July 7, 1995

**MEMORANDUM**

**TO:** Brian Monson, Chief
Operating Permits Bureau

**FROM:** Almer B. Casile, Air Quality Engineer
Operating Permits Bureau

**THROUGH:** Sue Richards, Engineering Manager
Operating Permits Bureau

**SUBJECT:** Technical Analysis for Tier II Operating Permit #005-00004
Ash Grove Cement Company, Inkom, Idaho

**PURPOSE**

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Operating Permits.

**FACILITY DESCRIPTION**

The Ash Grove Cement (AGC) plant has an annual production of approximately a 220,000 tons of cement. The plant is situated along the bank of the Portneuf River, approximately 11 miles south-east of Pocatello, Idaho. The plant produces clinker from raw materials, and processes it, the clinker, into cement.

The cement making process of begins with the mining of MgO Limestone, clay, shale, and limestone from the quarry located adjacent to the facility. The raw materials are blasted from bedrock, bulldozed to the quarry floor, and hauled to the jaw crusher. Silica and iron ore used in the process are hauled to the plant and stockpiled in the quarry.

The raw materials are crushed and screened until an appropriate size is obtained. The processed materials are then transported by conveyor belt from crushing and screening to storage silos. From the storage silos, a measured amount of processed materials is transported to a ball mill by conveyor belt. The ball mill grounds the processed materials into homogeneous mixture of water and rock in the form of a slurry.

The slurry is fed at the back of the kilns and calcined. To reach the temperatures needed to calcine the slurry, gases within the kiln flow countercurrent to the material flow and are heated to an excess of 1,650 °C (3,000 °F) by fossil and waste fuels. The material within the kiln reaches a temperature of approximately 1,538 °C (2,800 °F) before exiting the kiln and entering the clinker cooler.

Clinker enters the clinker coolers beneath the kilns. Secondary air entering the kilns is used as the air for the clinker cooler. All forced air entering the coolers is utilized in the kiln as primary and secondary air for combustion. The clinker leaves the cooler at an approximate temperature of 260 °C (500 °F). Drag chains, elevators, conveyor belts, and an overhead crane are used to transport the warm clinker from the clinker cooler to the clinker storage area, clinker storage silo, and craneway storage area. Clinker is transported from storage to three finish ball mills which grind the clinker with gypsum into cement. Separators are used to return oversized particles back to the mills for additional grinding.

FK pumps transfer the cement to 13 cement storage silos. Screws, airslides, and elevators then transfer the cement from the cement storage silos to truck loadout, bulk rail loadout, or the bagging area for packaging.

For a listing of all transfer points, point sources, roads, storage piles, and their associated emissions, please refer to Appendix A.

**PROJECT DESCRIPTION**

This project involves the issuance of an Operating Permit that implements RACT/RACM for $PM/PM_{10}$ emissions generated at AGC. The issuance of this permit is needed to satisfy conditions needed to extend the attainment date for the Power-Bannock Counties Nonattainment Area (PBNAA) and have the Inkom segment of the PBNAA redesignated attainment.

**SUMMARY OF EVENTS**

In order to satisfy conditions needed to extend the attainment date for the PBNAA and have the Inkom segment of the PBNAA redesignated attainment, AGC submitted a request for a $PM_{10}$, SIP Tier II operating permit on January 19, 1995. On March 2, 1995, Lore Bensel, Office of the Attorney General, sent AGC letter further clarifying the conditions set by EPA for the extension of the attainment date for PBNAA, and explaining the Tier II permitting process. On April 4, 1995, the Tier II operating permit application was submitted to DEQ. On April 14, 1995, DEQ received a amendment to the application. The application was determined administratively complete on May 12, 1995. The 30-day public comment period began on May 25, 1995, and extended until June 27, 1995. On June 23, 1995, DEQ received AGC's comments to the proposed permit.

**DISCUSSION**

1. **Emission Calculations**

All comments submitted by AGC were incorporated into the permit with the following exceptions:

1. Inconsistencies were noted between the proposed raw material inputs (i.e. limestone and silica inputs) on Table 1 of Proposed Emission Limits Section of AGC's comments, and Table 3 of the same section. Table 3 raw materials inputs were changed to reflect the values shown on Table 1. It should be noted that when these changes were made Table 3 automatically calculated average ton per hour values. These average ton per hour values were used as the ton per hour throughput limits, as determined on an average monthly basis.

2. An inconsistency was noted between the requested changes in the Silo Withdrawal, Conveying, and Storage section of the proposed PM10 SIP (Tier II) operating permit and Table 3 of the Proposed Emission Limits Section of AGC's comments. The annual throughput requested by AGC was incorporated into the permit. It should be noted that when the requested annual throughput was used as an input into for Table 3, a ton per hour value was automatically calculated by the spreadsheet. The automatically calculated ton per hour value was used as the ton per hour throughput limit, average monthly based, in the permit.

3. An inconsistency was noted between the requested changes in the Clinker Reclaim section of the proposed PM10 SIP (Tier II) operating permit and Table 3 of the Proposed Emission Limits Section of AGC's comments. AGC requested that Clinker Reclaim Section 4.1 of the proposed PM10 SIP (Tier II) operating permit be rewritten as follows:

   > "The process rate for the grinding of clinker shall not exceed 370,000 ton(s) per year. The three finish grindind mills shall not process in excess of 26 tons of clinker per hour for each mill on a monthly average basis."

   This requested change was inconsistent with the information given on pp. 2 - 3 of Table 3 Proposed Process Fugitive Emissions for Ash Grove Cement. For the purpose of expediency, the total throughput, in tons per year and average tons per hour, to bins #1-#3 given in Table 3 were used as the operation limitations for clinker reclaim and as the basis for determination fugitive emissions from this process area. It should also be noted that the requested 26 tons per hour throughput limit, when multiplied by 8760 hours per year of operation, did not equate to 370,000 tons per year.

4. The requested changes in the Section 4.1 of Finish Grinding and Associated Handling in the proposed PM10 SIP (Tier II) operating permit was changed to read as follows:

   > "Each of the three (3) finish mills shall process no more than twenty-six (26) tons of material per hour on a daily average basis, twenty (20) tons per hour on a monthly average basis, and 175, 200 tons of cement total per year."

The above changes were made because inconsistencies were noted in the requested changes. AGC requested 26 tons per hour on a monthly average basis and 370,000 tons of total cement per year. The annual value of 370,000 tons of total cement per year could not be determined by multiplying 26 tons per hour by 8760 hours of operation. Also, data provided by AGC showed average monthly ton per hour values to be 20 tons per hour, and average daily values to be 26 tons per hour. Inconsistencies were also noted in the process rates of mills #2 and #3. (This was noted when a comparison of proposed imputs and propose emissions were made). The appropriate values for these two mills were changed to reflect the 20 ton per hour and 175,200 ton per year values proposed above.

Other material considered in the revision of the proposed permit is included in attachment B. All other methods for the determination of emissions, emission limits, and operating limits are included in Attachment A and in the May 15, 1995, technical analysis memo for the proposed permit.

2. **Modeling**

All modeling has been documented in the SIP.

3. **Area Classification**

AGC is located in Inkom, which is located in the Power-Bannock Counties Nonattainmemt Area. This area is nonattainment for $PM_{10}$ and attainment or unclassified for other criteria pollutants.

4. **Facility Classification**

The facility is a portland cement plant (SIC #3241) and is a designated facility, as defined in IDAPA 16.01.01.006.25. The facility is a major facility, as defined in IDAPA 16.01.01.00654, because actual emissions of PM, $NO_x$, $SO_2$, and CO exceed 100 tons per year. The facility is also subject to NSPS, 40 CFR 60 Subpart F.

5. **Regulatory Review**

This operating permit is subject to the following permitting regulations:

A. State

| | |
|---|---|
| IDAPA 16.01.01.006 | Definitions; |
| IDAPA 16.01.01.401 | Tier II Operating Permit; |
| IDAPA 16.01.01.402 | Application Procedures; |
| IDAPA 16.01.01.403 | Permit Requirements; |
| IDAPA 16.01.01.404 | Procedure for Issuing Permits; |
| IDAPA 16.01.01.405 | Conditions for Tier II Operating Permit; |
| IDAPA 16.01.01.406 | Obligation to Comply; |
| IDAPA 16.01.01.470 | Permit Application Fees for Tier II Permits; |
| IDAPA 16.01.01.525 | Registration and Registration Fees; |
| IDAPA 16.01.01.625 | Visible Emissions Limitations; |
| IDAPA 16.01.01.650 | General Rules for the Control of Fugitive Dust; |

B. Federal

| | |
|---|---|
| 40 CFR 60 Subpart F | Standards of Performance for Portland Cement Plants |

**Recommendation**

Based on the review of the PBNAA SIP evaluation, and of state and federal correspondence regarding the attainment date of PBNAA, I recommend that Ash Grove Cement, located in Inkom, Idaho, be issued a Tier II Operating Permit.

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cc: A. Cole, SEIRO
R. Elkins, SEIRO
Source File
COF

