carbon Monoxides |
| PM ₁₀ | A | | | | Particulate Matter-PM ₁₀ |
| DIOX | B | | | | Dioxin/Furans |
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C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

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| 1. Area Map Showing Facility Location: [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested |
| 2. Facility Plot Plan: [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested |
| 3. Process Flow Diagram(s): [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested |
| 4. Precautions to Prevent Emissions of Unconfined Particulate Matter: [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested |
| 5. Fugitive Emissions Identification: [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested |
| 6. Supplemental Information for Construction Permit Application: [] Attached, Document ID: _____ [X] Not Applicable |
| 7. Supplemental Requirements Comment: |

Additional Supplemental Requirements for Title V Air Operation Permit Applications

| |
|---|
| 8. List of Proposed Insignificant Activities: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 9. List of Equipment/Activities Regulated under Title VI: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities On site but Not Required to be Individually Listed <input checked="" type="checkbox"/> Not Applicable |
| 10. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 11. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 12. Identification of Additional Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 13. Risk Management Plan Verification: <input type="checkbox"/> Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID: _____) or previously submitted to DEP (Date and DEP Office: _____) <input type="checkbox"/> Plan to be submitted to CEPPO (Date required: _____) <input checked="" type="checkbox"/> Not Applicable |
| 14. Compliance Report and Plan: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 15. Compliance Certification (Hard-copy Required): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

VIA ELECTRONIC MAIL

4 April 2003

Mr. H. Patrick Wong, Chief
Air Quality Management Division
Miami-Dade Environmental Resources Management
33 S.W. 2nd Avenue - Suite 900
Miami, Florida 33150-1540

455 Fairway Drive
Deerfield Beach, FL 33441
(954) 481-2800
Fax (954) 421-0296
www.titanamerica.com

Environmental Services
Direct line (954) 425-4165
Direct fax (954) 480-9352
Email squaas@titanamerica.com

**RE: Pennsuco Cement
Dade County - AP
Facility ID# 0250020
MACT Applicability**

Dear Mr. Wong:

This information is provided in response to your incompleteness determination letter regarding our Title V permit revision application and Area Source Determination. Tarmac believes that we have provided sufficient information to determine that no individual HAP emission exceeds 10 TPY and that the total HAP emissions are less than 25 TPY. The reasons stated for your incompleteness determination are incorrect and the following responses are provided to the numbered items beginning on page 1 of your letter:

1. HCl emissions were provided for both Kiln 3 and Kiln 2. The Kiln 3 potential emissions are 2.90 TPY and the Kiln 2 potential emissions are 0.75 TPY, for a total of 3.65 TPY. The potential emissions for both kilns are based on the emission factor derived from the HCl stack testing conducted on Kiln 3. HCl testing for Kiln 2 is unnecessary as discussed in the Determination of Area Source Status report (see Section 3) because HCl emissions are derived from chlorine in the kiln feed material and to a lesser extent, the fuel (coal). The same kiln feed material and fuel are used in both kilns; therefore, the unit rate of HCl emissions (lb/ton of clinker produced) should be identical.
2. Chlorine gas (Cl₂) is a HAP that is not expected to be emitted from the cement kilns. All forms of chlorine are either bound in the clinker or cement kiln dust as chlorides (typically CaCl) or are emitted as HCl. The emission factors that you refer to in AP-42 are for "Chloride (Cl)" which is not a HAP.

.../2

3. Toluene emissions for both kilns were included in the calculations of total HAPs. The Kiln 3 potential emissions are 0.54 TPY and the Kiln 2 potential emissions are 0.69 TPY, for a total of 1.23 TPY.

I have attached the complete copy of the HAP emission calculations. The spreadsheet table titled *SUMMARY OF KILN HAP EMISSIONS: ORGANICS, HCL AND METALS* shows the HCl and toluene emissions referred to in Items 1 and 3 above. Tarmac finds no reason to revise these calculations and believes all necessary information has been provided to complete the application. If you have any questions or need further information please call me at the number on the cover page.

