STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1154-AOP-R9 AFIN: 30-00008

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Acme Brick Company - Perla Plant
224736 US Highway 67 North
Malvern, Arkansas 72104

3. PERMIT WRITER:

Amanda Leamons

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Clay Building Material and Refractories Manufacturing
NAICS Code: 327120

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
11/12/2024	Renewal w/Mod	SN-14 &18 increased HCl, VOC, CO emissions based on recent stack test
8/08/2025	Minor Mod	Remove SN-09 and Replace it with SN-38 rotary cand dryer – added NSPS UUU conditions for the new dryer.

6. REVIEWER'S NOTES:

Acme Brick Company (AFIN: 30-00008) owns and operates a clay brick manufacturing facility located on Hwy 67 North in Malvern, Arkansas. This facility manufactures hard fired clay brick for use in the construction of commercial, residential, and architectural structures. There are two separate brick manufacturing operations at the Perla facility,

Eastgate and Westgate, which were constructed in 1968 and 1978 respectively. With this Title V permit renewal the following items have been changed:

- The permitted emission limits for PM/PM_{10}, CO, VOC, and HCl at SN-14 and SN-18 increased based on recent stack test data;
- A CO testing provision has been added as Specific Condition 15;
- Specific Condition 28 has been revised to list parameter values that are to be included in the OM&M Plan;
- The 40 C.F.R. § 63.6604(a) standard has been updated in Specific Condition 70;
- SN-09 has been removed from the permit and replaced with a new rotary sand dryer, SN-38;
- NSPS Subpart UUU conditions have been added for the new rotary sand dryer;
- SN-37, Brick Crusher has been removed from the insignificant activities list and the Primary Crusher 2 has been added to the IA list.

Overall permitted annual emissions increased 44.2 tons of total PM/PM_{10}, 5 tons of VOC, 17.4 tons of CO, 21.38 tons of HCl, and 0.46 ton of total other HAPs.

The CO testing condition was added for SN-14 and 18 tunnel dryers because the facility failed CO testing in 2024 and they are now permitted for 99% of the PSD threshold. None of the 2024 tests were conducted at 90% or higher of the permitted throughput (9.99 tph of fired ware per kiln). For the 2/13/2024 test (SN-14) the kiln was operated at 8.17 ton/hr and for the 3/7/2024 test (SN-18) the kiln operated at 6.52 ton/hr of fired ware.

7. COMPLIANCE STATUS:

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

CAO LIS 25-045 was signed on May 12, 2025 for emission exceedances based on the 2024 performance test results for SN-14 and SN-18. Below is the table of exceedances as reported in the CAO:

Table 2

Source	Pollutant	Emission Limit	Test Result
(SN-14)	PM	3.7 lb/hr	4.5 lb/hr
	VOC	0.6 lb/hr	0.82 lb/hr
	CO	24.9 lb/hr	29.5 lb/hr
	HCl	1.87 lb/hr	2.8 lb/hr
(SN-18)	VOC	0.6 lb/hr	0.97 lb/hr
	HCl	1.87 lb/hr	2.2 lb/hr

The permittee submitted increased emissions in this application for total PM, VOC, and HCl based on the 2024 testing results. The CO emissions are now based on the 2017

stack plus a safety factor. Per 40 CFR Part 63, Subpart JJJJJ the permittee must retest PM, HCl, HF, Hg, Cl_2 every 5 years. A CO testing condition has been added to this renewal.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? NA

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

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-14 & SN-18	PM, Hg, HCl, HF, Cl_2	NESHAP JJJJJ
SN-19 & SN-20	CO	NESHAP ZZZZ
SN-22 & SN-23	PM and Opacity	NSPS OOO
SN-38	PM and Opacity	NSPS UUU

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
SN-38	R9 approval date	NA	NA	NA

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source(s)	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
19 & 20	CO	The permit specifies a continuous compliance determination method that does not use an assumed control factor for the emission limitation or standard – 40 C.F.R. § 64.2(b)(1)(vi). Complies with 40 C.F.R. § 63.6600 for CO control.

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acenaphthene	0.2	0.022	4.4E-8	Yes
Acenaphthylene	0.2	0.022	4.4E-8	Yes
Acrolein	0.23	0.0253	1.86E-4	Yes
Anthracene	0.2	0.022	5.89E-8	Yes
Antimony	0.5	0.055	0.0007	Yes

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Arsenic	0.01	0.0011	0.00075	Yes
Benz(a)anthracene	0.2	0.022	4.41E-8	Yes
Benzo(a)pyrene	0.2	0.022	2.94E-8	Yes
Benzo(b)fluoranthene	0.2	0.022	4.41E-8	Yes
Benzo(g,h,i)perylene	0.2	0.022	2.943E-8	Yes
Beryllium	0.0005	0.000055	0.00001	Yes
Cadmium	0.01	0.0011	0.00039	Yes
Chromium	0.5	0.055	0.0013	Yes
Chrysene	0.2	0.022	4.41E-8	Yes
Cobalt	0.02	0.0022	5.25E-5	Yes
Dibenzo(a,h)anthracene	0.2	0.022	2.94E-8	Yes
Fluorene	0.2	0.022	6.86E-8	Yes
Hydrogen chloride	2.98	0.3278	8.68	No
Hydrogen fluoride	1.64	0.1804	18.16	No
Indeno(1,2,3-cd)pyrene	0.2	0.022	4.41E-8	Yes
Lead	0.05	0.0055	0.0036	Yes
Manganese	0.1	0.011	0.007	Yes
Mercury	0.01	0.0011	0.0073	No
PAH	0.2	0.022	0.005	Yes
Phenanthrene	0.2	0.022	1.23E-7	Yes
POM	0.2	0.022	5.14E-5	Yes
Pyrene	0.2	0.022	1.23E-7	Yes
Selenium	0.2	0.022	0.0055	Yes

