

**From:** [Air.Pollution Control](#)  
**To:** [APC Permitting](#)  
**Subject:** FW: Southern Concrete Permit No. 074027  
**Date:** Tuesday, January 16, 2024 9:24:31 AM  
**Attachments:** [SouthernConcrete.processflow.map.pdf](#)  
[UnitedDrive.APC100.signed.pdf](#)  
[UnitedDrive.APC111.signed.pdf](#)  
[UnitedDrive.emissions.xlsx](#)

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**From:** Eve Odle <eodle@southernconcrete.com>  
**Sent:** Monday, January 15, 2024 11:25 AM  
**To:** Air.Pollution Control <Air.Pollution.Control@tn.gov>  
**Subject:** [EXTERNAL] Southern Concrete Permit No. 074027

**\*\*\* This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. \*\*\***

Hello,

See the application and documents attached.  
If you need additional information, please contact me as the primary contact.

Thank you,

Evelyn Odle  
Environmental Compliance Officer  
Southern Concrete Products  
731-422-3366



**NON-TITLE V PERMIT APPLICATION  
FACILITY IDENTIFICATION**

Type or print and submit. Attach appropriate source description forms.			
<b>SITE INFORMATION</b>			
<b>1. Organization's legal name and SOS control number</b> [as registered with the TN Secretary of State (SOS)] Southern Concrete Products, Inc.			
<b>2. Site name</b> (if different from legal name) Southern Concrete Products, Inc. United Drive			
<b>3. Is a construction permit application fee being submitted?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (see instructions for appropriate fee to submit)			
<b>4. Site address</b> (St./Rd./Hwy.) 86 United Drive			<b>County name</b> Hardeman
City Jackson	Zip code 38305		<b>5. NAICS or SIC code</b> 3273
<b>6. Site location</b> (in lat. /long.)	Latitude 35.39.38.52N	Longitude 88.53.10.32W	
<b>CONTACT INFORMATION (RESPONSIBLE PERSON)</b>			
<b>7. Responsible person/Authorized contact</b> Evelyn Odle			<b>Phone number with area code</b> 731-422-3366
<b>Mailing address</b> (St./Rd./Hwy.) 860 Westover Rd			<b>Fax number with area code</b>
City Jackson	State TN	Zip code 38302	<b>Email address</b> eodle@southernconcrete.com
<b>CONTACT INFORMATION (TECHNICAL)</b>			
<b>8. Principal technical contact</b> Steven Haynes			<b>Phone number with area code</b> 731-467-0414
<b>Mailing address</b> (St./Rd./Hwy.) 860 Westover Rd			<b>Fax number with area code</b>
City Jackson	State TN	Zip code 38302	<b>Email address</b> stevenhaynes3@gmail.com
<b>CONTACT INFORMATION (BILLING)</b>			
<b>9. Billing contact</b> Evelyn Odle			<b>Phone number with area code</b> 731-422-3366
<b>Mailing address</b> (St./Rd./Hwy.) 860 Westover Rd.			<b>Fax number with area code</b>
City Jackson	State TN	Zip code 38302	<b>Email address</b> eodle@southernconcrete.com

**AIR CONTAMINANT SOURCE(S) INFORMATION**

**10. Description of air contaminant source(s) and Unique Source ID(s).** List, identify, and briefly describe process emission sources, fuel burning installations, and incinerators that are contained in this application and include a Unique Source ID for each source. The Unique Source ID is a name/number/letter, which uniquely identifies the air contaminant source(s), like Boiler #1, Paint Line #1, Engine #1, etc. (see instructions for more details)

Two silo top baghouses, one for cement and one for flyash

**11. Is the air contaminant source(s) in a nonattainment area? If "Yes", then minor source BACT must be addressed.** Yes      No

☐      ☒

<b>12. Normal operation:</b>	Hours/Day As Needed	Days/Week As Needed	Weeks/Year As Needed	Days/Year As Needed
<b>13. Percent annual throughput</b>	Dec. – Feb. 15%	March – May 25%	June – August 35%	Sept. – Nov. 25%

**TYPE OF PERMIT REQUESTED (check appropriate box)**

<b>14. Operating permit</b> <input type="checkbox"/>	Date construction started NA	Date completed NA	Date of ownership change (if applicable)
	Last permit number(s) 074027	Emission Source Reference Number(s) 57-0246	
<b>Construction permit</b> <input checked="" type="checkbox"/>	Last permit number(s)		Emission Source Reference Number(s)

If you chose Construction permit above, then choose either New Construction, Modification, or Location Transfer

<b>New Construction</b> <input type="checkbox"/>	Starting date	Completion date
<b>Modification</b> <input checked="" type="checkbox"/>	Date modification started or will start 02/01/2024	Date completed or will complete NA
<b>Location Transfer</b> <input type="checkbox"/>	Transfer date	Address of last location

**15. Describe changes that have been made to this equipment or operation(s) since the last construction or operating permit application:**

2 baghouse dust collection systems for both flyash and cement side of the silo (split silo)  
1 new baghouse vent on the weigh batcher

**16. Comments**

**SIGNATURE**

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

**17. Signature** (application must be signed before it will be processed)

**Date**

**Evelyn Odle**

Digitally signed by Evelyn Odle  
Date: 2024.01.15 11:19:02 -06'00'