# APPENDIX A

TABLE 3

PROPOSED
PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | EMISSION FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST. CONTL. FACT. | CAPT. CONTL. FACT. | BUILD. CONTL. FACT. | EMISSIONS PM10 LB/HR | EMISSIONS TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F 1 | DRILLING | | 24 | 0 | 220 | LIMESTONE | | | 380000 | 0.0001 | 0.0000 | | 5% | 0% | 0% | 0% | | | 0.02 | 0.00 |
| | F 2 | BLASTING | | 24 | 0 | 0 | LIMESTONE | | | 380000 | 0.1800 | 0.0900 | Th 8.19.2-2 | 5% | 0% | 0% | 0% | | | 30.40 | 1.52 |
| | F 3 | DOZING | | | | | | | | | | | | | | | | | | | |
| | | | DIR. | | | 131 | LIMESTONE | | | | 2.9400 | 1.8900 | Th 8.24-2 | 62% | | | | | | 0.39 | 0.19 |
| | | | DION | | | 1966 | LIMESTONE | | | | 2.9400 | 1.8900 | | 62% | | | | | | 2.58 | 1.81 |
| MATERIAL RECEIVING AND CRUSHING | F 4 | LOADER | FEEDER | 8 | 336 | 2672 | LIMESTONE | 180 | 142 | 380000 | 0.0350 | 0.0018 | AP42 | 5% | 0% | 0% | 80% | 0.05 | 1.00 | 1.32 | 0.07 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0.0350 | 0.0018 | Th 8.19.2-1 | 5% | 0% | 0% | 80% | 0.06 | 1.11 | 0.97 | 0.00 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0.0350 | 0.0018 | | 5% | 0% | 0% | 80% | 0.04 | 0.82 | 0.01 | 0.00 |
| | | | | 4 | 104 | 418 | SILICA | 180 | 96 | 40000 | 0.0350 | 0.0018 | | 5% | 0% | 0% | 80% | 0.03 | 0.67 | 0.14 | 0.01 |
| | F 5 | FEEDER | JAW CRUSHER | 8 | 336 | 2672 | LIMESTONE | 180 | 142 | 380000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.11 | 0.26 | 0.33 | 0.18 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.13 | 0.29 | 0.02 | 0.01 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.10 | 0.21 | 0.00 | 0.00 |
| | | | | 4 | 104 | 418 | SILICA | 180 | 96 | 40000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.08 | 0.17 | 0.04 | 0.02 |
| | F 6 | JAW CRUSHER | #1 INCLINE BELT | 8 | 336 | 2672 | LIMESTONE | 180 | 152 | 380000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.11 | 0.26 | 0.33 | 0.18 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.13 | 0.29 | 0.02 | 0.01 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.10 | 0.21 | 0.00 | 0.00 |
| | | | | 4 | 104 | 418 | SILICA | 180 | 96 | 40000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.08 | 0.17 | 0.04 | 0.02 |
| | F 7 | #1 INCLINE BELT | #2 INCLINE BELT | 8 | 336 | 2672 | LIMESTONE | 180 | 176 | 475000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.13 | 1.24 | 1.66 | 0.77 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 238 | 31500 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.27 | 1.87 | 0.11 | 0.06 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.38 | 0.82 | 0.01 | 0.01 |
| | | | | 4 | 104 | 418 | SILICA | 180 | 96 | 40000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.31 | 0.67 | 0.14 | 0.08 |
| | F 8 | #2 INCLINE BELT | #3 INCLINE BELT | 4 | 104 | 418 | SILICA | 180 | 144 | 60000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.19 | 0.40 | 0.08 | 0.04 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F 9 | #2 INCLINE BELT | SCREEN #2 | 4 | 104 | 418 | SILICA | 180 | 144 | 60000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.19 | 0.40 | 0.08 | 0.04 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F 10 | SCREEN #2 | CROSS COUNTRY BELT | 4 | 104 | 418 | SILICA | 180 | 96 | 40000 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.20 | 0.27 | 0.06 | 0.04 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F 11 | SCREEN #2 | CONE CRUSHER | 4 | 104 | 418 | SILICA | 180 | 48 | 20000 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.10 | 0.13 | 0.03 | 0.02 |
| | | | | 2 | 0 | 0 | IRON ORE | 180 | #DIV/0! | 0 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F 12 | CONE CRUSHER | #4 INCLINE BELT | 4 | 104 | 418 | SILICA | 180 | 48 | 20000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.82 | 1.39 | 0.28 | 0.13 |
| | | | | 2 | 0 | 0 | IRON ORE | 180 | #DIV/0! | 0 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F 13 | #4 INCLINE BELT | #2 INCLINE BELT | 4 | 104 | 418 | SILICA | 180 | 48 | 20000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.82 | 1.39 | 0.28 | 0.13 |
| | | | | 2 | 0 | 0 | IRON ORE | 180 | #DIV/0! | 0 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F 14 | #2 INCLINE BELT | SCREEN #1 | 8 | 365 | 2836 | LIMESTONE | 180 | 187 | 475000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.22 | 0.47 | 0.67 | 0.31 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 239 | 31500 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.31 | 0.87 | 0.04 | 0.02 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.15 | 0.32 | 0.01 | 0.00 |
| | F 15 | SCREEN #1 | CROSS COUNTRY BELT | 8 | 365 | 2836 | LIMESTONE | 180 | 134 | 380000 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.26 | 0.37 | 0.53 | 0.40 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.33 | 0.46 | 0.03 | 0.03 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.26 | 0.33 | 0.01 | 0.00 |
| | F 16 | SCREEN #1 | HAMMER MILL | 8 | 365 | 2836 | LIMESTONE | 180 | 33 | 95000 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.07 | 0.09 | 0.13 | 0.10 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 80 | 10500 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.17 | 0.23 | 0.01 | 0.01 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0.0350 | 0.0263 | | 75% | 20% | 0% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F 17 | HAMMER MILL | #1 INCLINE BELT | 8 | 365 | 2836 | LIMESTONE | 180 | 33 | 95000 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.03 | 0.08 | 0.06 | 0.04 |
| | | | | 3 | 44 | 132 | GYPSUM | 180 | 80 | 10500 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.06 | 0.14 | 0.01 | 0.00 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0.0350 | 0.0182 | | 48% | 50% | 0% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| CONVEYING AND SILO STORAGE | F 18 | CROSS COUNTRY BELT | BELT B | 8 | 365 | 2836 | LIMESTONE | 180 | 134 | 380000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 1.73 | 2.75 | 8.32 | 2.46 |
| | | | | 2 | 1418 | 2836 | IRON ORE | 180 | 1 | 4000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.02 | 0.04 | 0.06 | 0.02 |
| | | | | 4 | 710 | 2836 | SILICA | 180 | 14 | 40000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.19 | 0.39 | 0.56 | 0.26 |
| | F 19 | BELT B | BELT C | 8 | 365 | 2836 | LIMESTONE | 180 | 134 | 380000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 1.73 | 2.75 | 8.32 | 2.46 |
| | | | | 4 | 710 | 2836 | SILICA | 180 | 1 | 4000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.02 | 0.04 | 0.06 | 0.02 |
| | | | | 2 | 1418 | 2836 | IRON ORE | 180 | 14 | 40000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.19 | 0.39 | 0.56 | 0.26 |
| | F 20 | BELT C | SILOS (3) | 8 | 365 | 2836 | LIMESTONE | 180 | 134 | 380000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.17 | 0.27 | 0.53 | 0.25 |
| | | | | 4 | 104 | 418 | SILICA | 180 | 96 | 40000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.13 | 0.27 | 0.06 | 0.02 |
| | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 80% | 0.15 | 0.32 | 0.01 | 0.00 |
| | F 21 | CROSS COUNTRY BELT | GYPSUM BELT | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 2.06 | 4.45 | 0.28 | 0.14 |
| | F 22 | GYPSUM BELT | CHUTE | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 2.06 | 4.45 | 0.28 | 0.14 |
| | F 23 | CHUTE | GYPSUM BIN | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 2.06 | 4.45 | 0.28 | 0.14 |
| STOCKPILE CRUSHED ROCK | F 24 | CROSS COUNTRY BELT | CHUTE | 8 | 25 | 200 | LIMESTONE | 180 | 118 | 33202 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 1.50 | 2.25 | 0.32 | 0.15 |
| | | | | 8 | 13 | 100 | SILICA | 180 | 50 | 5000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.85 | 1.40 | 0.07 | 0.03 |
| | F 25 | CHUTE | GROUND | 8 | 25 | 200 | LIMESTONE | 180 | 118 | 33202 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 1.50 | 2.25 | 0.32 | 0.15 |
| | | | | 8 | 13 | 100 | SILICA | 180 | 50 | 5000 | 0.0350 | 0.0182 | | 48% | 20% | 0% | 0% | 0.85 | 1.40 | 0.07 | 0.03 |
| SILO WITHDRAWAL/ CONVEYING AND RAW GRINDING | F 26 | SILO FEEDER | FEED BELT | 24 | 364 | 8500 | LIMESTONE | 75 | 22 | 190000 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | 0.04 | 0.08 | 0.23 | 0.15 |
| | F 27 | SILO FEEDER | FEED BELT | 24 | 364 | 8500 | LIMESTONE | 75 | 22 | 190000 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | 0.04 | 0.08 | 0.23 | 0.15 |
| | F 28 | SILO FEEDER | FEED BELT | 24 | 364 | 8500 | SILICA | 75 | 5 | 40000 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | 0.01 | 0.02 | 0.07 | 0.03 |
| | F 29 | SILO FEEDER | FEED BELT | 24 | 364 | 8500 | IRON ORE | 75 | 0 | 4000 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F 30 | FEED BELT | MILL # 4 | 24 | 364 | 8500 | LIMESTONE | 75 | 45 | 380000 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | 0.07 | 0.16 | 0.67 | 0.31 |
| | | | | 24 | 364 | 8500 | SILICA | 75 | 5 | 40000 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | 0.01 | 0.02 | 0.07 | 0.03 |
| | | | | 24 | 364 | 8500 | IRON ORE | 75 | 0 | 4000 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F 31 | MILL #4 | SLURRY TANK | 24 | 364 | 8500 | RAW MEAL | 75 | 53 | 450000 | 0.0000 | 0.0000 | | 50% | 0% | 0% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F 32 | FEED BELT | MILL #3 (BACK-UP) | 24 | 0 | 0 | LIMESTONE | 75 | #DIV/0! | 0 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | | | | 24 | 0 | 0 | SILICA | 75 | #DIV/0! | 0 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | | | | 24 | 0 | 0 | IRON ORE | 75 | #DIV/0! | 0 | 0.0350 | 0.0182 | | 48% | 0% | 0% | 80% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F 33 | MILL #3 | SLURRY TANK | 24 | 0 | 0 | RAW MEAL | 75 | #DIV/0! | 0 | 0.0000 | 0.0000 | | 50% | 0% | 0% | 80% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| COAL HANDLING | F 34 | DUMP | HOPPER | 24 | 10 | 250 | COAL | 250 | 250 | 70000 | 0.0050 | 0.0013 | est | 25% | 0% | 0% | 0% | 0.25 | 1.40 | 0.18 | 0.04 |
| | F 35 | HOPPER | BELT | 24 | 10 | 250 | COAL | 250 | 250 | 70000 | 0.0050 | 0.0013 | est | 25% | 0% | 0% | 0% | 0.25 | 1.40 | 0.18 | 0.04 |
| | F 36 | BELT | COAL ELEVATOR | 24 | 10 | 250 | COAL | 250 | 250 | 70000 | 0.0050 | 0.0013 | pm10 | 25% | 0% | 0% | 0% | 0.25 | 1.40 | 0.18 | 0.04 |
| | F 37 | COAL ELEVATOR | COAL SILO | 24 | 10 | 250 | COAL | 250 | 250 | 70000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 0% | 0.25 | 1.40 | 0.18 | 0.04 |
| | F 38 | COAL SILO | BELT | 24 | 352 | 8440 | COAL | 10 | 4 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 80% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F 39 | BELT | #1 COAL MILL | 24 | 352 | 8440 | COAL | 10 | 4 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 80% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F 40 | COAL SILO | BELT | 24 | 274 | 8688 | COAL | 10 | 5 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 80% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F 41 | BELT | #2 COAL MILL | 24 | 274 | 8688 | COAL | 10 | 5 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 80% | 0.00 | 0.00 | 0.01 | 0.00 |

DEQ Revised

Iron Ore Requested
200 TPH
4000 TPY

Silica Requested
100 TPH
40,000 TPY

Gypsum Requested
200 TPH
21,000 TPY

Changed from
50/429,000 to
53/450,000

TABLE 3

PROPOSED
PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | EMISSION FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST. CONTL FACT. | CAPT. CONTL FACT. | BLD. CONTL FACT 3 | EMISSIONS PM10 LB/HR | EMISSIONS TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KILN SYSTEM | F | 43 | SLURRY | #1 KILN | 24 | 352 | 8448 | RAW MEAL | 50 | 23 | 198000 | 0.0000 | 0.0000 | | 50% | 0% | 0% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| NO. 1 | F | 42 | #1 KILN | COOLER | 24 | 352 | 8448 | CLINKER | 20 | 13 | 110000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.04 | 0.20 | 0.82 | 0.17 |
| | F | 44 | COOLER | DRAG #1 | 24 | 352 | 8448 | CLINKER | 20 | 13 | 110000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.04 | 0.20 | 0.82 | 0.17 |
| | F | 45 | DRAG #1 | DRAG #2 | 24 | 352 | 8448 | CLINKER | 20 | 13 | 110000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| KILN SYSTEM | F | 46 | SLURRY | #2 KILN | 24 | 336 | 8048 | RAW MEAL | 50 | 31 | 252000 | 0.0000 | 0.0000 | | 20% | 0% | 0% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| NO. 2 | F | 47 | #2 KILN | #2 COOLER | 24 | 336 | 8048 | CLINKER | 20 | 17 | 140000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 48 | #2 COOLER | DRAG #2 | 24 | 336 | 8048 | CLINKER | 20 | 17 | 140000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 49 | DRAG #2 | DRAG #3 | 24 | 336 | 8048 | CLINKER | 20 | 17 | 140000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 49A | DRAG #2 | AUX. DRAG | 24 | 336 | 8048 | CLINKER | 20 | 0 | 0 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 49B | AUX DRAG | TRACK BIN | 24 | 336 | 8048 | CLINKER | 20 | 0 | 0 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 10% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 49C | TRACK BIN | CRANE | 24 | 336 | 8048 | CLINKER | 20 | 0 | 0 | 0.1500 | 0.0300 | | 20% | 0% | 0% | 50% | 0.00 | 0.00 | 0.00 | 0.00 |
| SUBTOTAL | | | | | | | | | | | | | | | | | | | | | | |
| clinker replacing | | 49E | rail car | truck bin | 24 | 336 | 8048 | CLINKER | 500 | 250 | 80000 | 0.1500 | 0.0750 | | 50% | 0% | 0% | 20% | 15.00 | 30.00 | 4.80 | 2.40 |
| CLINKER | F | 50 | DRAG #2 | CLINKER ELEVATOR #1 | 24 | 365 | 8760 | CLINKER | 50 | 40 | 348219 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 20% | 0.13 | 0.26 | 1.06 | 0.52 |
| HANDLING | F | 51 | CLINKER ELEVATOR #1 | alternate bin | 24 | 365 | 8760 | CLINKER | 50 | 12 | 104765 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 20% | 0.04 | 0.07 | 0.31 | 0.16 |
| | F | 52 | alternate bin | BIN | 24 | 365 | 8760 | CLINKER | 50 | 12 | 104765 | 0.5000 | 0.2500 | | 50% | 0% | 95% | 20% | 0.12 | 0.24 | 1.04 | 0.52 |
| | F | 53 | BIN | CRANE | 24 | 365 | 8760 | CLINKER | 50 | 21 | 184795 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 20% | 4.22 | 8.44 | 36.98 | 18.49 |
| | F | 54 | CRANE | CRANEWAY STORAGE | 24 | 365 | 8760 | CLINKER | 50 | 21 | 184795 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 20% | 4.22 | 8.44 | 36.98 | 18.49 |
| | F | 55 | CLINKER ELEVATOR #1 | DRAG #4 | 24 | 365 | 8760 | CLINKER | 50 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 56 | DRAG #4 | ELEVATOR #2 | 24 | 365 | 8760 | CLINKER | 50 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 57 | ELEVATOR #2 | DRAG #5 | 24 | 365 | 8760 | CLINKER | 50 | 9 | 53382 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 80% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 58 | DRAG #5 | CLINKER SILO #1 | 24 | 365 | 8760 | CLINKER | 50 | 2 | 20428 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 59 | DRAG #5 | CLINKER SILO #2 | 24 | 365 | 8760 | CLINKER | 50 | 2 | 20428 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 60 | DRAG #5 | CLINKER SILO #3 | 24 | 365 | 8760 | CLINKER | 50 | 1 | 11524 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 61 | ELEVATOR #2 | STACKER BELT #1 | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.08 | 0.16 | 0.72 | 0.36 |
| | F | 62 | STACKER BELT #1 | STACKER BELT #2 | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.08 | 0.16 | 0.72 | 0.36 |
| | F | 63 | STACKER BELT #2 | STACKER | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.08 | 0.16 | 0.72 | 0.36 |
| | F | 64 | STACKER | PILE (OPEN AREA) | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.5000 | 0.2500 | | 50% | 0% | 95% | 90% | 0.14 | 0.27 | 1.29 | 0.60 |
| | F | 65A | STORAGE | CRANE | 24 | 365 | 8760 | CLINKER | 300 | 21 | 184795 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 2.64 | 5.27 | 23.10 | 11.55 |
| CLINKER | F | 65 | CRANE | BIN #1 | 24 | 365 | 8760 | CLINKER | 300 | 7 | 61532 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 0.88 | 1.76 | 7.70 | 3.85 |
| RECLAIM | F | 66 | CRANE | BIN #2 | 24 | 365 | 8760 | CLINKER | 300 | 7 | 61534 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 0.88 | 1.76 | 7.70 | 3.85 |
| | F | 67 | CRANE | BIN #3 | 24 | 365 | 8760 | CLINKER | 300 | 7 | 61499 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 0.88 | 1.76 | 7.69 | 3.84 |
| | F | 68 | GALLERY PILE | RECLAIM BELT #1 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 69 | GALLERY PILE | RECLAIM BELT #1 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 70 | GALLERY PILE | RECLAIM BELT #2 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 71 | GALLERY PILE | RECLAIM BELT #2 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 72 | RECLAIM BELT #1 | RECLAIM BELT #2 | 24 | 365 | 8760 | CLINKER | 100 | 11 | 96034 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.02 |
| | F | 73 | RECLAIM BELT #2 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 11 | 96034 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.02 |
| | F | 74 | CLINKER SILO #1 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 2 | 17461 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 75 | CLINKER SILO #2 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 2 | 17461 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 76 | CLINKER SILO #3 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 2 | 17461 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 77 | RECLAIM BELT #3 | ELEVATOR #3 | 24 | 365 | 8760 | CLINKER | 100 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 78 | ELEVATOR #3 | CLINKER BIN DRAG | 24 | 365 | 8760 | CLINKER | 100 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 79 | CLINKER BIN DRAG | BIN #1 | 24 | 365 | 8760 | CLINKER | 100 | 9 | 81542 | 0.5000 | 0.2500 | | 50% | 0% | 95% | 0% | 0.12 | 0.23 | 1.02 | 0.51 |
| | F | 80 | CLINKER BIN DRAG | BIN #2 | 24 | 365 | 8760 | CLINKER | 100 | 9 | 81545 | 0.5000 | 0.2500 | | 50% | 0% | 95% | 0% | 0.12 | 0.23 | 1.02 | 0.51 |
| | F | 81 | CLINKER BIN DRAG | BIN #3 | 24 | 365 | 8760 | CLINKER | 100 | 9 | 81368 | 0.5000 | 0.2500 | | 50% | 0% | 95% | 0% | 0.12 | 0.23 | 1.02 | 0.51 |
| KILN NO. 1 | F | 82 | MULTICLONE | SCREW | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 83 | SCREW | ELEVATOR | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST UPSET | F | 84 | ELEVATOR | SCREW | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 85 | SCREW | BIN | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 85% | 0.04 | 0.08 | 0.01 | 0.02 |
| | F | 108 | BIN | LOADER | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.27 | 0.54 | 0.03 | 0.02 |
| KILN NO. 1 ESP | F | 86 | ESP | SCREW | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 95% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 87 | SCREW | BUNKER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| DUST UPSET | F | 88 | BUNKER | LOADER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| MULTICLONE DUST | F | 89 | MULTICLONE | SCREW | 24 | 347 | 8322 | CKD | 4 | 2 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.03 | 0.01 |
| RETURN | F | 93 | SCREW | ELEVATOR | 24 | 347 | 8322 | CKD | 4 | 2 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.03 | 0.01 |
| | F | 94 | ELEVATOR | SCREW | 24 | 347 | 8322 | CKD | 4 | 2 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 109 | SCREW | PADDLE MIXER | 24 | 347 | 8322 | CKD | 4 | 2 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 80% | 90% | 0.01 | 0.01 | 0.08 | 0.03 |
| ESP DUST | F | 95 | PRECIPITATOR | SCREW | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| RETURNED | F | 96 | SCREW | ELEVATOR | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 95% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 97 | ELEVATOR | SCREW | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 95% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 98 | SCREW | LEACH TANK | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 95% | 0.03 | 0.05 | 0.11 | 0.05 |
| KILN NO. 2 | F | 99 | MULTICLONE | SCREW | 24 | 5 | 125 | CKD | 5 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 97 | SCREW | BIN | 24 | 5 | 125 | CKD | 5 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST UPSET | F | 98 | BIN | LOADER | 24 | 5 | 125 | CKD | 5 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.27 | 0.54 | 0.03 | 0.02 |
| KILN NO. 2 ESP | F | 101 | ESP | SCREW | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 95% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 106 | SCREW | BUNKER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| DUST UPSET | F | 107 | BUNKER | LOADER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| MULTICLONE DUST | F | 99 | MULTICLONE | SCREW | 24 | 330 | 7924 | CKD | | 2 | 17820 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.02 | 0.01 |
| RETURN | F | 99 | SCREW | ELEVATOR | 24 | 330 | 7924 | CKD | 0 | 2 | 17820 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 100 | ELEVATOR | PADDLE MIXER | 24 | 330 | 7924 | CKD | 0 | 2 | 17820 | 0.2700 | 0.1350 | | 50% | 0% | 90% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |

