**STATEMENT OF BASIS**

*for issuance of Air Permit No. 1343-AOP-R0*

## 1. PERMITTING AUTHORITY:

Arkansas Department of Pollution Control and Ecology
8001 National Drive
Post Office Box 8913
Little Rock, Arkansas 72219-8913.

## 2. APPLICANT:

Acme Brick Company - Ouachita Plant
Grigsby Ford Road
Malvern, AR 72104

## 3. PERMIT WRITER:

Kimberly A. Fuller

## 4. PROCESS DESCRIPTION AND SIC CODE:

Clay brick manufacturing
SIC Code: 3251

## 5. REVIEWER'S NOTES:

Arkansas operating permit #1343-AOP-R0 is the first operating permit issued to Acme Brick Company - Ouachita Plant under Regulation 26. The facility is modifying their existing air permit by the incorporation of on-site stack test data to quantify emissions from four sources, the addition of a previously unpermitted source, the removal of two sources by defining them as insignificant under Regulation 19 Appendix A Group C Number 5, and the addition of a high efficiency HEPA filter on the packaging process.

## 6. EMISSION CHANGES:

The following table summarizes plantwide emission changes associated with this permitting action.

| **Plantwide Permitted Emissions (ton/yr)** | | | |
|---|---|---|---|
| **Pollutant** | **Air Permit 1343-AR-1** | **Air Permit 1343-AOP-R0** | **Change** |
| $PM/PM_{10}$ | 85.0 | 18.7 | -66.3 |
| $SO_2$ | 30.7 | 54.4 | +23.7 |
| VOC | 2.6 | 4.4 | +1.8 |
| CO | 33.3 | 53.8 | +20.5 |

| Plantwide Permitted Emissions (ton/yr) | | | |
|---|---|---|---|
| **Pollutant** | **Air Permit 1343-AR-1** | **Air Permit 1343-AOP-R0** | **Change** |
| $NO_x$ | 12.3 | 19.2 | +6.9 |
| Fluorides | 15.3 | 17.77 | +2.47 |
| HCL | 0.0 | 9.45 | +9.45 |

## 7. CALCULATIONS:

At source locations for which no comments appear below, the emission calculations received the reviewer's concurrence as submitted by the facility in the permit application.

**KEY:** Abbreviations used in the following tables: SN = Source Number, SC = Specific Condition. For all sources deemed insignificant, the permit writer has reviewed submitted calculations, and concurs with the emission estimates.

| SN | Basis for emission calculation of final permit limits. | | Comment. |
|---|---|---|---|
| | lb/hr | ton/yr | |
| 03 | Maximum Stack test data | The avg lb/hr from stack test * 4.38 * a 1.1 safety factor. | Stack test data from sources SN-04 and SN-05. |
| 04 & 05 | Maximum Stack test data | The avg lb/hr from stack test * 4.38 * a 1.1 safety factor. | Stack test data from test conducted in October of 1997. |
| 06 | Maximum Stack test data | The avg lb/hr from stack test * 4.38 * a 1.1 safety factor. | Stack test data from test conducted in October of 1997 except fluoride. Fluoride emissions from stack test conducted in May of 1992. |
| 07 | The maximum throughput for the system * the efficiency of the control equipment * a 1.1 safety factor. | The maximum lb/hr emissions * 4.38. | Air filtration system eff of 99% and HEPA filter eff of 99.97%. |
| 09 | The maximum hourly throughput for the system * the AP-42 emission factor * a 1.1 safety factor. | The maximum yearly throughput for the system * the AP-42 emission factor * a 1.1 safety factor. | AP-42 factors are for a grinding system with a dust collector. |

## 8. MODELING:

### A. Criteria Pollutants

Total criteria pollutant emissions were not modeled, because the rates of total VOC and particulate as estimated in the calculations did not indicate a potential threat to the National Ambient Air Quality Standards (NAAQS).

### B. Non-Criteria Pollutants

**1st Tier Screening (PAER).**

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The PAER was deemed by the Department 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).

| SN(s) | Pollutant | TLV ($mg/m^3$) | PAER (lb/hr) = 0.11*TLV | Proposed lb/hr | Pass? |
|---|---|---|---|---|---|
| 4 - 6 | Fluoride | 2.5 | 0.275 | 5.25 | **No** |
| 4 - 6 | HCL | 7.5 | 0.825 | 3.19 | **No** |

**2nd Tier Screening (PAIL).**

ISCST3 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 was deemed by the Department to be one one-hundredth of the Threshold Limit Value, as listed by the ACGIH.

| SN(s) | Pollutant | (PAIL, $\mu g/m^3$) = 1/100 of Threshold Limit Value | Modeled Concentration ($\mu g/m^3$) | Pass? |
|---|---|---|---|---|
| 4 - 6 | Fluoride | 25 | 2.37314 | **Yes** |
| 4 - 6 | HCL | 75 | 1.44197 | **Yes** |

## 9. RECORD KEEPING, REPORTING:

The following specific conditions were included in Air Permit 1343-AOP-R0 to require record keeping and reporting of throughput, emissions, or operational parameters:

| SC | SN | Recorded Item |
|---|---|---|
| 4 | SN-06 | Observations of opacity from source SN-06. If visible emissions are detected, immediate corrective action must be taken to halt the excessive emissions. |
| PCs - 5,6 | Facility | An annual brick production limit. |

**10. OPACITY:**

The following opacity limits are required by this permit.

| SC | SN | Opacity | Justification |
|---|---|---|---|
| 3 | 6 | 20 | Continued from previous permit. |

**11. OTHER REQUIREMENTS:**

The following conditions were included in Air Permit 1343-AOP-R0 for the purposes described below.

| SC | Justification | Citation |
|---|---|---|
| PCs - 3,4 | Visible emission language. | 18.8 & 18.9 |
| PCs - 7-11 | Title VI language. | |
| PC - 12 | Permit shield. | |

**12. REFERENCES:**

a. Air Permit Application received *November 7, 1997*
b. Regulation No. 19, as amended July 1, 1997
c. Regulation No. 26, as amended January 27, 1995
d. Arkansas Air Pollution Control Code, as amended July 1 1997
e. Compilation of Air Pollutant Emission Factors, as amended January, 1995

**13. CONCURRENCE BY:**

The following supervisor concurs with the permitting decision:

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*Thomas Rheaume, P.E.*