**Signer's name** (type or print)

**Title**

**Phone number with area code**

Evelyn Odle

Environmental Compliance

731-422-3366



**NON-TITLE V PERMIT APPLICATION**  
**CONCRETE BATCH PLANT SOURCE DESCRIPTION**

Type or print. Submit for each concrete batch plant. Submit with the APC 100. Submit a Plant Diagram according to the instructions given below.					
<b>GENERAL IDENTIFICATION AND DESCRIPTION</b>					
<b>1. Organization's legal name and SOS control number</b> [as registered with the TN Secretary of State (SOS)] Southern Concrete Products, Inc. SOS 000031375				<b>2. Emission Source Reference Number</b> 57-0246-01	
<b>3. Is this air contaminant source subject to an NSPS or NESHAP rule?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, list rule citation, including Part, Subpart, and applicable Sections:					
<b>4. Unique Source ID</b> (name/number that uniquely identifies this source, like Plant 1) Southern Concrete Products, Inc. - United Drive				<b>5. Date constructed</b> NA	
<b>6. Maximum annual production: (Yards)</b>	Transit mix 45,000	Central mix NA	Dry mix NA		
<b>CEMENT RECEIVING AND STORAGE</b>					
<b>7. Cement receiving equipment</b>	Is conveyor enclosed? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is elevator enclosed? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Compressed air flow (Ft. <sup>3</sup> /Min.) 860	Average load size (Tons) 20	Normal loading time (Min.) 40
<b>8. Cement storage silos:</b>	Number of silos *1	Total capacity (Units: barrels or tons) 170 tons	<u>Silo vent controls</u> Discharges to (check one) Fabric filter <input checked="" type="checkbox"/> Another silo <input type="checkbox"/> Other <input type="checkbox"/> None <input type="checkbox"/>		
<b>WEIGH-BATCHER INFORMATION</b>					
<b>9. Weigh batcher:</b>	Capacity (Yards) 10	Batching rate (Yards/Hour) 120	Batch dumping rate (Yards/Minute) 2		
Silo - to - weigh - batcher vent controls	Hood <input type="checkbox"/>	Fabric filter <input checked="" type="checkbox"/>	Discharges to silo <input type="checkbox"/>	None <input type="checkbox"/>	
<b>10. Weigh - batcher:</b> (Check or complete as appropriate)	Discharges to: (In yards/year)				
	Trucks 45,000	Tilt NA	Products mixer NA		
	Weigh-batcher discharge chute controls:				
	Adjustable gathering hopper <input type="checkbox"/>	Hood <input type="checkbox"/>	Fabric filter <input checked="" type="checkbox"/>	Discharges to silo <input type="checkbox"/>	None <input type="checkbox"/>

**11. Air contaminants.** Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

#### SILO #1 EMISSION INFORMATION

12. Emission point data for:	Silo vent	Silo-to-weigh-batcher vent	Weigh-batcher discharge chute
A. Height above grade (Ft.)	78	24	15
B. Diameter (Ft.)	44	1 x 3	1
C. Emission exit direction (Up, down, or horizontal)	down	down	down
D. Air flow rate (Ft. <sup>3</sup> /Minute)	2340		5000
13. Particulate matter (PM)	Silo vent	Silo-to-weigh-batcher vent	Weigh-batcher discharge chute
A. Average emissions (Pounds/Hour)	<0.0000060	<0.04	<4.15
B. Maximum emissions (Pounds/hour)	0.0000060	0.04	4.15
C. Average emissions (Tons/Year)	0.0000090	<0.001	0.16
D. Potential emissions (Tons/Year)	0.0000090	0.16	18.16
E. Emissions estimation method*	3	3	3
F. Control devices*	018	018	018
G. Control efficiency %	99.9	99.9	99.9

#### SILO #2 EMISSION INFORMATION

14. Emission point data for:	Silo vent	Silo-to-weigh-batcher vent	Weigh-batcher discharge chute
A. Height above grade (Ft.)			
B. Diameter (Ft.)			
C. Emission exit direction (Up, down, or horizontal)			
D. Air flow rate (Ft. <sup>3</sup> /Minute)			
15. Particulate matter (PM)	Silo vent	Silo-to-weigh-batcher vent	Weigh-batcher discharge chute
A. Average emissions (Pounds/Hour)			
B. Maximum emissions (Pounds/hour)			
C. Average emissions (Tons/Year)			
D. Potential emissions (Tons/Year)			
E. Emissions estimation method*			
F. Control devices*			
G. Control efficiency %			

**16. Control device.** Description of proposed monitoring, recordkeeping, and reporting to assure compliance with emission limits. Include operating parameters of control device (flow rate, temperature, pressure drop, etc.).  
2 silo-top baghouses (flyash and cement), 1 baghouse vent on the weigh-batcher

#### ROAD DUST AND STOCKPILE INFORMATION

<b>17. Road dust control:</b>	None	Paved	Oiled	Watered frequently	
Plant yard:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Access roads:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<b>18. Stockpiles:</b>	Estimated annual tonnage	Number of sides enclosed	Turnover rate (Tons/Month)	Received damp	Wetted as received
Gravel:	40,500	3	3,375	NA	NA
Sand:	32,400	3	2,700	NA	NA

#### 19. Comments

\*split silo, one side is for fly ash and one side is for cement.

