

## STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0075-AOP-R12 AFIN: 41-00001

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Ash Grove Cement Company  
4343 Highway 108  
Foreman, Arkansas 71836

3. PERMIT WRITER:

Joseph Hurt

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Cement Manufacturing  
NAICS Code: 327310

5. SUBMITTALS:

5/6/2010

6. REVIEWER'S NOTES:

Ash Grove Cement Company (AFIN: 41-00001) operates a portland cement plant located at 4457 Hwy 108 West in Foreman, Arkansas 71836. Ash Grove is adding the Wilson rail-to-truck conveyor system (SN-611.UL10) as a permanent source. For the modifications proposed, the permitted emissions increase by 0.3 tpy of PM and PM<sub>10</sub>.

The Three Kiln Configuration Scenario has been removed with this permitting action, as the facility has begun operating under the Pyroprocess Unit Operating Scenario. Overall permitted emission changes include decreases of 298.75 tpy of PM<sub>10</sub>, 3041.4 tpy of SO<sub>2</sub>, 148.67 tpy of VOC, and 6153.4 tpy of NO<sub>x</sub>, and a permitted emission increase 512.4 tpy of CO. This permitting action did not include a PSD review due to the review completed with the application dated August 31, 2006 and permit issuance of Permit No. 0075-AOP-R7.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no known current or pending issues.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

b. Is the facility categorized as a major source for PSD? Y  
*Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list?*

If yes, explain why this permit modification not PSD?

The facility is adding baghouses to existing operations.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
41A.T10, 44A.T10, 44C.BF10, 326.BF10, 326.BF20, 326.BF30, 327.BF10, 327.BF20, 327.BF30, 329.BF10, 329.BF20, 403.BF3, 403.BF4, 403.BF6, 403.BF7, 403.BF8, 403.CHM, 403.CHR, 403.CHU, 403.T1, 403.T2, 442.BF10, 442.BF20, 443.BF20, 449.BF10, 449.BF20, 449.BF30, 449.BF40, 449.BF50, 449.BF60, 449.BF70, 449.HP2, 449.T1, 449.T2, 449.T3, 449.T4, 502.BF1, 502.BF2, 502.BF3, 502.CH3, 502.T1, 502.T2, 511.BF1, 514.BF1, 514.BF2, 514.BF3, 521.BF1, 521.BF2, 523.BF2, 524.BF1, 524.BF2, 531.BF10, 531.BF20, 533.BF10, 533.BF20, 533.LS10, 534.BF10, 534.BF20, 535.BF10, 535.BF20, 611.BF1, 611.BF2, 611.BF3, 611.BF4, 611.BF5, 611.BF6, 611.BF7, 611.BF8, 611.BF10, 611.BF20, 611.BF30, 611.BF40, 611.UL10, 612.BF1, 612.BF2, 612.BF3, 612.BF4, 612.BF5, 621.BF1, 621.BF2, 621.BF3,	PM <sub>10</sub>	NESHAP Subpart LLL

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
621.BF5, 621.BF6(E), 621.BF7(W), 621.BF8, 621.BF9		
R12	PM <sub>10</sub>	NSPS Subpart F
41A.BF10, 41A.BF20, 41A.T10, 41A.T2, 44A.BF10, 44A.T10, 44B.BF10	PM <sub>10</sub>	NSPS Subpart Y
41A.BF10, 41A.BF20, 41A.T1, 44A.BF10, 111.T10, 111.T12, 213.BF10, 213.BF20, 213.T1, 221.BF10, 221.CH01, 221.RMB1, 221.T1, 321.CH01, 323.BF10, 323.T1, 325.BF10, 325.BF20, 325.BF30	PM <sub>10</sub>	NSPS Subpart OOO
40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA, 41F.FT10, 41F.FT11	VOC	NSPS Subpart Kb
40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA, 40F.TX1, 41F.BF10, 41F.FT10, 41F.FT11, 41F.TK10, 41F.TX10, RCC, facility	Benzene Waste Operations	40 CFR Part 61, Subpart FF 40 CFR 63, Subpart DD
443.BF10, 443.BF30, 443.SK10	All	NESHAP Subpart EEE

