

217/782-2113

CONSTRUCTION PERMIT/PSD APPROVAL - NESHAP/NSPS SOURCE

PERMITTEE

Lafarge Midwest, Inc.  
Attn: Michael Pelan  
600 Southwest Jefferson, Suite 302  
Lee's Summit, Missouri 64063

Application No.: 05100026  
Applicant's Designation: EXPANSION  
Subject: Plant Expansion  
Date Issued: July 6, 2007  
Location: 2500 Portland Road, Grand Chain

I.D. No.: 127855AAA  
Date Received: March 2, 2007

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission unit(s) and/or air pollution control equipment consisting of a new preheater/precalciner kiln (Kiln 3), a finish mill, two clinker storage silos, a new rail cement loadout facility, and changes to other operations to increase cement production as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

In conjunction with this permit, approval is given with respect to the federal regulations for Prevention of Significant Deterioration of Air Quality (PSD) for the plant, as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the federal Clean Air Act, the federal regulations promulgated thereunder at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency (USEPA) and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with provisions of 40 CFR 124.19. This approval is based upon the findings that follow. This approval is subject to the following conditions. This approval is also subject to the general requirement that the plant be developed and operated consistent with the specifications and data included in the application and any significant departure from the terms expressed in the application, if not otherwise authorized by this permit, must receive prior written authorization from the Illinois EPA.

If you have any questions on this permit, please call Bob Smet at 217/782-2113.

Edwin C. Bakowski, P.E.  
Acting Manager, Permit Section  
Division of Air Pollution Control

Date Issued: \_\_\_\_\_

ECB:RPS:psj

cc: Region 3  
USEPA Region V

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## SECTION 1: FINDINGS

1. Lafarge Midwest, Inc. (Lafarge) has requested a construction permit for changes to its existing Portland Cement manufacturing plant, including construction of a preheater/precalciner kiln system, a clinker cooler, a finish mill, two clinker storage silos, and a new rail cement loadout facility, in conjunction with other changes to existing equipment and operations reflecting an expansion of the plant's operations. In addition, existing Kiln 2 and Raw Mill 2 will be permanently shut down.
2. The plant is located in Massac County. The site is in an area that is currently designated attainment for all criteria pollutants.
3. The plant is currently a major source under the PSD rules. The proposed plant expansion will only trigger the requirements of PSD for carbon monoxide (CO) because the potential increase in annual emissions of CO will be in excess of 100 tons. Due to the removal of Kiln 2 and other operations, the emissions of other PSD pollutants (e.g., NO<sub>x</sub>) will net out of PSD review. (Refer to Attachment 4)
4. The existing plant is permitted to be a major source for emissions of hazardous air pollutants (HAPs), i.e., the potential emissions from the plant are greater than 10 tons of an individual HAP, and greater than 25 tons in aggregate for a combination of HAPs. The emission units at the plant are therefore subject to applicable requirements of 40 CFR Part 63.
- 5a. After reviewing the materials submitted by Lafarge, the Illinois EPA has determined that the project will (i) comply with applicable Board emission standards, (ii) comply with applicable federal emission standards and (iii) utilize Best Available Control Technology (BACT) on emissions as required by PSD.
- b. The determination of BACT made by the Illinois EPA for the proposed plant is the control technology determination contained in the permit conditions for specific emission units.
- c. The Illinois EPA has determined that the proposed plant complies with all applicable Illinois Pollution Control Board Air Pollution Regulations; the federal Prevention of Significant Deterioration of Air Quality Regulations (PSD), 40 CFR 52.21; applicable federal New Source Performance Standards (NSPS), 40 CFR 60; and the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, Subpart LLL.
- 6a. The air quality analysis submitted by Lafarge and reviewed by the Illinois EPA shows that the proposed project will not cause **or contribute to** violations of the ambient air quality standard for CO.
- b. Lafarge has also submitted the additional impact analyses required under the PSD rules, including an analysis of growth that will occur due to the project, an analysis of soil and vegetation air pollution impacts from the project, and visibility impairment analysis. These

analyses adequately address the potential for any adverse impacts from the project.

7. A copy of the application, the project summary prepared by the Illinois EPA and a draft of this construction permit was placed in a nearby public repository, and the public was given notice and opportunity to examine this material and to participate in a public hearing and to submit comments on these matters.

SECTION 2: IDENTIFICATION OF SIGNIFICANT EMISSIONS UNITS

Category of Emission Unit	Emission Controls	Section Number
Raw Mills/Kilns/ Clinker Coolers	Raw Mill 1-Fabric Filters (PM/PM <sub>10</sub> ) Kiln 1-Fabric Filter (PM/PM <sub>10</sub> ), Indirect Firing/Low-NO <sub>x</sub> Burner Technology (NO <sub>x</sub> ), Selective Noncatalytic Reduction Technology (NO <sub>x</sub> ) Kiln 3 (with In-Line Raw Mill)-Fabric Filters (PM/PM <sub>10</sub> ), Indirect Firing/Low-NO <sub>x</sub> Burner Technology (NO <sub>x</sub> ), Selective Noncatalytic Reduction Technology (NO <sub>x</sub> ) Clinker Coolers-Fabric Filters (PM/PM <sub>10</sub> )	4.1
Finish Mills	Fabric Filters (PM/PM <sub>10</sub> )	4.2
Non-Fuel Material Handling (Enclosed)	Fabric Filters or other Dust Controls (PM/PM <sub>10</sub> )	4.3
Non-Fuel Material Handling (Open)	Work Practice (PM/PM <sub>10</sub> )	4.4
Fuel Handling	Work Practice or Fabric Filter (PM/PM <sub>10</sub> )	4.5
Roadways, etc.	Pavement (Water/Sweeping); Pile Maintenance (PM/PM <sub>10</sub> )	4.6

SECTION 3: SOURCE-WIDE PERMIT CONDITIONS

3.1 Effect of Permit

- a. This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois State Implementation Plan, as well as all other applicable federal, state and local requirements.
- b. In particular, this permit does not relieve the Permittee from the responsibility to carry out practices during the construction of new equipment and expanded operation of the plant, such as application of water or dust suppressant sprays to unpaved traffic areas, as necessary to minimize fugitive dust and prevent an air pollution nuisance from fugitive dust, as prohibited by 35 IAC 201.141.

3.2 Validity of Permit, Commencement of Construction and Plantwide Requirements

- a. This permit shall become invalid as applied to this project if construction is not commenced within 18 months after this permit becomes effective, if construction of a kiln is discontinued for a period of 18 months or more, or if construction of a kiln is not completed within a reasonable period of time, pursuant to 40 CFR 52.21(r) (2) and 40 CFR 63.43(g) (41). Illinois EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This condition supersedes Standard Condition 1. (See Attachment 2)
- b. For purposes of the above provisions, the definitions of "construction" and "commence" at 40 CFR 52.21 (b) (8) and (9) shall apply, which requires that a source must enter into a binding agreement for on-site construction or begin actual on-site construction. (See also the definition of "begin actual construction," 40 CFR 52.21 (b) (11)).
- c.
  - i. To ensure that the limits in Attachment 4 are met, production of clinker at the plant shall not exceed 300,000 tons/month and 2,900,000 tons/year.
  - ii. To ensure that the limits in Attachment 4 are met, use of raw material and solid fuel at the plant shall not exceed the following limits:

<u>Material</u>	<u>Usage (Tons/Year)</u>
Raw Materials (Limestone, Mill Scale, Gypsum, etc.)	4,800,000
Solid Fuel	355,000

- d. The New Source Performance Standards (NSPS) for Nonmetallic Mineral Process Plants, 40 CFR 60, Subpart 000, does not apply to any affected facility at the plant because no such operations are conducted onsite.

### 3.3 General Provisions For a Major Source of Hazardous Air Pollutants (HAPS)

This permit is issued based on the source being a major source of HAPS so that the provisions of 40 CFR Part 63 will apply. Specifically, the source's kilns and other affected operations must comply with the NESHAP for the Portland Cement Manufacturing Industry, 40 CFR 63, Subpart LLL. (See Attachment 3, Table III.)

### 3.4 Ancillary Equipment, Including Diesel Engines

- a. Ancillary equipment, including diesel engines, shall be operated in accordance with good air pollution control practice to minimize emissions.
- b. The New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII and related provisions of 40 CFR 60, Subpart A, General Provisions, shall apply to any new diesel engine(s) installed.
- c. Fuel-fired equipment other than the kilns including heaters and engines, shall only be fired on natural gas, propane or LPG, distillate fuel oil or other similar low-emitting fuel.
- d.
  - i. Diesel engines shall be used as emergency engines, as defined at 35 IAC 211.1920.
  - ii. The power output of each diesel engine shall be no more than 1,500 horsepower, if it is an emergency or standby unit as defined by 35 IAC 211.1920, or otherwise no more than 500 horsepower.
  - iii. Operation of each diesel engine shall not exceed 500 hours per year; provided, however, that the Illinois EPA may authorize temporary operation of diesel engines in excess of 500 hours per year to address extraordinary circumstances that require operation of the engines, by issuance of a separate State construction permit addressing such circumstances.

Note: These requirements for the fuel fired in the engines and heaters constitute the determination of Best Available Control Technology (BACT) for the engines and heaters, as required under the PSD rules.

### 3.5 Authorization to Operate Emission Units

- a.
  - i. Under this permit, the new kiln and all new associated plant equipment may be operated for a period that ends 180 days after the plant first processes material in the kiln

to allow for equipment shakedown and required emissions testing. This period may be extended by Illinois EPA upon request of the Permittee if additional time is needed to complete shakedown or perform emission testing. This condition supersedes Standard Condition 5. (See Attachment 5)

- ii. Upon successful completion of emission testing of the kiln and associated equipment demonstrating compliance with applicable limitations, the Permittee may continue to operate the equipment as allowed by Section 39.5(5) of the Environmental Protection Act.
  - b.
    - i. The remainder of the plant, excluding the kiln, may be operated under this construction permit for a period of 365 days after initial startup of the kiln. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties experienced during shakedown of the plant. This condition supersedes Standard Condition 5. (See Attachment 5)
    - ii. Upon successful completion of emission testing of the new kiln and associated equipment demonstrating compliance with applicable limitations, the Permittee may continue to operate the remainder of the kiln system as allowed by Section 39.5(5) of the Environmental Protection Act.
  - c. For emission units that are subject to federal New Source Performance Standards (NSPS), the Permittee shall fulfill applicable notification requirements of the NSPS, 40 CFR 60.7(a), including:
    - i. Written notification of commencement of construction no later than 30 days after such date [40 CFR 60.7(a)(1)]; and
    - ii. Written notification of the actual date of initial startup within 15 days after such date [40 CFR 60.7(a)(3)].
- 3.6 Requirements For Existing Units to be Shutdown and Operated at Reduced Levels
- a. This permit is issued based on the shutdown of existing Kiln 2 and reduced operation of existing kiln 1 at the plant, in conjunction with the operation of the new kiln 3, as follows:
    - i. Startup and Shakedown Periods  
  
When kiln 3 initiates operation, kiln 2 must be permanently shut down within 30 days. When kiln 3 completes its shakedown period, kiln 1 must begin

operating within the level specified in Condition 3.6(a)(iv).

ii. Extended Shakedown Period

If the Illinois EPA extends the shakedown period for kiln 3, the emissions from all kilns shall not exceed 3,892 and 1,757 tons of NO<sub>x</sub> and SO<sub>2</sub>, respectively, based on a 12-month rolling total.

iii. Permanent Shutdown

In conjunction with the shutdown of kiln 2, the Permittee shall permanently shutdown the raw mill and clinker cooler for kiln 2. At the end of the shakedown period for the new kiln, the Permittee shall permanently shutdown all units identified in the Lafarge PM/PM<sub>10</sub> netting analysis.

iv. Reduced Operation

At the end of the shakedown period for kiln 3, the Permittee shall reduce operations on kiln 1, and the production of Kiln 1 on a 12-month rolling total shall thereafter not exceed 330,690 tons of clinker.

- b. Notwithstanding the above, the Illinois EPA may authorize continued operation of the existing units in the event of that shakedown of kiln 3 must be interrupted for an extended period for further construction to correct defects by issuance of an appropriate State Construction Permit.

Note: These requirements are imposed on the existing units because the Permittee has relied upon a contemporaneous decrease in emissions, from the shutdown of these units, to demonstrate that this project is not a major modification for emissions of SO<sub>2</sub>, NO<sub>x</sub>, PM/PM<sub>10</sub> or sulfuric acid mist under the federal PSD rules, 40 CFR 52.21.

- c. Until it is permanently shutdown, Kiln 2 will be subject to and shall comply with all applicable requirements of 40 CFR 63, Subpart LLL, and the General Provisions of 40 CFR 63, Subpart A.

## SECTION 4: UNIT-SPECIFIC CONDITIONS FOR PARTICULAR UNITS

### 4.1 RAW MILLS, CEMENT KILNS AND ASSOCIATED CLINKER COOLERS

#### 4.1.1 Description

##### Raw Material Grinding:

Typical feed to the raw mills consists of approximately 90 percent limestone with the balance made of sand, clay, mill scale, bottom ash, fly ash, and other non-hazardous materials. Because the raw materials are stored outside, the amount of moisture in each material varies over time.

Kiln 1 will continue to use the existing Raw Mill 1, which is a ball mill. The raw materials are fed to Raw Mill 1 by conveyors. In Raw Mill 1, supply air may continue to be heated by direct-fired natural gas and/or used oil, to augment the drying and grinding process.

