

## TECHNICAL REVIEW AND EVALUATION

### OF

### AIR QUALITY PERMIT # 49393

### **CEMEX Construction Materials South, LLC**

#### **I. INTRODUCTION**

This air quality control renewal permit is for the operation of a concrete batch plant with or without a collocated crushing and screening plant. This is a portable facility and will be operated statewide. This is a renewal of Air Quality Permit No. 27286.

#### **Company Information**

1. Mailing Address: CEMEX Construction Materials South, LLC  
701 North 44<sup>th</sup> Street  
Phoenix, AZ 85008
2. Current Facility Address: CEMEX—Country Arizona Portable #3  
11195 West County 21 ½ Street  
San Luis, Yuma County, Arizona

#### **II. Learning Sites Evaluation**

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

There are seven learning sites within two miles of the facility.

1. Cesar Chavez Learning Center
2. Rio Colorado Elementary School
3. San Luis Middle School
4. San Luis Pre-School
5. Arizona Desert Elementary School
6. Ed Pastor Elementary 4
7. San Luis High School

The Department has determined that this facility will not cause any adverse health effects at the learning sites listed above.

### **III. FACILITY DESCRIPTION**

#### **A. Process Description**

Concrete is composed essentially of water, cement, sand (fine aggregate), and coarse aggregate. Coarse aggregate may consist of gravel or crushed stone. Concrete batching plants store, convey, measure, and discharge these constituents into trucks for transport to a job site.

The aggregate material is delivered by front-end loader or conveyor to the concrete batch plant. The cement is transferred to elevated storage silos pneumatically. The sand and coarse aggregate are transferred to elevated bins by front-end loader and belt conveyor. From these elevated bins, the constituents are fed by gravity or conveyor to weigh hoppers, which combine the proper amount of each material. Sand, aggregate, cement, and water are all gravity fed from the weigh hopper into mixer trucks. The concrete is mixed on the way to the site where the concrete is to be poured.

#### **B. Air Pollution Control Equipment**

Particulate matter (PM<sub>10</sub>), consisting primarily of cement dust but including some aggregate and sand dust emissions, is the primary pollutant of concern from the cement plant. Point sources include two dust collectors, transfer of sand and aggregate, truck loading, a heater and a generator. Fugitive sources include mixer loading, vehicle traffic, and wind erosion from sand and aggregate storage piles. The amount of fugitive emissions generated during the transfer of sand and aggregate depends primarily on the surface moisture content of these materials.

Two dust collectors are used to control particulate matter emissions from the loading and unloading of silos. Additional controls used include water sprays, enclosures, hoods, curtains, shrouds, and chutes. The movement of heavy trucks over unpaved or dusty surfaces in and around the plant is controlled by good maintenance, wetting of the road surface with water and/or the use of dust suppressants.

### **IV. COMPLIANCE HISTORY**

There have been two facility inspections for this facility since March 1, 2006. A Notice of Violation was issued due to four permit violations observed during an inspection conducted on July 12, 2006. The four violations were (1) failure to post the permit certificate onsite, (2) failure to have a certified Method 9 observe onsite or on call, (3) failure to conduct quarterly Method 9 observations, and (4) failure to control dust from a haul road. The facility was brought into compliance on September 11, 2006, and the case was closed.

### **V. POTENTIAL-TO-EMIT AND SYNTHETIC MINOR LIMITATIONS**

#### **A. Statewide Operation (outside Maricopa County)**

The facility has the equipment capacity to produce 180 cubic yards per hour of concrete and crushed material. The facility may also have a crushing and screening plant capable of emitting 13.64 tons per year of PM<sub>10</sub> which it may collocate on site periodically. The Permittee must limit the capacity of diesel-fueled generators at a collocated crushing and screening plant to 580 horsepower.

**B. Operating in Maricopa County**

The facility, when collocated with a crushing and screening facility, has a potential to emit 8.49 pounds per hour and 37.2 tons per year of NO<sub>x</sub>. However, the source has voluntarily accepted hourly limitations to stay below the Maricopa County BACT threshold. The facility has voluntarily accepted hourly limitations of 11.4 hours per day and 3,804 hours per year. The facility has also accepted the voluntarily restriction not to collocate with a crushing & screening facility while operating within Maricopa County.

Pollutant	Inside Maricopa County Emissions (tpy)	Outside Maricopa County Emissions (tpy)
PM <sub>10</sub>	10.6	41.7
PM	22.5	69.2
SO <sub>2</sub>	1.17	6.16
NO <sub>x</sub>	16.1	90.0
VOC	1.26	7.10
CO	3.49	19.4

The outside Maricopa County PM<sub>10</sub> Emissions include 13.64 tons/yr emissions from the collocated Crushing/Screening Plant

**VI. APPLICABLE REGULATIONS**

The Permittee has identified the applicable regulations that apply to each unit in its permit application. The following table summarizes the findings of the Department with respect to the regulations that are applicable to each emissions unit. Previous permit conditions are discussed under Section VI of this technical review document.