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m <sup>3</sup> )	Averaging Time	Highest Concentration (µg/m <sup>3</sup> )	% of NAAQS
PM <sub>10</sub>	135.4	50	Annual	41.6	83%
		150	24-Hour	144.6	96%
SO <sub>2</sub>	2563.4	80	Annual	23.6	30%

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ( $\mu\text{g}/\text{m}^3$ )	Averaging Time	Highest Concentration ( $\mu\text{g}/\text{m}^3$ )	% of NAAQS
		1300	3-Hour	882.6	68%
		365	24-Hour	268.6	74%
CO	551.4	10,000	8-Hour	1169.0	12%
		40,000	1-Hour	4366.8	11%
NO <sub>x</sub>	3349.6	100	Annual	51.1	51%

These modeling results were obtained through detailed modeling performed by the facility in Permit # 0075-AOP-R7. Changes in this permit were not significant enough to change the results.

Non-Criteria Pollutants:

This facility is subject to 40 CFR 63, Subpart EEE. This subpart requires a risk assessment to be performed and no threat to the public health or safety was found.

12. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
Kiln	Testing	Various	ESP	99%	
Fabric filters	Various	0.01 gr/dscf		95%	
M20	AP-42	0.0195 lb/ton	Scrubber		
Combustion sources	AP-42	Various			Based on equation in AP-42
Crushers	AP-42	Various			based on equation in AP-42
Roads	AP-42	Various			based on equation in AP-42
Storage piles	AP-42	Various			based on equation in AP-42

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
443.SK10	All	See NESHAP EEE		

14. MONITORING OR CEMS

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
443.SK10	CO, VOC	CEM	Continuously	Y
40F.TX1 & 41F.TX10	Combustion chamber temperature	Continuous temperature recorder	Continuously	N

15. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
443.SK10 & Plantwide	Clinker production	5,300 tons/day	Daily	Y
211.CR2	Brick crushed	5,000 tons per consecutive 12-months	As needed	Y
	Hours of operations	1,000 hours per consecutive 12-months		Y
	Sulfur content of diesel	0.5% by weight		Y
403.P1	Pile area	20 acres	Annually	Y
449.P1	Pile area	4 acres	Annually	Y
41.AP1, 41.AP2, & 41.AP3	Pile area	0.92 acres (total)	Annually	Y
41A.P5	Pile area	1.03 acres	Annually	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
41A.P6	Pile area	0.52 acres	Annually	Y
41A.P7	Pile area	0.09 acres	Annually	Y
221.RMB1	Pile area	4.93 acres	Annually	Y
40F.TX1 & 41F.TX10	Combustion chamber temperature	≥ 1500°F	Continuously	N
	Breakthrough indicators	Log of observations	Good engineering judgment	N
M20	Natural gas combustion	55.8 MMft <sup>3</sup> of natural per month	Monthly	Y
F5	Pile area	1.0 acre	Monthly	Y
R5	Pile area	0.22 acre	Monthly	Y
R12	Material crushed	744,000 tons of material per month	Weekly	Y
F5 & R5	Pile Area	Various	every 3 months	N

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
443.BF10, 443.BF30, & 443.SK10	20	NESHAP Subpart EEE	Weekly observation
514.BF1, 514.BF2, 514.BF3, 524.BF1, 524.BF2, 611.BF1, 611.BF10, 611.BF2, 611.BF3, 611.BF4, 611.BF5, 611.BF6, 611.BF7, 611.BF8, 611.BF20, 611.BF30, 611.BF40, 611.UL10, 403.BF3, 403.BF4, 403.BF6, 403.BF7, 403.BF8, 612.BF1, 612.BF2, 612.BF3, 612.BF4, 612.BF5, 621.BF1, 621.BF2, 621.BF3, 621.BF5, 621.BF6(E), 621.BF7(W), 621.BF8, 621.BF9, 449.BF20, 449.BF30, 449.BF40, 449.BF50, 449.BF60, 449.BF70,	10	NESHAP Subpart LLL	Weekly observation