Raw Mill 1 is air swept. Material in the raw mill is recirculated through the mill via air conveyance, air separator, screw conveyor, and/or belt conveyor. As the materials are ground to the desired particle size, they are removed in the air separators. The resulting mixture, suitable as kiln feed, is pneumatically conveyed to one of four storage silo(s) located near the feed end of Kiln 1.

Particulate matter-laden exhaust from the Raw Mill 1 and associated systems is routed to various fabric filter baghouses.

Kiln 3 will use an in-line vertical roller mill. Exhaust gases from the kiln and precalciner pass through the mill, drying and preheating the raw materials. No supplemental heating is needed. The mill recirculates the materials until they reach the desired particle size, whereby they are air conveyed to a cyclone separator and deposited into a blending silo.

Particulate matter-laden exhaust from the Roller Mill 3 cyclone separators are routed to the main kiln baghouse. The blending silo is equipped with a fabric filter baghouse.

##### Kilns (Pyroprocessing):

##### Kiln Feed Flow

Kiln 1 is a long dry kiln. The kiln is essentially a slightly inclined rotating cylinder. Raw kiln feed is introduced into the high end of the kiln while fuel and air is introduced into the low end. The raw feed and combustion air move in opposite directions through the kiln, as the kiln rotates. In Kiln 1, feed is introduced directly into the kiln via a bucket elevator.

Kiln 3 is a "short" dry kiln that will be equipped with multi-stage preheaters, where the raw kiln feed is introduced via air pump and passes through a series of cyclones. In the cyclones, the material flow is counter-current to the kiln and precalciner exhaust, thus recovering more heat from the exhaust gases to further preheat the raw feed.

In the kilns, the feed materials are converted into an intermediate product (clinker). Clinker resembles road gravel in size and consistency, with most material typically on the order of one-half to one inch in diameter. The clinker is fed directly from the kiln to the clinker cooler, where it is air-cooled. In the clinker cooler, the clinker travels across grates as air is blown upward through the product. The clinker is transferred via belt conveyors from the clinker cooler to a series of storage silos to await finish grinding.

#### Fuel Combustion:

The kiln fuel consists primarily of coal and petroleum coke. The solid fuel is stored in stockpiles. When solid fuel is needed, it is transferred via conveyors and bucket elevators to a series of storage bins. From the storage bins, solid fuel is transferred by conveyors to solid fuel mills where it is milled to a consistency that can be pneumatically transferred. The solid fuel is pneumatically transferred to a storage bin at the respective kiln burner building. For Kiln 3 pulverized fuel from the main storage bin is transferred to two fuel bins, one located near the kiln main burner and the other near the precalciner burner. The transfer air for the pneumatically conveyed solid fuel is de-dusted by fabric filter baghouses. From these pulverized fuel storage bins, the pulverized fuel is pneumatically injected into the kiln and/or precalciner. Transfer air for fuel injection into the kiln is carefully controlled via an indirect firing/low NO<sub>x</sub> burner system to optimize the combustion conditions. In addition to the transfer air, combustion air is injected at various locations in the low NO<sub>x</sub> burner to achieve optimum flame control.

Whole tires can be used as part of the fuel supply for the kilns, and include equipment to feed the whole tires and associated tire unloading and conveying equipment.

The tires replace an equivalent amount of fuel introduced at the main burner. The effect of firing tires on a cement kiln is generally to stage combustion and reduce emissions of nitrogen oxides (NO<sub>x</sub>).

Particulate matter emissions from all kilns will be controlled by fabric filter baghouses. NO<sub>x</sub> emissions will be controlled by indirect firing, low-NO<sub>x</sub> burners, and aqueous ammonia or urea (reagent) injection systems from all kilns. Reagent can be injected mid-kiln on kiln 1 and into the riser duct on kiln 3 directly after the precalciner where temperatures are high

enough for a sufficient time period to allow the reagent to react with the NO<sub>x</sub>, forming nitrogen gas and water vapor.

#### 4.1.2-1 Applicability Provisions and Emission Standards

- a. An "affected unit" for the purpose of these unit-specific conditions in this section is an emission unit described in Condition 4.1.1 and listed in Attachment 2, Table I.
- b. The affected units are also affected sources subject to the NESHAP for the Portland Cement Manufacturing Industry, 40 CFR 63 Subparts LLL and related provisions in 40 CFR 63, Subpart A, General Provisions.

#### 4.1.2-2 Federal Emission Standards

For affected units, the following federal emission standards apply:

NESHAP 40 CFR 63, Subpart LLL (Refer to Attachment 3, Table III), and the General Provisions of 40 CFR 63, Subpart A.

#### 4.1.2-3 State Emission Standards

- a.
  - i. Each affected kiln is subject to 35 IAC Part 217, Subpart T for Cement Kilns. This is because kiln 1, a long dry kiln has a clinker production rate in excess of 12 tons per hour and kiln 3, a preheater/precalciner kiln, has a clinker production rate in excess of 22 tons per hour.
  - ii. Kilns 1 and 3 shall be equipped and operated with "low-NO<sub>x</sub> burners" as defined by 35 IAC 211.3487, as required by 35 IAC 217.402(a)(1).  
  
Note: This permit does not address additional NO<sub>x</sub> allowances, if any, that may be available to the source under the NO<sub>x</sub> Trading Program, due to any further reduction in the rate of NO<sub>x</sub> emissions achieved due to firing the tires.
- b. Each affected unit is subject to 35 IAC 212.422 which limits particulate matter emissions:
  - i. From existing units (kiln 1 and clinker cooler 1), to the limit set by 35 IAC 212.322.
  - ii. From the new kiln (kiln 3), to no more than 0.3 lb/ton of feed to the kiln.
  - iii. From the new clinker cooker (clinker cooler 3), to no more than 0.1 lb/ton of feed to the kiln.

- c. Each affected unit is subject to 35 IAC 212.421 which limits opacity to no more than 10 percent.
- d. Each affected unit is subject to 35 IAC Part 214 Subpart K, Sulfur Limitations from Process Emission Sources which limits sulfur dioxide (SO<sub>2</sub>) emissions to no more than 2000 parts per million.

#### 4.1.3 Control Technology Determination

- a. Emissions of carbon monoxide (CO) from kiln 3 shall be controlled by good combustion practices.
- b.
  - i. CO emissions from kiln 3 shall not exceed 2.5 lbs/ton of clinker, on a 12-month rolling annual average.
  - ii. CO emissions from kiln 3 shall not exceed 5.0 lbs/ton of clinker on an 8-hour block average, excluding periods that include startup and shutdown of a kiln.

Note: These requirements represent Best Available Control Technology (BACT) for this affected unit.

#### 4.1.4 Non-Applicability of Regulations of Concern

The affected units are not subject to NSPS, pursuant to 40 CFR 63.1356(a), which provide that any affected facility subject to the provisions of 40 CFR 63, Subpart LLL is exempt from any otherwise applicable NSPS contained in Subpart F, of 40 CFR Part 60.

#### 4.1.5 Operating Requirements and Limits

- a. The Permittee shall prepare a written operations and maintenance plan pursuant to 40 CFR 63.1350. The plan shall be submitted for review and approval as part of the application for Clean Air Act Permit Program (CAAPP) permit and shall include the information required in 40 CFR 63.1350(a)(1) through (10).
- b. The Permittee shall comply with all applicable operating limits required by 40 CFR 63.1344.
- c.
  - i. At all times the Permittee shall to the extent practicable, maintain and operate the affected units, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.
  - ii. Notwithstanding the above, an SNCR system shall not be operated when the temperature of the flue gas in the reagent injection area of the system is outside the range for effective reduction of NO<sub>x</sub> emissions.

4.1.6 Emission Limitations

- a. Emissions from the affected units shall not exceed the limits in Attachment 2, Table I.
- b. Emissions of NO<sub>x</sub> and SO<sub>2</sub> from the kilns shall not exceed the following limits:

<u>Pollutant</u>	<u>Kiln</u>	<u>Rate lbs/ton Clinker</u>	<u>Compliance Period</u>
NO <sub>x</sub>	1	8.54	Annual Average, Rolled Monthly
	3	2.00	Annual Average, Rolled Monthly
SO <sub>2</sub>	1	1.78	Annual Average, Rolled Monthly
	3	1.18	Annual Average, Rolled Monthly
SO <sub>2</sub>	3	2.50	Monthly Block Average

4.1.7 Testing Requirements

4.1.7-1 Initial Performance Testing

- a.
  - i. Pursuant to 40 CFR 63.1349(a), the Permittee shall demonstrate initial compliance with applicable NESHAP emission limits for each new affected unit using test methods and procedures in 40 CFR 63.1349(b) and 40 CFR 63.7.
  - ii.
    - A. Within 60 days after achieving the maximum production rate at which kiln 3 will be operated but not later than 180 days after initial startup of the kiln, the Permittee shall have tests conducted for emissions of NO<sub>x</sub>, CO, PM, VOM, SO<sub>2</sub>, hydrogen chloride, hydrogen fluoride, sulfuric acid mist, and mercury and other metals, as follows, at its expense by an approved testing service while the kiln is operating at maximum production and other representative operating conditions. (In addition, the Permittee may also perform measurements to evaluate emissions at other operating conditions.)
    - B. This period of time may be extended by the Illinois EPA for up to an

additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties in the startup and testing of the kiln, provided that initial performance testing required by the NESHAP, 40 CFR Part 63, Subpart LLL, has been completed for the kiln and the test report submitted to the Illinois EPA.

- b. The following methods and procedures shall be used for the testing of emissions for which the NESHAP does not specify applicable test methods and procedures, unless other methods adopted by or being developed by USEPA are specified or approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture	Method 4
Particulate Matter <sup>1</sup>	Method 5, or Methods 5 and Method 201 or 201A (40 CFR 51, Appendix M), with Method 19 as specified in 40 CFR 60.48a(b) and Method 202
Nitrogen Oxides <sup>2</sup>	Method 19, as specified in 40 CFR 60.48a(d)
Sulfur Dioxide <sup>2</sup>	Method 19, as specified in 40 CFR 60.48a(c)
Carbon Monoxide <sup>2</sup>	Method 10
Volatile Organic Material <sup>3</sup>	Methods 18 and 25A
Hydrogen Chloride	Method 26
Hydrogen Fluoride	Method 26
Sulfuric Acid Mist	Method 8
Metals <sup>4,5</sup>	Method 29

Notes:

<sup>1</sup> The Permittee may report all PM emissions measured by USEPA Method 5 as PM<sub>10</sub>, in which case separate testing using USEPA Method 201 or 201A need not be performed.

<sup>2</sup> Emission testing shall be conducted for purposes of certification of the continuous emission monitors required by Condition 4.1.9. Thereafter, the NO<sub>x</sub>, SO<sub>2</sub> and CO emission data from certified monitors may be provided in lieu of conducting emissions tests.

3 The Permittee may exclude methane, ethane and other exempt compounds from the results of any VOM test provided that the test protocol to quantify and correct for any such compounds is included in the test plan approved by the Illinois EPA.

4 For purposes of this permit, metals are defined as mercury, arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and zinc.

5 During the initial emissions testing for metals, the Permittee shall also conduct measurements using established test methods for the principle forms of mercury present in the emissions, i.e., particle bound mercury, oxidized mercury and elemental mercury.

- c.
  - i. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with Condition 5.2.
  - ii. In addition to other information required in a test report, test reports shall include detailed information on the operating conditions of the kiln during testing, including:
    - A. Clinker production rate and feed rate to the kiln (tons/hour);
    - B. Fuel consumption (in tons) and fuel rate at main burner, precalciner burner (kiln 3), and any other fuel firing locations (i.e., tire feed slot (tons/hour));
    - C. Composition of raw material and fuel (Refer to Condition 4.1.10(b)), including the metals, chlorine and fluorine content, expressed in weight percent;
    - D. All data recorded and used to establish parameters for compliance monitoring, including:
      - 1. PM control device inlet temperature;

2. Reagent injection rate for the SNCR system (gallons/hour);
3. Gas temperature at the reagent injection point; and
4. Other significant operating parameters of the kiln.

#### 4.1.7-2 Periodic Testing

a. In conjunction with the periodic emissions tests required by the NESHAP, 40 CFR 63.1349(b), the Permittee shall also measure emissions of VOM and metals while firing tires at the maximum rate at which the mid-kiln firing system will be operated, using USEPA Methods 18 and, 25A and Method 29, respectively.

b. In addition to the emission testing required above, the Permittee shall perform emission tests as provided below as requested by the Illinois EPA for any affected unit within 90 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

Note: Revised requirements for periodic emission testing may be established in the CAAPP Permit for the plant.

c. Testing methods, procedures, notifications, test plans, and reports specified in Section 4.1.7-1(c) are also applicable for this periodic testing.

d. Test plan(s), notifications, and reports shall be submitted to the Illinois EPA in accordance with Condition 5.2.

#### 4.1.8 Monitoring Requirements

##### 4.1.8-1 Emissions Monitoring

a. The Permittee shall conduct monitoring for affected units (including development of a written operations and maintenance plan), pursuant to 40 CFR 63.1350.

b. i. The Permittee shall install, certify, operate, calibrate, and maintain

continuous monitoring systems on each kiln for:

- A. Emissions of SO<sub>2</sub>, NO<sub>x</sub>, CO, total hydro carbons (THC)\* and either oxygen or carbon dioxide in the exhaust. The monitors shall be operated in accordance with the applicable requirements for monitoring in the NSPS, 40 CFR 60.13, and 40 CFR 60 Appendix B.
- B. "Dioxin/Furan", i.e., temperature of the flue gas prior to PM control devices, as required by the NESHAP 63.1350(f).
- C. Opacity of the exhaust. This monitor shall be located before any wet control equipment as needed to prevent interference from moisture in the ductwork.