Sincerely,



Scott Quaas
Environmental Manager
Environmental Services-Florida Business

cc: A. Townsend
R. Hawks, EQM
R. Manning, HGS

TABLE 1. SUMMARY OF POTENTIAL HAP EMISSIONS

| Source | Pollutan | Potential Emissions (ton/yr) | Major Source Threshold (ton/yr) | Status |
|------------------------------------|---------------|------------------------------|---------------------------------|-------------|
| Main Kiln Stacks | HC | 3.65 | | |
| | Organic HAPs | 16.55 | | |
| | Semivolatiles | 1.70 | | |
| | Metal HAPs | 1.20 | | |
| Miscellaneous Sources ¹ | Metal HAPs | 0.41 | | |
| Total Plan | All HAPs | 23.50 | 25 | Area Source |
| Largest HAP | HC | 3.65 | 10 | Area Source |
| Second Largest HAP | Formaldehyde | 3.32 | 10 | Area Source |

Includes cooler and all other point sources controlled by baghouses, process fugitive sources, and plant roads

SUMMARY OF KILN HAP EMISSIONS: ORGANICS, HCL AND METALS

| | K3 TEST RESULTS | | | K3 POTENTIAL HAPS | | | | K2 TEST RESULTS | | | K2 POTENTIAL HAPS | | | | TOTAL | NOTE |
|------------------------------------|-----------------|----------------|-------------|-------------------|-------------|---------------|--------------|-----------------|----------------|-------------|-------------------|-------------|---------------|-------------|--------------|------|
| | TEST LB/HR | CLINKER TON/HR | E.F. LB/TON | CLINKER TON/HR | HOURS HR/YR | ANNUAL TON/YR | EMIS T/YR | TEST LB/HR | CLINKER TON/HR | E.F. LB/TON | CLINKER TON/HR | HOURS HR/YR | ANNUAL TON/YR | EMIS T/YR | EMIS TON/YR | |
| ACETALDEHYDE | 0.566 | 81.95 | 6.91E-03 | 87 | 8760 | 762120 | 2.63 | | | 3.45E-03 | 25 | 7884 | 197100 | 0.34 | 2.97 | 4 |
| ACRYLONITRILE | 0.231 | 81.95 | 2.82E-03 | 87 | 8760 | 762120 | 1.08 | 0.1937 | 23.75 | 8.16E-03 | 25 | 7884 | 197100 | 0.80 | 1.88 | 5 |
| BENZENE | 0.295 | 81.95 | 3.60E-03 | 87 | 8760 | 762120 | 1.37 | 0.363 | 23.75 | 1.53E-02 | 25 | 7884 | 197100 | 1.51 | 2.88 | |
| CHLOROBENZENE | 0.1160 | 81.95 | 1.42E-03 | 87 | 8760 | 762120 | 0.54 | 0.0352 | 23.75 | 1.48E-03 | 25 | 7884 | 197100 | 0.15 | 0.69 | 1 |
| ETHYLBENZENE | 0.1160 | 81.95 | 1.42E-03 | 87 | 8760 | 762120 | 0.54 | 0.0352 | 23.75 | 1.48E-03 | 25 | 7884 | 197100 | 0.15 | 0.69 | 1 |
| FORMALDEHYDE | 0.632 | 81.95 | 7.71E-03 | 87 | 8760 | 762120 | 2.94 | | | 3.86E-03 | 25 | 7884 | 197100 | 0.38 | 3.32 | 4 |
| HEXANE | 0.1160 | 81.95 | 1.42E-03 | 87 | 8760 | 762120 | 0.54 | 0.0352 | 23.75 | 1.48E-03 | 25 | 7884 | 197100 | 0.15 | 0.69 | 1 |
| HCL | 0.609 | 80 | 7.61E-03 | 87 | 8760 | 762120 | 2.90 | | | 7.61E-03 | 25 | 7884 | 197100 | 0.75 | 3.65 | |
| O-XYLENE | 0.1160 | 81.95 | 1.42E-03 | 87 | 8760 | 762120 | 0.54 | 0.0352 | 23.75 | 1.48E-03 | 25 | 7884 | 197100 | 0.15 | 0.69 | 1 |
| M&P-XYLENE | 0.0942 | 81.95 | 1.15E-03 | 87 | 8760 | 762120 | 0.44 | 0.0352 | 23.75 | 1.48E-03 | 25 | 7884 | 197100 | 0.15 | 0.58 | 1 |