SN	Opacity	Justification for limit	Compliance Mechanism
511.BF1, 521.BF1, 521.BF2, 523.BF2, 531.BF10, 531.BF20, 533.BF10, 533.BF20, 44C.BF10, 502.BF1, 502.BF2, 502.BF3, 449.BF10, 327.BF30, 442.BF10, 442.BF20, 443.BF20, 326.BF10, 326.BF20, 326.BF30, 327.BF10, 327.BF20, 329.BF10, 329.BF20, 534.BF10, 534.BF20, 535.BF10, 535.BF20, 41A.T10, 44A.T10, 403.CHM, 403.CHR, 403.CHU, 403.T1, 403.T2, 449.HP2, 449.T1, 449.T2, 449.T3, 449.T4, 533.LS10, 502.CH3, 502.T1, 502.T2, M9, M20, M24, M25, & M26			
40F.TX1 & 41F.TX10	10	Department Guidance	Natural gas only
41A.BF10, 41A.BF20, 41A.T2, 41A.T101, 44A.T101, 44A.BF10, 44B.BF10	10	NSPS Subpart Y	Weekly observation
41A.BF10, 41A.BF20, 44A.BF10, 213.BF10, 213.BF20, 221.BF10, 323.BF10, 325.BF10, 325.BF20, 325.BF30, 41A.T1, 111.T10, 111.T12, 213.T1, 221.CH01, 221.RMB1, 221.T1, 321.CH01, 323.T1	Various	NSPS Subpart OOO	Weekly observation
403.P1, 449.P1, 41A.P1, 41A.P2, 41A.P3, 41A.P5, 41A.P6, 41A.P7, 211.CR2, 211.CH8, 211.T10, 211.ED10, 211.BF1, 311.BF1, 311.CH10, 311.CH11, 311, CH15, 311.CH16, R5, R10, R12 & R15	20	Department Guidance	Weekly observation
311.CH1, 311.CHC, R3, R4, R11, R13 & R14	40	Department Guidance	Weekly observation
F6, F8, F9, F11, F12, F13, F14, F15, & F18	20	Department Guidance	Weekly observation

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17. DELETED CONDITIONS:

Former SC	Justification for removal
The Three Kiln Operating Scenario has been removed, along with all associated conditions because Ash Grove is now operating under the Pyroprocess Operating Scenario and Temporary Three Kiln Operating Scenario.	

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
No Insignificant Activities were added with this modification.								

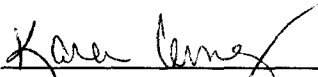
19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0075-AOP-R11

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

  
\_\_\_\_\_  
Karen Cerney, P.E.



APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

### Fee Calculation for Major Source

Facility Name: Ash Grove Cement Company  
 Permit Number: 0075-AOP-R12  
 AFIN: 41-00001

\$/ton factor	22.07	Annual Chargeable Emission (tpy)	6486.2
Permit Type	Modification	Permit Fee \$	1000
Minor Modification Fee \$	500		
Minimum Modification Fee \$	1000		
Renewal with Minor Modification \$	500		
Check if Facility Holds an Active Minor Source Permit	<input type="checkbox"/>		
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0		
Total Permit Fee Chargeable Emissions (tpy)	-2521.72		

HAPs not included in VOC or PM:

*Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

Air Contaminants:

