

Division of Air Quality  
February 12, 2015

## MEMORANDUM

**To:** Regional Supervisors – All DAQ Regional Offices  
Permit Coordinators – All DAQ Regional Offices

**From:**  Mark Cuilla, Acting Supervisor, AQAB

**Subject:** Concrete Production Modeling Exemption Rates

The attached Concrete Production Modeling Exemption Rates table has been modified based on the revised AAL for arsenic of  $2.1e^{-6}$  mg/m<sup>3</sup> on an annual basis. The revision process involved re-modeling to determine maximum allowable production rates based on various property line distances for both truck mix and central mix concrete plants. Specifically, AERMOD was run using the most recent version of the model along with the most recent 5-year meteorological datasets (2008-2012). Modeling parameters that were determined to be conservative (i.e. “worst-case”) in the previous modeling evaluation conducted in 2008 were also utilized. This included terrain elevations, source parameters, and representative source locations.

The "Concrete Batch Plants - DAQ/AQAB Modeling Policy" memo sent in November '07 remains valid but should utilize the Modeling Exemption Rates table.

cc: Alex Zarnowski w/ attachments  
Tom Anderson w/ attachments

# CONCRETE PRODUCTION MODELING EXEMPTION RATES

TRUCK MIX FACILITY	
Closest Distance to Property Line (m)	Production Rate (yd <sup>3</sup> /yr) <sup>1)</sup>
10	233,500
15	284,500
20	340,500
25	392,500
30	438,500
35	508,500
40	615,500
45	680,500
50	742,500
55	815,500
60	896,000
<sup>1)</sup> Production rate calculated from AAL of 2.1 <sup>e-6</sup> mg/m <sup>3</sup>	
Modeling Assumptions / Parameters	
Source Emissions Evaluated:	Cement silo Flyash silo Truck loadout
Emission Points Modeled:	Dust collection baghouse Truck loadout
On-site Structures:	Control building Three silos
Meteorology:	Greensboro
Terrain:	Haw River terrain (Alamance County)

CENTRAL MIX FACILITY	
Closest Distance to Property Line (m)	Production Rate (yd <sup>3</sup> /yr) <sup>1)</sup>
10	327,000
15	417,000
20	581,000
25	766,500
30	1,002,500
35	1,358,000
40	<sup>2)</sup>
45	<sup>2)</sup>
50	<sup>2)</sup>
55	<sup>2)</sup>
60	<sup>2)</sup>
<sup>1)</sup> Production rate calculated from AAL of 2.1 <sup>e-6</sup> mg/m <sup>3</sup> <sup>2)</sup> These production rates would result in an hourly production capacity of greater than 120 yd <sup>3</sup> /hr	
Modeling Assumptions / Parameters	
Source Emissions Evaluated:	Cement silo Flyash silo Mixer
Emission Points Modeled:	All emissions assumed to be vented thru mixer baghouse
On-site Structures:	Control building Three silos
Meteorology:	Charlotte
Terrain:	Gaston County