| STYRENE | 0.1160 | 81.95 | 1.42E-03 | 87 | 8760 | 762120 | 0.54 | 0.0975 | 23.75 | 4.11E-03 | 25 | 7884 | 197100 | 0.40 | 0.94 | 5 |
| TOLUENE | 0.1160 | 81.95 | 1.42E-03 | 87 | 8760 | 762120 | 0.54 | 0.1664 | 23.75 | 7.01E-03 | 25 | 7884 | 197100 | 0.69 | 1.23 | 5 |
| TOTAL VOLATILE ORGANICS/HCL | | | | | | | 14.59 | | | | | | | 5.61 | 20.20 | |
| DEHP | 0.0060 | 81.95 | 7.32E-05 | 87 | 8760 | 762120 | 0.03 | 0.0028 | 23.75 | 1.18E-04 | 25 | 7884 | 197100 | 0.01 | 0.04 | 2 |
| 1,2-DIPHENYLHYDRAZINE | 0.0015 | 81.95 | 1.79E-05 | 87 | 8760 | 762120 | 0.01 | | | 1.79E-05 | 25 | 7884 | 197100 | 0.00 | 0.01 | 1 |
| NAPHTHALENE | 0.0608 | 81.95 | 7.42E-04 | 87 | 8760 | 762120 | 0.28 | 0.0800 | 23.75 | 3.37E-03 | 25 | 7884 | 197100 | 0.33 | 0.61 | |
| PHENOL | 0.0169 | 81.95 | 2.06E-04 | 87 | 8760 | 762120 | 0.08 | 0.0419 | 23.75 | 1.76E-03 | 25 | 7884 | 197100 | 0.17 | 0.25 | |
| POM | 0.0536 | 81.95 | 6.54E-04 | 87 | 8760 | 762120 | 0.25 | 0.1283 | 23.75 | 5.40E-03 | 25 | 7884 | 197100 | 0.53 | 0.78 | 3 |
| TOTAL SEMI-VOLATILES | | | | | | | 0.65 | | | | | | | 1.05 | 1.70 | |
| ANTIMONY | 0.0012 | 81.95 | 1.46E-05 | 87 | 8760 | 762120 | 0.01 | 0.0015 | 23.75 | 6.32E-05 | 25 | 7884 | 197100 | 0.01 | 0.01 | |
| ARSENIC | 0.08 | 81.95 | 9.76E-04 | 87 | 8760 | 762120 | 0.37 | 0.001 | 23.75 | 4.21E-05 | 25 | 7884 | 197100 | 0.00 | 0.38 | |
| BERYLIUM | 4.50E-05 | 81.95 | 5.49E-07 | 87 | 8760 | 762120 | 0.00 | 4.50E-05 | 23.75 | 1.89E-06 | 25 | 7884 | 197100 | 0.00 | 0.00 | 1 |
| CADMIUM | 5.00E-05 | 81.95 | 6.10E-07 | 87 | 8760 | 762120 | 0.00 | 1.00E-04 | 23.75 | 4.21E-06 | 25 | 7884 | 197100 | 0.00 | 0.00 | 1 |
| CHROMIUM | 0.0093 | 81.95 | 1.13E-04 | 87 | 8760 | 762120 | 0.04 | 0.0042 | 23.75 | 1.77E-04 | 25 | 7884 | 197100 | 0.02 | 0.06 | |
| COBALT | 3.50E-04 | 81.95 | 4.27E-06 | 87 | 8760 | 762120 | 0.00 | 0.0004 | 23.75 | 1.68E-05 | 25 | 7884 | 197100 | 0.00 | 0.00 | 1 |
| LEAD | 0.0049 | 81.95 | 5.98E-05 | 87 | 8760 | 762120 | 0.02 | 0.0068 | 23.75 | 2.86E-04 | 25 | 7884 | 197100 | 0.03 | 0.05 | |
| MANGANESE | 0.0112 | 81.95 | 1.37E-04 | 87 | 8760 | 762120 | 0.05 | 0.0049 | 23.75 | 2.06E-04 | 25 | 7884 | 197100 | 0.02 | 0.07 | |
| MERCURY | 0.0055 | 81.95 | 6.71E-05 | 87 | 8760 | 762120 | 0.03 | 0.0002 | 23.75 | 8.42E-06 | 25 | 7884 | 197100 | 0.00 | 0.03 | |
| NICKEL | 0.0047 | 81.95 | 5.74E-05 | 87 | 8760 | 762120 | 0.02 | 0.0025 | 23.75 | 1.05E-04 | 25 | 7884 | 197100 | 0.01 | 0.03 | |
| PHOSPHORUS | 0.077 | 81.95 | 9.40E-04 | 87 | 8760 | 762120 | 0.36 | 0.049 | 23.75 | 2.06E-03 | 25 | 7884 | 197100 | 0.20 | 0.56 | |
| SELENIUM | 1.82E-04 | 81.95 | 2.22E-06 | 87 | 8760 | 762120 | 0.00 | 1.39E-03 | 23.75 | 5.85E-05 | 25 | 7884 | 197100 | 0.01 | 0.01 | |
| TOTAL METALS | | | | | | | 0.90 | | | | | | | 0.30 | 1.20 | |
| KILN TOTAL | | | | | | | 16.14 | | | | | | | 6.96 | 23.10 | |