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

HCl modeling was updated with the R9 permit renewal and increased HCl emission limits.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of TLV	Modeled Rate (lb/hr)	Modeled Concentration ($\mu g/m^3$)	Pass ?
Hydrogen chloride	29.8	8.68	5.93	Yes
Hydrogen fluoride*	16.4	18.16	9.37	Yes
Mercury*	0.1	0.0073	0.00368	Yes

*Modeling last performed with the R5 revision, no increases have been requested or permitted since that revision.

c) H_2S Modeling: N/A no H_2S emissions

15. CALCULATIONS:

SN	Emission Factor Source	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
10	Stack Test Data	3.51 $lb_{PM/PM10}$/hr 6.4 lb_{SO2}/hr 0.5 lb_{VOC}/hr 0.88 lb_{CO}/hr 3.65 lb_{NOx}/hr 0.064 lb_{HF}/hr 0.023 lb_{HCl}/hr Other HAP factors are from AP-42 1.4-3 and 1.4-4	Wet Scrubber	PM 90%	Stack test data from test conducted in March 2001. 10% safety factor
12, 13, & 17	Stack Test Data	Production ratio of 0.87 used for all emissions 2.43 $lb_{PM/PM10}$/hr	None	N/A	Stack test data from test conducted in October 1993. 10% safety factor
14 & 18	Brick MACT, Stack Test Data, & AP-42 Table 11.3-6 and 7	Filterable 0.37 $lb_{PM/PM10}$/ton (Brick MACT) Total 0.8 $lb_{PM/PM10}$/ton 2.04 lb_{SO2}/ton (PT)* 0.102 lb_{VOC}/ton(PT)* 2.49 lb_{CO}/ton(PT)** 0.33 lb_{NOx}/ton (PT)* 0.005lb_{Cl2}/ton (PT)* 0.82 lb_{HF}/ton (PT)* 0.39 lb_{HCl}/ton (PT)* 3.3E-4lb_{Hg}/ton (BM)	None	N/A	*10% safety factor added **8% safety factor added ***sf of 20% added to AP-42 HAPs BM - Brick MACT PT-Performance Tests conducted in 2016, 2017, 2024.

SN	Emission Factor Source	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Other HAP factors from AP-42***			
19	Manufacturer Supplied Data & AP-42	2,200 HP 200 $g_{PM/PM10}$/hr 650 g_{SO2}/hr 550 g_{VOC}/hr 1,100 g_{CO}/hr 13,200 g_{NOx}/hr HAP Factors AP-42	None	N/A	2,700 hr/yr
20	Manufacturer Supplied Data	1,495 HP 179 $g_{PM/PM10}$/hr 2,288 g_{SO2}/hr 240 g_{VOC}/hr 768 g_{CO}/hr 6,166 g_{NOx}/hr HAP Factors AP-42	None	N/A	2,700 hr/yr
21	EPA-450/3-88-008 (Sept. 1988, pp 4-17) & AP-42 13.2.2	4 Stockpiles f= 8.1% p= 105 Clay (2L & 1S) Silt Content 6% 1.9E-6lb_{PM10}/hr/ft^3 Long: 15'x50'x800' & 40,000 ft^2 Short: 15'x50'x400' & 20,000 ft^2 Sand Silt Content 2.6% 8.4E-7lb_{PM10}/hr/ft^3 10'x50'x200' 2,000 ft^2			
22	AP-42 11.19.2	1.15 Production Ratio 0.00012 lb_{PM}/ton 0.000542 lb_{PM10}/ton 23 tph 201,478 tons/yr	Dust Collector		10% safety factor

SN	Emission Factor Source	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
23	AP-42 13.2.4	1.15 Production Ratio 0.000121 lb_{PM}/ton 5.71E-5 lb_{PM10}/ton			10% safety factor
38	Stack Test & AP-42	Production ratio of 0.13 used for all emissions 3.51 $lb_{PM/PM10}$/hr 6.4 lb_{SO2}/hr 0.5 lb_{VOC}/hr 0.88 lb_{CO}/hr 3.65 lb_{NOx}/hr 0.064 lb_{HF}/hr 0.023 lb_{HCl}/hr Other HAP factors are from AP-42 1.4-3 and 1.4-4	Wet Scrubber	PM 90%	Stack test data from test conducted in March 2001. 10% safety factor