TABLE 3

PROPOSED
PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION TSP LB/TON | FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST. CONTL. FACT. | CAPT. CONTL. FACT. | BLD. CONTL. FACT 3 | EMISSIONS PM10 LB/HR | TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KIEF DUST | F | 101 | PRECIPITATOR | SCREW | 24 | 148 | 3648 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 102 | SCREW | SCREW | 24 | 148 | 3648 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 103 | SCREW | ELEVATOR | 24 | 148 | 3648 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 104 | ELEVATOR | SCREW | 24 | 148 | 3648 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 105 | SCREW | LEACH TANK | 24 | 148 | 3648 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | | | | | | | | | | | | | | | | |
| FINISH GRINDING | F | 110 | CLINKER BIN #1 | CLINKER FEEDER | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| MILL # 1 | F | 111 | CLINKER FEEDER | BELT | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 112 | GYPSUM BIN | CRANE | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 112A | CRANE | GYPSUM FEEDER | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 113 | GYPSUM FEEDER | BELT | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 114 | BELT | MILL #1 | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | | | | | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | CEMENT | 80 | 37 | 244000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.03 | 0.02 |
| | | | | | | | | | | | | | | | | | | | | | | |
| MILL #2 | F | 115 | CLINKER BIN #2 | CLINKER FEEDER | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 116 | CLINKER FEEDER | BELT | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 117 | GYPSUM BIN | CRANE | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 117A | CRANE | GYPSUM FEEDER | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 118 | GYPSUM FEEDER | BELT | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 119 | BELT | MILL #2 | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | | | | | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | CEMENT | 80 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | | | | | | | | | | | | | | | | | | | | | | |
| | F | 120 | MILL #1 | CEMENT ELEVATOR #1 | 24 | 275 | 6600 | CEMENT | 120 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 121 | MILL #2 | CEMENT ELEVATOR #1 | 24 | 275 | 6600 | CEMENT | 120 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 122 | CEMENT ELEVATOR #1 | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 240 | 53 | 350400 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.06 | 0.02 |
| | F | 123 | AIRSLIDE | SEPARATOR | 24 | 275 | 6600 | CEMENT | 240 | 53 | 350400 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.06 | 0.02 |
| | F | 125 | SEPARATOR | RETURN SCREW | 24 | 275 | 6600 | CEMENT | 240 | 53 | 350400 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.06 | 0.02 |
| | F | 126 | RETURN SCREW | MILL #1 | 24 | 275 | 6600 | CEMENT | 80 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 128 | RETURN SCREW | MILL #2 | 24 | 275 | 6600 | CEMENT | 80 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | | |
| | F | 127 | SEPARATOR | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 80 | 40 | 350400 | 0.2700 | 0.1350 | | 50% | 0% | | 99% | 0.05 | 0.11 | 0.47 | 0.24 |
| | F | 128 | AIRSLIDE | COOLER | 24 | 275 | 6600 | CEMENT | 80 | 40 | 350400 | 0.2700 | 0.1350 | | 50% | 0% | | 99% | 0.05 | 0.11 | 0.47 | 0.24 |
| | F | 129 | COOLER | PK PUMP | 24 | 275 | 6600 | CEMENT | 80 | 40 | 350400 | 0.2700 | 0.1350 | | 50% | 0% | | 99% | 0.05 | 0.11 | 0.47 | 0.24 |
| | | | | | | | | | | | | | | | | | | | | | | |
| MILL #3 | F | 130 | CLINKER BIN #3 | CLINKER FEEDER | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 131 | CLINKER FEEDER | BELT | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 132 | ROCK BIN | ROCK FEEDER | 24 | 275 | 6600 | ROCK | 75 | 0 | 0 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 133 | ROCK FEEDER | BELT | 24 | 275 | 6600 | ROCK | 75 | 0 | 0 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 134 | GYPSUM BIN | CRANE | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 134A | CRANE | GYPSUM FEEDER | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 135 | GYPSUM FEEDER | BELT | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 136 | BELT | MILL #3 | 24 | 275 | 6600 | CLINKER | 40 | 18 | 118235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | | | | | 24 | 275 | 6600 | ROCK | 75 | 0 | 0 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 8765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | CEMENT | 80 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.12 | 0.06 |
| | | | | | | | | | | | | | | | | | | | | | | |
| | F | 137 | MILL #3 | CEMENT ELEVATOR #2 | 24 | 275 | 6600 | CEMENT | 120 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.12 | 0.06 |
| | | | | | 24 | 275 | 6600 | Masonry | 120 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 138 | CEMENT ELEVATOR #2 | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 120 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.12 | 0.06 |
| | | | | | 24 | 275 | 6600 | Masonry | 120 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 139 | AIRSLIDE | SEPARATOR #3 | 24 | 275 | 6600 | CEMENT | 120 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.12 | 0.06 |
| | | | | | 24 | 275 | 6600 | Masonry | 120 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 140 | SEPARATOR #3 | RETURN SCREW | 24 | 275 | 6600 | CEMENT | 80 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.12 | 0.06 |
| | | | | | 24 | 275 | 6600 | Masonry | 80 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 141 | RETURN SCREW | MILL #3 | 24 | 275 | 6600 | CEMENT | 80 | 20 | 176200 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.12 | 0.06 |
| | | | | | 24 | 275 | 6600 | Masonry | 80 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | | | | | | | | | | | | | | | | |
| | F | 142 | SEPARATOR #3 | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 40 | 13 | 123000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.08 | 0.04 |
| | | | | | 24 | 275 | 6600 | Masonry | 40 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 143 | AIRSLIDE | COOLER | 24 | 275 | 6600 | CEMENT | 40 | 13 | 123000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.08 | 0.04 |
| | | | | | 24 | 275 | 6600 | Masonry | 40 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 144 | COOLER | PK PUMP | 24 | 275 | 6600 | CEMENT | 40 | 13 | 123000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.03 | 0.08 | 0.04 |
| | | | | | 24 | 275 | 6600 | Masonry | 40 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | | | | | | | | | | | | | | | | |
| FINISH BLDG | F | 145 | PK PUMP BALL#1,#2 | BLD #1 | 24 | 18 | 378 | CEMENT | 80 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.00 | 0.00 | 0.00 |
| FROM MILL #1,#2 | F | 146 | PK PUMP BALL#1,#2 | BLD #2 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 147 | PK PUMP BALL#1,#2 | BLD #3 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 148 | PK PUMP BALL#1,#2 | BLD #4 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 149 | PK PUMP BALL#1,#2 | BLD #5 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 150 | PK PUMP BALL#1,#2 | BLD #6 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 151 | PK PUMP BALL#1,#2 | BLD #7 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 152 | PK PUMP BALL#1,#2 | BLD #8 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 153 | PK PUMP BALL#1,#2 | BLD #9 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 154 | PK PUMP BALL#1,#2 | BLD #10 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 155 | PK PUMP BALL#1,#2 | BLD #11 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 156 | PK PUMP BALL#1,#2 | BLD #12 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 157 | PK PUMP BALL#1,#2 | BLD #13 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 158 | PK PUMP BALL#1,#2 | BLD #14 | 24 | 16 | 378 | CEMENT | 80 | 29 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | | | | | | | | | | | | | | | | | | | | | | |
| FINISH BLDG | F | 159 | PK PUMP BALL #3 | BLD #1 | 24 | 18 | 248 | Masonry | 40 | 3 | 876 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.00 | 0.00 |
| FROM MILL #3 | F | 160 | PK PUMP BALL #3 | BLD #2 | 24 | 18 | 248 | CEMENT | 40 | 18 | 6278 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.06 | 0.01 | 0.00 |
| | F | 161 | PK PUMP BALL #3 | BLD #3 | 24 | 18 | 248 | CEMENT | 40 | 18 | 6278 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.06 | 0.01 | 0.00 |
| | F | 162 | PK PUMP BALL #3 | BLD #4 | 24 | 18 | 248 | CEMENT | 40 | 18 | 6278 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.06 | 0.01 | 0.00 |
| | F | 163 | PK PUMP BALL #3 | BLD #5 | 24 | 18 | 248 | CEMENT | 40 | 18 | 6278 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.06 | 0.01 | 0.00 |
| | F | 164 | PK PUMP BALL #3 | BLD #6 | 24 | 18 | 248 | CEMENT | 40 | 8 | 1696 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 165 | PK PUMP BALL #3 | BLD #7 | 24 | 18 | 248 | CEMENT | 40 | 8 | 1696 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 166 | PK PUMP BALL #3 | BLD #8 | 24 | 18 | 248 | CEMENT | 40 | 8 | 1696 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 167 | PK PUMP BALL #3 | BLD #9 | 24 | 18 | 248 | CEMENT | 40 | 8 | 1696 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 168 | PK PUMP BALL #3 | BLD #10 | 24 | 18 | 248 | CEMENT | 40 | 8 | 1696 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |

TABLE 3

PROPOSED
PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | PUS CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | EMISSION FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST. CONTL. FACT. | CAPT. CONTL. FACT. | BLD. CONTL. FACT 2 | EMISSIONS PM10 LB/HR | EMISSIONS TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | 169 | FK PUMP BELL #10 | BLO #11 | 24 | 15 | 348 | CEMENT | 40 | 9 | 1896 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 170 | FK PUMP BELL #10 | BLO #12 | 24 | 15 | 348 | CEMENT | 40 | 9 | 1896 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 171 | FK PUMP BELL #10 | BLO #13 | 24 | 15 | 348 | CEMENT | 40 | 18 | 6376 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.05 | 0.01 | 0.00 |
| | F | 172 | FK PUMP BELL #10 | BLO #14 | 24 | 15 | 348 | CEMENT | 40 | 9 | 1896 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| CEMENT bottom | F | 173 | BLO #1 | SCREW #1 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| screws | F | 174 | BLO #2 | SCREW #1 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 175 | BLO #3 | SCREW #1 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 176 | BLO #4 | SCREW | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 177 | BLO #5 | SCREW | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 178 | SCREW | SCREW #1 | 24 | 37 | 881 | CEMENT | 150 | 75 | 66071 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.04 | 0.02 |
| | F | 179 | SCREW #1 | ELEVATOR # 1 | 24 | 37 | 881 | CEMENT | 150 | 75 | 66071 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.04 | 0.02 |
| | | | | | | | | | 150 | | | | | | | | | | | | | |
| | F | 180 | BLO #6 | SCREW #2 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 181 | BLO #7 | SCREW #2 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 182 | BLO #8 | SCREW #2 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 183 | SCREW #3 | SCREW #4 | 24 | 22 | 528 | CEMENT | 150 | 75 | 39642 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.03 | 0.01 |
| | F | 184 | BLO #12 | SCREW #3 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 185 | BLO #13 | SCREW #3 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 186 | BLO #14 | SCREW #3 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 187 | SCREW #2 | SCREW #4 | 24 | 22 | 528 | CEMENT | 150 | 75 | 39642 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.03 | 0.01 |
| | F | 188 | SCREW #4 | ELEVATOR #1 | 24 | 44 | 1057 | CEMENT | 150 | 75 | 79288 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.06 | 0.03 |
| | F | 189 | BLO #9 | SCREW #5 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 190 | BLO #10 | SCREW #5 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 191 | BLO #11 | SCREW #5 | 24 | 7 | 178 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.01 | 0.00 |
| | F | 192 | SCREW #6 | SCREW #6 | 24 | 22 | 528 | CEMENT | 150 | 75 | 39642 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.03 | 0.01 |
| | F | 193 | SCREW #5 | ELEVATOR #1 | 24 | 22 | 529 | CEMENT | 150 | 75 | 39642 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.03 | 0.01 |
| | | | | | | | | | | | | ~Calculate | | | | | | | | | | |
| | F | 194 | ELEVATOR #1 | DISCHARGE SCREW | 24 | 103 | 2487 | CEMENT | 150 | 75 | 186500 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.06 | 0.10 | 0.12 | 0.06 |
| | F | 195 | DISCHARGE SCREW | RAIL LOADOUT | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| BY TRUCK | F | 196 | DISCHARGE SCREW | TRANSFER SCREW | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.02 | 0.01 |
| | F | 197 | TRANSFER SCREW | SCREW | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.02 | 0.01 |
| | F | 198 | SCREW | TANK A | 24 | 88 | 1944 | CEMENT | 150 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.12 | 0.06 |
| | F | 199 | SCREW | TANK B | 24 | 88 | 1944 | CEMENT | 150 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.12 | 0.06 |
| | F | 200 | SCREW | TANK C | 24 | 88 | 1944 | CEMENT | 150 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.12 | 0.06 |
| | F | 201 | TANK A | TRUCK LOADOUT | 24 | 88 | 1944 | CEMENT | 500 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | 0.51 | 1.01 | 0.83 | 0.42 |
| | F | 202 | TANK B | TRUCK LOADOUT | 24 | 88 | 1944 | CEMENT | 500 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | 0.51 | 1.01 | 0.83 | 0.42 |
| | F | 203 | TANK C | TRUCK LOADOUT | 24 | 88 | 1944 | CEMENT | 500 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | 0.51 | 1.01 | 0.83 | 0.42 |
| cement back | F | 204 | elev 3-14 | AIRSLIDE | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.02 | 0.01 |
| systems | F | 205 | AIRSLIDE | ELEVATOR #4 | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.02 | 0.01 |
| | F | 206 | SCREW #8 | AIRSLIDE | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.02 | 0.01 |
| | F | 207 | AIRSLIDE | ELEVATOR #4 | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.02 | 0.01 |
| | F | 208 | ELEVATOR #4 | ELEVATOR #5 | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.37 | 0.18 |
| | F | 209 | ELEVATOR #5 | AIRSLIDE | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.37 | 0.18 |
| | F | 210 | AIRSLIDE | SCREW | 24 | 206 | 4933 | CEMENT | 150 | 75 | 370000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.37 | 0.18 |
| | F | 211 | SCREW | TANK A | 24 | 88 | 1944 | CEMENT | 150 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.12 | 0.06 |
| | F | 212 | SCREW | TANK B | 24 | 88 | 1944 | CEMENT | 150 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.12 | 0.06 |
| | F | 213 | SCREW | TANK C | 24 | 88 | 1944 | CEMENT | 150 | 75 | 123333 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 95% | 0.06 | 0.15 | 0.12 | 0.06 |
| | F | 30Ba | airslide | rail loadout | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| CEMENT | F | 214 | SCREW #1 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| BY PACKAGE | F | 215 | SCREW #2 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 216 | SCREW #4 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 217 | SCREW #5 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 218 | ELEVATOR #2 | NORTH SOUTH SCREW | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 219 | NORTH SOUTH SCREW | BIN #1 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 220 | NORTH SOUTH SCREW | BIN #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 221 | BIN #1 | PACKER # 1 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 222 | BIN #2 | PACKER # 2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 223 | BIN #1/PACKER #1 | SPILL AIRSLIDE | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 224 | BIN #2/PACKER #2 | SPILL AIRSLIDE | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 225 | SPILL AIRSLIDE | ELEVATOR #3 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 226 | ELEVATOR #3 | NORTH SOUTH SCREW | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 227 | NORTH SOUTH SCREW | BIN #1 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 228 | NORTH SOUTH SCREW | BIN #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 229 | BLO #8 | AIRSLIDE | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 230 | AIRSLIDE | BIN #3 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| MASONARY | F | 231 | BLO #1 | SCREW #1 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| BY PACKAGE | F | 232 | SCREW #1 | ELEVATOR #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 233 | ELEVATOR # 3 | NORTH SOUTH SCREW | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 234 | NORTH SOUTH SCREW | BIN #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 235 | BIN #3 | PACKER #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 236 | BIN #3/PACKER #3 | SPILL SCREW | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 237 | SPILL SCREW | ELEVATOR #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 238 | ELEVATOR #3 | BIN #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| TOTAL | | | | | | | | | | | | | | | | | | | | | 206 | 97.37 |

TABLE 1 PROPOSED EMISSIONS SUMMARY FOR ASH GROVE CEMENT

| SOURCE CATEGORY | POLLUTANT | PROPOSED EMISSIONS (T/YR) |
|---|---|---|
| | | |
| POINT SOURCES | TSP | 157.6 |
| PROCESS FUGITIVES | TSP | 204.2 |
| PAVED ROADS | TSP | 16.1 |
| UNPAVED ROADS | TSP | 16.6 |
| INTERNAL TRANSFERS | TSP | 3.6 |
| PILES | TSP | 4.2 |
| TOTAL | TSP | 402.3 |
| POINT SOURCES | $PM_{10}$ | 133.9 |
| PROCESS FUGITIVES | $PM_{10}$ | 86.6 |
| PAVED ROADS | $PM_{10}$ | 3.5 |
| UNPAVED ROADS | $PM_{10}$ | 6.0 |
| PILES | $PM_{10}$ | 2.0 |
| TOTAL | $PM_{10}$ | 232.0 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

PROPOSED
MATERIAL INPUTS FOR ASH GROVE CEMENT

| PROCESS | SOURCE | MATERIAL | PROPOSED TONS/YR (Received/Shipped) | PROPOSED TONS/YR (Used/Produced) |
|---|---|---|---|---|
| RAW MATERIALS | | SILICA | 40000 | 40000 |
| | | IRON ORE | 4000 | 4000 |
| | | GYPSUM | 21000 | 21000 |
| | | LIMESTONE (HIGH) | 190000 | 190000 |
| | | LIMESTONE (LOW) | 190000 | 190000 |
| | | MGO ROCK (DOLOMITE) | 0 | 0 |
| | | TOTAL LIMESTONE | 380000 | 380000 |
| AIDS | | GRINDING AID | 116 | 116 |
| RAW FEED TO KILN | TOTAL MILLS | RAW MEAL (GROUND) | | 450000 |
| | | RAW MEAL (KILN FEED) | | 450000 |
| FUELS - KILN | KILN #1 | COAL | 70000 | 35000 |
| | KILN #2 | COAL | 0 | 35000 |
| | KILN #1 | OIL (tons) | 6505 | 3849 |
| | KILN #2 | OIL | 0 | 2635 |
| | KILN #1 | TIRES | 2761 | 0 |
| | KILN #2 | TIRES | 0 | 2792 |
| CLINKER PRODUCTION | KILN #1 | CLINKER PRODUCED | 110000 | 110000 |
| | KILN #2 | CLINKER PRODUCED | 140000 | 140000 |
| | | TOTAL CLINKER PRODUCED | 250000 | 250000 |
| | | CLINKER SHIPPED | 0 | |
| | | CLINKER RECEIVED | 80000 | 80000 |
| PRODUCTION (CEMENT) | FINISH MILL #1 | CLINKER | | 116235 |
| | | ROCK | | 0 |
| | | GYPSUM | | 6765 |
| | | TOTAL (CEMENT) | | 123000 |
| | FINISH MILL #2 | CLINKER | | 116235 |
| | | ROCK | | 0 |
| | | GYPSUM | | 6765 |
| | | TOTAL (CEMENT) | | 123000 |
| | FINISH MILL #3 | CLINKER | | 116235 |
| | | ROCK | | 0 |
| | | GYPSUM | | 6765 |
| | | TOTAL (CEMENT) | | 123000 |
| PRODUCTION (MASONARY) | FINISH MILL #1 | CLINKER | | 254 |
| | | ROCK | | 174 |
| | | GYPSUM | | 7 |
| | | TOTAL | | 435 |
| | FINISH MILL #2 | CLINKER | | 258 |
| | | ROCK | | 176 |
| | | GYPSUM | | 7 |
| | | TOTAL | | 441 |
| | FINISH MILL #3 | CLINKER | | 0 |
| | | ROCK | | 0 |
| | | GYPSUM | | 0 |
| | | TOTAL | | 0 |
| FINISH MILL SUMMARY | | TOTAL CLINKER USED | 349216 | |
| | | TOTAL ROCK USED | 350 | |
| | | TOTAL GYPSUM USED | 20310 | |
| | | TOTAL CEMENT PRODUCED | 369000 | |
| | | TOTAL MASONARY PRODUCED | 878 | |
| SHIPMENTS | BAGGED | CEMENT | 0 | |
| | | MASONARY | 0 | |
| | TRUCK (BULK) | CEMENT | | |
| | | MASONARY | | |
| | | TOTAL | 370000 | |
| | RAIL | CEMENT | | |
| | | MASONARY | | |
| | | TOTAL | 0 | |
| OTHER | | POTASH | 10000 | |
| | | CKD | 5000 | |
| | | GASOLINE (8534 GAL) | 32 | |
| | | DIESEL (43356 GAL) | 183 | |
| | | ROAD ROCK (GROUND) | 3202 | |
| | | RAIN DAYS | 90 | |
| OPERATING HOURS | FACILITY | | HRS/YR | AVERAGE T/HR |
| | | JAW CRUSHER | 2838 | 122 |
| | | HAMMER CRUSHER | 2838 | 122 |
| | | CONE CRUSHER (SILICA) | 416 | 43 |
| | | RAW MILL (NO. 4 MILL) | 8500 | 48 |
| | | RAW MILL (NO. 3 MILL) BACKUP | 0 | |
| | | COAL HANDLING | 250 | |
| | | KILN NO. 1 | 8448 | 12 |
| | | KILN NO. 2 | 8049 | 15 |
| | | CLINKER HANDLING | 8760 | |
| | | FINISH MILL NO. 1 | 6600 | 19 |
| | | FINISH MILL NO. 2 | 6600 | 19 |
| | | FINISH MILL NO. 3 | 6600 | 10 |
| | | PACKING & cement transfer | 7000 | |
| | | BULK LOADING | 7000 | |

TABLE 2

PROPOSED PARTICULATE EMISSIONS FROM POINT SOURCES AT ASH GROVE CEMENT

| Stack No. | ID No. | Area served | Source Description | Flow Rate (acfm) | Temp. (F) | Grain Loading (gr/dscf) | Flow Rate (dscfm) | Operating Hours (hrs/yr) | Actual TSP Emissions (lb/hr) | Actual TSP Emissions (Ton/yr) | $PM_{10}$ Fraction % | Actual PM10 Emissions (Ton/yr) | Maximum Hours (hrs/yr) | Potential TSP Emissions (Ton/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C1 | KILN # 1 | ESP # 1 | 39294 | 469 | 0.021 | 22333 | 8448 | 4.02 | 50.84 | 85% | 43.21 | 8760 | 50.84 |
| 2 | C2 | KILN # 2 | ESP # 2 | 39936 | 351 | 0.0256 | 26000 | 8049 | 5.71 | 73.91 | 85% | 62.82 | 8760 | 73.91 |
| 3 | C3 | DRAGS/COOLER | BAGHOUSE # 1 | 2800 | 140 | 0.03 | 2464 | 8600 | 0.63 | 2.72 | 85% | 2.32 | 8760 | 2.78 |
| 4 | C4 | CLINKER ELEVATOR | BAGHOUSE # 2 | 3992 | 129 | 0.03 | 3579 | 8600 | 0.92 | 3.96 | 85% | 3.36 | 8760 | 4.03 |
| 5 | C5 | CLINKER/SILO | BAGHOUSE # 3 | 3000 | 100 | 0.03 | 2829 | 7000 | 0.73 | 2.55 | 85% | 2.16 | 8760 | 3.19 |
| 6 | C6 | CLINKER RECLAIM | BAGHOUSE # 4 | 600 | 70 | 0.03 | 598 | 7000 | 0.15 | 0.54 | 85% | 0.46 | 8760 | 0.67 |
| 7 | C7 | FINISH MILLS #1 & # 2 | BAGHOUSE # 5 | 7600 | 190 | 0.03 | 6174 | 6600 | 1.59 | 5.24 | 85% | 4.45 | 8760 | 6.95 |
| 8 | C8 | FINISH MILL #3 | BAGHOUSE # 6 | 10000 | 190 | 0.03 | 8123 | 6600 | 2.09 | 6.89 | 85% | 5.86 | 8760 | 9.15 |
| 9 | C10 | BULK LOADING | BAGHOUSE # 7 | 1200 | 70 | 0.03 | 1195 | 7000 | 0.31 | 1.08 | 85% | 0.91 | 8760 | 1.35 |
| 10 | C9 | SILOS/PACKAGING | BAGHOUSE # 8 | 11000 | 70 | 0.03 | 10958 | 7000 | 2.82 | 9.86 | 85% | 8.38 | 8760 | 12.34 |
| | | | | | | | | | TOTAL | 157.58 | | 133.94 | | 165.20 |