- NOTES:
- 1 COMPOUND WAS NOT DETECTED, USED 1/2 OF DETECTION LIMIT FOR CONSERVATIVE ESTIMATE
 - 2 BIS(2-ETHYLHEXYL)PHTHALATE
 - 3 POLYCYCLIC ORGANIC MATTER, INCLUDES THE FOLLOWING SEMI-VOLATILE ORGANIC COMPOUNDS NOT OTHERWISE LISTED: ACENAPHTHYLENE, DIBENZOFURAN, FLUORANTHENE, 2-METHYLNAPHTHALENE, PHENANTHRENE, ANTHRACENE, FLUORENE, PYRENE, ACENAPHTHALENE, CRYSENE, BENZO(A)ANTHRACENE, BENZO(B)FLUORANTHENE, BENZO(K)FLUORANTHENE, AND BENZO(A)PYRENE.
 - 4 COMPOUND DETECTED IN KILN 3 TEST; KILN 2 TEST RESULTS WERE BELOW DETECTION LIMITS; FOR KILN 2, USED 1/2 OF KILN 3 EMISSION FACTOR AS A CONSERVATIVE ESTIMATE.
 - 5 COMPOUND WAS NOT DETECTED IN KILN 3 BUT WAS DETECTED IN KILN 2; USED 1/2 DETECTION LIMIT FOR KILN 3 AS A CONSERVATIVE ESTIMATE, AND USED ACTUAL TEST RESULT FOR KILN 2.