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
14 & 18	PM	Method 5 or Method 29	5 years	§63.8440
	HF	Method 26A or 320		
	HCl	Method 26A or 320		
	Cl_2	Method 26A or 320		
	Hg	Method 29		
14 & 18	CO*	Method 10	Annual and then every 5 years	Rule 19.702*
19 & 20	CO	ASTM D6522-00 or Method 10	8,760 hrs or 3 years, whichever occurs first	§63.6615
22 & 23	VE	Method 9	5 years	§60.675
38	PM	Method 5	Initial performance test	§60.732
	VE opacity	Method 9	Monthly Observations	§60.732

**Failed a previous stack test and operating within 99% PSD major source threshold.*

17. 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)
19 & 20	Catalyst Inlet Temperature	CPMS for Temperature	Continuous	N

18. 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)
10, 12, 13 17, 19, & 20	Opacity	20%	Monthly	N
10	Annual Throughput	64,000 tons of calcine material	Monthly	Y
14 & 18	Operating, Maintenance, and Monitoring (OM&M) Plan	*See SC 35 (63.8425)* Process to be monitored, Type of monitoring, Operating parameters monitored, Monitoring schedule, Parameter limits **(HCl-equivalent value, push rate, temperature profile, and maximum tested throughput from most recent perf. test)** for compliance based on perf. testing, Corrective action procedures, & Procedures for documenting compliance.	Update with each Perf. Test	N
14	Annual Production Limit	87,599 tons of fired ware	Monthly	Y
	Daily Production Limit	239.76 tons/day of fired ware	Daily	Y
18	Annual Production Limit	87,599 tons of fired ware	Monthly	Y
	Daily Production Limit	239.76 tons/day of fired ware	Daily	Y
14 & 18	Opacity or Alternative	0%	Daily or Alternative	N
19 and 20	Calendar Year Usage Limit	2,700 hrs/yr for each generator	Monthly	Y
22 & 23	Opacity	7%	Initial PT	Y
	Annual Throughput	202,000 tons of ground material	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
38	Annual Throughout	8,300 tons of sand	Monthly	Y
	Opacity	10%	Monthly	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
10, 12, 13 17, 19, & 20	20%	Dept. Guidance	Monthly Observation
14 & 18	0%	NESHAP JJJJJ	Daily Method 22 or PM Annual Test Alternative
22 & 23	7%	NSPS OOO	Method 9 Perf. Test
38	10 %	NSPS UUU	Monthly Observation

20. DELETED CONDITIONS:

Former SC	Justification for removal
01-07	SN-09 Removed from service

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Clay Dryer Burner	A-1	0.33	0.03	0.24	3.61	4.29	0.08	0.08
Waste Oil, 1500 gallons	A-3			0.00051				
Waste Oil, 1000 gallons	A-3			0.00033				
Waste Oil, 500 gallons	A-3			0.00017				
Diesel Tank, 9000 gallons	A-3			0.005				
Diesel Tank, 9000 gallons	A-3			0.005				
Diesel Tank, 1000 gallons	A-3			0.00084				
Diesel Tank, 1000 gallons	A-3			0.00084				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Standby Generators Diesel Supply Tanks, 2500 gallons	A-3			0.00033				
Total for Group	A-3	0.33	0.03	0.01302	3.61	4.29	0.08	0.08
SN-29, Primary Crusher	A-13	0.91						
Primary Crusher 2	A-13							
SN-30, Secondary Crusher	A-13	0.91						
SN-31, Secondary Syenite Sand Feeder	A-13	0.01						
SN-33, Brick Crusher	A-13	0.69						
SN-35, Calcine Clay Feeder	A-13	0.004						
IA-8, Bat Loss Drop	A-13	0.00075						
IA-16, 1000 Gallon Gasoline Tank	A-13			0.23			0.012	0.012
IA-29, Calcine Clay Feeder	A-13	0.01						
IA-33, Car Cleaner Systems	A-13	0.19						
Vehicle Travel	A-13	0.24						
Total for Group	A-13	3.65		0.23			0.012	0.012

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1154-AOP-R8

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: ACME Brick Company - Perla Plant
Permit Number: 1154-AOP-R9
AFIN: 30-00008

$/ton factor	28.14	Annual Chargeable Emissions (tpy)	619.44
Permit Type	Modification	Permit Fee $	1988.9352

Minor Modification Fee $	500
Minimum Modification Fee $	1000
Renewal with Minor Modification $	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	70.68
Initial Title V Permit Fee Chargeable Emissions (tpy)	

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		75.5	119.7	44.2	44.2	119.7
PM_{10}		74.5	118.7	44.2		
$PM_{2.5}$		0	0	0		
SO_2		240.3	240.4	0.1	0.1	240.4
VOC		10.2	15.2	5	5	15.2
CO		228.7	246.1	17.4		
NO_X		126.2	126.2	0	0	126.2
lead	☐	0.0158	0.0158	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
HCl	☑	16.51	37.89	21.38	21.38	37.89
HF	☑	79.37	79.37	0	0	79.37
Total other HAP	☐	1.11	1.57	0.46		
Chargeble NCAPs	☑	0.68	0.68	0	0	0.68