*All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM	<input checked="" type="checkbox"/>	720.75	255.9	-464.85	-464.85	255.9
PM <sub>10</sub>	<input type="checkbox"/>	554.65	255.9	-298.75		
SO <sub>2</sub>	<input checked="" type="checkbox"/>	5741.1	2699.7	-3041.4	-1300.3	2699.7
VOC	<input checked="" type="checkbox"/>	287.17	138.5	-148.67	-148.67	138.5
CO	<input type="checkbox"/>	1214.9	1727.3	512.4		
NO <sub>x</sub>	<input checked="" type="checkbox"/>	9128.9	2975.5	-6153.4	-1024.5	2975.5
1. (The following HAPs are bubbled together)	<input type="checkbox"/>			0		
1,1,1-Trichloroethane*	<input type="checkbox"/>		120.8	120.8		
1,1,2,2-Tetrachloroethane*	<input type="checkbox"/>		0	0		
1,1,2-Trichloroethane*	<input type="checkbox"/>		0	0		
1,1-Dichloroethane*	<input type="checkbox"/>		0	0		
1,1-Dimethyl hydrazine*	<input type="checkbox"/>		0	0		
1,2-Dibromo-3-chloropropane*	<input type="checkbox"/>		0	0		
1,2-Dichloroethane*	<input type="checkbox"/>		0	0		
1,2-Dichloropropane*	<input type="checkbox"/>		0	0		
1,2-Diphenylhydrazine*	<input type="checkbox"/>		0	0		
1,2-Epoxybutane*	<input type="checkbox"/>		0	0		
1,2-Propylenimine (2-Methylaziridine)*	<input type="checkbox"/>		0	0		
1,3-Butadiene*	<input type="checkbox"/>		0	0		
1,3-Propane sultone*	<input type="checkbox"/>		0	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
1,4-Dioxane*	✓		0	0		
1,4-Phenylenediamine*	✓		0	0		
2,2,4-Trimethylpentane*	✓		0	0		
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	✓		0	0		
2,4-D, salts and esters*	✓		0	0		
2,4-Toluene diamine*	✓		0	0		
2,4-Toluene diisocyanate*	✓		0	0		
2-Acetylaminofluorene*	✓		0	0		
2-Chloroacetophenone*	✓		0	0		
2-Nitropropane*	✓		0	0		
3,3-Dimethoxybenzidine*	✓		0	0		
3,3'-Dimethyl benzidine*	✓		0	0		
4,4-Methylenebis(2-chloroaniline)*	✓		0	0		
4,4'-Methylenedianiline*	✓		0	0		
4,6-Dinitro-o-cresol, and salts*	✓		0	0		
4-Nitrobiphenyl*	✓		0	0		
Acetaldehyde*	✓		0	0		
Acetamide*	✓		0	0		
Acetonitrile*	✓		0	0		
Acetophenone*	✓		0	0		
Acrolein*	✓		0	0		
Acrylic acid*	✓		0	0		
Benzene*	✓		0	0		
Benzotrichloride*	✓		0	0		
Benzyl chloride*	✓		0	0		
beta-Propiolactone*	✓		0	0		
Biphenyl*	✓		0	0		
Bromoform*	✓		0	0		
Calcium cyanamide*	✓		0	0		
Captan*	✓		0	0		
Carbaryl*	✓		0	0		
Carbonyl sulfide*	✓		0	0		
Catechol*	✓		0	0		
Chloramben*	✓		0	0		
Chlordane*	✓		0	0		
Chloroacetic acid*	✓		0	0		
Chlorobenzilate*	✓		0	0		
Chloromethyl methyl ether*	✓		0	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Chloroprene*	✓		0	0		
Cresols/Cresylic acid*	✓		0	0		
DDE*	✓		0	0		
Diazomethane*	✓		0	0		
Dibutylphthalate*	✓		0	0		
Dichlorvos*	✓		0	0		
Diethanolamine*	✓		0	0		
Diethyl sulfate*	✓		0	0		
Dimethyl aminoazobenzene*	✓		0	0		
Dimethyl carbamoyl chloride*	✓		0	0		
Dimethyl formamide*	✓		0	0		
Dimethyl sulfate*	✓		0	0		
Epichlorohydrin (1-Chloro-2,3epoxypropane)*	✓		0	0		
Ethyl carbamate (Urethane)*	✓		0	0		
Ethyl chloride (Chloroethane)*	✓		0	0		