**Applicable Regulations**

Unit ID	Control Equipment	Applicable Regulations	Verification
<b>Concrete Batch Plant</b>	Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions.	<u>A.A.C.</u> R18-2-604.A R18-2-604.B R18-2-605.A R18-2-605.B R18-2-606 R18-2-607.A R18-2-607.B R18-2-614 R18-2-702.B R18-2-723	Standards of performance for concrete batch plants and Fugitive dust sources.

Unit ID	Control Equipment	Applicable Regulations	Verification
<p align="center"><b>Concrete Batch Plant</b></p>	<p>Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions.</p>	<p><u><i>Maricopa County Rule (M.C.R.)</i></u> Rule 300</p> <p>Rule 316</p> <p>Rule 320</p>	<p>Maricopa County Rule 300-Visible Emissions describe standards for visible emissions and opacity.</p> <p>Maricopa County Rule 316-Nonmetallic Mineral Processing establishes limits for the emissions of particulate matter into the ambient air from any nonmetallic mining operating or rock product processing plant.</p> <p>Maricopa County Rule 320-Odors and Gaseous Air Contaminants establish limits for the emissions of odors and other gaseous air contaminants into the atmosphere.</p>
		<p><u><i>Pima County Code</i></u> §§17.16.040 §§17.16.050 §§17.16.380</p>	<p>Standards and applicability for opacity limitations.</p> <p>Standards of performance for concrete batch plants.</p>
		<p><u><i>Pinal Code</i></u> §5-5</p>	<p>Stationary source performance standards-Gravel or crushed stone processing plant and concrete batch plants.</p>
		<p align="center"><b>Water Heater</b></p>	<p align="center">N/A</p>
<p><u><i>M.C.R.</i></u> Rule 323 §103.8</p>	<p>The water heater is not subject to Maricopa County Rule 323 because its sole purpose is to heat water for radiant heat, an exemption from applicability.</p>		
<p><u><i>Pima County Code</i></u> §§17.16.165.C.1 §§17.16.165.E §§17.16.165.G §§17.16.165.J</p>	<p>The water heater is subject to Pima County Codes §§17.16.165C.1, E, G and J. They were however streamlined because A.A.C. R18-2-724 regulations are just as stringent.</p>		
<p><u><i>Pinal Code</i></u> §5-21-930</p>	<p>The water heater is subject to Pinal County Code §5.21.930. They were however streamlined because A.A.C. R18-2-724 regulations are just as stringent.</p>		

Unit ID	Control Equipment	Applicable Regulations	Verification
Generator	N/A	<u>A.A.C.</u> R18-2-719.B R18-2-719.C.1 R18-2-719.E R18-2-719.F R18-2-719.H R18-2-719.I R18-2-719.J	Standards of Performance for existing stationary rotating machinery. This section is applicable to internal combustion engines.  The generator is not subject to any NSPS regulations. It is not subject to 40 CFR 60 Subpart JJJJ because it is a diesel fuel engine and this subpart is applicable to spark ignition internal combustion engines. It is not subject to 40 CFR 60 Subpart IIII because it was manufactured prior to April 1, 2006.
		<u>M.C.R.</u> Rule 324	Maricopa County Rule 324- Establishes limits for the emissions of carbon monoxide, nitrogen oxides, sulfur oxides, volatile organic compounds, and particulate matter from stationary internal combustion engines, including stationary IC engines used in cogeneration.
		<u>Pima County Code</u> §§17.16.340	The facility is also subject to Pima County Code §§17.16.340 but the regulations were streamlined because Article 7 of the A.A.C. is just as stringent.
		<u>Pinal Code</u> §5-23-990	The facility is also subject to Pinal County Code §5.23.990 but the regulations were streamlined because Article 7 of the A.A.C. is just as stringent.
Fugitive Dust Sources	Water and other reasonable precautions	<u>A.A.C.</u> R18-2-702 Article 6	These standards are applicable to all fugitive dust sources.

Unit ID	Control Equipment	Applicable Regulations	Verification
		<u>M.C.R.</u> Rule 300  Rule 316	Maricopa County Rule 300-Visible Emissions describe standards for visible emissions and opacity.  Maricopa County Rule 316-Nonmetallic Mineral Processing establishes limits for the emissions of particulate matter into the ambient air from any nonmetallic mining operating or rock product processing plant.
		<u>Pima County Code</u> §§17.16.060  §§17.16.080  §§17.16.090  §§17.16.100	Fugitive dust producing activities.  Vacant lots and open spaces.  Roads and Streets  Particulate material
		<u>Pinal Code</u> §4-2	Emissions from existing new non-point sources-Fugitive dust.
<b>Mobile Sources</b>	Water Sprays/Water Truck for dust control	<u>A.A.C.</u> Article 8	This Article is applicable to off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.
		<u>M.C.R.</u> Rule 200§410	Maricopa County Rule 200§410 was included in the Mobile Sources Section covering Article 8 to streamline the document since the conditions are identical.
		<u>Pima County Code</u> §§17.12.300	The facility is also subject to Pima County Code §§17.12.300 but the regulations were streamlined because Article 8 of the A.A.C. is just as stringent.
<b>Spray Painting Operations</b>	N/A	<u>A.A.C.</u> R18-2-727	This standard is applicable to any spray-painting operation.
		<u>M.C.R.</u> Rule 315	Maricopa County Rule 315 establishes a limit for the emission of particulate matter to the atmosphere from spray coating operations.

