

**Louisville Metro Air Pollution Control District**  
**850 Barret Ave., Louisville, Kentucky 40204**  
**02 April 2015**

**Construction Statement of Basis**

**Company:** Kosmos Cement Company

**Plant Location:** 15301 Dixie Hwy, Louisville, Kentucky 40272

<b>Date Application Received:</b> 1/5/2015	<b>Application Number:</b> 68778
1/26/2015	69077
2/10/2015	69327
<b>Public Comment Date:</b> 04/02/2015	<b>Proposed Permit Date:</b> 04/02/2015

<b>District Engineer:</b> Randy Schoenbaechler	<b>Permit No:</b> 1-05-C (R1)
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<b>Plant ID:</b> 0060	<b>SIC Code:</b> 3241	<b>NAICS:</b> 32731	<b>AFS:</b> 00060
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**Introduction:**

This permit will be issued pursuant to District Regulation 2.03, *Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements*. Its purpose is to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hr and 8 hr ozone (O<sub>3</sub>), and particulate matter less than 10 microns (PM<sub>10</sub>); and is a non-attainment area for particulate matter less than 2.5 microns (PM<sub>2.5</sub>) and partial non-attainment for sulfur dioxide (SO<sub>2</sub>).

**Application Type/Permit Activity:**

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

Construction

**Compliance Summary:**

Compliance certification signed

Source is out of compliance

Compliance schedule included

Source is operating in compliance

**I. Source Information**

1. **Product/Process Description:** The source produces Portland cement.
2. **Project Description:** This permit grants a one year extension to the compliance date, from September 9, 2015 to September 9, 2016, for the particulate matter standards and associated monitoring and recordkeeping required by 40 CFR 63 Subpart LLL for the Clinker Cooler (E-909) and Baghouse (C-924) but does not extend the date for any other equipment.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
4. **Emission Unit Summary:**

Construction No.	Equipment Description
1-05-C (R1)	Emission Point E-909 formerly E-97 Clinker Cooler (K-909) and Baghouse C-924 formerly C-35

**5. Permit Revisions**

Revision No.	Date or Reissuance	Public Notice Date	Type	Emission Unit	Description
Initial	1/14/2005	NA	Initial	Entire Permit	Lower the first three compartments of the C-924 Baghouse and split the last compartment (#7) in half with half the airflow (48,000 acfm) going through each new section.
R1		04/02/2015	Revision	Entire Permit	This permit grants a one year extension to the compliance date, from September 9, 2015 to September 9, 2016, for the particulate matter standards and associated monitoring and recordkeeping required by 40 CFR 63 Subpart LLL for the Clinker Cooler (E-909) and Baghouse (C-924).

6. **Fugitive Sources:** Fugitive emissions of dust from any part of the plant are subject to Regulation 1.14, *Control of Fugitive Particulate Emissions*.

**7. Plant-wide Emission Summary:**

Pollutant	Actual Emissions (tpy) 2013 Data	Major Source Status (based on PTE)
CO	397.19	Yes
NO <sub>x</sub>	1308.23	Yes
SO <sub>2</sub>	185.98	Yes
PM <sub>10</sub>	364.7	Yes
VOC	51.71	Yes
Total HAPs	26.01	Yes
GHGs*	>100,000 CO <sub>2</sub> e	Yes
Single HAP > 1 tpy		
Hydrochloric Acid	22.134	Yes

\*Note: The GHG are potential to emit (PTE) emissions not actual emissions.

**8. Applicable Requirements:**

PSD       40 CFR 60       SIP       40 CFR 63  
 NSR       40 CFR 61       District-Origin       Other

**9. MACT Requirements:**

40 CFR 63 Subpart LLL      National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry

**10. Referenced non-MACT Federal Regulations in Permit:**

NA

**II. Regulatory Analysis**

- Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
- Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
- Prevention of Accidental Releases 112(r):** The source is capable of storing and handling one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions. The source accepted a limit for ammonia in order to be exempt from Regulation 5.15.
- 40 CFR Part 64 Applicability Determination:** This project and affected equipment is major for the criteria pollutant PM<sub>10</sub>. In accordance with 40 CFR 64,

Compliance Assurance Monitoring for Major Stationary Sources, the source is required to propose a CAM plan based on current process and control device requirements and practices.

## 5. Basis of Regulation Applicability

### a. Plant-wide

Regulation 2.03, section 6.1 requires sufficient monitoring, record keeping, and reporting to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.

### b. Applicable Regulations:

Regulation	Title	Type
2.03	Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements	SIP
2.05	Prevention of Significant Deterioration of Air Quality	SIP
5.00	Definitions	Local
5.01	General Provisions	Local
5.02	Adoption of National Emission Standards for Hazardous Air Pollutants	Local
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant	Local
5.21	Environmental Acceptability for Toxic Air Contaminants	Local
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant	Local
5.23	Categories of Toxic Air Contaminants	Local
7.08	Standards of Performance for New Process Operations	SIP
40 CFR 63, Subpart LLL	National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry	Federal
40 CFR 64	Compliance Assurance Monitoring	Federal

c. **Basis for Applicability**

<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
2.03	Regulation 2.03 applies to new construction projects.
2.05	KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77.
5.00, 5.01, 5.20, 5.21, 5.22, 5.23	Regulations from Chapter 5 establish the requirements for Environmental Acceptability for TACs.
7.08	Regulation 7.08 establishes requirements for new processes that are subject to PM standards and were installed after September 1, 1976.
40 CFR 63 Subpart LLL	40 CFR 63, Subpart LLL applies to each new and existing Portland cement plants
40 CFR 64	Equipment major for PM pre control

d. **Construction Project**

i. **Equipment**

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulations</b>
E-909	Clinker Cooler	2.03, 2.05, 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08 40 CFR 63 Subpart LLL, and 40 CFR 64
C-924	Baghouse	

ii. **Standards/Operating Limits**

1) **PM/PM<sub>10</sub>**

- (a) 2.05 (PM/PM<sub>10</sub>) allows the District to specify operating limits. The source is limited to 8064 hours of operation of the Clinker Cooler.
- (b) The lb/hr PM limits are calculated per Regulation 7.08, section 3.1.2. The equation to calculate the emission limits for process rates greater than 60,000 lb/hr is  $E = (17.31) * (P)^{0.16}$ , where P is expressed in tons/hr.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **HAP**