SUMMARY OF POTENTIAL PM EMISSIONS NON-KILN SOURCES

POINT SOURCE GROUPS

| | SOURCE ID | EMIS RATE | | CLINKER T/YR | LIMESTONE T/YR | CEMENT T/YR | COAL T/YR | CKD T/YR | SLAG T/YR | TOTAL T/YR |
|----------------------------|-----------|-----------|-------|-----------------|-------------------|----------------|--------------|-------------|--------------|---------------|
| | | LB/HR | HR/YR | | | | | | | |
| COAL HANDLING | 3 | 4.29 | 8760 | | | | 18.77 | | | |
| COOLER NO.2 | 5 | 17.63 | 7884 | 69.50 | | | | | | |
| COOLER NO.3 | 7 | 12.25 | 8760 | 53.66 | | | | | | |
| DUST INSUFLATION K2 | | 0.26 | 7884 | | | | | 1.01 | | |
| DUST INSUFLATION K3 | | 0.86 | 8760 | | | | | 3.75 | | |
| CLINKER SILOS | 8 | 0.39 | 8760 | 1.69 | | | | | | |
| CLINKER HANDLING K2 | 9A | 0.51 | 7884 | 2.03 | | | | | | |
| CLINKER HANDLING K3 | 9B | 0.86 | 8760 | 3.75 | | | | | | |
| SLAG DRYER | | 2.19 | 8760 | | | | | | 9.58 | |
| FINISH MILL 1 | 10 | 2.04 | 8760 | | | 8.94 | | | | |
| FINISH MILL 2 | 11 | 2.04 | 8760 | | | 8.94 | | | | |
| FINISH MILL 3 | 12 | 3.56 | 8760 | | | 15.58 | | | | |
| FINISH MILL 4 | 13 | 5.74 | 8760 | | | 25.15 | | | | |
| CEMENT SILOS | 14 | 3.69 | 8760 | | | 16.14 | | | | |
| LOADING TRUCK/RAIL | 15 | 1.29 | 8760 | | | 5.63 | | | | |
| PACKHOUSE | 16 | 1.03 | 8760 | | | 4.51 | | | | |
| SUBTOTAL | | | | 130.64 | 0.00 | 84.88 | 18.77 | 4.77 | 9.58 | 248.64 |
| FUGITIVE EMISSIONS | | | | | | | | | | |
| RAW MATERIALS | | | | | 3.25 | | | | | |
| COAL HANDLING | | | | | | | 0.38 | | | |
| SLAG HANDLING | | | | | | | | | 2.39 | |
| CLINKER HANDLING | | | | 12.25 | | | | | | |
| CKD HANDLING | | | | | | | | 0.50 | | |
| FINISH MILLS/CEMENT | | | | | | 3.08 | | | | |
| SUBTOTAL | | | | 12.25 | 3.25 | 3.08 | 0.38 | 0.50 | 2.39 | 21.86 |
| ROADS | | | | | | | | | | |
| UNPAVED ROADS | | | | | 107.22 | | | | | |
| PAVED ROADS | | | | | | 45.69 | | | | |
| SUBTOTAL | | | | 0.00 | 107.22 | 45.69 | 0.00 | 0.00 | 0.00 | 152.91 |
| TOTAL EMISSIONS(PM) | | | | 142.89 | 110.47 | 133.66 | 19.15 | 5.27 | 11.98 | 423.41 |

NON-KILN HAP EMISSIONS BY MATERIAL TYPE

MATERIALS ANALYSIS (PPM)

| | COAL | COKE | LIMESTONE | Bauxite | FLYASH | MILLSALE | BRICK | SLAG | GYPSUM | CLINKER | CKD | CEMENT | MASONRY | TOTALS |
|----------------|------|------|-----------|---------|--------|----------|-------|-------|--------|---------|------|--------|---------|--------|
| ANTIMONY | 1.13 | 1.13 | 6 | 89 | 10 | 326.3 | 6 | | 0.27 | 46 | 63 | 6 | 6 | |
| ARSENIC | 19.1 | 19.1 | 6.5 | 6.6 | 168 | 84.9 | 5.7 | | 3.1 | 6.8 | 5.4 | 5.7 | 5.7 | |
| BARIUM (N-H) | 250 | 250 | 20 | 130 | 9360 | 338 | 52 | | 107 | 183 | 119 | 52 | 52 | |
| BERYLIUM | 3.17 | 3.17 | 0.5 | 0.5 | | 0.445 | 0.5 | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| CADMIUM | 0.16 | 0.16 | 1 | 3 | 10 | 15.902 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| CHROMIUM | 16.3 | 16.3 | 1 | 453 | 5820 | 646.3 | 18 | | 11 | 69 | 18 | 18 | 18 | |
| COBALT | 6.6 | 6.6 | 2 | 21 | | 41.3 | 2 | | 2.4 | 2 | 2 | 2 | 2 | |
| COPPER (N-H) | 185 | 185 | 1 | 21 | 932 | 2109 | 8 | | 1 | 27 | 22 | 8 | 8 | |
| LEAD | 10.6 | 10.6 | 4.3 | 28 | 1082 | 608.4 | 38 | | 2.6 | 41 | 157 | 38 | 38 | |
| MANGANESE | 32 | 32 | 817 | 42 | 1940 | 972.4 | 258 | 10000 | 200 | 828 | 558 | 258 | 258 | |
| MERCURY | 0.15 | 0.15 | 0.1 | 0.1 | 4.2 | 0.067 | 0.1 | | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | |
| NICKEL | 17.5 | 17.5 | 2 | 34 | 2939 | 257.38 | 2 | | 2 | 2 | 2 | 2 | 2 | |
| SELENIUM | 3.83 | 3.83 | 0.5 | 0.5 | 14 | 0.217 | 0.5 | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| SILVER (N-H) | 0.08 | 0.08 | | | 9.9 | | 0 | | | | | | | |
| THALLIUM (N-H) | 1.38 | 1.38 | 0.2 | 0.2 | | 0.2 | 0.2 | | 1.4 | 0.2 | 0.2 | 0.2 | 0.2 | |
| VANADIUM (N-H) | 36.0 | 36.0 | | | 537 | | 4.37 | | 15 | 4.37 | 4.37 | 4.37 | 4.37 | |
| ZINC (N-H) | 22.1 | 22.1 | 15 | 43 | 1796 | 3915 | 235 | | 18 | 496 | 84 | 235 | 235 | |