Unit ID	Control Equipment	Applicable Regulations	Verification
<b>Demolition/ Renovation Operations</b>	N/A	<u>A.A.C.</u> R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
<b>Abrasive Blasting</b>	N/A	<u>A.A.C.</u> R18-2-726 R18-2-702.B	This standard is applicable to any activity related to abrasive blasting operations.
		<u>M.C.R.</u> Rule 312§410	Maricopa County Rule 312§410 establishes limits for particulate emissions from abrasive blasting operations.
		<u>Pinal Code</u> §5-4-140	The facility is also subject to Pinal County Code §5.4.140 but the regulations were streamlined because A.A.C. R18-2-726 and A.A.C R18-2-702.B are just as stringent.

## VII. PREVIOUS PERMIT CONDITIONS

### A. Previous Permit Conditions

The following are discussions on the previous permits that have been issued to the source.

#### **CLASS II, NON-TITLE V OPERATING PERMIT NO. 27286**

This operating permit was issued to CEMEX Construction Materials South, LLC on December 29, 2003, to operate a concrete batch plant with or without a collocated crushing and screening plant.

OP #27286, References	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. A.	X				General provisions - revised to represent most recent language
Att.B.I.A		X			Facility Wide Limitations-Operating Limitations
Att B.I.B		X			Facility Wide Limitations-Record Keeping Requirements

OP #27286, References	Determination				Comments
	Revise	Keep	Delete	Stream- line	
Att B.I.C		X			Facility Wide Limitations-Reporting Requirements
Att B.II.A	X				Concrete Batch Plant-Emission Standards-revised to represent most recent language. Meets requirement A.A.C. R18-2-614 for nonpoint sources and A.A.C. R18-2-702.B for any point sources.
Att B.II.B	X				Concrete Batch Plant-Air Pollution Control Requirements-revised to represent most recent language. Meets material permit conditions as defined by A.A.C. R18-2-306.A.2 and - 331.A.3.d.
Att B.II.C	X				Concrete Batch Plant-Monitoring Requirement-revised to represent most recent language. Meets requirement A.A.C. R18-2-306.A.3.c.
Att B.II.D	X				Concrete Batch Plant-Record Keeping Requirement-revised to represent most recent language. Meets requirement A.A.C. R18-2-306.A.3.c
Att B.III		X			Conditions Specific to Mobile Sources-Section and language is retained.
Att B.IV		X			Conditions Specific to Portable Sources-Section and language are retained.
Att C	X				Conditions for Operation Inside Pima County-revised to represent most recent language in the Pima County Code.
Att D	X				Conditions for Operation Inside Pinal County-revised to represent most recent language in the Pinal County Code.
Att E	X				Conditions for Operation Inside Maricopa County- revised to represent most recent language in the Maricopa County Rule.
Att F	X				Equipment List-the equipment list has been updated.

## VIII. MONITORING REQUIREMENTS

### A. Opacity

1. The Permittee is required to conduct a monthly survey of visible emissions coming from the concrete batch plant equipment and any fugitive dust sources. If the opacity of the emissions observed appears to exceed the opacity limit, the observer must conduct a

certified EPA Reference Method 9 observation. The Permittee must keep records of the initial survey and any EPA Reference Method 9 observations performed. If the observation result is above the opacity limit, the Permittee is required to take corrective action and log all such actions. Any exceedance must be reported to ADEQ as an “excess emission”.

2. The Permittee is required to perform a quarterly EPA Reference Method 9 observation of emissions coming from the concrete batch plant. The Permittee must keep a record of the results of the observation. If the observation result is above the opacity limit, the Permittee must take corrective action and log all such actions taken to fix the problem. Any exceedance must be reported to ADEQ as an “excess emission”.
3. The Permittee must maintain records of the dates when reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne are performed and which of the eight approved control measures were implemented.
4. The Permittee must conduct a monthly survey of visible emissions coming from the stack of the water heater. If the opacity of the emissions observed appears to exceed the opacity limit, the observer must perform a certified EPA Reference Method 9 observation. The Permittee is required to keep records of the initial survey and any EPA Reference Method 9 observations performed. If the observation result is above the opacity limit, the Permittee must take corrective action and log all such actions. Any exceedance must be reported to ADEQ as an “excess emission”.

**B. Sulfur Dioxide**

The Permittee must keep records of fuel supplier certifications. The certification must contain information with regard to sulfur content and the method used to determine the sulfur content of fuel. These records must be made available to the ADEQ inspector upon request.

**IX. LIST OF ABBREVIATIONS**

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CO	Carbon Monoxide
MCR	Maricopa County Rule
NO <sub>x</sub>	Nitrogen Oxide
P.C.C.	Pima County Code
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter Nominally less than 10 Micrometers
PTE	Potential-to-Emit
SO <sub>2</sub>	Sulfur Dioxide
TPY	Tons per Year
VOC	Volatile Organic Compound