This is the same plant from operating permit no. 074027, with new silo bag houses and weigh-batcher vent.

#### SIGNATURE

If this form is being submitted at the same time as an APC 100 form, then a signature is not required on this form. Date this form regardless of whether a signature is provided. If this form is NOT being submitted at the same time as an APC 100 form, then a signature is required.

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

#### 20. Signature

**Evelyn Odle**

Digitally signed by Evelyn Odle  
Date: 2024.01.15 11:19:23 -06'00'

#### Date

**Signer's name** (type or print)

Evelyn Odle

**Title**

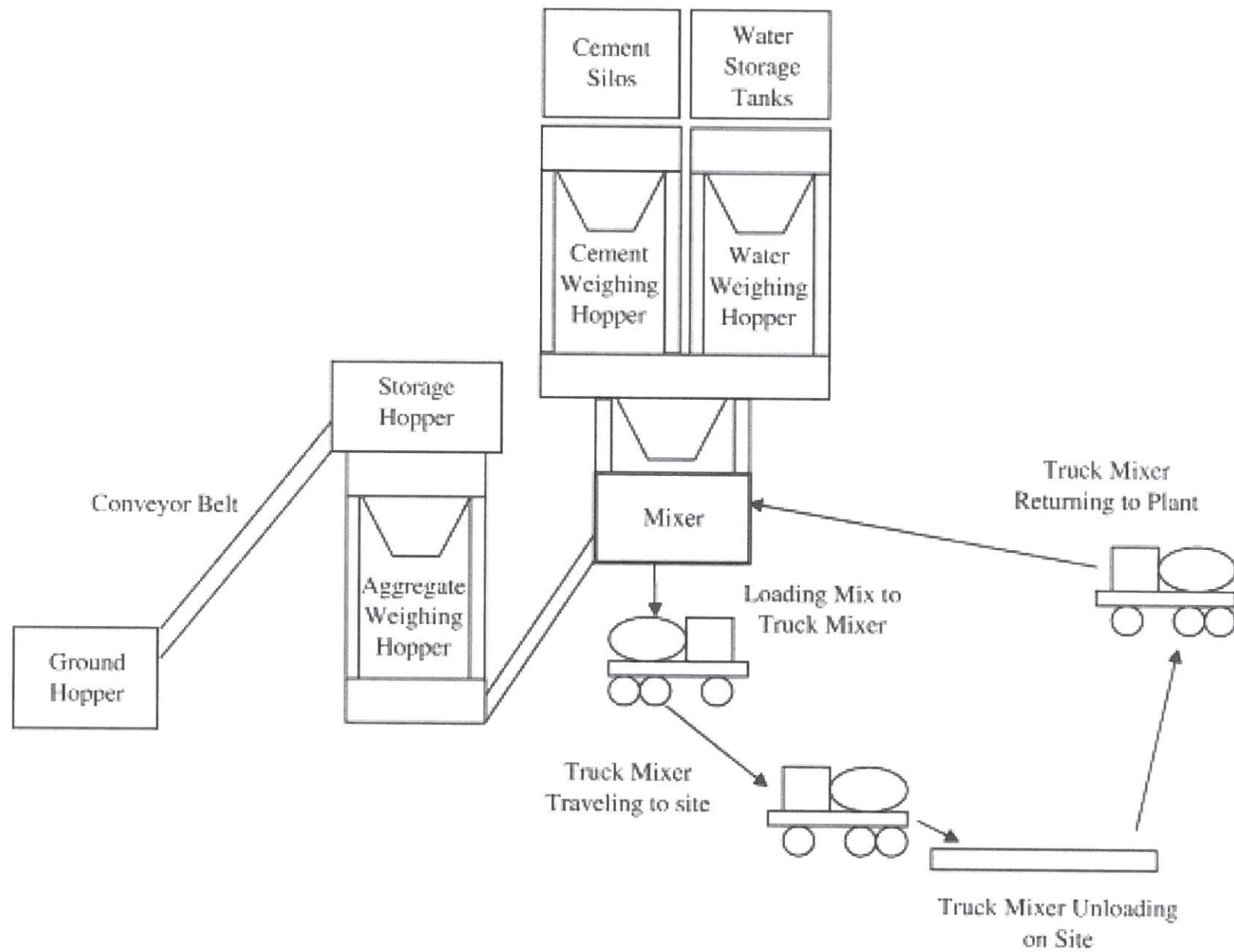
Environmental Compliance

**Phone number with area code**

731-422-3366

**Concrete batch plant diagram instructions:** Show general plant layout and air pollution control devices. Indicate the following: storage pile areas, conveyor systems, method of receiving cement, elevators, silos, silo vents, silo-to-weigh-batcher vent, weigh-batcher discharge chute, and product receiving equipment such as trucks and tilt or product mixers. Indicate air pollution control devices such as fabric filters, wet suppressions, hoods, canvas coverings, enclosures, etc.


\* Refer to the instructions for the estimation method and control device codes. If the code is "Other" specify in comments.





CONCRETE BATCH PLANT EMISSIONS CALCULATOR - INPUT SCREEN

REVISION D; October 15, 2015



Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

This spreadsheet is for your use only and should be used with caution. DENR does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. DENR is not responsible for errors or omissions that may be contained herein.