\* Kiln 3 only.

- ii. The Permittee shall operate and maintain these emissions monitoring systems according to site-specific monitoring plan(s), which shall be submitted at least 60 days before the initial startup of a kiln to the Illinois EPA for review and comment. With this submission, the Permittee shall submit the proposed type of monitoring equipment and proposed sampling location(s), which shall be approved by the Illinois EPA prior to installation of equipment.
  - iii. The Permittee shall maintain detailed records for both the measurements made by these systems and the maintenance, calibration and operational activity associated with the monitoring systems.
- c. Compliance with the most stringent emission monitoring requirements for a pollutant is sufficient to demonstrate compliance with all emission monitoring requirements for that pollutant.

#### 4.1.8-2 Operational Monitoring

- a. i. The Permittee shall install, operate and maintain systems to measure key operating

parameters of the control system for each kiln, including:

- A. Reagent injection rates for the SNCR systems;
  - B. Gas temperature at the reagent injection points.
- ii. The Permittee shall maintain records of the measurements made by these systems and records of maintenance and operational activity associated with the systems.
- b. i. The Permittee shall also operate and maintain these monitoring systems according to a site-specific monitoring plan, which shall be submitted at least 60 days before the initial startup of a kiln to the Illinois EPA for its review and comment. With this submission, the Permittee shall submit the proposed type of monitoring equipment and proposed sampling location, which shall be approved by the Illinois EPA prior to installation of equipment.

#### 4.1.8-3 Sampling and Analysis of Fuels

- a. The Permittee shall analyze samples of all fuel supplies that are components of the fuel supply to the kilns, other than natural gas and fuel oil, and the solid fuel supply, to the kiln, for heat content, sulfur content, mercury and other metals and chlorine content, as follows:
  - i. Analysis shall be conducted in accordance with USEPA Reference Methods or other method approved by USEPA.
  - ii. Analysis of the fuel supply to the kiln, itself, shall be conducted in conjunction with performance testing of a kiln.
  - iii. Analysis of representative samples of a fuel shall be conducted in conjunction with acceptance of fuel.
  - iv. Analysis of representative samples of fuels shall be conducted at least every three years, if a more frequent analysis

is not needed pursuant to the above requirements.

- b. The Permittee shall keep records for these analyses.

#### 4.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following:

- a. All records required by 40 CFR 63.1355, for each startup and shutdown of each affected unit, which shall contain the date of a startup or shutdown, and note any deviations from normal startup/shutdown procedures, as set forth in the Permittee's written operating procedure, with description and explanation.
- b.
  - i. Clinker production (tons/month and tons/year);
  - ii. Usage of raw materials (tons/month and tons/year) in total and by each affected kiln system (Kiln Systems 1 and 3);
  - iii. Usage of fuels, by type (tons, gallons or scf/month and tons, gallons or scf/year); and
  - iv. Amount of reagent consumed in the reagent injection systems (tons/month and tons/year).
- c. Records for Continued Operation during Malfunctions and Breakdowns of the Affected Unit:
  - i. A maintenance and repair log for each affected unit and associated control equipment, listing each activity performed with date. The log(s) for the kiln system, at a minimum, shall identify such activities that are performed related to components that may effect emissions; the reason for such activities, i.e., whether planned or initiated due to a specific event or condition; and any failure to carry out the established maintenance procedures, with explanation.
  - ii. Records for each occurrence when operation of each affected unit continued during a malfunction or breakdown that acted to increase emissions or affect emission compliance, including the following information:
    - A. Date and duration of malfunction or breakdown.
    - B. A description of the malfunction or breakdown and the pollutant(s) that may have been affected, including each malfunction of the

kiln system that significantly impairs emission performance, including the nature and duration of the event, sequence and timing of major steps in the malfunction, corrective actions taken, any deviations from the established procedures for such a malfunction, and preventative actions taken to address similar events.

- C. The corrective actions used to reduce the quantity of emissions and the duration of the occurrence.
- D. If excess emissions occurred:
  - 1. An explanation why continued operation of the affected unit was necessary.
  - 2. The preventive measures planned or taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.
  - 3. An estimate of the magnitude of excess emissions during the occurrence.
- d. For each affected unit, the Permittee shall maintain records of the following items related to emissions:
  - i. Records of SO<sub>2</sub>, NO<sub>x</sub> and CO emissions of the kilns based on the continuous emissions monitoring system.
  - ii. Records of emissions of PM and VOM, mercury and other pollutants from the affected units, based on operating data and appropriate emission factors, with supporting documentation.
- e. The information specified in Condition 5.3 for any period during which an affected unit deviated from an applicable requirement.

#### 4.1.10 Reporting Requirements

- a. The Permittee shall fulfill all applicable notification and reporting requirements of 40 CFR 63 Subpart LLL.
- b. i. The Permittee shall report to the Illinois EPA on a calendar quarterly basis any and all opacity and emission measurements for an affected unit that are in excess of the respective requirements set by this permit. These reports shall provide for each such incident, the pollutant emission rate and the information specified in Condition 5.3. This report shall be submitted to the Illinois EPA no later than

45 calendar days from the end of each calendar quarter.

- ii. These reports shall also address any deviations from applicable compliance procedures for an affected unit established by this permit, including periods during which the required continuous monitoring systems were not in operation.
- c. The Permittee shall promptly submit the following information for the reagent injections system to the Illinois EPA when the design is completed: 1) Form of reagent, i.e., percent concentration by weight, 2) Range of injection rate, 3) Operating temperature of the injection point, and 4) Description of injection system.
- d. Unless a new or revised construction permit is obtained for use of a new supplemental fuel, the Permittee shall notify the Illinois EPA at least 30 days prior to using a new supplemental fuel in the affected unit. This notification shall describe the fuel that is proposed to be used, the maximum rate at which it would be fired and expected effects on emissions of different pollutants, if any, with supporting documentation, and demonstrate that use of such fuel would not trigger requirements for local siting approval as a pollution control facility or constitute or entail construction or modification for which a construction permit is required.

## 4.2 Finish Mill Operations

### 4.2.1 Description

Finish mill operations convert clinker into finished cement. Clinker, along with about 5 to 10 percent cement additives (i.e., gypsum, limestone, etc) are introduced into the finish mills. Material in the finish mills is processed through the mills via elevator, air conveyance, air separators, and conveyors. After the materials are ground, they are removed and processed in air separators to recycle oversize material. The resulting product, in the desired particle size which is finished cement, is pneumatically conveyed to the storage silos. To assist in the grinding process, a liquid grinding aid can be injected into the finish mills themselves. Cement will be loaded out from the storage silos to trucks, rail, or barge for transport off site.

### 4.2.2 Applicability Provisions and Emission Standards

- a. An "affected unit" for the purpose of the unit-specific conditions in this section is an emission unit described in Condition 4.2.1 and listed in Attachment 2, Table II.
- b. The affected units are also affected sources subject to the NESHAP for the Portland Cement Manufacturing Industry, 40 CFR 63 Subparts LLL and related provisions in 40 CFR 63, Subpart A, General Provisions.

### 4.2.3-1 Federal Emission Standards

For affected units, the following federal emission standards apply:

NESHAP 40 CFR 63, Subpart LLL (Refer to Attachment 3, Table III), and the General Provisions of 40 CFR 63, Subpart A.

### 4.2.3-2 State Emission Standards

- a. The affected units are subject to 35 IAC 212.321 and 212.322, which limits particulate matter (PM) emissions based on the process weight rate of emission units.
- b. The affected units are subject to 35 IAC 212.421, which limits opacity to no more than 10 percent.

Note: This limit is more stringent than the general opacity standard in 35 IAC 212.123.

### 4.2.4 Non-Applicability of Regulations of Concern

- a. Pursuant to 40 CFR 63.1356(a), the affected units, which are all subject to the provisions of 40 CFR 63, Subpart

LLL, are exempt from any otherwise applicable NSPS contained in 40 CFR 60, Subpart F.

- b. This permit does not address applicable emission standards for fugitive emissions from these affected units because visible fugitive emissions are not allowed (see Condition 4.2.6(b)).

#### 4.2.5 Operational Requirements and Limits

- a. The Permittee shall prepare a written operations and maintenance plan pursuant to 40 CFR 63.1350. The plan shall be submitted for review and approval as part of the application for Clean Air Act Permit Program (CAAPP) permit and shall include the information required in 40 CFR 63.1350(a)(1) through (10).
- b. At all times the Permittee shall to the extent practicable maintain and operate the affected units, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.

#### 4.2.6 Emission Limitations

- a. The stack emissions of PM from each affected unit shall not exceed the following limits:

New/Modified Units: 0.010 gr/scf  
Existing Units: 0.020 gr/scf

- b. Emissions of PM from each affected unit shall not exceed the limits specified in Attachment 2, Table II.
- c. Compliance with the annual PM emission limit for each affected unit listed in Attachment 2, Table II shall be determined from a monthly running total of 12 months of emission data, calculated from material throughput and appropriate emission factors.
- d. There shall be no visible emissions of fugitive particulate matter from the affected units.

#### 4.2.7-1 Initial Performance Testing

- a. Within 60 days after achieving the maximum production rate at which each new or modified affected unit subject to the NESHAP will be operated, but no later than 180 days after initial startup of each such unit, the Permittee shall have initial performance tests conducted at its expense as follows below by an approved testing service under unit operating conditions that are representative of maximum emissions.

- b. Pursuant to 40 CFR 63.1349(a), the Permittee shall demonstrate initial compliance with applicable NESHAP emission limits using test methods and procedures in 40 CFR 63.1349(b) and 40 CFR 63.7.
- c. The following methods and procedures shall be used for the initial performance testing for opacity of process emissions:
  - Opacity - Method 9, opacity measurements shall be performed by a certified observer.
- d. The Permittee shall test the opacity from the affected units during representative weather and operating conditions by a qualified observer.
- e. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).
- f. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- g. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

#### 4.2.7-2 Periodic Testing

Unless otherwise specified for the affected units by the source's CAAPP permit:

- a. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM emissions at the stacks or vents of the affected units, as specified in such request, measured during representative operating conditions.
- b. Testing shall be conducted using appropriate USEPA Reference Test Methods, including Method 5 for PM emissions.
- c. Compliance may be determined from the average of three valid test runs, subject to the limitations and conditions contained in 35 IAC Part 283.
- d. Test plan(s), notifications, and reports shall be submitted to the Illinois EPA in accordance with Condition 5.2.

#### 4.2.8 Monitoring Requirements

The Permittee shall conduct monitoring of affected units (including development of a written operations and maintenance plan), pursuant to 40 CFR 63.1350.

#### 4.2.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected units.

- a. All records required by 40 CFR 63.1355.
- b. Amount of cement produced (tons/month and tons/year).
- c. The Permittee shall keep file(s) containing the following information for the affected units, with supporting information, which information shall be kept up to date:
  - i. Information related to the dust collection equipment associated with the affected units, including the design control efficiency or performance specifications and maximum design particulate matter emissions, in gr/dscf.
  - ii. The maximum operating capacity of each affected unit (tons/hour).
- d. The Permittee shall maintain a demonstration that confirms that the control measures for each affected unit are sufficient to assure compliance with Conditions 4.2.4 and 4.2.6 (Attachment 2, Table II) at the maximum process weight rate at which each affected unit can be operated (tons/hour), with supporting emission calculations and documentation for the emission factors and the efficiency of the control measures being relied upon by the Permittee. Except as addressed by Condition 4.2.9(a) or testing of an affected unit conducted in accordance with Condition 4.2.7-1(b), this demonstration shall be developed using emission factors for controlled PM emissions published by USEPA.
- e. The Permittee shall maintain records of the readings of daily visible emissions required by Condition 4.2.8 (40 CFR 63.1350):

For the readings required by Condition 4.2.8 for each affected unit:

- i. Date and time the inspection was performed and name(s) of inspection personnel.

- ii. The presence of any visible emissions of fugitive particulate matter from the emission point for an affected unit.
- f. The Permittee shall maintain records of the following for each incident when any affected unit is operated without the required control measures. These records can be combined with the records required by 40 CFR 63.6(c) for the affected units:
  - i. The date of the incident and identification of the affected unit(s) that were involved.
  - ii. A description of the incident, including the required control measures that were not present or implemented; the required control measures that were present, if any; other control measures or mitigation measures that were implemented, if any; and the magnitude of the PM emissions during the incident.
  - iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel.
  - iv. The length of time after the incident was identified that the affected unit(s) continued to operate before established control measures were in place or the operations were shutdown (to resume operation only after established control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident.
  - v. The estimated total duration of the incident, i.e., the total length of time that the affected process(es) ran without established control measures and the estimated amount of coal processed during the incident.
  - vi. A discussion of the probable cause of the incident and any preventative measures taken.
  - vii. A discussion whether any applicable emission standards, as listed in Condition 4.2.4, may have been violated during the incident, with supporting explanation.
- g. The Permittee shall keep a maintenance and repair log for each dust collection device, associated with affected units. This log shall list the date and nature of maintenance and repair activities performed on the control equipment.

- h. To demonstrate compliance with Condition 4.2.6(c), the Permittee shall keep records of PM emissions (tons/month and tons/year), with supporting calculations. These records shall be compiled on at least a quarterly basis.