PM10 (BAGHOUSE) FRACTION FROM AP42, TABLE C2._CATORGORY 4 — new for consistency

TABLE 3

PROPOSED

PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | FUG CODE | | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | EMISSION FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST CONTL FACT | CAPT CONTL FACT 2 | BUILD CONTL FACT 3 | EMISSIONS PM10 LB/HR | EMISSIONS TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | 1 | DRILING | | 24 | 0 | 320 | LIMESTONE | | | 380000 | 0 0001 | 0 0000 | | 5% | 0% | 0% | 0% | | | 0 02 | 0 00 |
| | F | 2 | BLASTING | | 24 | 0 | 0 | LIMESTONE | | | 380000 | 0 1600 | 0 0080 | Tb 8 19 2 2 | 5% | 0% | 0% | 0% | | | 30 40 | 1 52 |
| | F | 3 | DOZING | | | | | | | | | | | | | | | | | | | |
| | | | | D9L | | | 191 | LIMESTONE | | | | 2 6400 | 1 6500 | Tb 8 24-2 | 63% | | | | | | 0 25 | 0 16 |
| | | | | D10N | | | 1955 | LIMESTONE | | | | 2 6400 | 1 6500 | | 63% | | | | | | 2 58 | 1 61 |
| MATERIAL RECEIVING AND CRUSHING | F | 4 | LOADER | FEEDER | 8 | 334 | 2672 | LIMESTONE | 180 | 150 | 400000 | 0 0350 | 0 0018 | AP42 | 5% | 0% | 0% | 80% | 0 05 | 1 05 | 1 40 | 0 07 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0 0350 | 0 0018 | Tb 8 19 2-1 | 5% | 0% | 0% | 80% | 0 06 | 1 11 | 0 07 | 0 00 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0 0350 | 0 0018 | | 5% | 0% | 0% | 80% | 0 04 | 0 82 | 0 01 | 0 00 |
| | | | | | 4 | 104 | 416 | SILICA | 180 | 108 | 45000 | 0 0350 | 0 0018 | | 5% | 0% | 0% | 80% | 0 04 | 0 76 | 0 16 | 0 01 |
| | F | 5 | FEEDER | JAW CRUSHER | 8 | 334 | 2672 | LIMESTONE | 180 | 150 | 400000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 12 | 0 26 | 0 35 | 0 18 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 13 | 0 28 | 0 02 | 0 01 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 10 | 0 21 | 0 00 | 0 00 |
| | | | | | 4 | 104 | 416 | SILICA | 180 | 108 | 45000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 09 | 0 19 | 0 04 | 0 02 |
| | F | 6 | JAW CRUSHER | #1 INCLINE BELT | 8 | 334 | 2672 | LIMESTONE | 180 | 150 | 400000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 12 | 0 26 | 0 35 | 0 18 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 13 | 0 28 | 0 02 | 0 01 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 10 | 0 21 | 0 00 | 0 00 |
| | | | | | 4 | 104 | 416 | SILICA | 180 | 108 | 45000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 09 | 0 19 | 0 04 | 0 02 |
| | F | 7 | #1 INCLINE BELT | #2 INCLINE BELT | 8 | 334 | 2672 | LIMESTONE | 188 | 187 | 500000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 60% | 0 60 | 1 31 | 1 75 | 0 81 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 239 | 31500 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 60% | 0 77 | 1 67 | 0 11 | 0 05 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 60% | 0 38 | 0 82 | 0 01 | 0 01 |
| | | | | | 4 | 104 | 416 | SILICA | 180 | 108 | 45000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 60% | 0 35 | 0 76 | 0 16 | 0 07 |
| | F | 8 | #2 INCLINE BELT | #3 INCLINE BELT | 4 | 104 | 416 | SILICA | 180 | 162 | 67500 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 21 | 0 45 | 0 09 | 0 04 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 00 | 0 00 | 0 00 | 0 00 |
| | F | 9 | #3 INCLINE BELT | SCREEN #2 | 4 | 104 | 416 | SILICA | 180 | 162 | 67500 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 21 | 0 45 | 0 09 | 0 04 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 00 | 0 00 | 0 00 | 0 00 |
| | F | 10 | SCREEN #2 | CROSS COUNTRY B | 4 | 104 | 416 | SILICA | 180 | 108 | 45000 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 23 | 0 30 | 0 08 | 0 05 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 00 | 0 00 | 0 00 | 0 00 |
| | F | 11 | SCREEN #2 | CONE CRUSHER | 4 | 104 | 416 | SILICA | 180 | 54 | 22500 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 11 | 0 15 | 0 03 | 0 02 |
| | | | | | 2 | 0 | 0 | IRON ORE | 180 | #DIV/0! | 0 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 12 | CONE CRUSHER | #4 INCLINE BELT | 4 | 104 | 416 | SILICA | 180 | 54 | 22500 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 0 70 | 1 51 | 0 32 | 0 15 |
| | | | | | 2 | 0 | 0 | IRON ORE | 180 | #DIV/0! | 0 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 13 | #4 INCLINE BELT | #2 INCLINE BELT | 4 | 104 | 416 | SILICA | 180 | 54 | 22500 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 0 70 | 1 51 | 0 32 | 0 15 |
| | | | | | 2 | 0 | 0 | IRON ORE | 180 | #DIV/0! | 0 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | | | | | | | | | | | | | | | | 20% | | | | | | |
| | F | 14 | #2 INCLINE BELT | SCREEN #1 | 8 | 355 | 2838 | LIMESTONE | 180 | 176 | 500000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 23 | 0 49 | 0 70 | 0 32 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 239 | 31500 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 31 | 0 67 | 0 04 | 0 02 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 15 | 0 33 | 0 01 | 0 00 |
| | F | 15 | SCREEN #1 | CROSS COUNTRY B | 8 | 355 | 2838 | LIMESTONE | 180 | 141 | 400000 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 30 | 0 39 | 0 56 | 0 42 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 33 | 0 45 | 0 03 | 0 02 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 25 | 0 33 | 0 01 | 0 00 |
| | F | 16 | SCREEN #1 | HAMMER MILL | 8 | 355 | 2838 | LIMESTONE | 180 | 35 | 100000 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 07 | 0 10 | 0 14 | 0 11 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 80 | 10500 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 17 | 0 22 | 0 01 | 0 01 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0 0350 | 0 0263 | | 75% | 20% | 0% | 90% | 0 00 | 0 00 | 0 00 | 0 00 |
| | F | 17 | HAMMER MILL | #1 INCLINE BELT | 8 | 355 | 2838 | LIMESTONE | 180 | 35 | 100000 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 03 | 0 06 | 0 09 | 0 04 |
| | | | | | 3 | 44 | 132 | GYPSUM | 180 | 80 | 10500 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 06 | 0 14 | 0 01 | 0 00 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 0 | 0 | 0 0350 | 0 0162 | | 46% | 50% | 0% | 90% | 0 00 | 0 00 | 0 00 | 0 00 |
| CONVEYING AND SILO STORAGE | F | 18 | CROSS COUNTRY B | BELT B | 8 | 355 | 2838 | LIMESTONE | 180 | 134 | 380000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 1 73 | 3 75 | 5 32 | 2 48 |
| | | | | | 2 | 1419 | 2838 | IRON ORE | 180 | 1 | 4000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 0 02 | 0 04 | 0 06 | 0 03 |
| | | | | | 4 | 710 | 2838 | SILICA | 180 | 14 | 40000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 0 18 | 0 39 | 0 56 | 0 26 |
| | F | 19 | BELT B | BELT C | 8 | 355 | 2838 | LIMESTONE | 180 | 134 | 380000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 1 73 | 3 75 | 5 32 | 2 48 |
| | | | | | 4 | 710 | 2838 | SILICA | 180 | 1 | 4000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 0 02 | 0 04 | 0 06 | 0 03 |
| | | | | | 2 | 1419 | 2838 | IRON ORE | 180 | 14 | 40000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 0 18 | 0 39 | 0 56 | 0 26 |
| | F | 20 | BELT C | SILOS (3) | 8 | 355 | 2838 | LIMESTONE | 180 | 141 | 400000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 18 | 0 39 | 0 56 | 0 26 |
| | | | | | 4 | 104 | 416 | SILICA | 180 | 108 | 45000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 14 | 0 30 | 0 06 | 0 03 |
| | | | | | 2 | 17 | 34 | IRON ORE | 180 | 118 | 4000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 90% | 0 16 | 0 33 | 0 01 | 0 00 |
| | F | 21 | CROSS COUNTRY B | GYPSUM BELT | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 2 06 | 4 45 | 0 29 | 0 14 |
| | F | 22 | GYPSUM BELT | CHUTE | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 2 06 | 4 45 | 0 29 | 0 14 |
| | F | 23 | CHUTE | GYPSUM BIN | 3 | 44 | 132 | GYPSUM | 180 | 159 | 21000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 2 06 | 4 45 | 0 29 | 0 14 |
| STOCKPILE CRUSHED ROCK | F | 24 | CROSS COUNTRY B | CHUTE | 8 | 25 | 200 | LIMESTONE | 180 | 116 | 23202 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 1 50 | 3 25 | 0 32 | 0 15 |
| | | | | | 8 | 13 | 100 | SILICA | 180 | 50 | 6000 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 0 65 | 1 40 | 0 07 | 0 03 |
| | F | 25 | CHUTE | GROUND | 8 | 25 | 200 | LIMESTONE | 180 | 116 | 23202 | 0 0350 | 0 0162 | | 46% | 20% | 0% | 0% | 1 50 | 3 25 | 0 32 | 0 15 |