Directions: Enter and select information in the boxes that are highlighted in blue:

General Facility Information

COMPANY NAME:	Southern Concrete Products, Inc.
FACILITY ID NUMBER:	57-0246
PERMIT NUMBER	74027
FACILITY CITY:	Jackson
FACILITY COUNTY:	Madison
SPREADSHEET PREPARED BY:	Evelyn Odle

General Facility Information

MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT	150	(yd <sup>3</sup> /hour)
ACTUAL ANNUAL PRODUCTION	45,000	(yd <sup>3</sup> /year)
MAXIMUM ANNUAL PRODUCTION*	1,314,000	(yd <sup>3</sup> /year)

\*Default maximum annual production is maximum hourly throughput times 8,760 hours per year. Enter another limit if applicable (i.e. for arsenic modeling).

Facility Production Information

PERCENT OF ANNUAL LOADOUT THROUGH TRUCK MIX	100	(% by volume)
PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX	0	(% by volume)

Facility Emissions Control Information

IS THERE A CONTROL DEVICE ON THE TRUCK MIX?	2	(1=No, 2=Yes)
IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?	1	(1=No, 2=Yes)

Material Composition Information

		Typical NC Comp.*
Cement	451 lbs	410 lbs
Supplement	113 lbs	120 lbs
Coarse Aggregate	1800 lbs	1884 lbs
Sand	1351 lbs	1443 lbs
Water	271 lbs	167 lbs
Total	3986 lbs	4024 lbs

\* North Carolina typical material composition is based on data from industry contacts. User may enter site-specific data.

15A NCAC 2D .0515 "Particulates from Miscellaneous Industrial Processes"

	Cement Silo	Flyash silo	Sand&Agg Weigh hopper	Truck mix <sup>1</sup>	Central mix <sup>1</sup>	
Enter the process rate if different from default, otherwise leave blank						
Process Rate <sup>2</sup>	25	25	236.325	278.625	0.000	tons/hr
Maximum Allowable Emission Rate <sup>3</sup>	35.4	35.4	60.3	62.2	0.0	lbs/hr
PM Emission Rate Before controls	18.250	78.500	1.134	61.758	0.000	lbs/hr
PM Emission Rate After Controls	0.025	0.223	0.001	1.184	0.000	lbs/hr
Assumed control device efficiency for weigh hopper <sup>4</sup>			99.9%			
Complies with 2D .0515?	yes	yes	yes	yes	yes	
Control device required to comply?	no	yes	no	no	no	


<sup>1</sup> Emission factors for truck/central mix include emissions from cement & supplement weigh hoppers.

<sup>2</sup> Default process rate for silo loading is 25 tons per hour. Default process weight for sand & aggr weigh hopper includes only aggr & sand.

Default process rate for truck mix and central mix includes all components except water since assumes water is added directly to truck.

<sup>3</sup> Allowable emission rate should be calculated to 3 significant digits.

<sup>4</sup> Default efficiency is 99.9% for bagfilters. Enter 0 if weigh hopper is not controlled.

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - OUTPUT SCREEN	
REVISION D; October 15, 2015	
	<p>This spreadsheet is for your use only and should be used with caution. DENR does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. DENR is not responsible for errors or omissions that may be contained herein.</p>

SOURCE / FACILITY / USER INPUT SUMMARY (FROM INPUT SCREEN)

<u>General Facility Information</u>	
COMPANY NAME:	Southern Concrete Products, Inc.
FACILITY ID NUMBER:	57-0246
PERMIT NUMBER	74027
FACILITY CITY:	Jackson
FACILITY COUNTY:	Madison
SPREADSHEET PREPARED BY:	Evelyn Odle

<u>General Facility Information</u>	
MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT	150 (yd <sup>3</sup> /hour)
ACTUAL ANNUAL PRODUCTION	45000 (yd <sup>3</sup> /year)

<u>Facility Production Information</u>	
PERCENT OF ANNUAL LOADOUT THROUGH TRUCK MIX	100 (% by volume)
PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX	0 (% by volume)

<u>Facility Emissions Control Information</u>	
IS THERE A CONTROL DEVICE ON THE TRUCK MIX?	2 (1=No, 2=Yes)
IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?	1 (1=No, 2=Yes)

<u>Material Composition Information</u>		Typical NC Comp.*
Cement	451 lbs	410 lbs
Supplement	113 lbs	120 lbs
Coarse Aggregate	1800 lbs	1884 lbs
Sand	1351 lbs	1443 lbs
Water	271 lbs	167 lbs
Total	3986 lbs	4024 lbs

\* North Carolina typical material composition is based on data from industry contacts. User may enter site-specific data.

PARTICULATE MATTER EMISSIONS INFORMATION							
PARTICULATE EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
	Pollutant	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
truck mix*	PM	1.184	0.178	61.758	270.500	1.184	5.188
	PM10	0.444	0.067	17.639	77.259	0.444	1.945
central mix*	PM	0.000	0.000	0.000	0.000	0.000	0.000
	PM10	0.000	0.000	0.000	0.000	0.000	0.000
cement silo	PM	0.033	0.005	24.692	108.152	0.033	0.147
	PM10	0.012	0.002	15.898	69.632	0.012	0.050
suppl. Silo	PM	0.075	0.011	26.612	116.558	0.075	0.330
	PM10	0.042	0.006	9.323	40.833	0.042	0.182
weigh hopper** [sand & aggr.]	PM	1.134	0.170	1.134	4.968	1.134	4.968
	PM10	0.662	0.099	0.662	2.898	0.662	2.898
sand & aggr.	PM	3.433	0.515	3.433	15.036	3.433	15.036
	PM10	1.637	0.246	1.637	7.172	1.637	7.172
TOTAL PM		PM	5.861	0.879	117.629	515.215	25.669
TOTAL PM10		PM10	2.796	0.419	45.158	197.794	12.248
Title V Potential		PM10					0.232

\*Truck/Central mix emission factors include emissions from cement & supplement weigh hopper(s).