#### 4.2.10 Reporting Requirements

- a. The Permittee shall fulfill all applicable notification and reporting requirements of 40 CFR 63 Subpart LLL.
- b.
  - i. The Permittee shall report to the Illinois EPA on a calendar quarterly basis any and all opacity and emission measurements for an affected unit that are in excess of the respective requirements set by this permit. These reports shall provide for each such incident, the pollutant emission rate and the information specified in Condition 5.3. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar quarter.
  - ii. These reports shall also address any deviations from applicable compliance procedures for an affected unit established by this permit.

## 4.3 ENCLOSED MATERIAL HANDLING AND STORAGE

### 4.3.1 Description

#### Raw Material Handling and Storage:

The Permittee transfers and stores limestone and other raw materials into silos and other enclosed structure. Various conveyor belts (with associated hoppers and transfer points) transfer these materials from the various storage locations to the raw mills. Additional conveyance systems transfer blended raw materials and recycled kiln dust to storage bins where they are ultimately transferred to the kiln feed systems.

Particulate matter (PM) emissions associated with these operations are controlled by enclosure and dust collection devices.

#### Clinker and Cement Additive Handling and Storage:

Clinker exiting the clinker cooler is transferred via conveyor to clinker storage silos. Clinker is reclaimed from the storage silos via conveyor and transferred to the finish mill systems. Cement additives are delivered by truck and transferred via conveyor to cement additive storage silos. Cement additives are reclaimed from the storage silos via conveyor and transferred to the finish mill system.

Particulate matter (PM) emissions associated with these operations are controlled by enclosure and dust collection devices.

#### Cement Handling, Storage and Loadout:

Cement is conveyed pneumatically from the finish mills to several storage silos. From each storage silo, the cement can be further transferred either to other storage silos, to truck loadout systems, to rail loadout systems, or to barge loading systems. All conveyance of finished cement is pneumatic or via gravity air slides.

Particulate matter (PM) emissions associated with these operations are controlled by enclosure and dust collection devices.

### 4.3.2 Applicability Provisions and Emissions Standards

- a. An "affected unit" for the purpose of the unit-specific conditions, is an emission unit described in Condition 4.3.1 and listed in Attachment 2, Table III.
- b. The affected units are also affected sources subject to the NESHP for the Portland Cement Manufacturing Industry,

40 CFR 63 Subpart LLL and applicable requirements of Subpart A, General Provisions.

#### 4.3.3-1 Federal Emissions Standards

For affected units, the following federal emission standards, apply:

NESHAP 40 CFR 63, Subpart LLL (Refer to Attachment 3 Table III), and the General Provisions of 40 CFR 63, Subpart A.

#### 4.3.3-2 State Emission Standards

- a. Each affected unit is subject to 35 IAC 212.421 which limits opacity to no more than 10 percent.
- b. Each affected unit shall comply with 35 IAC 212.123, which addresses the opacity of the emission of smoke or other particulate matter from the unit.
- c. The affected units not engaged in transfer or storage operations are subject to 35 IAC 212.321 and 212.322, which limits particulate matter emissions based on the process weight rate of the unit.

#### 4.3.4 Non-Applicability of Regulations of Concern

- a. Affected units engaged in transfer or storage of materials are not subject to 35 IAC 212.321 and 212.322 because of the disperse nature of the operations, as generally addressed by 35 IAC 212.323.
- b. Pursuant to 40 CFR 63.1356(a), the affected units, which are all subject to the provisions of 40 CFR 63, Subpart LLL, are exempt from any otherwise applicable NSPS contained in 40 CFR 60, Subpart F.
- c. This permit is issued based on the affected units that handle gypsum or other cement additives not being subject to the NSPS, 40 CFR 60, Subpart 000, because the Permittee will not crush or grind such materials, so that the Permittee does not operate a nonmetallic mineral processing plant, as defined by 40 CFR 60.671.
- d. This permit does not address applicable emission standards for fugitive emissions from these affected units because visible fugitive emissions are not allowed (see Condition 4.3.6(b)).

#### 4.3.5 Operational Requirements and Limits

- a. The Permittee shall prepare a written operations and maintenance plan pursuant to 40 CFR 63.1350. The plan shall be submitted for review and approval as part of the

application for Clean Air Act Permit Program (CAAPP) permit and shall include the information required in 40 CFR 63.1350(a)(1) through (10).

- b. The affected units, including associated control equipment shall be operated in accordance with good air pollution control practice to minimize emissions.

#### 4.3.6 Emission Limitations

- a. The baghouses on affected units shall be designed, operated and maintained to emit no more than:

New/Modified Units: 0.010 gr/scf  
Existing Units: 0.020 gr/scf

- b. There shall be no visible fugitive emissions from affected units.
- c. Emissions of particulate matter (PM) from each affected unit in this section shall not exceed the limits specified in Attachment 2, Table III.
- d. Compliance with this annual PM emission limit for each affected unit listed in Attachment 2, Table III shall be determined from a monthly running total of 12 months of emission data, calculated from material throughput and appropriate emission factors.

#### 4.3.7 Testing Requirements

##### 4.3.7-1 Initial Performance Testing

- a. Within 60 days after achieving the maximum production rate at which each new or modified affected unit subject to the NESHAP will be operated, but no later than 180 days after initial startup of each such unit, the Permittee shall have initial performance tests conducted at its expense as follows below by an approved testing service under unit operating conditions that are representative of maximum emissions.
- b. Pursuant to 40 CFR 63.1349(a), the Permittee shall demonstrate initial compliance with applicable NESHAP emission limits using test methods and procedures in 40 CFR 63.1349(b) and 40 CFR 63.7.
- c. The following methods and procedures shall be used for the initial performance testing for opacity of process emissions:

Opacity - Method 9, opacity measurements shall be performed by a certified observer.

- d. The Permittee shall test the opacity from the affected units during representative weather and operating conditions by a qualified observer.
- e. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).
- f. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- g. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

#### 4.3.7-2 Periodic Testing

Unless otherwise specified for the affected units by the source's CAAPP permit:

- a. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM emissions at the stacks or vents of affected units, as specified in such request, measured during representative operating conditions.
- b. Testing shall be conducted using appropriate USEPA Test Methods, including Method 5 or 17 for PM emissions.
- c. Compliance may be determined from the average of three valid test runs, subject to the limitations and conditions contained in 35 IAC Part 283.
- d. Test plan(s), notifications, and reports shall be submitted to the Illinois EPA in accordance with Condition 5.2.

#### 4.3.8 Monitoring Requirements

The Permittee shall conduct monitoring of affected units (including development of a written operations and maintenance plan), pursuant to 40 CFR 63.1350.

#### 4.3.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected units:

- a. All records required by 40 CFR 63.1355.
- b. The Permittee shall maintain the following operating records:

The amount of raw materials (non-fuel) received at the source by affected units (tons/month and tons/year, by category of material); and
- c. The Permittee shall keep file(s) containing the following information for the affected units, with supporting information, which information shall be kept up to date:
  - i. Information related to the dust collection equipment associated with the affected units, including the design control efficiency or performance specifications and maximum design particulate matter emissions, in gr/dscf.
  - ii. Documentation for the emission factors that are used to determine emissions from the different units.
  - iii. Records of the process weight rate (in tons/hour) and corresponding PM emission rate shall be determined for each affected unit to verify compliance to the limits in Attachment 2, Table III and Condition 4.3.3-2, if applicable.
  - iv. The maximum operating capacity of each affected unit (tons/hour).
- d. The Permittee shall maintain a demonstration that confirms that the control measures for each affected unit are sufficient to assure compliance with Conditions 4.3.4 and 4.3.6 (Attachment 2, Table II) at the maximum process weight rate at which each affected unit can be operated (tons/hour), with supporting emission calculations and documentation for the emission factors and the efficiency of the control measures being relied upon by the Permittee. Except as addressed by Condition 4.3.9(a) or testing of an affected unit conducted in accordance with Condition 4.3.7-1(b), this demonstration shall be developed using emission factors for controlled PM emissions published by USEPA.
- e. The Permittee shall maintain records of the readings of daily visible emissions required by Condition 4.3.8 (40 CFR 63.1350):

For the readings required by Condition 4.3.8 for each affected unit:

- i. Date and time the inspection was performed and name(s) of inspection personnel.
  - ii. The presence of any visible emissions of fugitive particulate matter from the emission point for an affected unit.
- f. The Permittee shall maintain records of the following for each incident when any affected unit is operated without the required control measures. These records can be combined with the records required by 40 CFR 63.6(c) for the affected units:
- i. The date of the incident and identification of the affected unit(s) that were involved;
  - ii. A description of the incident, including the required control measures that were not present or implemented; the required control measures that were in use, if any; other control measures or mitigation measures that were implemented, if any; and the estimated amount of PM emitted during the incident;
  - iii. The time and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel;
  - iv. The length of time after the incident was identified that the affected unit(s) continued to operate before established control measures were in place or the unit(s) were shutdown (to resume operation only after required control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident;
  - v. The estimated total duration of the incident, i.e., the total length of time that the affected unit(s) ran without the full benefit of established control measures and the estimated amount of material handled by the unit during the incident; and
  - vi. A discussion of the probable cause of the incident and any preventative measures taken.
  - vii. A discussion whether any applicable emission standards, as listed in Condition 4.3.4, may have been violated during the incident, with supporting explanation.

- g. The Permittee shall keep a maintenance and repair log for each dust collection device, associated with affected units. This log shall list the date and nature of maintenance and repair activities performed on the control equipment.
- h. To demonstrate compliance with Condition 4.3.6(d), the Permittee shall keep records of PM emissions (tons/month and tons/year), with supporting calculations. These records shall be compiled on at least a quarterly basis.

#### 4.3.10 Reporting Requirements

- a. The Permittee shall fulfill all applicable notification and reporting requirements of 40 CFR 63 Subpart LLL.
- b.
  - i. The Permittee shall report to the Illinois EPA on a calendar quarterly basis any and all opacity and emission measurements for an affected unit that are in excess of the respective requirements set by this permit. These reports shall provide for each such incident, the pollutant emission rate and the information specified in Condition 5.3. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar quarter.
  - ii. These reports shall also address any deviations from applicable compliance procedures for an affected unit established by this permit.

#### 4.4 RAW MATERIAL HANDLING, PROCESSING AND STORAGE (OPEN/PARTIALLY ENCLOSED)

##### 4.4.1 Description

The Permittee receives, transfers and stores limestone and other raw materials, which are used for the production of cement, in various operations with the potential for fugitive PM emissions. Limestone for the kilns will be unloaded and stored in a covered structure. Other raw materials will be stored in a partially enclosed structure. Various conveyor belts (with associated receiving hoppers and transfer points) transfer these materials from the various storage facilities to the enclosed material handling operations addresses in Section 4.3.

Particulate matter (PM) emissions associated with these operations are controlled by various measures including partial enclosures, covers, and dust suppression measures.

##### 4.4.2 Applicability Provisions and Emission Standards

- a. An "affected unit" for the purpose of the unit-specific conditions is an emission unit described in Condition 4.4.1 and listed in Attachment 2, Table IV.
- b. The affected units, other than open storage of materials are also affected sources subject to the NESHAP for the Portland Cement Manufacturing Industry, 40 CFR 63 Subpart LLL and related provisions in 40 CFR 63, Subpart A, General Provisions.

##### 4.4.3-1 Federal Emission Standards

For affected units that are affected sources, the following federal emission standards, the following emission standards apply:

NESHAP, 40 CFR 63, Subpart LLL (Refer to Attachment 3, Table III), and the General Provisions of 40 CFR 63, Subpart A.

##### 4.4.3-2 State Emission Standards

- a. Each affected unit shall comply with 35 IAC 212.301, which addresses visible emissions of fugitive particulate matter, as defined by 35 IAC 211.2490, from the unit, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.
- b. Each affected unit is subject to 35 IAC 212.421 which limits opacity to no more than 10 percent.
- c. The affected units not engaged in transfer or storage operations are subject to 35 IAC 212.321 and 212.322 which

limits particulate matter emissions based on the process weight rate of the unit

#### 4.4.4 Non-Applicability of Regulations of Concern

- a. Affected units engaged in transfer or storage of materials are not subject to 35 IAC 212.321 and 212.322 because of the disperse nature of the operations, as generally addressed by 35 IAC 212.323.
- b. Pursuant to 40 CFR 63.1356(a), the affected units, which are all subject to the provisions of 40 CFR 63, Subpart LLL, are exempt from any otherwise applicable NSPS contained in 40 CFR 60, Subpart F.
- c. This permit is issued based on the affected units that handle limestone, gypsum or other cement additives not being subject to the NSPS, 40 CFR 60, Subpart OOO, because the Permittee will not crush or grind such materials, so that the Permittee does not operate a nonmetallic mineral processing plant, as defined by 40 CFR 60.671.

#### 4.4.5 Operational Requirements and Limits

- a. The Permittee shall prepare a written operations and maintenance plan pursuant to 40 CFR 63.1350. The plan shall be submitted for review and approval as part of the application for Clean Air Act Permit Program (CAAPP) permit and shall include the information required in 40 CFR 63.1350(a)(1) through (10).
- b. Raw ground kiln feed, finished cement and other fine material shall not be handled by affected units.
- c. The following work practices shall be used to control emissions of fugitive particulate matter from the affected units:
  - i. Raw material and conveyor transfer operations shall be sprayed with water or a surfactant solution, utilize choke-feeding, or be treated by an equivalent method of emission control; and
  - ii. All unloading and transportation of cement kiln dust shall be to pneumatic trucks with appropriate dust collection devices.
- d. The Permittee shall implement and maintain control measures for the affected units, such as enclosures, and natural surface moisture that minimize visible emissions of particulate matter and provide assurance of compliance with the applicable emission standards in Condition 4.4.3 and the limitation in Condition 4.4.6.