PARTICULATE METAL HAPS EMISSIONS (T/YR)

| | | | | | | | | | | | | | | |
|--------------------|---------------|--|---------------|--|--|--|--|---------------|--|---------------|---------------|---------------|--|---------------|
| TSP (NON-KILN) | 19.15 | | 110.47 | | | | | 11.98 | | 142.89 | 5.27 | 133.66 | | 423.41 |
| ANTIMONY | 2.16E-05 | | 6.63E-04 | | | | | 0.00E+00 | | 6.57E-03 | 3.32E-04 | 8.02E-04 | | 8.39E-03 |
| ARSENIC | 3.66E-04 | | 7.18E-04 | | | | | 0.00E+00 | | 9.72E-04 | 2.85E-05 | 7.62E-04 | | 2.85E-03 |
| BARIUM (N-H) | | | | | | | | | | | | | | |
| BERYLIUM | 6.07E-05 | | 5.52E-05 | | | | | 0.00E+00 | | 7.14E-05 | 2.64E-06 | 6.68E-05 | | 2.57E-04 |
| CADMIUM | 3.06E-06 | | 1.10E-04 | | | | | 0.00E+00 | | 1.43E-04 | 5.27E-06 | 1.34E-04 | | 3.95E-04 |
| CHROMIUM | 3.12E-04 | | 1.10E-04 | | | | | 0.00E+00 | | 9.86E-03 | 9.49E-05 | 2.41E-03 | | 1.28E-02 |
| COBALT | 1.26E-04 | | 2.21E-04 | | | | | 0.00E+00 | | 2.86E-04 | 1.05E-05 | 2.67E-04 | | 9.11E-04 |
| COPPER (N-H) | | | | | | | | | | | | | | |
| LEAD | 2.03E-04 | | 4.75E-04 | | | | | 0.00E+00 | | 5.86E-03 | 8.27E-04 | 5.08E-03 | | 1.24E-02 |
| MANGANESE | 6.13E-04 | | 9.03E-02 | | | | | 1.20E-01 | | 1.18E-01 | 2.94E-03 | 3.45E-02 | | 3.66E-01 |
| MERCURY | 2.87E-06 | | 1.10E-05 | | | | | 0.00E+00 | | 1.43E-05 | 5.27E-07 | 1.34E-05 | | 4.21E-05 |
| NICKEL | 3.35E-04 | | 2.21E-04 | | | | | 0.00E+00 | | 2.86E-04 | 1.05E-05 | 2.67E-04 | | 1.12E-03 |
| SELENIUM | 7.33E-05 | | 5.52E-05 | | | | | 0.00E+00 | | 7.14E-05 | 2.64E-06 | 6.68E-05 | | 2.69E-04 |
| SILVER (N-H) | | | | | | | | | | | | | | |
| THALLIUM (N-H) | | | | | | | | | | | | | | |
| VANADIUM (N-H) | | | | | | | | | | | | | | |
| ZINC (N-H) | | | | | | | | | | | | | | |
| TOTAL(T/YR) | 0.0021 | | 0.0929 | | | | | 0.1198 | | 0.1424 | 0.0043 | 0.0443 | | 0.4058 |