\*\*Actual/Potential weigh hopper (sand & aggr) emissions assumed uncontrolled since AP-42 reports "no data" for controlled.

TOXIC / HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION							
POLLUTANT	CAS NUMBER	ACTUAL EMISSIONS		POTENTIAL EMISSIONS			
		(AFTER CONTROLS / LIMITS)		(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Arsenic Unlisted Compounds (TH)	ASC-OTHER	7.59E-05	2.28E-02	2.94E-03	2.58E+01	7.59E-05	6.65E-01
Beryllium metal (TH)	7440-41-7	5.18E-06	1.55E-03	1.17E-05	1.02E-01	5.18E-06	4.54E-02

# CONCRETE BATCH PLANT EMISSIONS CALCULATOR - OUTPUT SCREEN

REVISION D; October 15, 2015



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Cadmium Metal (TH)	7440-43-9	5.51E-07	1.65E-04	9.53E-06	8.35E-02	5.51E-07	4.83E-03
Chromic Acid (TH)	7738-94-5	1.85E-04	5.54E-02	5.01E-04	4.39E+00	1.85E-04	1.62E+00
Lead Unlisted Compounds (H)	PBC-OTHER	6.95E-05	2.08E-02	1.56E-03	1.37E+01	6.95E-05	6.09E-01
Manganese Unlisted compounds (TH)	MNC-OTHER	8.86E-04	2.66E-01	9.49E-03	8.31E+01	8.86E-04	7.76E+00
Nickel metal (TH)	7440-02-0	2.23E-04	6.69E-02	1.12E-03	9.79E+00	2.23E-04	1.95E+00
Phosphorus Metal Yellow or White (H)	7223-14-0	5.50E-04	1.65E-01	2.05E-03	1.80E+01	5.50E-04	4.82E+00
Selenium compounds (H)	SEC	5.39E-06	1.62E-03	1.11E-04	9.76E-01	5.39E-06	4.72E-02
Total HAPs		2.00E-03	6.00E-01	1.78E-02	1.56E+02	2.00E-03	1.75E+01
Highest HAP      Manganese		8.86E-04	2.66E-01	9.49E-03	8.31E+01	8.86E-04	7.76E+00

## TOXIC AIR POLLUTANT EMISSIONS INFORMATION (FOR PERMITTING PURPOSES)

### EXPECTED EMISSIONS AFTER CONTROLS / LIMITATIONS

(Daily calculations are based on maximum hourly plant capacity operating at 24 hours per day. If over the TPER, the facility should more closely analyze the maximum daily emissions based on actual operation. Annual calculations are based on the actual annual production as entered on the INPUT worksheet.)

POLLUTANT	CAS NUMBER	lb/hr	lb/day	lb/yr	TPER
Arsenic Unlisted Compounds (TH)	ASC-OTHER			0.0228	0.053 lb/yr
Beryllium metal (TH)	7440-41-7			0.002	0.28 lb/yr
Cadmium Metal (TH)	7440-43-9			0.000	0.37 lb/yr
Chromic Acid (TH)	7738-94-5		0.0044		0.013 lb/day
Manganese Unlisted compounds (TH)	MNC-OTHER		0.021		0.63 lb/day
Nickel metal (TH)	7440-02-0		0.005		0.13 lb/day

# CONCRETE BATCH PLANT EMISSIONS CALCULATOR - TAP CALCULATIONS

REVISION D; October 15, 2015



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## ARSENIC (HAP/TAP) EMISSIONS INFORMATION

ARSENIC EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Arsenic	6.73E-05	2.02E-02	2.88E-03	2.52E+01	6.73E-05	5.89E-01
central mix	Arsenic	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Arsenic	1.43E-07	4.30E-05	5.68E-05	4.98E-01	1.43E-07	1.26E-03
supplement silo*	Arsenic	8.48E-06	2.54E-03	8.48E-06	7.42E-02	8.48E-06	7.42E-02
<b>TOTAL</b>	<b>Arsenic</b>	<b>7.59E-05</b>	<b>2.28E-02</b>	<b>2.94E-03</b>	<b>2.58E+01</b>	<b>7.59E-05</b>	<b>6.65E-01</b>

(Arsenic TPER: 0.053 lb/yr)

## BERYLLIUM (HAP/TAP) EMISSIONS INFORMATION

BERYLLIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Beryllium	4.40E-06	1.32E-03	1.03E-05	9.04E-02	4.40E-06	3.85E-02
central mix	Beryllium	-	-	-	-	-	-
cement silo	Beryllium	1.64E-08	4.93E-06	6.05E-07	5.30E-03	1.64E-08	1.44E-04
supplement silo*	Beryllium	7.66E-07	2.30E-04	7.66E-07	6.71E-03	7.66E-07	6.71E-03
<b>TOTAL</b>	<b>Beryllium</b>	<b>5.18E-06</b>	<b>1.55E-03</b>	<b>1.17E-05</b>	<b>1.02E-01</b>	<b>5.18E-06</b>	<b>4.54E-02</b>