#### 4.4.6 Emission Limits

- a. Emissions of particulate matter (PM) from each affected unit in this section shall not exceed the limits specified in Attachment 2, Table IV.
- b. Compliance with this annual PM emission limit for each affected unit listed in Attachment 2, Table IV shall be determined from a monthly running total of 12 months of emission data, calculated from the material throughput and appropriate emission factors.

#### 4.4.7 Testing Requirements

- a. Within 60 days after achieving the maximum production rate at which each new or modified affected unit subject to the NESHAP will be operated, but no later than 180 days after initial startup of each such unit, the Permittee shall have initial performance tests conducted at its expense as follows below by an approved testing service under unit operating conditions that are representative of maximum emissions.
- b. Pursuant to 40 CFR 63.1349(a), the Permittee shall demonstrate initial compliance with applicable NESHAP emission limits using test methods and procedures in 40 CFR 63.1349(b) and 40 CFR 63.7.
- c. The following methods and procedures shall be used for the initial performance testing for opacity of process emissions:

Opacity - Method 9, opacity measurements shall be performed by a certified observer.
- d. The Permittee shall test the opacity from the affected units during representative weather and operating conditions determined by a qualified observer.
- e. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).
- f. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- g. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

#### 4.4.8 Monitoring Requirements

The Permittee shall conduct monitoring of affected units (including development of a written operations and maintenance plan), pursuant to 40 CFR 63.1350.

#### 4.4.9 Recordkeeping Requirements

The Permittee shall keep the following records related to the affected units:

- a. All records required by 40 CFR 63.1355.
- b. The Permittee shall keep file(s) containing the following information for the affected units, with supporting information, which information shall be kept up to date:
  - i. Information, which shall be kept up to date, related to the dust collection measures/equipment associated with the affected units, including the design control efficiency or performance specifications and maximum design particulate matter emissions, in gr/dscf.
  - ii. Accompanying this record, the Permittee shall maintain documentation for emission factors (lb/ton) that it is using to determine the emissions from the various affected units.
  - iii. The maximum operating capacity of each affected unit (tons/hour).
- c. The Permittee shall maintain the following operating records:

The amount of limestone and other raw materials (non-fuel) received at the source at affected units (tons/month and tons/year, by category of material).
- d. The Permittee shall maintain records of the following:
  - i. Readings of daily visible emissions required by Condition 4.4.8 (40 CFR 63.1350) for each affected unit:
    - A. Date and time the inspection was performed and name(s) of inspection personnel.
    - B. The presence of any visible emissions of fugitive particulate matter from the emission point for an affected unit.
  - ii. Records for observations conducted for affected units, e.g., storage piles, which are not subject to the NESHAP.

- e. The Permittee shall maintain records of the following for each incident when any affected unit is operated without the required control measures. These records can be combined with the records required by 40 CFR 63.6(c) for the affected units:
  - i. The date of the incident and identification of the affected operation(s) that were involved;
  - ii. A description of the incident, including the established control measures that were not present or implemented; the established control measures that were in use, if any; other control measures or mitigation measures that were implemented, if any; and the estimated amount of PM emitted during the incident;
  - iii. The time and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel;
  - iv. The length of time after the incident was identified that the affected unit(s) continued to operate before established control measures were in place or the operations were shutdown (to resume operation only after established control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident;
  - v. The estimated total duration of the incident, i.e., the total length of time that the affected unit(s) ran without the full benefit of established control measures and the estimated amount of material handled by the unit during the incident; and
  - vi. A discussion of the probable cause of the incident and any preventative measures taken.
  - vii. A discussion whether any applicable emission standards, as listed in Condition 4.4.4, may have been violated during the incident, with supporting explanation.
- f. To demonstrate compliance with Condition 4.4.6(b), the Permittee shall keep records of PM emissions (tons/month and tons/year), with supporting calculations. These records shall be compiled on at least a quarterly basis.

#### 4.4.10 Reporting Requirements

- a. The Permittee shall fulfill all applicable notification and reporting requirements of 40 CFR 63 Subpart LLL.
- b.
  - i. The Permittee shall report to the Illinois EPA on a calendar quarterly basis any and all opacity and emission measurements for an affected unit that are in excess of the respective requirements set by this permit. These reports shall provide for each such incident, the pollutant emission rate and the information specified in Condition 5.3. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar quarter.
  - ii. These reports shall also address any deviations from applicable compliance procedures for an affected unit established by this permit.

#### 4.5 FUEL HANDLING, PROCESSING AND STORAGE

##### 4.5.1 Description of Emission Units

These unit-specific permit conditions address operations that handle coal and other solid fuel materials in bulk that are involved with the operation of the cement plant and have the potential for particulate matter emissions. Affected units include receiving, transfer, handling, storage, processing or preparation (crushing, etc.) for such materials.

The Permittee prepares or processes solid fuels (i.e., coal and petroleum coke) for use as fuel in its kilns with grinding mills that reduce the size of the fuel. Associated particulate matter (PM) emissions are controlled by various control measures including, application of dust suppressant to the solid fuel, partial enclosures and covers, and dust collection devices.

The kilns are also capable of using whole tires as part of the fuel supply for the kilns, and include equipment to feed the whole tires at mid-kiln and associated tire unloading and conveying equipment.

##### 4.5.2 Applicability Provisions and Emission Standards

- a. An "affected unit" for the purpose of the unit-specific conditions in this section is an emission unit described in Condition 4.5.1 and listed in Attachment 2, Table V.
- b. The affected units are also affected sources subject to either the NESHAP for the Portland Cement Manufacturing Industry, 40 CFR 63, Subpart LLL and related provisions in 40 CFR 63, Subpart A, or the NSPS for Coal Preparation Plants, 40 CFR 60, Subpart Y and related provisions in 40 CFR 60, Subpart A.

##### 4.5.3-1 Federal Emission Standards

For affected units, the following federal emission standards apply:

- a. The NSPS for Coal Preparation Plants, 40 CFR 60, Subpart Y, and related provisions of 40 CFR 60, Subpart A, General Provisions. Note: These NSPS are applicable because the source has the potential to process more than 200 tons/day of coal.
- b. NESHAP for the Portland Cement Manufacturing Industry, 40 CFR 63 Subparts LLL and related provisions of 40 CFR 63, Subpart A, General Provisions.

#### 4.5.3-2 State Emission Standards

- a. Each affected unit shall comply with 35 IAC 212.301, which addresses visible emissions of fugitive particulate matter, as defined by 35 IAC 211.2490, from the unit, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.
- b. Each affected unit shall comply with 35 IAC 212.123, which addresses the opacity of the emissions of smoke or other particulate matter from the units.
- c. The affected units not engaged in transfer or storage operations are subject to 35 IAC 212.321 and 212.322 which limits particulate matter emissions based on the process weight rate of the unit

#### 4.5.4 Non-Applicability of Regulations of Concern

- a. Affected units engaged in transfer or storage operations of solid fuels are not subject to 35 IAC 212.321 and 212.322 because of the disperse nature of the operations, as generally addressed in 35 IAC 212.323.
- b. Pursuant to 40 CFR 63.1356(a), the affected units that are subject to the provisions of 40 CFR 63, Subpart LLL are exempt from any otherwise applicable NSPS contained in 40 CFR 60, Subpart Y.

#### 4.5.5 Operational Requirements and Limits

- a. The Permittee shall prepare a written operations and maintenance plan pursuant to 40 CFR 63.1350. The plan shall be submitted for review and approval as part of the application for Clean Air Act Permit Program (CAAPP) permit and shall include the information required in 40 CFR 63.1350(a) (1) through (10).
- b. The following work practices shall be used to control emissions of fugitive particulate matter from the affected units:

Solid fuel handling and conveyor transfer operations shall be sprayed with water or a surfactant solution, utilize choke-feeding, or be treated by an equivalent method of emission control.

- c. Affected units that utilize control equipment shall operate the equipment in accordance with good air pollution control practices to minimize emissions.
- d. The Permittee shall implement and maintain control measures for the affected units, such as enclosures and natural surface moisture that minimize visible emissions

of particulate matter and provide assurance of compliance with the applicable emission standards in Conditions 4.5.3 and the limitations in Condition 4.5.6.

#### 4.5.6 Emission Limitations

a. Emissions of particulate matter (PM) from each affected unit shall not exceed the limits specified in Attachment 2, Table V.

b. The baghouses on affected units shall be designed, operated and maintained to emit no more than:

New/Modified Units: 0.010 gr/scf

Existing Units: 0.020 gr/scf

c. There shall be no visible fugitive emissions from affected units that are controlled with baghouses.

d. Compliance with the annual PM emission limit for each affected unit listed in Attachment 2, Table V shall be determined from a monthly running total of 12 months of emission data, calculated from material throughput and appropriate emission factors.

#### 4.5.7 Testing Requirements

##### 4.5.7-1 Initial Performance Testing

a. Within 60 days after achieving the maximum production rate at which new or modified affected emission units subject to the NSPS or NESHAP will be operated, but not later than 180 days after initial startup of each such unit, the Permittee shall have initial performance testing conducted at its expense as follows below by an approved testing service under unit operating conditions that are representative of maximum emissions.

b. Pursuant to 40 CFR 63.1349(a) and 40 CFR 60.8, the Permittee shall demonstrate initial compliance with applicable NESHAP and NSPS emission limits using test methods and procedures in 40 CFR 63.1349(b), 40 CFR 63.7, and 40 CFR 60.8.

c. The following methods and procedures shall be used for opacity testing for affected units subject to 40 CFR 63, Subpart LLL and 40 CFR 60, Subpart Y:

Opacity - Method 9, opacity measurements shall be performed by a certified observer.

- d. The Permittee shall test the opacity from the affected units during representative weather and operating conditions by a qualified observer.
- e. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).
- f. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- g. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

4.5.7-2 Periodic Testing

Unless otherwise specified for the affected units by the source's CAAPP permit:

- a.
  - i. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM emissions at the stacks or vents of the affected units, as specified in such request, measured during representative operating conditions.
  - ii. The following methods and procedures shall be used for PM emission testing for affected units:  

PM - Method 5, with the sampling time and sample volume for each run to be at least 60 minutes and 30 scf and sampling to begin no less than 30 minutes after startup and to terminate before shutdown begins.
  - iii. Compliance may be determined from the average of three valid test runs, subject to the limitations and conditions contained in 35 IAC Part 283.

- b.
  - i. The Permittee shall conduct monthly opacity readings at the stacks or vents of the affected units subject to 40 CFR 60, Subpart Y, measured during representative operating conditions. Any unit with visible emissions shall have a 6-minute Method 9 test conducted.
  - ii. The following methods and procedures shall be used for opacity testing for affected units subject to 40 CFR 60, Subpart Y:  
  
Opacity - Method 9, opacity measurements shall be performed by a certified observer.
- c. Test plan(s), test notifications, and test reports shall be submitted to the Illinois EPA in accordance with Condition 5.2.

#### 4.5.8 Monitoring Requirements

The Permittee shall conduct monitoring of all affected units (including those units subject only to 40 CFR 60, Subpart Y), pursuant to 40 CFR 63.1350, including development of a written operations and maintenance plan.

#### 4.5.9 Recordkeeping

The Permittee shall maintain records of the following items for the affected units:

- a. All records required by 40 CFR 63.1355 and 40 CFR 60.7, including all visible emissions of units subject to 40 CFR 60 Subpart Y.
- b.
  - i. Records of the process weight rate (in tons/hour) and corresponding PM emission rate shall be determined for each affected unit to verify compliance to the limits in Attachment 2, Table III.
  - ii. Accompanying this record, the Permittee shall maintain documentation for efficiencies of control measures and the emission factors that it is using to determine the emissions from affected operations.
- c. The Permittee shall maintain the following operating records:

The amount of coal, petroleum coke, or other solid fuel received at the source (tons/month and tons/year, by type of material).

- d. The Permittee shall maintain records of the following for each incident when any affected unit is operated without the required control measures. These records can be combined with the records required by 40 CFR 63.6(c) for the affected units:
  - i. The date of the incident and identification of the affected units(s) that were involved.
  - ii. A description of the incident, including the required or established control measures that were not present or implemented; the control measures that were present, if any; other control measures or mitigation measures that were implemented, if any; and the magnitude of the PM emissions during the incident.
  - iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel.
  - iv. The length of time after the incident was identified that the affected unit(s) continued to operate before established control measures were in place or the operations were shutdown (to resume operation only after required or established control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident.
  - v. The estimated total duration of the incident, i.e., the total length of time that the affected unit(s) ran without established control measures and the estimated amount of coal processed during the incident.
  - vi. A discussion of the probable cause of the incident and any preventative measures taken.
- e. The Permittee shall keep a maintenance and repair log for each dust collection device, associated with affected units. This log shall list the date and nature of maintenance and repair activities performed on the control equipment.
- f. To demonstrate compliance with Condition 4.5.6(a), the Permittee shall keep records of PM emissions (tons/month and tons/year), with supporting calculations. These records shall be compiled on at least a quarterly basis.

#### 4.5.10 Reporting Requirements

- a. The Permittee shall fulfill all applicable notification and reporting requirements of 40 CFR 63 Subpart LLL.

- b.
  - i. The Permittee shall report to the Illinois EPA on a calendar quarterly basis any and all opacity and emission measurements for an affected unit that are in excess of the respective requirements set by this permit. These reports shall provide for each such incident, the pollutant emission rate and the information specified in Condition 5.3. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar quarter.
  - ii. These reports shall also address any deviations from applicable compliance procedures for an affected unit established by this permit.