Ethylene dibromide*	✓		0	0		
Ethylene glycol*	✓		0	0		
Ethylene imine (Aziridine)*	✓		0	0		
Ethylene oxide*	✓		0	0		
Ethylene thiourea*	✓		0	0		
Ethylidene dichloride*	✓		0	0		
Formaldehyde*	✓		0	0		
Glycol ethers*	✓		0	0		
Heptachlor*	✓		0	0		
Hexamethylene-1,6-diisocyanate*	✓		0	0		
Hexamethylphosphoramide*	✓		0	0		
Hydrazine*	✓		0	0		
Lindane (all isomers)*	✓		0	0		
Maleic anhydride*	✓		0	0		
m-Cresol*	✓		0	0		
Methanol*	✓		0	0		
Methoxychlor*	✓		0	0		
Methyl hydrazine*	✓		0	0		
Methyl isobutyl ketone (Hexone)*	✓		0	0		
Methyl isocyanate*	✓		0	0		
Methyl Methacrylate*	✓		0	0		
Methyl tert-butyl ether*	✓		0	0		
Methylene diphenyl diisocyanate*	✓		0	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
N,N-Dimethylaniline*	✓		0	0		
N-Nitrosodimethylamine*	✓		0	0		
N-Nitrosomorpholine*	✓		0	0		
N-Nitroso-N-methylurea*	✓		0	0		
o-Anisidine*	✓		0	0		
o-Cresol*	✓		0	0		
Parathion*	✓		0	0		
p-Cresol*	✓		0	0		
Phosgene*	✓		0	0		
Phosphine*	✓		0	0		
Phthalic anhydride*	✓		0	0		
Polychlorinated biphenyls*	✓		0	0		
Propionaldehyde*	✓		0	0		
Propoxur (Baygon)*	✓		0	0		
Propylene oxide*	✓		0	0		
Quinoline*	✓		0	0		
Quinone*	✓		0	0		
Styrene oxide*	✓		0	0		
Tetrachloroethylene*	✓		0	0		
Toxaphene (chlorinated camphene)*	✓		0	0		
trans-1,3-Dichloropropene*	✓		0	0		
Trichloroethylene*	✓		0	0		
Triethylamine*	✓		0	0		
Trifluralin*	✓		0	0		
Vinyl acetate*	✓		0	0		
Vinyl chloride*	✓		0	0		
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Dioxin/Furan	✓	0	1.30E-06	0.0000013		
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(The following emissions are bubbled together)						
HCl	✓	0	416.6	416.6	416.6	416.6
Hydrogen fluoride	✓				0	
Hydrogen sulfide	✓				0	
Chlorine	✓				0	
Titanium tetrachloride	✓				0	
Carbon tetrachloride	✓				0	
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Arsenic	✓	0	0.2	0.2		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Beryllium	<input type="checkbox"/>	0	0.2	0.2		
Cadmium	<input type="checkbox"/>	0	0.7	0.7		
Chromium	<input type="checkbox"/>	0	0.2	0.2		
Lead	<input type="checkbox"/>	0	0.7	0.7		
Mercury	<input type="checkbox"/>	0	0.4	0.4		
-----				0		
(The following emissions are bubbled together)	<input type="checkbox"/>			0		
Antimony**	<input type="checkbox"/>	0	119.3	119.3		
Asbestos**	<input type="checkbox"/>			0		
Cobalt**	<input type="checkbox"/>			0		
Cyanide Compounds**	<input type="checkbox"/>			0		
Fine mineral fibers**	<input type="checkbox"/>			0		
Manganese**	<input type="checkbox"/>			0		
Nickel**	<input type="checkbox"/>			0		
Phosphorus**	<input type="checkbox"/>			0		
Polycyclic Organic Matter**	<input type="checkbox"/>			0		
Radionuclides**	<input type="checkbox"/>			0		
(including radon)	<input type="checkbox"/>			0		
Selenium**	<input type="checkbox"/>			0		
-----				0		
Hexachlorobenzene	<input type="checkbox"/>	0	5	5		
Acrylamide	<input type="checkbox"/>	0	5	5		
Bis(chloromethyl)ether	<input type="checkbox"/>	0	5	5		