(Beryllium TPER: 0.28 lb/yr)

## CADMIUM (HAP/TAP) EMISSIONS INFORMATION

CADMIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Cadmium	3.83E-07	1.15E-04	1.45E-06	1.27E-02	3.83E-07	3.36E-03
central mix	Cadmium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Cadmium	-	-	7.92E-06	6.93E-02	-	-
supplement silo*	Cadmium	1.68E-07	5.03E-05	1.68E-07	1.47E-03	1.68E-07	1.47E-03
<b>TOTAL</b>	<b>Cadmium</b>	<b>5.51E-07</b>	<b>1.65E-04</b>	<b>9.53E-06</b>	<b>8.35E-02</b>	<b>5.51E-07</b>	<b>4.83E-03</b>

(Cadmium TPER: 0.37 lb/yr)

## CHROMIUM (HAP/TAP) EMISSIONS INFORMATION

CHROMIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Chromium	1.73E-04	5.20E-02	4.82E-04	4.22E+00	1.73E-04	1.52E+00
central mix	Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Chromium	9.81E-07	2.94E-04	8.52E-06	7.47E-02	9.81E-07	8.59E-03
supplement silo*	Chromium	1.03E-05	3.10E-03	1.03E-05	9.06E-02	1.03E-05	9.06E-02
<b>TOTAL</b>	<b>Chromium</b>	<b>1.85E-04</b>	<b>5.54E-02</b>	<b>5.01E-04</b>	<b>4.39E+00</b>	<b>1.85E-04</b>	<b>1.62E+00</b>

(Chromium TPER: 0.013 lb/day)

## LEAD (HAP) EMISSIONS INFORMATION

LEAD EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Lead	6.47E-05	1.94E-02	1.53E-03	1.34E+01	6.47E-05	5.67E-01
central mix	Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Lead	3.69E-07	1.11E-04	2.49E-05	2.18E-01	3.69E-07	3.23E-03
supplement silo*	Lead	4.41E-06	1.32E-03	4.41E-06	3.86E-02	4.41E-06	3.86E-02

# CONCRETE BATCH PLANT EMISSIONS CALCULATOR - TAP CALCULATIONS

REVISION D; October 15, 2015



This spreadsheet is for your use only and should be used with caution. DENR does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. DENR is not responsible for errors or omissions that may be contained herein.

<b>TOTAL</b>	<b>Lead</b>	<b>6.95E-05</b>	<b>2.08E-02</b>	<b>1.56E-03</b>	<b>1.37E+01</b>	<b>6.95E-05</b>	<b>6.09E-01</b>
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## MANGANESE (HAP/TAP) EMISSIONS INFORMATION

MANGANESE EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Manganese	8.80E-04	2.64E-01	2.59E-03	2.27E+01	8.80E-04	7.71E+00
central mix	Manganese	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Manganese	3.96E-06	1.19E-03	6.90E-03	6.04E+01	3.96E-06	3.47E-02
supplement silo*	Manganese	2.17E-06	6.51E-04	2.17E-06	1.90E-02	2.17E-06	1.90E-02
<b>TOTAL</b>	<b>Manganese</b>	<b>8.86E-04</b>	<b>2.66E-01</b>	<b>9.49E-03</b>	<b>8.31E+01</b>	<b>8.86E-04</b>	<b>7.76E+00</b>

(Manganese TPER: 0.63 lb/day)

## NICKEL (HAP/TAP) EMISSIONS INFORMATION

NICKEL EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Nickel	2.02E-04	6.07E-02	5.03E-04	4.41E+00	2.02E-04	1.77E+00
central mix	Nickel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Nickel	1.41E-06	4.24E-04	5.95E-04	5.22E+00	1.41E-06	1.24E-02
supplement silo*	Nickel	1.93E-05	5.80E-03	1.93E-05	1.69E-01	1.93E-05	1.69E-01
<b>TOTAL</b>	<b>Nickel</b>	<b>2.23E-04</b>	<b>6.69E-02</b>	<b>1.12E-03</b>	<b>9.79E+00</b>	<b>2.23E-04</b>	<b>1.95E+00</b>

(Nickel TPER: 0.13 lb/day)

## PHOSPHORUS (HAP) EMISSIONS INFORMATION

PHOSPHORUS EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Phosphorus	5.20E-04	1.56E-01	1.62E-03	1.42E+01	5.20E-04	4.56E+00
central mix	Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Phosphorus	-	-	3.99E-04	3.50E+00	-	-
supplement silo*	Phosphorus	3.00E-05	9.00E-03	3.00E-05	2.63E-01	3.00E-05	2.63E-01
<b>TOTAL</b>	<b>Phosphorus</b>	<b>5.50E-04</b>	<b>1.65E-01</b>	<b>2.05E-03</b>	<b>1.80E+01</b>	<b>5.50E-04</b>	<b>4.82E+00</b>