#### 4.6 UNIT-SPECIFIC CONDITIONS FOR ROADWAYS AND OTHER OPEN AREAS

##### 4.6.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are roadways, parking areas, and other open areas at the plant, which may be sources of fugitive particulate matter due to vehicle traffic or wind blown dust.

##### 4.6.2 Applicable Federal Emission Standards

None

##### 4.6.3 Applicable State Emission Standards

Affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive particulate matter shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed is greater than 25 miles per hour, as provided by 35 IAC 212.314.

##### 4.6.4 Non-Applicability of Regulations of Concern

None

##### 4.6.5 Operating Requirements and Limits

- a. All normal traffic pattern access areas surrounding storage piles and all normal traffic pattern roads and parking facilities shall be paved or treated with water, oils, or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils or chemical dust suppressants shall have the treatment applied on a regular basis, as needed.
- b. The Permittee shall carry out control of fugitive particulate matter emissions from affected units in accordance with a written operating program describing the measures being implemented to control emissions at each unit with the potential to generate significant quantities of such emissions, which program shall be kept current.
  - i. This program shall include maps or diagrams indicating the location of affected units with the potential to generate significant quantities of fugitive particulate matter, with description of the unit (length, width, surface material, etc.) and volume and nature of expected vehicle traffic, or other activity on such unit, and an identification of any roadways that are not considered routinely traveled, with justification.

- ii. This program shall include a detailed description of the emissions control technique (e.g., vacuum truck, water spray, surfactant spray, water flushing, dust suppressant application, or sweeping) for the affected unit, including: typical application rate; type and concentration of additives; normal frequency with which measures would be implemented; circumstances, in which the measure would not be implemented, e.g., recent precipitation; triggers for additional control, e.g. observation of 10 percent opacity; and calculated control efficiency for particulate matter emissions.
- c. The Permittee shall submit copies of this operating program to the Illinois EPA for review as follows:
  - i. A program addressing the modification of the plant shall be submitted with 30 days of beginning actual construction.
  - ii. A program addressing the operation of the plant shall be submitted within 90 days of initial start up of the modified plant.
  - iii. Significant amendments to the program by the Permittee shall be submitted within 30 days of the date that the amendment is made.
- d. A revised operating program shall be submitted to the Illinois EPA for review within 90 days of a request from the Illinois EPA for revision to address observed deficiencies in control of fugitive particulate emissions.
- e. The handling of material collected from any affected unit by sweeping or vacuuming trucks shall be conducted in a manner to minimize emissions of particulate matter.
- f. The Permittee shall conduct inspections of affected units on at least a monthly basis with personnel not directly responsible for the day-to-day implementation of the fugitive dust control program, for the specific purpose of verifying that the measures identified in the operating program and other measures required to control emissions from affected units are being properly implemented.

#### 4.6.6 Emission Limitations

The total annual emissions of particulate matter from the affected units shall not exceed 22.6 tons/year, as determined by vehicle traffic and other operating data, and engineering calculations.

4.6.7 Testing Requirements

None

4.6.8 Monitoring Requirements

None

4.6.9 Recordkeeping Requirements

- a. The Permittee shall keep a file that contains:
  - i. The operating factors, if any, used to determine the amount of activity associated with the affected units or the particulate matter emissions from the affected units, with supporting documentation.
  - ii. The designated particulate matter emission rate, in tons/year, from each category of emission unit (e.g., traffic associated with receiving of limestone), with supporting calculations and documentation. The sum of these rates shall not exceed the annual limit on emission in Condition 4.6.6.
- b. The Permittee shall maintain logs or other records documenting implementation of the operating program required by Condition 4.6.5, including:
  - i. Records for each treatment of an affected unit or units:
    - A. The identity of the affected unit(s), the date and time, and the identification of the truck(s) or treatment equipment used;
    - B. For application of dust suppressant by truck: target application rate or truck speed during application, total quantity of water or chemical used and, for application of a chemical or chemical solution, the identity of the chemical and concentration, if applicable;
    - C. For sweeping or cleaning: Identity of equipment used and identification of any deficiencies in the condition of equipment; and
    - D. For other type of treatment: A description of the action that was taken.
  - ii. Records for each incident when control measures were not implemented and each incident when additional control measures were implemented due to particular activities, including description, date, a statement

of explanation, and expected duration of such circumstances.

- c. The Permittee shall record any period during which an affected unit was not properly controlled as required by this permit, which records shall include at least the information specified by Condition 5.3 and an estimate of the additional emissions of particulate matter that resulted, if any, with supporting calculations.
- d. The Permittee shall maintain records for the particulate matter emissions of the affected units based on plant operating data, the above records for the affected unit including data for implementation of the operating program, and appropriate USEPA emission estimation methodology and emission factors, with supporting calculations.

#### 4.6.10 Reporting Requirements

- a. The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements for affected units that are not addressed by the regular reporting required below. These notifications shall include the information specified by General Condition 5.3.
- b. The Permittee shall submit quarterly reports to the Illinois EPA for affected units stating the following: the dates any necessary control measures were not implemented; a listing of those control measures; the reasons that the control measures were not implemented; and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not implemented based on a belief that implementation of such control measures would have been unreasonable given prevailing weather conditions. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar quarters.

SECTION 5: GENERAL PERMIT CONDITIONS

5.1 Standard Conditions

Standard conditions for issuance of construction permits, attached hereto and incorporated herein by reference, shall apply to this project, unless superseded by other conditions in the permit.

5.2 General Requirements for Emission Testing

- a. i. At least 60 days prior to the actual date of initial emission testing required by this permit, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include at a minimum:
  - A. The person(s) who will be performing sampling and analysis and their experience with similar tests.
  - B. The specific conditions, e.g., operating rate and control device operating conditions, under which testing shall be performed including a discussion of why these conditions will be representative and the means by which the operating parameters will be determined.
  - C. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations. As part of this plan, the Permittee may set forth a strategy for performing emission testing of the kilns, etc.
  - D. The test method(s) that will be used, with the specific analysis method if the method can be used with different analysis methods.
- ii. As provided by 35 IAC 283.220(d), the Permittee need not submit a test plan for subsequent emissions testing that will be conducted in accordance with the procedures used for previous tests accepted by the Illinois EPA or the previous test plan submitted to and approved by the Illinois EPA, provided that the Permittee's notification for testing, as required below, contains the information specified by 35 IAC 283.220(d)(1)(A), (B) and (C).
- b. i. The Permittee shall notify the Illinois EPA prior to performing emissions testing required by this permit to enable the Illinois EPA to observe the tests. Notification for the expected date of testing shall be submitted a minimum of 30 days\* prior to the expected date, and identify the testing that will be performed. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days\* prior to the actual date of testing.

- \* For a particular test, the Illinois EPA may at its discretion accept shorter advance notification provided that it does not interfere with the Illinois EPA'S ability to observe testing.
- ii. This notification shall also identify the parties that will be performing testing and the set or sets of operating conditions under which testing will be performed.
- c. Three copies of the Final Reports for emission tests shall be forwarded to the Illinois EPA within 30 days after the test results are compiled and finalized but not later than 90 days after the date of testing. At a minimum, the Final Report for testing shall contain:
  - i. General information, i.e., testing personnel and test dates;
  - ii. A summary of results;
  - iii. Description of test method(s), including a description of sampling points, sampling train, analysis equipment, and test schedule;
  - iv. Quality assurance procedures and results, including preparation of standards, and calibration procedures;
  - v. The operating conditions of the emission unit and associated control devices during testing; and
  - vi. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

### 5.3 General Requirements for Records and Reports for Deviations

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the plant, records and reports for deviations from applicable permit requirements shall include at least the following information: the date, time and estimated duration of the event; a description of the event; the manner in which the event was identified, if not readily apparent; the probable cause for deviation, if known, including a description of any equipment malfunction/breakdown associated with the event; information on the magnitude of the deviation, including actual emissions or performance in terms of the applicable standard if measured or readily estimated; confirmation that standard procedures were followed or a description of any event-specific corrective actions taken; and a description of any preventative measures taken to prevent future occurrences, if appropriate.

#### 5.4 Retention and Availability of Records

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the plant, all records, including written procedures and logs, required by this permit shall be kept at a readily accessible location at the plant and be available for inspection and copying by the Illinois EPA and shall be retained for at least five years.

#### 5.5 Annual Emission Reports

The Permittee shall submit Annual Emission Reports to the Illinois EPA in accordance with 35 IAC Part 254. For hazardous air pollutants, these reports shall include emissions information for at least the following pollutants: hydrogen chloride, hydrogen fluoride, dioxin/furan, mercury, arsenic, beryllium, cadmium, chromium, lead, manganese, and nickel.

#### 5.6 General Requirements for Notifications and Reports

- a.
  - i. Unless otherwise specified in the particular provision of this permit or in the written instructions distributed by the Illinois EPA for particular reports, reports and notifications shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.
  - ii. As of the date of issuance of this permit, the addresses of the office that should generally be utilized for the submittal of reports and notifications are as follows:
    - A. Illinois EPA - Air Compliance Section  
  
Illinois Environmental Protection Agency  
Bureau of Air  
Compliance and Enforcement Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276
    - B. Illinois EPA - Air Regional Field Office  
  
Illinois Environmental Protection Agency  
Division of Air Pollution Control  
2009 Mall Street  
Collinsville, Illinois 62234
    - C. USEPA Region 5 - Air Branch  
  
USEPA (AE-17J)  
Air and Radiation Division  
77 West Jackson Boulevard  
Chicago, Illinois 60604

ATTACHMENT 1

Table I: Summary of Particulate Matter (PM) Emission Limitations by Department  
(Tons per Year)

<b>Department</b>	<b>Application Designations of Emission Units</b>	<b>PM Emission Rate (Pounds/Hour)</b>	<b>PM Emission Rate (Tons/Year)</b>
Raw Mills, Kilns and Clinker Coolers	J17(a & b), J17(c & d), J17(e & f), J17(g & h), J17(i), J41, J43, J222, J301, J306	104.1	354.7
Finish Mills	J70(a), J70(b), J70(c), J75, J76, J113, J416, J417, J420	18.6	59.1
Raw Material Handling (Enclosed)	J11, J18a, J18b, J18c, J19, J25, J26, J27, J28, J39, J44, J49a, J49b, J68a, J68b, J71, J74, J77, J104, J112, J114, J116, J117, J118, J122, J123, J124, J126, J127, J128, J131, J132, J133, J135, J136, J139, J140, J141, J142, J172, J173, J203, J212, J213, J215, J216, J217, J219, J220, J221, J223, J224, J225, J302, J303, J304, J307, J308, J310, J351, J352, J353, J354, J355, J401, J402, J403, J404, J405, J406, J407, J408, J409, J410, J415, J418, J419, J421, J422, J501, J502, J503, J504, J505, J506, J507, J508, J509, J510	17.4	21.2
Raw Material Handling (Open)	J1, J2, J3, J4, J5, J6, J8, J9, J10, J12, J13, J14, J15, J16, J100, J103, J105, J106, J107, J171, J201, J202, J204, J205, J206, J207, J208, J209, J210, J211, J214, J218, J226 J309, J411, J412, J413, J414	42.7	13.6
Fuel Handling	J1, J2, J3, J4, J5, J34, J35, J37, J91, J93, J96, J143, J144, J146, J147, J148, J149, J150, J151, J601, J602, J603, J604, J605, J606, J607, J608, J609, J610	26.4	2.8
Roadways, Stockpiles,	Roadways, Stockpiles	5.2	22.6

ATTACHMENT 1, continued

Table II: Summary Permitted Annual Emissions (Tons Per Year)

Pollutant	Raw Mills, Kilns and Clinker Coolers	Finish Mills	Raw Material Handling (Enclosed)	Raw Material Handling (Open)	Fuel Handling	Emergency Generators, Mobile Equipment, Space Heaters and Cooling Towers	Roadways and Stockpiles	Total
NO <sub>x</sub>	3,898	----	----	----	---	45.0	---	3,943
CO	3,316	----	----	----	---	11.0	---	3,327
VOM	129	----	----	----	---	4.0	---	133
SO <sub>2</sub>	1,768	----	----	----	---	3.0	---	1,771
PM	355	59.1	21.2	13.6	2.8	8.5	22.6	483
PM <sub>10</sub>	320	50.2	11.3	4.8	1.0	8.4	6.2	402
Sulfuric Acid	24.1	-----	-----	-----	-----	---	---	24.1
Fluorides	1.26	-----	-----	-----	-----	---	---	1.26
Lead	0.141	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.142

ATTACHMENT 2

Listings of Emission Units at the Plant

Table I

Kiln and Clinker Cooler Operations

Emission Unit Number	Emission Unit	Control Type	PM Emissions		NO <sub>x</sub> Emissions		SO <sub>2</sub> Emissions		CO Emissions		LEAD Emissions		VOM Emissions	
			(Lb/Hr)	(T/Yr)	(Lb/Ton <sup>a</sup> )	(T/Yr)	(Lb/Ton <sup>a</sup> )	(T/Yr)	(Lb/ Ton <sup>a</sup> )	(T/Yr)	(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)
J17(a-i)	#1 Raw Mill (existing)	Baghouse	11.1	20.2	3.2 <sup>b</sup>	5.8	5.9 <sup>b</sup>	10.8	0.8 <sup>b</sup>	1.4	< 0.001	< 0.001	0.1	0.1
J41	#1 Kiln (existing)	Low-NO <sub>x</sub> Burner, SNCR and Baghouse	8.4	24.8	8.54	1,412	1.78	294	1.3	215	0.006	0.017	10.1	29.8
J43	#1 Clinker Cooler (existing)	Baghouse	9.2	26.9	---	---	---	---	---	---	< 0.001	< 0.001	---	---
J222	Raw Mill 3 Air Separator (new)	Baghouse (Kiln 3 Baghouse)	49.6	186.0	2.00	2,480	1.18 <sup>c</sup>	1,463	2.5 <sup>d</sup>	3,100	0.033	0.124	26.5	99.2
J301	K3 Kiln (new)	Low-NO <sub>x</sub> Burner, SNCR Baghouse												
J306	K3 Clinker Cooler (new)	Baghouse	25.8	96.8	---	---	---	---	---	---	< 0.001	0.001	---	---

Notes:

- a. Annual average, rolled monthly.
- b. NO<sub>x</sub>, SO<sub>2</sub>, and CO emissions are in pounds per hour for the Raw Mill 1 (J17 a-i) emission points.
- c. SO<sub>2</sub> emissions for Kiln 3 are also limited to 2.50 lbs/ton clinker monthly block average [See Condition 4.1.6(b)].
- d. CO emissions for Kiln 3 are also limited to 5.0 lbs/ton clinker 8-hour block average [See Condition 4.1.3(b)].