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PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | PM10 LB/TON | REF | PM10 FRAC % | MOIST CONTL FACT. | CAPT. CONTL FACT 2 | BUILD CONTL FACT 3 | EMISSIONS PM10 LB/HR | TSP LB/HR | TSP EMISS T/YR | PM 10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 15 | 100 | SILICA | 180 | 50 | 5000 | 0.0350 | 0.0162 | | 46% | 20% | 0% | 0% | 0.65 | 1.40 | 0.07 | 0.03 |
| SILO WITHDRAWAL | F | 26 | SILO FEEDER | FEED BELT | 24 | 354 | 8500 | LIMESTONE | 75 | 22 | 190000 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | 0.04 | 0.08 | 0.33 | 0.15 |
| CONVEYING AND | F | 27 | SILO FEEDER | FEED BELT | 24 | 354 | 8500 | LIMESTONE | 75 | 22 | 190000 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | 0.04 | 0.08 | 0.33 | 0.15 |
| RAW GRINDING | F | 28 | SILO FEEDER | FEED BELT | 24 | 354 | 8500 | SILICA | 75 | 5 | 45000 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | 0.01 | 0.02 | 0.08 | 0.04 |
| | F | 29 | SILO FEEDER | FEED BELT | 24 | 354 | 8500 | IRON ORE | 75 | 0 | 4000 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 30 | FEED BELT | MILL # 4 | 24 | 354 | 8500 | LIMESTONE | 75 | 45 | 380000 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | 0.07 | 0.18 | 0.67 | 0.31 |
| | | | | | 24 | 354 | 8500 | SILICA | 75 | 5 | 45000 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | 0.01 | 0.02 | 0.08 | 0.04 |
| | | | | | 24 | 354 | 8500 | IRON ORE | 75 | 0 | 4000 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 31 | MILL #4 | SLURRY TANK | 24 | 354 | 8500 | RAW MEAL | 75 | 50 | 429000 | 0.0000 | 0.0000 | | 50% | 0% | 0% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 32 | FEED BELT | MILL #3 (BACK-UP) | 24 | 0 | 0 | LIMESTONE | 75 | #DIV/0! | 0 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | | | | | 24 | 0 | 0 | SILICA | 75 | #DIV/0! | 0 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | | | | | 24 | 0 | 0 | IRON ORE | 75 | #DIV/0! | 0 | 0.0350 | 0.0162 | | 46% | 0% | 0% | 90% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 33 | MILL #3 | SLURRY TANK | 24 | 0 | 0 | RAW MEAL | 75 | #DIV/0! | 0 | 0.0000 | 0.0000 | | 50% | 0% | 0% | 90% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| COAL HANDLING | F | 34 | DUMP | HOPPER | 24 | 10 | 250 | COAL | 250 | 280 | 70000 | 0.0050 | 0.0013 | cs | 25% | 0% | 0% | 0% | 0.35 | 1.40 | 0.18 | 0.04 |
| | F | 35 | HOPPER | BELT | 24 | 10 | 250 | COAL | 250 | 280 | 70000 | 0.0050 | 0.0013 | esl | 25% | 0% | 0% | 0% | 0.35 | 1.40 | 0.18 | 0.04 |
| | F | 36 | BELT | COAL ELEVATOR | 24 | 10 | 250 | COAL | 250 | 280 | 70000 | 0.0050 | 0.0013 | pm10 | 25% | 0% | 0% | 0% | 0.35 | 1.40 | 0.18 | 0.04 |
| | F | 37 | COAL ELEVATOR | COAL SILO | 24 | 10 | 250 | COAL | 250 | 280 | 70000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 0% | 0.35 | 1.40 | 0.18 | 0.04 |
| | F | 38 | COAL SILO | BELT | 24 | 352 | 8440 | COAL | 10 | 4 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 39 | BELT | #1 COAL MILL | 24 | 352 | 8440 | COAL | 10 | 4 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 40 | COAL SILO | BELT | 24 | 274 | 6569 | COAL | 10 | 5 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 41 | BELT | #2 COAL MILL | 24 | 274 | 6569 | COAL | 10 | 5 | 35000 | 0.0050 | 0.0013 | | 25% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| KILN SYSTEM | F | 42 | SLURRY | #1 KILN | 24 | 352 | 8448 | RAW MEAL | 60 | 23 | 198000 | 0.0000 | 0.0000 | | 50% | 0% | 0% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| NO. 1 | F | 43 | #1 KILN | COOLER | 24 | 352 | 8448 | CLINKER | 20 | 13 | 110000 | 0.1500 | 0.0300 | | 20% | 0% | 0% | 90% | 0.04 | 0.20 | 0.83 | 0.17 |
| | F | 44 | COOLER | DRAG #1 | 24 | 352 | 8448 | CLINKER | 20 | 13 | 110000 | 0.1500 | 0.0300 | | 20% | 0% | 0% | 90% | 0.04 | 0.20 | 0.83 | 0.17 |
| | F | 45 | DRAG #1 | DRAG #3 | 24 | 352 | 8448 | CLINKER | 20 | 13 | 110000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| KILN SYSTEM | F | 46 | SLURRY | #2 KILN | 24 | 335 | 8049 | RAW MEAL | 90 | 31 | 252000 | 0.0000 | 0.0000 | | 20% | 0% | 0% | 99% | 0.00 | 0.00 | 0.00 | 0.00 |
| NO. 2 | F | 47 | #2 KILN | #2 COOLER | 24 | 335 | 8049 | CLINKER | 30 | 17 | 140000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.05 | 0.01 |
| | F | 48 | #2 COOLER | DRAG #2 | 24 | 335 | 8049 | CLINKER | 30 | 17 | 140000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.05 | 0.01 |
| | F | 49 | DRAG #2 | DRAG #3 | 24 | 335 | 8049 | CLINKER | 30 | 17 | 140000 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.05 | 0.01 |
| | F | 49A | DRAG #2 | AUX. DRAG | 24 | 335 | 8049 | CLINKER | 30 | 0 | 0 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 80% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 49B | AUX DRAG | TRACK BIN | 24 | 335 | 8049 | CLINKER | 30 | 0 | 0 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 10% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 49C | TRACK BIN | CRANE | 24 | 335 | 8049 | CLINKER | 30 | 0 | 0 | 0.1500 | 0.0300 | | 20% | 0% | 0% | 50% | 0.00 | 0.00 | 0.00 | 0.00 |
| SUBTOTAL | | | | | | | | | | | | | | | | | | | | | | |
| clinker reclaiming | | 49d | rail car | track bin | 24 | 335 | 8049 | CLINKER | 500 | 250 | 80000 | 0.1500 | 0.0750 | | 50% | 0% | 0% | 20% | 15.00 | 30.00 | 4.80 | 2.40 |
| CLINKER | F | 50 | DRAG #3 | CLINKER ELEVATOR | 24 | 365 | 8760 | CLINKER | 50 | 40 | 349218 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 20% | 0.12 | 0.24 | 1.05 | 0.52 |
| HANDLING | F | 51 | CLINKER ELEVATOR | plenum box | 24 | 365 | 8760 | CLINKER | 50 | 12 | 104765 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 20% | 0.04 | 0.07 | 0.31 | 0.16 |
| | F | 52 | plenum box | BIN | 24 | 365 | 8760 | CLINKER | 50 | 12 | 104765 | 0.5000 | 0.2500 | | 50% | 0% | 95% | 20% | 0.12 | 0.24 | 1.05 | 0.52 |
| | F | 53 | BIN | CRANE | 24 | 365 | 8760 | CLINKER | 50 | 21 | 184765 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 20% | 4.22 | 8.44 | 36.95 | 18.48 |
| | F | 54 | CRANE | CRANEWAY STORAG | 24 | 365 | 8760 | CLINKER | 50 | 21 | 184765 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 20% | 4.22 | 8.44 | 36.95 | 18.48 |
| | F | 55 | CLINKER ELEVATOR | DRAG #4 | 24 | 365 | 8760 | CLINKER | 50 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 56 | DRAG #4 | ELEVATOR #2 | 24 | 365 | 8760 | CLINKER | 50 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 57 | ELEVATOR #2 | DRAG #5 | 24 | 365 | 8760 | CLINKER | 50 | 6 | 52392 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 58 | DRAG #5 | CLINKER SILO #1 | 24 | 365 | 8760 | CLINKER | 50 | 2 | 20429 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 59 | DRAG #5 | CLINKER SILO #2 | 24 | 365 | 8760 | CLINKER | 50 | 2 | 20429 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 60 | DRAG #5 | CLINKER SILO #3 | 24 | 365 | 8760 | CLINKER | 50 | 1 | 11524 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 61 | ELEVATOR #2 | STACKER BELT #1 | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.08 | 0.16 | 0.72 | 0.36 |
| | F | 62 | STACKER BELT #1 | STACKER BELT #2 | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.08 | 0.16 | 0.72 | 0.36 |
| | F | 63 | STACKER BELT #2 | STACKER | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.08 | 0.16 | 0.72 | 0.36 |
| | F | 64 | STACKER | PILE (OPEN AREA) | 24 | 365 | 8760 | CLINKER | 50 | 22 | 192069 | 0.5000 | 0.2500 | | 50% | 0% | 95% | 50% | 0.14 | 0.27 | 1.20 | 0.60 |
| | F | 65A | STORAGE | CRANE | 24 | 365 | 8500 | CLINKER | 300 | 21 | 184765 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 2.64 | 5.27 | 23.10 | 11.55 |
| CLINKER | F | 65 | CRANE | BIN #1 | 24 | 365 | 8760 | CLINKER | 300 | 7 | 61632 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 0.88 | 1.76 | 7.70 | 3.85 |
| RECLAIM | F | 66 | CRANE | BIN #2 | 24 | 365 | 8760 | CLINKER | 300 | 7 | 61634 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 0.88 | 1.76 | 7.70 | 3.85 |
| | F | 67 | CRANE | BIN #3 | 24 | 365 | 8760 | CLINKER | 300 | 7 | 61498 | 0.5000 | 0.2500 | | 50% | 0% | 0% | 50% | 0.88 | 1.76 | 7.69 | 3.84 |
| | F | 68 | GALLERY PILE | RECLAIM BELT #1 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 69 | GALLERY PILE | RECLAIM BELT #1 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 70 | GALLERY PILE | RECLAIM BELT #2 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |

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TABLE 3

PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | EMISSION FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST CONTL FACT | CAPT CONTL FACT. 2 | BUILD CONTL FACT 3 | EMISSIONS PM10 LB/HR | EMISSIONS TSP LB/HR | TSP EMISS T/YR | PM10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | 71 | GALLERY PILE | RECLAIM BELT #2 | 24 | 365 | 8760 | CLINKER | 100 | 5 | 48017 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.02 | 0.01 |
| | F | 72 | RECLAIM BELT #1 | RECLAIM BELT #2 | 24 | 365 | 8760 | CLINKER | 100 | 11 | 96034 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.02 |
| | F | 73 | RECLAIM BELT #2 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 11 | 96034 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.02 |
| | F | 74 | CLINKER SILO #1 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 2 | 17461 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 75 | CLINKER SILO #2 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 2 | 17461 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 76 | CLINKER SILO #3 | RECLAIM BELT #3 | 24 | 365 | 8760 | CLINKER | 100 | 2 | 17461 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 77 | RECLAIM BELT #3 | ELEVATOR #3 | 24 | 365 | 8760 | CLINKER | 100 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 78 | ELEVATOR #3 | CLINKER BIN DRAG | 24 | 365 | 8760 | CLINKER | 100 | 28 | 244451 | 0.1500 | 0.0750 | | 50% | 0% | 95% | 0% | 0.10 | 0.21 | 0.92 | 0.46 |
| | F | 79 | CLINKER BIN DRAG | BIN #1 | 24 | 365 | 8760 | CLINKER | 100 | 9 | 81542 | 0.6000 | 0.2500 | | 50% | 0% | 95% | 0% | 0.12 | 0.23 | 1.02 | 0.51 |
| | F | 80 | CLINKER BIN DRAG | BIN #2 | 24 | 365 | 8760 | CLINKER | 100 | 9 | 81545 | 0.6000 | 0.2500 | | 50% | 0% | 95% | 0% | 0.12 | 0.23 | 1.02 | 0.51 |
| | F | 81 | CLINKER BIN DRAG | BIN #3 | 24 | 365 | 8760 | CLINKER | 100 | 9 | 81365 | 0.6000 | 0.2500 | | 50% | 0% | 95% | 0% | 0.12 | 0.23 | 1.02 | 0.51 |
| KILN NO. 1 | F | 82 | MULTICLONE | SCREW | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 83 | SCREW | ELEVATOR | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST UPSET | F | 84 | ELEVATOR | SCREW | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 85 | SCREW | BIN | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 85% | 0.04 | 0.08 | 0.01 | 0.00 |
| | F | 109 | BIN | LOADER | 24 | 5 | 125 | CKD | 4 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.27 | 0.54 | 0.03 | 0.02 |
| KILN NO. 1 ESP | F | 92 | ESP | SCREW | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 87 | SCREW | BUNKER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| DUST UPSET | F | 88 | BUNKER | LOADER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| MULTICLONE DUS | F | 82 | MULTICLONE | SCREW | 24 | 347 | 8323 | CKD | 4 | 3 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.03 | 0.01 |
| RETURN | F | 83 | SCREW | ELEVATOR | 24 | 347 | 8323 | CKD | 4 | 3 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.03 | 0.01 |
| | F | 84 | ELEVATOR | SCREW | 24 | 347 | 8323 | CKD | 4 | 3 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 108 | SCREW | PADDLE MIXER | 24 | 347 | 8323 | CKD | 4 | 3 | 21120 | 0.2700 | 0.1350 | | 50% | 0% | 80% | 90% | 0.01 | 0.01 | 0.06 | 0.03 |
| ESP DUST | F | 92 | PRECIPITATOR | SCREW | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| RETURNED | F | 93 | SCREW | ELEVATOR | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 94 | ELEVATOR | SCREW | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 95 | SCREW | LEACH TANK | 24 | 165 | 3948 | CKD | 4 | 1 | 5227 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 85% | 0.03 | 0.05 | 0.11 | 0.05 |
| KILN NO. 2 | F | 96 | MULTICLONE | SCREW | 24 | 5 | 125 | CKD | 5 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 97 | SCREW | BIN | 24 | 5 | 125 | CKD | 5 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST UPSET | F | 98 | BIN | LOADER | 24 | 5 | 125 | CKD | 5 | 2 | 250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.27 | 0.54 | 0.03 | 0.02 |
| KILN NO. 2 ESP | F | 101 | ESP | SCREW | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| DUST HANDLING | F | 106 | SCREW | BUNKER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| DUST UPSET | F | 107 | BUNKER | LOADER | 24 | 188 | 4500 | CKD | 4 | 1 | 2250 | 0.2700 | 0.1350 | | 50% | 0% | 0% | 0% | 0.07 | 0.14 | 0.30 | 0.15 |
| MULTICLONE DUS | F | 96 | MULTICLONE | SCREW | 24 | 330 | 7924 | CKD | | 2 | 17920 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.02 | 0.01 |
| RETURN | F | 99 | SCREW | ELEVATOR | 24 | 330 | 7924 | CKD | 0 | 2 | 17920 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.02 | 0.01 |
| | F | 100 | ELEVATOR | PADDLE MIXER | 24 | 330 | 7924 | CKD | 0 | 2 | 17920 | 0.2700 | 0.1350 | | 50% | 0% | 90% | 90% | 0.00 | 0.01 | 0.02 | 0.01 |
| ESP DUST | F | 101 | PRECIPITATOR | SCREW | 24 | 148 | 3549 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 102 | SCREW | SCREW | 24 | 148 | 3549 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 103 | SCREW | ELEVATOR | 24 | 148 | 3549 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 104 | ELEVATOR | SCREW | 24 | 148 | 3549 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 105 | SCREW | LEACH TANK | 24 | 148 | 3549 | CKD | 30 | 1 | 4435 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 85% | 0.00 | 0.00 | 0.00 | 0.00 |
| FINISH GRINDING | F | 110 | CLINKER BIN #1 | CLINKER FEEDER | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| MILL # 1 | F | 111 | CLINKER FEEDER | BELT | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 112 | GYPSUM BIN | CRANE | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 112A | CRANE | GYPSUM FEEDER | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 113 | GYPSUM FEEDER | BELT | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 114 | BELT | MILL #1 | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | | | | | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.03 | 0.02 |
| MILL #2 | F | 115 | CLINKER BIN #2 | CLINKER FEEDER | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 116 | CLINKER FEEDER | BELT | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 117 | GYPSUM BIN | CRANE | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |

6/21/95

PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | EMISSION FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST CONTL FACT | CAPT. CONTL FACT. 2 | BUILD CONTL FACT 3 | EMISSIONS PM10 LB/HR | EMISSIONS TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | 117A | CRANE | GYPSUM FEEDER | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 118 | GYPSUM FEEDER | BELT | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 119 | BELT | MILL #2 | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | | | | | 24 | 275 | 6600 | GYPSUM | 40 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.03 | 0.02 |
| | F | 120 | MILL #1 | CEMENT ELEVATOR | 24 | 275 | 6600 | CEMENT | 120 | 56 | 369000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.02 | 0.05 | 0.02 |
| | F | 121 | MILL #2 | CEMENT ELEVATOR | 24 | 275 | 6600 | CEMENT | 120 | 56 | 369000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.02 | 0.05 | 0.02 |
| | F | 122 | CEMENT ELEVATOR | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 240 | 112 | 738000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.02 | 0.03 | 0.10 | 0.05 |
| | F | 123 | AIRSLIDE | SEPARATOR | 24 | 275 | 6600 | CEMENT | 240 | 112 | 738000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.02 | 0.03 | 0.10 | 0.05 |
| | F | 124 | SEPARATOR | RETURN SCREW | 24 | 275 | 6600 | CEMENT | 240 | 75 | 492000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.02 | 0.07 | 0.03 |
| | F | 125 | RETURN SCREW | MILL #1 | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.03 | 0.02 |
| | F | 126 | RETURN SCREW | MILL #2 | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 90% | 0.01 | 0.01 | 0.03 | 0.02 |
| | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | | |
| | F | 127 | SEPARATOR | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | | 99% | 0.05 | 0.10 | 0.33 | 0.17 |
| | F | 128 | AIRSLIDE | COOLER | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | | 99% | 0.05 | 0.10 | 0.33 | 0.17 |
| | F | 129 | COOLER | FK PUMP | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | | 99% | 0.06 | 0.10 | 0.33 | 0.17 |
| MILL #3 | F | 130 | CLINKER BIN #3 | CLINKER FEEDER | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 131 | CLINKER FEEDER | BELT | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | F | 132 | ROCK BIN | ROCK FEEDER | 24 | 275 | 6600 | ROCK | 75 | 0 | 0 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 133 | ROCK FEEDER | BELT | 24 | 275 | 6600 | ROCK | 75 | 0 | 0 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 134 | GYPSUM BIN | CRANE | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 134A | CRANE | GYPSUM FEEDER | 24 | 275 | 6600 | GYPSUM | 300 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 0% | 90% | 0.00 | 0.00 | 0.01 | 0.00 |
| | F | 135 | GYPSUM FEEDER | BELT | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 136 | BELT | MILL #3 | 24 | 275 | 6600 | CLINKER | 40 | 18 | 116235 | 0.1500 | 0.0300 | | 20% | 0% | 95% | 90% | 0.00 | 0.01 | 0.04 | 0.01 |
| | | | | | 24 | 275 | 6600 | ROCK | 75 | 0 | 0 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | GYPSUM | 10 | 1 | 6765 | 0.0350 | 0.0014 | | 4% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.03 | 0.05 | 0.17 | 0.08 |
| | F | 137 | MILL #3 | CEMENT ELEVATOR | 24 | 275 | 6600 | CEMENT | 120 | 56 | 369000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.04 | 0.08 | 0.25 | 0.12 |
| | | | | | 24 | 275 | 6600 | Masonry | 120 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 138 | CEMENT ELEVATOR | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 120 | 56 | 369000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.04 | 0.08 | 0.25 | 0.12 |
| | | | | | 24 | 275 | 6600 | Masonry | 120 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 139 | AIRSLIDE | SEPARATOR #2 | 24 | 275 | 6600 | CEMENT | 120 | 56 | 369000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.04 | 0.08 | 0.25 | 0.12 |
| | | | | | 24 | 275 | 6600 | Masonry | 120 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 140 | SEPARATOR #2 | RETURN SCREW | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.03 | 0.05 | 0.17 | 0.08 |
| | | | | | 24 | 275 | 6600 | Masonry | 80 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 141 | RETURN SCREW | MILL #3 | 24 | 275 | 6600 | CEMENT | 80 | 37 | 246000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.03 | 0.05 | 0.17 | 0.08 |
| | | | | | 24 | 275 | 6600 | Masonry | 80 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 142 | SEPARATOR #2 | AIRSLIDE | 24 | 275 | 6600 | CEMENT | 40 | 19 | 123000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.01 | 0.03 | 0.08 | 0.04 |
| | | | | | 24 | 275 | 6600 | Masonry | 40 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 143 | AIRSLIDE | COOLER | 24 | 275 | 6600 | CEMENT | 40 | 19 | 123000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.01 | 0.03 | 0.08 | 0.04 |
| | | | | | 24 | 275 | 6600 | Masonry | 40 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 144 | COOLER | FK PUMP | 24 | 275 | 6600 | CEMENT | 40 | 19 | 123000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.01 | 0.03 | 0.08 | 0.04 |
| | | | | | 24 | 275 | 6600 | Masonry | 40 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.00 | 0.00 | 0.00 | 0.00 |
| FINISH SILOS FROM MILL #1,#2 | F | 145 | FK PUMP (MILL#1,#2) | SILO #1 | 24 | 15 | 375 | CEMENT | 80 | 0 | 0 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.00 | 0.00 | 0.00 |
| | F | 146 | FK PUMP (MILL#1,#2) | SILO #2 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 147 | FK PUMP (MILL#1,#2) | SILO #3 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 148 | FK PUMP (MILL#1,#2) | SILO #4 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 149 | FK PUMP (MILL#1,#2) | SILO #5 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 150 | FK PUMP (MILL#1,#2) | SILO #6 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 151 | FK PUMP (MILL#1,#2) | SILO #7 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 152 | FK PUMP (MILL#1,#2) | SILO #8 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 153 | FK PUMP (MILL#1,#2) | SILO #9 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 154 | FK PUMP (MILL#1,#2) | SILO #10 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 155 | FK PUMP (MILL#1,#2) | SILO #11 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 156 | FK PUMP (MILL#1,#2) | SILO #12 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 157 | FK PUMP (MILL#1,#2) | SILO #13 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| | F | 158 | FK PUMP (MILL#1,#2) | SILO #14 | 24 | 16 | 375 | CEMENT | 80 | 39 | 14737 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.05 | 0.11 | 0.02 | 0.01 |
| FINISH SILOS FROM MILL #3 | F | 159 | FK PUMP (MILL #3) | SILO #1 | 24 | 15 | 348 | Masonry | 40 | 3 | 876 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.00 | 0.01 | 0.00 | 0.00 |
| | F | 160 | FK PUMP (MILL #3) | SILO #2 | 24 | 15 | 348 | CEMENT | 40 | 18 | 6376 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.05 | 0.01 | 0.00 |
| | F | 161 | FK PUMP (MILL #3) | SILO #3 | 24 | 15 | 348 | CEMENT | 40 | 18 | 6376 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.05 | 0.01 | 0.00 |
| | F | 162 | FK PUMP (MILL #3) | SILO #4 | 24 | 15 | 348 | CEMENT | 40 | 18 | 6376 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.05 | 0.01 | 0.00 |

PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | EMISSION FACTORS PM10 LB/TON | REF | PM10 FRAC % | MOIST CONTL FACT. | CAPT CONTL FACT. | BUILD CONTL FACT 3 | EMISSIONS PM10 LB/HR | EMISSIONS TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | 163 | FK PUMP (MILL #3) | SILO #5 | 24 | 15 | 348 | CEMENT | 40 | 18 | 6376 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.05 | 0.01 | 0.00 |
| | F | 164 | FK PUMP (MILL #3) | SILO #6 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 165 | FK PUMP (MILL #3) | SILO #7 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 166 | FK PUMP (MILL #3) | SILO #8 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 167 | FK PUMP (MILL #3) | SILO #9 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 168 | FK PUMP (MILL #3) | SILO #10 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 169 | FK PUMP (MILL #3) | SILO #11 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 170 | FK PUMP (MILL #3) | SILO #12 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| | F | 171 | FK PUMP (MILL #3) | SILO #13 | 24 | 15 | 348 | CEMENT | 40 | 18 | 6376 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.02 | 0.05 | 0.01 | 0.00 |
| | F | 172 | FK PUMP (MILL #3) | SILO #14 | 24 | 15 | 348 | CEMENT | 40 | 5 | 1686 | 0.2700 | 0.1350 | | 50% | 0% | 99% | 0% | 0.01 | 0.01 | 0.00 | 0.00 |
| CEMENT bottom system | F | 173 | SILO #1 | SCREW #1 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 174 | SILO #2 | SCREW #1 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 175 | SILO #3 | SCREW #1 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 176 | SILO #4 | SCREW | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 177 | SILO #5 | SCREW | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 178 | SCREW | SCREW #1 | 24 | 37 | 881 | CEMENT | 150 | 75 | 66071 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.04 | 0.02 |
| | F | 179 | SCREW #1 | ELEVATOR # 1 | 24 | 37 | 881 | CEMENT | 150 | 75 | 66071 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.04 | 0.02 |
| | | | | | | | | | 150 | | | | | | | | | | | | | |
| | F | 180 | SILO #6 | SCREW #2 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 181 | SILO #7 | SCREW #2 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 182 | SILO #8 | SCREW #2 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 183 | SCREW #2 | SCREW #4 | 24 | 22 | 529 | CEMENT | 150 | 75 | 39643 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.03 | 0.01 |
| | F | 184 | SILO #12 | SCREW #3 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 185 | SILO #13 | SCREW #3 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 186 | SILO #14 | SCREW #3 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 187 | SCREW #3 | SCREW #4 | 24 | 22 | 529 | CEMENT | 150 | 75 | 39643 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.03 | 0.01 |
| | F | 188 | SCREW #4 | ELEVATOR #1 | 24 | 44 | 1057 | CEMENT | 150 | 75 | 79286 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.05 | 0.03 |
| | F | 189 | SILO #9 | SCREW #6 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 190 | SILO #10 | SCREW #6 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 191 | SILO #11 | SCREW #6 | 24 | 7 | 176 | CEMENT | 150 | 75 | 13214 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.01 | 0.00 |
| | F | 192 | SCREW #6 | SCREW #5 | 24 | 22 | 529 | CEMENT | 150 | 75 | 39643 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.03 | 0.01 |
| | F | 193 | SCREW #5 | ELEVATOR #1 | 24 | 22 | 529 | CEMENT | 150 | 75 | 39643 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.03 | 0.01 |
| | F | 194 | ELEVATOR #1 | DISCHARGE SCREW | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 90% | 0.05 | 0.10 | 0.12 | 0.06 |
| | F | 195 | DISCHARGE SCREW | RAIL LOADOUT | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| BY TRUCK | F | 196 | DISCHARGE SCREW | TRANSFER SCREW | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.01 | 0.01 |
| | F | 197 | TRANSFER SCREW | SCREW | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.01 | 0.01 |
| | F | 198 | SCREW | TANK A | 24 | 34 | 822 | CEMENT | 150 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.06 | 0.03 |
| | F | 199 | SCREW | TANK B | 24 | 34 | 822 | CEMENT | 150 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.06 | 0.03 |
| | F | 200 | SCREW | TANK C | 24 | 34 | 822 | CEMENT | 150 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.06 | 0.03 |
| | F | 201 | TANK A | TRUCK LOADOUT | 24 | 34 | 822 | CEMENT | 500 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | 0.51 | 1.01 | 0.42 | 0.21 |
| | F | 202 | TANK B | TRUCK LOADOUT | 24 | 34 | 822 | CEMENT | 500 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | 0.51 | 1.01 | 0.42 | 0.21 |
| | F | 203 | TANK C | TRUCK LOADOUT | 24 | 34 | 822 | CEMENT | 500 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | 0.51 | 1.01 | 0.42 | 0.21 |
| cement back system | F | 204 | silos 9-14 | AIRSLIDE | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.01 | 0.01 |
| | F | 205 | AIRSLIDE | ELEVATOR #4 | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.01 | 0.01 |
| | F | 206 | SCREW #6 | AIRSLIDE | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.01 | 0.01 |
| | F | 207 | AIRSLIDE | ELEVATOR #4 | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | 0.01 | 0.01 | 0.01 | 0.01 |
| | F | 208 | ELEVATOR #4 | ELEVATOR #5 | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.19 | 0.09 |
| | F | 209 | ELEVATOR #5 | AIRSLIDE | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.19 | 0.09 |
| | F | 210 | AIRSLIDE | SCREW | 24 | 103 | 2467 | CEMENT | 150 | 75 | 185000 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.19 | 0.09 |
| | F | 211 | SCREW | TANK A | 24 | 34 | 822 | CEMENT | 150 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.06 | 0.03 |
| | F | 212 | SCREW | TANK B | 24 | 34 | 822 | CEMENT | 150 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.06 | 0.03 |
| | F | 213 | SCREW | TANK C | 24 | 34 | 822 | CEMENT | 150 | 75 | 61667 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 85% | 0.08 | 0.15 | 0.06 | 0.03 |
| | F | 209a | airslide | rail loadout | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 0% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| CEMENT BY PACKAGE | F | 214 | SCREW #1 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 215 | SCREW #2 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 216 | SCREW #4 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 217 | SCREW #5 | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 218 | ELEVATOR #2 | NORTH SOUTH SCR | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 219 | NORTH SOUTH SCR | BIN #1 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 220 | NORTH SOUTH SCR | BIN #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |
| | F | 221 | BIN #1 | PACKER # 1 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0.2700 | 0.1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0.00 | 0.00 |

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TABLE 3

PROCESS FUGITIVE EMISSIONS FOR ASH GROVE CEMENT

| PROCESS | | FUG CODE | NAME FROM | NAME TO | HRS /DAY | DAYS /YR | HRS/YR | MATERIAL | MAXIMUM THR-PUT TON/HR | AVERAGE THR-PUT TON/HR | ANNUAL THROUGHPUT TON/YR | EMISSION FACTORS TSP LB/TON | PM10 LB/TON | REF | PM10 FRAC % | MOIST CONTL FACT. | CAPT. CONTL FACT. | BUILD CONTL FACT 3 | EMISSIONS PM10 LB/HR | TSP LB/HR | TSP EMISS T/YR | PM-10 EMISS T/YR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | 222 | BIN #2 | PACKER # 2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 223 | BIN #1/ PACKER #1 | SPILL AIRSLIDE | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 224 | BIN #2/ PACKER #2 | SPILL AIRSLIDE | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 225 | SPILL AIRSLIDE | ELEVATOR #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 226 | ELEVATOR #2 | NORTH SOUTH SCR | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 227 | NORTH SOUTH SCR | BIN #1 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 228 | NORTH SOUTH SCR | BIN #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 229 | SILO #6 | AIRSLIDE | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 230 | AIRSLIDE | BIN #2 | 24 | 0 | 0 | CEMENT | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| MASONARY | F | 231 | SILO #1 | SCREW #1 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| BY PACKAGE | F | 232 | SCREW #1 | ELEVATOR #2 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 233 | ELEVATOR # 2 | NORTH SOUTH SCR | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 234 | NORTH SOUTH SCR | BIN #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 235 | BIN #3 | PACKER #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 236 | BIN #3/PACKER #3 | SPILL SCREW | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 237 | SPILL SCREW | ELEVATOR #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| | F | 238 | ELEVATOR #3 | BIN #3 | 24 | 0 | 0 | Masonry | 150 | #DIV/0! | 0 | 0 2700 | 0 1350 | | 50% | 0% | 95% | 99% | #DIV/0! | #DIV/0! | 0 00 | 0 00 |
| TOTAL | | | | | | | | | | | | | | | | | | | | | 204 | 88 59 |