## SELENIUM (HAP) EMISSIONS INFORMATION

SELENIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS			
				(BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Selenium	4.78E-06	1.43E-03	1.11E-04	9.71E-01	4.78E-06	4.19E-02
central mix	Selenium	-	-	-	-	-	-
cement silo	Selenium	-	-	-	-	-	-
supplement silo*	Selenium	6.14E-07	1.84E-04	6.14E-07	5.38E-03	6.14E-07	5.38E-03
<b>TOTAL</b>	<b>Selenium</b>	<b>5.39E-06</b>	<b>1.62E-03</b>	<b>1.11E-04</b>	<b>9.76E-01</b>	<b>5.39E-06</b>	<b>4.72E-02</b>

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>EMISSION FACTOR SUMMARY FOR READY-MIXED CONCRETE BATCH FACILITIES</b>											
2												
3	<b>Emission Source Description</b>	<b>PM Emission Factors</b>		<b>PM<sub>10</sub> Emission Factors</b>		<b>Arsenic Emission Factors</b>		<b>References</b>				
4	Cement Silo without controls	0.73	lb/ton cement	0.47	lb/ton cement	1.68E-06	lb/ton cement	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10) & Table 11.12-8 (As)				
5	Cement Silo with controls	0.00099	lb/ton cement	0.00034	lb/ton cement	4.24E-09	lb/ton cement	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10) & Table 11.12-8 (As)				
6	Suppl Silo without controls	3.14	lb/ton suppl	1.1	lb/ton suppl	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10)				
7	Suppl Silo with controls	0.0089	lb/ton suppl	0.0049	lb/ton suppl	0.000001	lb/ton suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10) & Table 11.12-8 (As)				
8	Weigh Hopper without controls	0.0048	lb/ton aggr+sand	0.0028	lb/ton aggr+sand	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10)				
9	Weigh Hopper with controls	No Data	-	No Data	-	No Data	-	-				
10	Truck Mix without controls	1.46	lb/ton cement+suppl	0.417	lb/ton cement+suppl	6.80E-05	lb/ton cement+suppl	Memorandum, Emission Factors for Ready-Mixed Concrete Facilities. From Mr. Keith Overcash (NC DAQ, Director) to Section Chiefs/Regional Supervisors. June 8, 2005.				
11	Truck Mix with controls	0.028	lb/ton cement+suppl	0.0105	lb/ton cement+suppl	1.59E-06	lb/ton cement+suppl	Memorandum, Emission Factors for Ready-Mixed Concrete Facilities. From Mr. Keith Overcash (NC DAQ, Director) to Section Chiefs/Regional Supervisors. June 8, 2005.				
12	Central Mix without controls	0.683	lb/ton cement+suppl	0.181	lb/ton cement+suppl	2.80E-05	lb/ton cement+suppl	Memorandum, Emission Factors for Ready-Mixed Concrete Facilities. From Mr. Keith Overcash (NC DAQ, Director) to Section Chiefs/Regional Supervisors. June 8, 2005.				
13	Central Mix with controls	0.0212	lb/ton cement+suppl	0.00577	lb/ton cement+suppl	8.85E-07	lb/ton cement+suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10) & Table 11.12-8 (As)				
14	Sand Plant-Wide*	0.0063	lb/ton sand	0.00297	lb/ton sand	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10)				
15	Aggr Plant-Wide*	0.0207	lb/ton aggr	0.0099	lb/ton aggr	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-2 (PM/PM10)				
16	*There are 3 emission points for sand transfer and 3 emission points for aggr transfer plant-wide, so those emission factors are multiplied by 3 to get a plant-wide emission factor (consistent with Table 11.12-5											
17	<b>Emission Source Description</b>	<b>Beryllium Emission Factors</b>		<b>Cadmium Emission Factors</b>		<b>Chromium Emission Factors</b>		<b>Lead Emission Factors</b>		<b>References</b>		
18	Cement Silo without controls	1.79E-08	lb/ton cement	2.34E-07	lb/ton cement	2.52E-07	lb/ton cement	7.36E-07	lb/ton cement	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
19	Cement Silo with controls	4.86E-10	lb/ton cement	No Data	-	2.9E-08	lb/ton cement	1.09E-08	lb/ton cement	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
20	Suppl Silo without controls	No Data	-	No Data	-	No Data	-	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
21	Suppl Silo with controls	9.04E-08	lb/ton suppl	1.98E-08	lb/ton suppl	1.22E-06	lb/ton suppl	5.2E-07	lb/ton suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
22	Weigh Hopper without controls	No Data	-	No Data	-	No Data	-	No Data	-	-		
23	Weigh Hopper with controls	No Data	-	No Data	-	No Data	-	No Data	-	-		
24	Truck Mix without controls	2.44E-07	lb/ton cement+suppl	3.42E-08	lb/ton cement+suppl	1.14E-05	lb/ton cement+suppl	3.62E-05	lb/ton cement+suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
25	Truck Mix with controls	1.04E-07	lb/ton cement+suppl	9.06E-09	lb/ton cement+suppl	4.10E-06	lb/ton cement+suppl	1.53E-06	lb/ton cement+suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
26	Central Mix without controls	No Data	-	1.18E-08	lb/ton cement+suppl	1.42E-06	lb/ton cement+suppl	3.82E-07	lb/ton cement+suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
27	Central Mix with controls	No Data	-	7.10E-10	lb/ton cement+suppl	1.27E-07	lb/ton cement+suppl	3.66E-08	lb/ton cement+suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
28	Sand & Aggr Plant-Wide	No Data	-	No Data	-	No Data	-	No Data	-	-		
29												
30												
31	<b>Emission Source Description</b>	<b>Manganese Emission Factors</b>		<b>Nickel Emission Factors</b>		<b>Phosphorous Emission Factors</b>		<b>Selenium Emission Factors</b>		<b>References</b>		
32	Cement Silo without controls	0.000204	lb/ton cement	0.0000176	lb/ton cement	0.0000118	lb/ton cement	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
33	Cement Silo with controls	1.17E-07	lb/ton cement	4.18E-08	lb/ton cement	No Data	-	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
34	Suppl Silo without controls	No Data	-	No Data	-	No Data	-	No Data	-	-		
35	Suppl Silo with controls	2.56E-07	lb/ton suppl	2.28E-06	lb/ton suppl	3.54E-06	lb/ton suppl	7.24E-08	lb/ton suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
36	Weigh Hopper without controls	No Data	-	No Data	-	No Data	-	No Data	-	-		
37	Weigh Hopper with controls	No Data	-	No Data	-	No Data	-	No Data	-	-		
38	Truck Mix without controls	6.12E-05	lb/ton cement+suppl	1.19E-05	lb/ton cement+suppl	3.84E-05	lb/ton cement+suppl	2.62E-06	lb/ton cement+suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
39	Truck Mix with controls	2.08E-05	lb/ton cement+suppl	4.78E-06	lb/ton cement+suppl	1.23E-05	lb/ton cement+suppl	1.13E-07	lb/ton cement+suppl	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
40	Central Mix without controls	6.12E-05	lb/ton cement+suppl	3.28E-06	lb/ton cement+suppl	2.02E-05	lb/ton cement+suppl	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
41	Central Mix with controls	3.78E-06	lb/ton cement+suppl	2.48E-07	lb/ton cement+suppl	1.20E-06	lb/ton cement+suppl	No Data	-	U.S. EPA, Office of Air Quality Planning and Standards. AP-42; Chapter 11.12 (June 2006 w/ Feb2011), Table 11.12-8		
42	Sand & Aggr Plant-Wide	No Data	-	No Data	-	No Data	-	No Data	-	-		