- (a) 40 CFR 63 Subpart LLL establish opacity standards and PM emission standards as surrogates for limits on HAP emissions.
- (b) 40 CFR 63.1346 establishes operation and maintenance plan requirements for affected facilities.

4) **TAC**

Per Regulations 5.00 and 5.21, TAC emissions shall not exceed environmentally acceptable levels.

iii. **Monitoring and Record Keeping**

1) **HAP**

(a) 40 CFR 63.1348 establishes compliance requirements for the affected facilities.

(b) 40 CFR 63.1350 establishes monitoring requirements for the affected facilities.

(c) 40 CFR 63.1355 establishes record keeping requirements for the affected facilities.

2) **PM, Opacity and TAC**

See Section II.5.a.

iv. **Reporting**

1) **HAP**

(a) 40 CFR 63.1353 establishes notification requirements for the affected facilities.

(b) 40 CFR 63.1354 establishes reporting requirements for the affected facilities.

2) **PM, Opacity and TAC**

See Section II.5.a.

v. **Testing**

(a) 40 CFR 63.1349 establishes testing requirements for the affected facilities.

(b) District Regulation 2.03, section 6.1 allows additional testing on the inlet coinciding with testing required by the federal regulation.

**III. Other Requirements**

1. **Temporary Sources:** The source did not request to operate any temporary facilities.

2. **Short Term Activities:** The source did not report any short term activities.

3. **Emissions Trading:** N/A

4. **Operational Flexibility:** The source did not request any operational flexibility for the emission points.

5. **Compliance History:**

Date	Regulation Violated	Result
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<b>Date</b>	<b>Regulation Violated</b>	<b>Result</b>
6/20/1993	Reg. 6.09, section 3 and Reg. 1.09	Agreement
9/14/1993	Reg. 1.14, section 2	Agreement
11/9/1993	Reg. 1.14, section 2	Agreement
12/19/1994	Reg. 1.14, section 2	Agreement
6/13/1995	Reg. 7.02, section 1/ Reg. 1.07 section 5	Board Order
11/1/1995	Reg. 6.42, section 5/ Reg. 2.03, section 5	Agreement
10/16/2000	Reg. 1.14, section 2/ Reg. 1.07, section 6	Agreement
10/23/2001	Reg. 1.14, section 2	Agreement
3/14/2002	Reg. 1.14, section 2	Agreement
8/1/2002	Reg. 1.14, section 2	Agreement
8/7/2002	Reg. 1.14, section 2	Agreement
5/19/2003	Reg. 1.14, section 2	Agreement
8/29/2003	Reg. 1.14, section 2	Board Order
9/15/2003	Reg. 1.14, section 2	Board Order
11/4/2003	Reg. 1.14, section 2	Board Order
10/16/2003	Reg. 1.14, section 2	Board Order
7/7/2003	Reg. 1.14, section 2	Board Order
5/10/2004	Reg. 1.14, section 2	Board Order
6/22/2004	Reg. 2.16, section 5	Board Order
6/10/2004	Reg. 1.14, section 2	Board Order
8/10/2004	Reg. 2.16, section 5	Board Order
7/6/2004	Reg. 1.14, section 2	Board Order
11/9/2004	Reg. 1.14, section 2	Board Order
1/5/2005	Reg. 1.14, section 2	Board Order
7/6/2005	Reg. 1.14, section 2	Board Order
6/14/2005	Reg. 1.14, section 2	Board Order
4/15/2006	Reg. 2.03, section 5/ Reg. 2.16, section 5	Board Order
7/10/2006	Reg. 1.14, section 2	Board Order
9/14/2006	Reg. 1.14, section 2	Board Order
11/21/2007	Reg. 1.14, section 2	Board Order
10/12/2007	Reg. 1.14, section 2	Board Order
6/9/2008	Reg. 1.14, section 2	Board Order
6/18/2008	Reg. 1.14, section 2	Board Order
11/3/2008	Reg. 1.14, section 2	Board Order
4/15/2012	Reg. 1.06, section 4	Agreement

Date	Regulation Violated	Result
12/01/2013	Reg. 2.03, section 5	Agreement

**6. Calculation Methodology:**

Kosmos uses a variety of methods to estimate air emissions. Most of the emission estimates are based on established calculation methodologies which are based on EPA's AP-42. The calculation methods include:

**EPA emission factors.**

The District approves uncontrolled emissions calculations for Baghouse C-924 using stack test results for inlet testing averaged from 3 tests dated 9/21/05, 3/21/06, and 6/28/07 at 10003.3 lb/hr, other calculation methodologies must receive approval from the District.

**7. Insignificant Activities:**

There are no insignificant activities contained in this construction permit.

**8. Permit Fee:**

Construction permit fees are based on the construction fee for Title V source (\$2,542.40), subject to a MACT (\$1,016.96), and EA Demo with Tier 4 Modeling (\$1,525.44). The total construction fees are \$5,084.80.