Table II  
Finish Mill Operations

Emission Unit Number	Emission Unit	Control Type	PM Emissions		
			(Lbs/Hour)	(Tons/Year)	
<b>Existing Units</b>					
J70 (a)	Finish Mill 1	Air Separator 1	Baghouse	1.08	2.43
J70 (b)		Air Separator 2	Baghouse	1.08	2.43
J70 (c)		Mill Sweep & Feed Belt	Baghouse	0.80	1.81
J75	Finish Mill 2	Feed Belt	Baghouse	0.41	1.37
J76		Mill Sweep	Baghouse	1.37	4.57
J113		Air Separator	Baghouse	4.78	16.00
<b>New Units</b>					
J416	Finish Mill 3	Mill Sweep	Baghouse	1.90	6.35
J417		Air Separator	Baghouse	6.64	22.22
J418		Feed Belt (Elevator)	Baghouse	0.57	1.90

(a) Finish Mill 3 has a single stack for mill sweep and air separator exhaust.

Table III

## Enclosed Material Handling and Storage

Emission Unit Number	Emission Unit	Control	PM Emissions	
			(lbs/ton material)	(tons/year)
<b>Existing Units</b>				
J11	Limestone Transfer from #72 Belt to 202BC04	Baghouse	(a)	(a)
J18a	#1 Raw Mill - Raw Feed to #20 Belt (a)	Baghouse	(a)	(a)
J18b	#1 Raw Mill - Raw Feed to #20 Belt (b)	Baghouse	(a)	(a)
J18c	#1 Raw Mill - Raw Feed to #20 Belt (c)	Baghouse	(a)	(a)
J19	Limestone Transfer from #34 Belt to Limestone Bin	Baghouse	(a)	(a)
J25/J26/ J27/J28	Blending Silos #1 - 4	Baghouse	0.0089	1.52
J39	#1 Kiln Schenck Feed Tank	Baghouse	(a)	(a)
J44	#1 Kiln Clinker Elevator	Baghouse	(b)	(b)
J49a	Waste Dust Tank	Baghouse	(a)	(a)
J49b	Waste Dust Tank Load-Out Spout	Baghouse	(a)	(a)
J68a	Transfer from Bin #1 to #2 Bin to #23 Belt	Baghouse	(a)	(a)
J68b	Transfer from #9 Bin to #23 Belt	Baghouse	(a)	(a)
J71	#1 Finish Mill - FK Pump Hopper	Baghouse	(a)	(a)
J74	Clinker/Gypsum/Syngyp Transfer to #39 Belt	Baghouse	(b)	(b)
J77	#2 Finish Mill - FK Pump Hopper	Baghouse	(b)	(b)
J93	Kiln 1 Indirect Firing System	Baghouse	(b)	(b)
J104	CKD Truck Unloading	Baghouse	(b)	(a)
J112	Cement Fringe Bin	Baghouse	(b)	(a)
J114	Kiln 1 Cooler Elevator to #56 and #57 Pan Conveyors	Baghouse	(b)	(a)
J116	#56 Pan Conveyor Discharge to Gate	Baghouse	(b)	(a)
J117	Transfer to Off Spec Tank and Calibration Tank	Baghouse	(b)	(a)
J118	#57 Pan Conveyor Discharge to Gate	Baghouse	(a)	(a)
J122	Clinker Transfer from 422BC01 to #3 Silo	Baghouse	(b)	(b)
J123	Clinker Transfer to #58 Belt	Baghouse	(b)	(a)

Emission Unit Number	Emission Unit	Control	PM Emissions	
			(lbs/ton material)	(tons/year)
J124	#58 Belt Discharge to #1 Silo or #59 Belt	Baghouse	(b)	(a)
J126	#59 Belt Discharge to #1 Silo	Baghouse	(b)	(a)
J127	#3 Silo to #61 Belt Type II	Baghouse	(b)	(b)
J128	Clinker to Tower Elevator	Baghouse	(b)	(b)
J131	Tower Elevator to #62 Belt Type II Clinker	Baghouse	(b)	(b)
J132	#62 Belt to Bin #14 or #16	Baghouse	(b)	(b)
J133	Bin #14 Discharge to #14 Weigh Belt	Baghouse	(b)	(a)
J135	Clinker Transfer from #2 Silo to #50 Belt	Baghouse	(b)	(a)
J136	#1 Silo to Weigh Belts FEW-005, 006, 007	Baghouse	(b)	(a)
J139	Type H Clinker to Finish Mill 1 Feed Belt	Baghouse	(b)	(a)
J140	Off-Spec and Calib. Clinker to Finish Mill 1 Feed Belt	Baghouse	(b)	(a)
J141/142	Loading to Trucks (K1 Clinker)	Baghouse	(a)	(a)
J172	Transfer from #6 Belt to Elevator	Baghouse	(a)	(a)
J173	Elevator Discharge to #15 Tank	Baghouse	(a)	(a)
<b>New Units</b>				
J203	Raw Material Transfer from 105BC02 to 125BC01 or 105VV03	Baghouse	(a)	(a)
J212	Raw Mix 3 from 233BC04 to Clay Bin or 233BC04	Baghouse	(a)	(a)
J213	Raw Mix 3 from 233BC04 to Raw Mill 3 Feed Bins	Baghouse	(a)	(a)
J215	4" Limestone from 232BC02 to 232BC03	Baghouse	(a)	(a)
J216	4" Limestone from 232BC03 to 232BC01	Baghouse	(a)	(a)
J217	4" Limestone from 232BC01 to Limestone Bin	Baghouse	(b)	(a)
J219	Limestone and Clay Bins Discharge to 236BC01	Baghouse	(a)	(a)
J220	Misc. Raw Material Bins Discharge to 236BC01	Baghouse	(a)	(a)
J221	236BC01 Discharge to Raw Mill 3	Baghouse	(a)	(a)
J223	Kiln 3 Feed Silo	Baghouse	(a)	(a)
J224	Raw Mill 3 Reject Discharge	Baghouse	(a)	(a)
J225	Raw Mill 3 Reject Belt	Baghouse	(a)	(a)

Emission Unit Number	Emission Unit	Control	PM Emissions	
			(lbs/ton material)	(tons/year)
J226	Raw Mill 3 Reject Elevator	Baghouse	(a)	(a)
J302	K3 CKD Bin	Baghouse	(a)	(a)
J303	K3 Air Slide to Feed Elevator	Baghouse	(a)	(a)
J304	K3 Feed Elevator	Baghouse	(a)	(a)
J307	K3 Clinker Cooler Discharge to Pan	Baghouse	(b)	(b)
J308	Chlorine Bypass Dust Transfer to Bin	Baghouse	(a)	(a)
J310	Hydrated Lime Receiving	Baghouse	(b)	(a)
J351	Pan 309PA02 to Clinker Elevator 309BE01	Baghouse	(a)	(a)
J352	Clinker Elevator 309BE01 Discharge	Baghouse	(b)	(b)
J353	Belt 309BC01 Discharge Clinker Silo 4	Baghouse	(b)	(b)
J354	Belt 309BC01 Discharge Clinker Silo 5	Baghouse	(b)	(b)
J355	Discharge from Hot Clinker Bin	Baghouse	(a)	(a)
J401	Clinker Silo 4 Silo to 402BC01	Baghouse	(b)	(b)
J402	Clinker Silo 5 Silo to 402BC01	Baghouse	(b)	(b)
J403	Clinker Silo 4 Silo to 402BC02	Baghouse	(b)	(b)
J404	Clinker Silo 5 Silo to 402BC02	Baghouse	(b)	(b)
J405	Clinker Transfer 432BC02 to 432BC03	Baghouse	0.0005	(b)
J406	Clinker Transfer 432BC01 to 432BC03	Baghouse	0.0005	(b)
J407	Transfer from 433BC02 to Finish Mill 3 Limestone Bin	Baghouse	(a)	(a)
J408	Clinker Transfer from 432BC03 to Finish Mill 3 Clinker Bin or 422BC01	Baghouse	(b)	(b)
J409	Transfer from Finish Mill 3 Clinker Bin to 436BC01	Baghouse	(b)	(a)
J410	Transfer from Finish Mill 3 Limestone Bin to 436BC01	Baghouse	(a)	(a)
J413	Transfer from 433BC01 to Finish Mill 3 Gypsum Bin	Baghouse	(b)	(a)
J415	Transfer from 436BC01 to Finish Mill 3 Elevator	Baghouse	(b)	(b)
J418	Finish Mill 3 Fringe Bin	Baghouse	(a)	(a)
J419	Finish Mill 3 Cement Pump Hopper	Baghouse	(b)	(b)
J421	E. Clinker Maintenance Hopper	Baghouse	(a)	(a)

Emission Unit Number	Emission Unit	Control	PM Emissions	
			(lbs/ton material)	(tons/year)
J422	W. Clinker Maintenance Hopper	Baghouse	(a)	(a)
J501	Transfer from Finish Mill 2 and 3 Pumps to Silo Distribution	Baghouse	0.00001	1.38
J502(a-f)	Transfer from Silo Distribution to Cement Silos	Baghouse	(a)	(a)
J503(a-b)	Transfer from Finish Mill 1 and CKD Pumps to Cement Silos	Baghouse	0.00001	1.38
J504(a-d)	Cement Silo Discharge	Baghouse	(a)	(a)
J505(a-d)	Transfer to Truck Loadout Bins	Baghouse	(b)	(b)
J506(a-b)	Truck Loading	Baghouse	0.0048	(b)
J507(a-b)	Transfer to Rail Loading Bins	Baghouse	0.00001	(b)
J508(a-b)	Rail Cement Loadout	Baghouse	0.0048	(b)
J509	Transfer to Barge Loading Surge Bin	Baghouse	0.00001	1.33
J510(a-b)	Barge Loading	Baghouse	0.0048	6.43

Notes:

- a. The permit is issued based upon negligible emissions from this unit. For this purpose, PM emissions shall not exceed 0.025 pounds/hour and 0.10 tons/year.
- b. This permit is issued based on minimal emissions from this unit. For this purpose, PM emissions shall not exceed 0.25 lbs/hour and 1.0 tons/year.

Table IV

## Raw Material Handling Processing and Storage (Open)

Emission Unit Number	Emission Unit	Control	PM Emissions	
			(lbs/ton material)	(tons/year)
<b>Existing Units</b>				
J1	#1 Crane Raw Material Unloading from Barge	Work Practices	0.0025	3.62
J2	Raw Material Transfer from #9 Belt to #10 Belt	Work Practices	(b)	(a)
J3	Raw Material Transfer from #10 Belt to #11 Belt	Work Practices	(a)	(a)
J4	Raw Material Transfer from #11 Belt to 185BC01, #12 or #13 Belts	Work Practices	0.0025	1.21
J5	Raw Material Transfer from #12 Belt to #71 Belt or #19 Belt	Work Practices	0.0025	(b)
J6	Limestone Transfer from #71 Belt to A-Frame	Work Practices	0.0025	5.14
J8	Additive Transfer from #13 Belt Tripper to South Storage	Work Practices	0.0025	(a)
J9	Additive Transfer from #19 Belt to Storage Hall or #63 Belt	Work Practices	0.0025	(b)
J10	Limestone Transfer from Storage to #72 Belt	Work Practices	(b)	(b)
J12	Oilwell Additive Transfer from 18 Belt to 19 Belt	Work Practices	(a)	(a)
J13	Additive Feed to #15 Belt in South Reclaim Tunnel	Work Practices	(a)	(a)
J14	Additive Feed to #16 Belt in North Reclaim Tunnel	Work Practices	(a)	(a)
J15	Transfer of Additives #15 and/or #16 Belts to #17 Belt	Work Practices	(b)	(a)
J16	Transfer of Additives from #17 Belt to #18 Belt or 202BC03	Work Practices	(a)	(a)
J100	Fugitive Emissions from Outside Material Handling	Work Practices	0.0025	(a)
J103	Natural Gypsum to Pugmill	Work Practices	(a)	(a)
J105	Syngyp to Pugmill	Work Practices	(a)	(a)
J106	Pugmill Transfer to Elevator	Work Practices	(b)	(a)
J107	Syngyp Elevator Discharge to #17 Tank	Work Practices	(a)	(a)
J171	Gypsum Feed to #6 Belt	Work Practices	(a)	(a)

Emission Unit Number	Emission Unit	Control	PM Emissions	
			(lbs/ton material)	(tons/year)
<b>New Units</b>				
J201	#2 Crane	Work Practices	(b)	(a)
J202	Raw Material Transfer from 105EF01 to 105BC02	Work Practices	(b)	(a)
J204	Limestone Transfer from 125BC03 to 4" Pile	Work Practices	0.0025	(b)
J205	Sandstone & Mill Scale from 185BC01 to Storage	Work Practices	0.0025	(b)
J206	Kiln 3 Coal & Coke from 185BC01 to Storage	Work Practices	0.0025	(b)
J207	Clay Transfer to Clay Hopper	Work Practices	(b)	(a)
J208	Clay Hopper Transfer to 233BC02	Work Practices	(b)	(b)
J209	Sandstone & Mill Scale to Drag Conveyor	Work Practices	(a)	(a)
J210	Sandstone & Mill Scale from Drag Conveyor to 233BC01	Work Practices	(a)	(a)
J211	Sandstone & Mill Scale from 233BC01 or 233BC02	Work Practices	(b)	(a)
J214	4" Limestone from Storage to 232BC01 or 23BC02	Work Practices	(b)	(b)
J218	Clay Dump to Storage	Work Practices	(b)	(a)
J309	Chlorine Bypass CKD Transfer to Trucks	Work Practices	(a)	(a)
J411	Natural Gypsum to Drag Conveyor	Work Practices	0.0025	(b)
J412	Natural Gypsum Discharge to 433BC01	Work Practices	0.0025	(b)
J414	Transfer from Finish Mill 3 Gypsum Bin to 436BC01	Work Practices	(a)	(a)

Notes:

- a. The permit is issued based upon negligible emissions from this unit. For this purpose, PM emissions shall not exceed 0.025 pounds/hour and 0.10 tons/year.
- b. This permit is issued based on minimal emissions from this unit. For this purpose, PM emissions shall not exceed 0.25 lbs/hour and 1.0 tons/year.