# CONCRETE BATCH PLANT EMISSIONS CALCULATOR - REVISIONS SCREEN

REVISION D; October 15, 2015

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Revisions</u>
N/A	3/15/2002	Ken Lumsden, P.E.	Added metals listed in U.S. EPA's AP-42, Table 11.12-6.
Revision A	1/23/2006	Tom McKinney	Revised emission factors for PM, PM <sub>10</sub> , and Arsenic based on memorandum from DAQ's Keith Overcash, dated June 8, 2005. Revised formatting to be consistent with DAQ protocol.
Revision B	11/5/2013	Heather Hawkins	Corrected emission factors based on Feb 2011 AP-42 updates, corrected metal emission factor reference from AP-42 to Table 11.12-8, added Total HAP PTE calculation.  Changed Title V PTE to after controls based on memo from DAQ's Keith Overcash, dated April 16, 2003 and letter from U.S. EPA dated July 10, 2002 to Edward R. Herbert, III, Director of Environmental Affairs, National Ready Mixed Concrete Association. Also removed weigh hopper emissions from Title V PTE since, per AP-42 Section 11.12.1, "All but one of the emission points are fugitive in nature. The only point sources are the transfer of cement and pozzolan material to silos."
		Sharon Wyatt	Removed 2.012 correction factor from all calculations (not needed when using lb/ton factors from Table 11.12-2). Changed emission factors for sand & aggregate plant-wide to Table 11.12-2 rather than Table 11.12-5 so that those would also be based on lb/ton.  Added 2D .0515 section on Input Page  Removed synthetic limit option since all facilities will be minor for Title V (since PTE is now only evaluated after controls)  Put HAP/TAP calculations in separate worksheet and added summary tables to "OUTPUT" tab with formatting similar to other DENR spreadsheets. Added daily TAP calculations for TAPs with daily TPERs
Revision C	13-Oct-14	WSRO	Update for Arsenic TPER revision from 0.016 to 0.053 lb/yr. Also changed HAP/TAP annual emissions on OUTPUT tab and HAPs&TAPs tab from ton/yr to lb/yr to simplify AERO entry.
Revision D	15-Oct-15	Greg Reeves	Updated the "TOXICS/HAZARDOUS AIR POLLUTANT EMISSION INFORMATION" and the "TOXIC AIR POLLUTANT EMISSION INFORMATION" tables on the output tab. Changed heavy metal pollutant descriptions and CAS numbers to agree with those used for combustion emissions to align with guidelines for emission inventories and reporting to EPA. Changed the following items: Arsenic - "Arsenic Unlisted Compounds" - CAS Number "ASC-OTHER" Cadmium - "Cadmium Metal" - CAS Number "7440-43-9" Chromium - "Chromic Acid" - CAS Number "7338-94-5" Lead - "Lead Unlisted Compounds" - CAS Number "PBC-OTHER" Manganese - "Manganese Unlisted Compounds" - CAS Number "MNC-OTHER" Phosphorus - "Phosphorus Metal Yellow or White" - 7723-14-0 Also noted those pollutants that are both TAP and HAP with the designation "(TH)"