TABLE 4

# 1994 PAVED ROAD EMISSIONS SUMMARY FOR ASH GROVE CEMENT

| Segment No. | Segment Length (mi) | Paved Road Data: Surface dust (lb/mi) | Silt % | Silt Loading (oz/yd2) | Material Trips (#/yr) | Total Mileage (Mi/yr) | Rain Days (year) | Water Control % | TSP Emply Trucks lb/VMT | TSP Loaded Trucks lb/VMT | PM-10 Emissions Paved lb/VMT | Total Emissions TSP (T/yr) | Total Emissions PM10 (T/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3A | 0.03 | 1750.00 | 12.50 | 0.35 | 54560 | 1555 | 90 | 0.00 | 2.98 | 4.23 | 0.77 | 2.83 | 0.60 |
| 3B | 0.05 | 1750.00 | 12.50 | 0.35 | 61974 | 2949 | 90 | 0.00 | 3.01 | 4.27 | 0.77 | 5.41 | 1.14 |
| 3C | 0.03 | 1750.00 | 12.50 | 0.35 | 33876 | 965 | 90 | 0.00 | 2.98 | 4.74 | 0.77 | 1.59 | 0.37 |
| 3D | 0.02 | 1750.00 | 12.50 | 0.35 | 33600 | 640 | 90 | 0.00 | 2.99 | 4.74 | 0.77 | 1.06 | 0.25 |
| 3E | 0.02 | 1750.00 | 12.50 | 0.35 | 33324 | 793 | 90 | 0.00 | 3.01 | 4.74 | 0.77 | 1.32 | 0.31 |
| 3F | 0.01 | 1750.00 | 12.50 | 0.35 | 33324 | 476 | 90 | 0.00 | 3.01 | 4.74 | 0.77 | 0.79 | 0.18 |
| 3FF | 0.03 | 1750.00 | 12.50 | 0.35 | 28650 | 954 | 90 | 0.00 | 3.01 | 4.14 | 0.77 | 1.71 | 0.37 |
| 3I | 0.01 | 1750.00 | 12.50 | 0.35 | 276 | 4 | 90 | 0.00 | n/a | 2.27 | 0.77 | 0.00 | 0.00 |
| 3J | 0.06 | 1750.00 | 12.50 | 0.35 | 276 | 16 | 90 | 0.00 | n/a | 2.27 | 0.77 | 0.02 | 0.01 |
| 3K | 0.03 | 1750.00 | 12.50 | 0.35 | 276 | 8 | 90 | 0.00 | n/a | 2.27 | 0.77 | 0.01 | 0.00 |
| 3L | 0.08 | 1750.00 | 12.50 | 0.35 | 276 | 22 | 90 | 0.00 | n/a | 2.27 | 0.77 | 0.03 | 0.01 |
| 3N | 0.02 | 1750.00 | 12.50 | 0.35 | 3889 | 74 | 90 | 0.00 | n/a | 5.03 | 0.77 | 0.19 | 0.03 |
| 3R | 0.03 | 1750.00 | 12.50 | 0.35 | 3707 | 123 | 90 | 0.00 | 3.24 | 4.51 | 0.77 | 0.24 | 0.05 |
| 3M | 0.05 | 1750.00 | 12.50 | 0.35 | 9127 | 434 | 90 | 0.00 | 3.64 | 4.90 | 0.77 | 0.93 | 0.17 |
| | | | | TOTAL | 297136 | 9013 | | | | | | 16.12 | 3.47 |

TABLE 5

1994 UNPAVED ROADS EMISSION SUMMARY FOR ASH GROVE CEMENT

| Segment No. | Segment Length (mi) | Silt % | Average* Vehicle Speed (mph) | Material Trips (#/yr) | Total Mileage (Mi/yr) | Rain Days (year) | Water Control % | TSP Empty Trucks lb/VMT | TSP Loaded Trucks lb/VMT | PM-10 Emissions Unpaved lb/VMT | PM-10 Emissions Unpaved lb/VMT | Total Emissions TSP (T/yr) | Total Emissions PM10 (T/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.25 | 7.10 | 13 | 8000 | 2000 | 90 | 70 | 1.77 | 2.29 | 0.64 | 0.82 | 2.03 | 0.73 |
| 2 | 0.10 | 7.10 | 13 | 8000 | 800 | 90 | 70 | 1.77 | 2.29 | 0.64 | 0.82 | 0.81 | 0.29 |
| D | 0.10 | 7.10 | 13 | 5111 | 511 | 90 | 70 | 4.01 | 5.05 | 1.45 | 1.82 | 1.16 | 0.42 |
| 3P | 0.20 | 7.10 | 13 | 4889 | 978 | 90 | 70 | 1.21 | 5.98 | 0.44 | 2.15 | 2.69 | 0.97 |
| 3P1 | 0.10 | 7.10 | 13 | 3889 | 389 | 90 | 70 | n/a | 6.51 | n/a | 2.34 | 1.27 | 0.46 |
| 3Q | 0.10 | 7.10 | 13 | 3889 | 389 | 90 | 70 | 5.29 | n/a | 1.90 | n/a | 1.03 | 0.37 |
| 3O | 0.07 | 7.10 | 13 | 3889 | 259 | 90 | 70 | n/a | 6.51 | n/a | 2.34 | 0.84 | 0.30 |
| HR1 | 0.20 | 7.10 | 13 | 38000 | 7600 | 90 | 70 | 0.44 | 0.51 | 0.16 | 0.18 | 1.80 | 0.65 |
| LR1 | 0.20 | 7.10 | 13 | 38000 | 7600 | 90 | 70 | 0.44 | 0.51 | 0.16 | 0.18 | 1.80 | 0.65 |
| CKD | 0.10 | 7.10 | 13 | 1000 | 100 | 90 | 70 | 1.21 | 1.89 | 0.44 | 0.68 | 0.08 | 0.03 |
| G1 | 0.10 | 7.10 | 13 | 1652 | 165 | 90 | 70 | 5.29 | 6.51 | 1.90 | 2.34 | 0.49 | 0.18 |
| G2 | 0.10 | 7.10 | 13 | 1342 | 134 | 90 | 70 | 5.29 | 6.51 | 1.90 | 2.34 | 0.40 | 0.14 |
| I1 | 0.07 | 7.10 | 13 | 310 | 22 | 90 | 70 | 5.29 | 6.51 | 1.90 | 2.34 | 0.06 | 0.02 |
| S1 | 0.06 | 7.10 | 13 | 2307 | 131 | 90 | 70 | 1.77 | 2.29 | 0.64 | 0.82 | 0.13 | 0.05 |
| 3g | 0.03 | 7.10 | 13 | 3897 | 221 | 90 | 70 | 3.46 | 6.51 | 1.24 | 2.34 | 0.72 | 0.26 |
| 3h | 0.06 | 7.10 | 13 | 5050 | 287 | 90 | 70 | 0.44 | 5.54 | n/a | 2.00 | 0.80 | 0.29 |
| 3S | 0.13 | 7.10 | 13 | 1276 | 73 | 90 | 70 | 0.44 | 1.89 | 0.48 | 0.68 | 0.06 | 0.02 |
| 3T | 0.10 | 7.10 | 13 | 5000 | 284 | 90 | 70 | 0.44 | 0.51 | 0.16 | 0.18 | 0.07 | 0.02 |
| 3U | 0.17 | 7.10 | 13 | 6652 | 378 | 90 | 70 | 0.44 | 2.00 | n/a | 0.72 | 0.34 | 0.12 |
| | | | TOTAL | 129225 | 21586 | | | | | | TOTAL | 16.58 | 5.97 |

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TABLE 7

PROPOSED PARTICULATE EMISSIONS FROM STORAGE PILES FOR ASH GROVE CEMENT

| Area | Pile Num. | Pile Material | Pile Storage (Tons) | Pile Area (Acres) | Material Moisture (%) | Material Throughput (T/yr) | AVG Wind Speed (mph) | Rain Days (days/yr) | TSP Transfer Factor (lb/Ton) | TSP Wind Factor (lb per acre/day) | TSP Transfer Emissions (T/yr) | TSP Wind Emissions (T/yr) | $PM_{10}$ Transfer Factor (lb/Ton) | $PM_{10}$ Wind Factor (lb per acre/day) | $PM_{10}$ Transfer Emissions (T/yr) | $PM_{10}$ Wind Emissions (T/yr) | TSP Total Emissions (T/yr) | $PM_{10}$ Total Emissions (T/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quarry | 1 | Limestone (High) | 50000 | 2.00 | 8 | 190000 | 10.2 | 90 | 0.00116 | 3.5 | 0.1103 | 0.96 | 0.00041 | 1.7 | 0.04 | 0.4675 | 1.07 | 0.51 |
| Quarry | 2 | Limestone (Low) | 50000 | 2.00 | 8 | 190000 | 10.2 | 90 | 0.00116 | 3.5 | 0.1103 | 0.96 | 0.00041 | 1.7 | 0.04 | 0.4675 | 1.07 | 0.51 |
| Quarry | 3 | Gypsum | 3370 | 0.50 | 8 | 21000 | 10.2 | 90 | 0.00116 | 3.5 | 0.0122 | 0.24 | 0.00041 | 1.7 | 0.00 | 0.1169 | 0.25 | 0.12 |
| Quarry | 4 | Iron Ore | 989 | 0.40 | 2 | 4000 | 10.2 | 90 | 0.00808 | 3.5 | 0.0162 | 0.19 | 0.00283 | 1.7 | 0.01 | 0.0935 | 0.21 | 0.10 |
| Plant | 5 | Coal | 8965 | 1.00 | 5 | 70000 | 10.2 | 90 | 0.00224 | 3.5 | 0.0785 | 0.48 | 0.00078 | 1.7 | 0.03 | 0.2338 | 0.56 | 0.26 |
| Quarry | 6 | Silica | 26095 | 1.00 | 10 | 40000 | 10.2 | 90 | 0.00085 | 3.5 | 0.0170 | 0.48 | 0.00030 | 1.7 | 0.01 | 0.2338 | 0.50 | 0.24 |
| Quarry | 7 | CKD | 10000 | 1.00 | 1 | 5000 | 10.2 | 90 | 0.02134 | 3.5 | 0.0533 | 0.48 | 0.00747 | 1.7 | 0.02 | 0.2338 | 0.63 | 0.25 |
| | | | | | | | | | | | | | | | | TOTAL | 4.20 | 1.99 |

REFERENCES:

AP-42 SECTION 11.2.3 (PILE TRANSFERS)
AP-42 SECTION 8.19.1 (PILE WIND EROSION)
ASSUMED NO WIND EROSION ON RAIN DAYS

# APPENDIX B

# AGREEMENT BETWEEN
# ASH GROVE CEMENT, EPA, DEQ

In summary of the issues discussed on June 15, 1995, between Ash Grove Cement ("Ash Grove"), the U. S. Environmental Protection Agency ("EPA"), and the Idaho Division of Environmental Quality ("IDEQ"), this document identifies the actions that must be completed to revise the Power-Bannock Counties PM-10 Nonattainment Area ("PBNAA") boundary to exclude Inkom.

Underlying Objectives

1. Protect the National Ambient Air Quality Standards.

2. Provide Ash Grove maximum flexibility under the law.

3. Reserve all rights and remedies under the law available to Ash Grove.

Action Items

1. (a) IDEQ will issue a Tier II operating permit by June 30, 1995. PM-10 emissions limits will be based upon representative historic levels of PM-10 emissions, as discussed on June 15, 1995, provided that an adequate technical demonstration is made. This level is estimated to be approximately 230 tons per year. The permit may be modified after June 30, 1995 to establish reasonable conditions reflective of the discussions on June 15, 1995.

   (b) IDEQ shall supply a PM-10 monitoring device and conduct hot spot PM-10 monitoring with sampling every other day, for at least one year, beginning on or about October 1, 1995. At the conclusion of the first year of the hot spot monitoring, Ash Grove and IDEQ can review the need for continued hot spot PM-10 monitoring.

   (c) Permit emissions cap can be adjusted in the future based on PM-10 hot spot monitoring data or improved emission estimates.

   (d) IDEQ will incorporate the Tier II permit conditions into the Tier I permitting process.

   (The Tier I permit may propose additional conditions to meet the requirements of 40 CFR Part 70.)

(e) If necessary, Ash Grove can use the Tier II permit limits for PM-10 in the preconstruction review process to "net out" of the requirements under the rules for Prevention of Significant Deterioration.

2. IDEQ will inform Governor Phil Batt of Idaho, and EPA will inform the Idaho Congressional delegation of this action plan.

3. If the Tier II permit described in Action Item 1 is issued, EPA will extend for one year the PM-10 attainment date for the PBNAA. Anticipated publication of the Federal Register notice is scheduled for July, 1995.

4. If the Tier II permit described in Action Item 1 is issued, EPA will proceed with the process of revising the PM-10 PBNAA boundary to identify the Inkom area as an "unclassifiable" area, on or before January 1, 1996, according to the procedure set forth in Section 110 of the Clean Air Act, 42 USC S 7410(k)(6).

5. After collecting three years of adequate data from the Inkom PM-10 monitoring station, to demonstrate attainment in Inkom, Ash Grove, IDEQ, and EPA will review the opportunity to pursue the redesignation of Inkom to PM-10 attainment.

Signed: _____ Date: _____

Phil Millam, Acting Director, Air and Radiation Programs, U.S. EPA Region X

Orville Green _____ Date: 6/26/95

Orville Green, Assistant Administrator
Idaho Division of Environmental Quality

_____ Date: _____

Douglas Hale, Safety and Environmental Manager, Western Region, Ash Grove Cement