Table V

## Fuel Handling

Emission Unit Number	Emission Unit	Control	PM Emissions	
			(lbs/ton material)	(tons/year)
<b>Existing Units</b>				
J1	#1 Crane Solid Fuel Unloading from Barge	Work Practices	0.0025	1.29
J2	Solid Fuel Transfer from #9 Belt to #10 Belt	Work Practices	(b)	(a)
J3	Solid Fuel Transfer from #10 Belt to #11 Belt	Work Practices	(b)	(a)
J4	Solid Fuel Transfer from #11 Belt to 185BC01, #12 or #13 Belts	Work Practices	0.0025	(b)
J5	Solid Fuel Transfer from #12 Belt to #71 Belt or #19 Belt	Work Practices	0.0025	(a)
J34	Solid Fuel Discharge from Crusher to #47 Belt	Work Practices	(a)	(a)
J35	Solid Fuel Transfer from #47 Belt Fuel Bins or #48 Belt	Work Practices	(b)	(a)
J37	Solid Fuel Transfer from Kiln 1 Fuel Bins to Kiln 1 Fuel Mill	Work Practices	(a)	(a)
J91	Coke Transfer from #48 Belt to Coke Bin	Baghouse	(a)	(a)
J93	#1 Kiln Indirect Firing System	Baghouse	(b)	(b)
J96	#1 Coal Mill Burner	Baghouse	(a)	(a)
J143	Solid Fuel Transfer from #19 Belt to #63 Belt	Work Practices	0.0006	(a)
J144	Solid Fuel Transfer from #63 Belt to #64 Belt and #65 Belt	Work Practices	0.0006	(a)
J146	Coal Transfer from #65 Belt to Coal Pile	Work Practices	0.0018	(a)
J147	Coke Transfer from #64 Belt to Coke Pile	Work Practices	(a)	(a)
J148	Coal Transfer from Pile to #67 Belt	Work Practices	(a)	(a)
J149	Coke Transfer from Pile to #66 Belt	Work Practices	(a)	(a)
J150	Coke Transfer from #66 Belt to #67 Belt	Work Practices	(a)	(a)
J151	Solid Fuel Transfer from #67 Belt to Crusher	Work Practices	(b)	(a)
<b>New Units</b>				
J601	Loader Reclaim of Solid Fuels	Work Practices	0.0018	(b)
J602	Fuel Hopper Discharge	Work Practices	0.0018	(b)
J603	Coal Transfer from 632BC01 to Coal Bin	Baghouse	(a)	(a)

Emission Unit			PM Emissions	
Number	Emission Unit	Control	(lbs/ton material)	(tons/year)
J604	Coke Transfer from 632BC01 to Coke Bin	Baghouse	(a)	(a)
J605	Coal Bin Discharge to Solid Fuel Mill	Baghouse	(a)	(a)
J606	Coke Bin Discharge to Solid Fuel Mill	Baghouse	(a)	(a)
J607	Solid Fuel Mill	Baghouse	(a)	(a)
J608	Solid Fuel Transfer to Pulverized Fuel Bin #1	Baghouse	(a)	(a)
J609	Solid Fuel Transfer to Pulverized Fuel Bin #2	Baghouse	(a)	(a)
J610	Solid Fuel Transfer to Pulverized Fuel Bin #3	Baghouse	(a)	(a)

Notes:

- a. The permit is issued based upon negligible emissions from this unit. For this purpose, PM emissions shall not exceed 0.025 pounds/hour and 0.10 tons/year.
- b. This permit is issued based on minimal emissions from this unit. For this purpose, PM emissions shall not exceed 0.25 lbs/hour and 1.0 tons/year.

ATTACHMENT 3

Relevant Federal Emission Standards

Table I

NSPS for Coal Preparation Plants (Subpart Y)

**§ 60.252 Standards for Particulate Matter**

- a. On and after the date on which the performance test required to be conducted by §60.8 is completed, an owner or operator subject to the provisions of this subpart shall not cause to be discharged into the atmosphere from any thermal dryer gases which:
  - 1. Contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf).
  - 2. Exhibit 20 percent opacity or greater.
  
- b. On and after the date on which the performance test required to be conducted by §60.8 is completed, an owner or operator subject to the provisions of this subpart shall not cause to be discharged into the atmosphere from any pneumatic coal cleaning equipment, gases which:
  - 1. Contain particulate matter in excess of 0.040 g/dscm (0.017 gr/dscf).
  - 2. Exhibit 10 percent opacity or greater.
  
- c. On and after the date on which the performance test required to be conducted by §60.8 is completed, an owner or operator subject to the provisions of this subpart shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal, gases which exhibit 20 percent opacity or greater.

Table II

NSPS for Stationary Compression Ignition Internal Combustion Engines  
(Subpart IIII)

§ 60.4205 Emission Standards for CI Internal Combustion Engines (CI ICE)

- a. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 of this subpart.
- b. Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in § 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.
- c. Owner and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in Table 4 of this subpart, for all pollutants.
- d. Owners and operators of emergency stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in paragraphs (d) (1) and (2) of this section.
  1. Reduce NO<sub>x</sub> emissions by 90 percent or more, or limit the emissions of NO<sub>x</sub> in the stationary CI ICE exhaust to 1.6 grams per KW-hour (1.2 grams per HP-hour).
  2. Reduce PM emissions by 60 percent or more, or limit the emissions of PM in the stationary CI ICE exhaust to 0.15 g/KW-hour (0.11 g/HP-hour).

Table 2

NESHAP for Portland Cement Plants

**Table 1 to § 63.1342 or 63.1347 -- Emission Limits and Operating Limits**

Affected Source	Pollutant or Opacity	Emission and Operating Limit
All Kilns and in-line kiln/raw mills at major sources (including alkali bypass).	PM Opacity	0.15 kg/Mg of feed (dry basis). 20 percent.
All Kilns and in-line kiln/raw mills at major and area sources (including alkali bypass).	D/F	0.20 ng TEQ/dscm or
		<p>0.40 ng TEQ/dscm when the average of the performance test run average particulate matter control device (PMCD) inlet temperatures is 204 °C or less. [Corrected to 7 percent oxygen]</p> <p>Operate such that the three-hour rolling average PMCD inlet temperature is no greater than the temperature established at performance test.</p> <p>If activated carbon injection is used: Operate such that the three-hour rolling average activated carbon injection rate is no less than rate established at performance test. Operate such that either the carrier gas flow rate or carrier gas pressure drop exceeds the value established at performance test. Inject carbon of equivalent specifications to that used at performance test.</p>

Affected Source	Pollutant or Opacity	Emission and Operating Limit
All Kilns and in-line kiln/raw mills at major and area sources (including alkali bypass). (Continued)	Hg	Must Remove (i.e., not recycle to the kilns) from the kiln system sufficient cement kiln dust to maintain the desired product quality. Use of fly ash as a raw material or fuel is prohibited where the mercury content of the fly ash has been increased through the use of activated carbon or any other sorbent unless the facility can demonstrate that the use of that fly ash will not result in an increase in mercury emissions over baseline emissions.
New and reconstructed kilns and in-line kiln/raw mills at major and areas sources (construction commenced after December 2, 2005).	Hg	41 ug/dscm, corrected to 7 percent oxygen, or route emissions through a packed bed or spray tower wet scrubber with a liquid-to-gas (l/g) ratio of 30 gallons per 1000 actual cubic feet per minute (acfm) or more and meet a site-specific emissions limit based on the measured performance of the wet scrubber.
New and reconstructed kilns and in-line kiln/raw mills at major and area sources. (Construction Commenced on or prior to December 2, 2005).	THC	50 ppmvd, as propane, corrected to 7 percent oxygen, monthly block average.
New and reconstructed kilns and in-line kiln/raw mills at major and area sources. (Construction commenced after December 2, 2005).	THC	20 ppmvd, as propane, corrected to 7 percent oxygen, hourly block average; or demonstrated 98 percent reduction between kiln outlet and discharge to atmosphere.

Affected Source	Pollutant or Opacity	Emission and Operating Limit
Existing kilns and in-line kilns/raw mills at major and area sources.	THC	Implement good combustion practiced (GCP) including training all operators and supervisors to operate and maintain the kiln and calciner, and the pollution control systems in accordance with good engineering practices.
All clinker coolers at major sources.	PM Opacity	0.050 kg/Mg of feed (dry basis) 10 percent.
All raw mills and finish mills at major sources.	Opacity	10 percent.
New greenfield raw material dryers at major and area sources.	THC	50 ppmvd, as propane, corrected to 7 percent oxygen.
All raw material dryers and material handling points at major sources.	Opacity	10 percent.

ATTACHMENT 4

Netting Analysis

Change in emissions from the project (tons/year).

<u>Pollutant</u>	<u>Historical Emissions</u>	<u>Future Emissions</u>	<u>Net Change</u>	<u>Significance Level</u>	<u>Notes</u>
NO <sub>x</sub>	3,904	3,943	39	40	1
CO	686	3,321	2,641	100	2
SO <sub>2</sub>	1,732	1,771	39	40	3
VOM	105	133	28	40	4
PM	690	483	-207	25	5
PM <sub>10</sub>	424	402	-22	15	6
Lead	0.054	0.142	0.088	0.6	7
H <sub>2</sub> SO <sub>4</sub>	30.9	24.1	-6.8	7	8
Fluorides	0.50	1.26	0.76	3	9

Notes:

1. Based on the actual emissions (continuous emission monitoring data) for the kilns averaged over two years (November 1998 through October 2000) using the emission factors derived from continuous emission monitoring data.
2. Based on the actual emissions from the kilns averaged over two years (November 1998 through October 2000) using the emission factors derived from continuous emission monitoring data.
3. Based on the actual emissions (continuous emission monitoring data) for the kilns averaged over two years (December 1997 through November 1999).
4. Based on the actual emissions (2003 stack tests) for the kilns averaged over two years (January 2003 through December 2004) using emission factors developed from 2003 stack tests with production data from those years.
5. Based on actual emissions AP-42 emission factors for 1999 and 2000, with stack tests for the kiln emissions during 2000. (May 2000 test for Kiln 1, February 2001 test for Kiln 2).
6. Based on actual emissions AP-42 emission factors for 1999 and 2000, with stack test for the kiln emissions during 2000. (May 2000 test for Kiln 1, February 2001 test for Kiln 2).
7. Based on the actual emissions (2003 stack tests) for the kilns averaged over two years (November 1998 through October 2000) using emission factors developed from 2003 stack test with production data from those years.
8. Based on the production data for the kilns averaged over two years (January 2003 through December 2004) using AP-42 emission factors.
9. Based on the production data for the kilns averaged over two years (January 2003 through December 2004) using AP-42 emission factors.

**ATTACHMENT 5**

**STANDARD PERMIT CONDITIONS**

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS  
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Illinois Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.
2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, has been submitted to the Illinois EPA and a supplemental written permit issued.
4. The Permittee shall allow any duly authorized agent of the Illinois EPA, upon the presentation of credentials, at reasonable times:
  - a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit;
  - b. To have access to and to copy any records required to be kept under the terms and conditions of this permit;
  - c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit;
  - d. To obtain and remove samples of any discharge or emissions of pollutants; and
  - e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:
  - a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;
  - b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
  - c. Does not release the Permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
  - d. Does not take into consideration or attest to the structural stability of any units or parts of the project; and
  - e. In no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
- 6a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Illinois EPA before the equipment covered by this permit is placed into operation.
- b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.
7. The Illinois EPA may file a complaint with the Board for modification, suspension or revocation of a permit,
  - a. Upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed; or
  - b. Upon finding that any standard or special conditions have been violated; or
  - c. Upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.

