

# ADEQ MINOR SOURCE AIR PERMIT

Permit #: 0635-AR-6

IS ISSUED TO:

Porocel Corporation  
10300 Arch Street Pike  
Little Rock, AR 72206  
Pulaski County  
AFIN: 60-00004

THIS PERMIT IS POROCEL CORPORATION'S AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DEPARTMENT'S MINOR SOURCE AIR PERMIT AND THE APPLICATION. THIS PERMIT IS ISSUED PURSUANT TO THE PROVISIONS OF THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT (ARK. CODE ANN. SEC. 8-4-101 ET SEQ.) AND THE REGULATIONS PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

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Michael Bonds  
Chief, Air Division

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Date

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**Section I: FACILITY INFORMATION**

PERMITTEE: Porocel Corporation

AFIN: 60-00004

PERMIT NUMBER: 0635-AR-6

FACILITY ADDRESS: 10300 Arch Street Pike  
Little Rock, AR 72206

COUNTY: Pulaski

CONTACT POSITION: Gerald Ashford – Plant Manager

TELEPHONE NUMBER: (501) 888-1357

REVIEWING ENGINEER: John Bailey

UTM North-South (Y) Zone 15 (3834.7 km)

UTM East-West (X): Zone 15 (563.3 km)

## **Section II: INTRODUCTION**

### **Summary**

Porocel Corporation (Porocel) owns and operates a facility at 10300 Arch Street Pike, Little Rock, which processes various nonmetallic minerals and product materials (these include bauxite ore and montmorillonite clay - NAICS Codes 333131 and 327992). The facility's air permit is being modified to allow for the following changes:

- The addition of a bin vent to the Munson Mixer (Source A-12);
- The addition of a cure drum (A-28) which consists of a 290,000 btu/hr natural gas fired burner and material handling equipment;
- The addition of railcar unloading station (A-29) which consists of conveying equipment ;
- The addition of a 1.5 MMbtu/hr burner to Activator No. 3 (A-13) ;
- The addition of a 1.0 MMbtu/hr burner to Tub No. 5 (B-17);
- The addition of a new tub forming system (B-21) to provide feed to Activator No. 3. This new system will include a feed tank and bin vent filter; and
- The replacement of the current Raymond Mill (B-09) with like-kind equipment entitled Elliot Mill #6.

The changes result in an increase of Particulate Matter of 2.1 tons/yr. The addition of burners at Activator No. 3 (A-13) and Tub No. 5 (B-17) requires these sources be subject to NSPS Subpart UUU-Standards of Performance for Calciners and Dryers in Mineral Industries.

### **Process Description**

Bauxite ore is processed in the Bauxite Plant and alumina tri-hydrates and activated alumina are processed in the Active Plant. Maximum hourly production rates for all processes are limited by the capacity of the Precrusher (SN-03), which is 15 tons per hour.

Mineral product processing involves a variety of changing complexities during production. Regardless of whether material is processed in the Active Plant or the Bauxite Plant, there are some operations and emission sources common to both plants. The following process descriptions address the common sources, the Bauxite Plant and ancillary operations, and the Active Plant and ancillary operations. A listing of specific sources for the three consolidated areas will be found in Appendix A, along with the heat capacities of driers and kilns subject to NSPS Subpart UUU.

## **Plantwide Sources**

The first emission sources to discuss are the various raw material stockpiles (PW-01). The primary raw materials are bauxite ore which is transported by truck to the facility from land which Porocel owns and alumina hydrate which is brought in by truck from barges. An additional material stockpiled is called "ammonia hold," but its processing is identical to bauxite.

From the staging areas, coarse bauxite or hydrate is next fed into the inlet hopper (PW-02), processed through a precrusher (PW-03) and then fed into the dryer at 500°F (PW-04). The dryer is controlled

by a baghouse. After exiting the dryer, the material will be processed in either the Bauxite Plant (bauxite / ammonia hold) or the Active Plant (hydrate).

## **Bauxite Plant**

Upon exiting the dryer (PW-04), bauxite is discharged into a drag conveyor and pulled to a bucket elevator. The elevator then picks up the ore, carries it to the top of the mill house and discharges onto the hot rock belt. The belt then carries the material and drops it into either the #1 or #2 Hot Rock Tanks (also referred to as the mill feed tanks). The drag belt, conveyor, elevator, and tanks are all controlled by a complex aspiration system that is exhausted through a baghouse (B-01).

As material is withdrawn from the Hot Rock Tanks, it drops onto belts and is carried to one of eleven (11) elevators. These transfer systems are also tied into the same baghouse system (B-01).

The material is next introduced into the #2 Kiln. Particulate emissions from the kiln are controlled by a baghouse (B-02). The collected fines from this baghouse and Kiln #1 (B-15), to be discussed later, are routed to the Receiver Tank (B-03) which is controlled. Kiln #2 then discharges onto a drag conveyor, bucket elevators, and cooling tube before taking the material to screens for various sizing steps and eventually to storage for product loadout (B-05).

As stated, dust and calcined fines from the #1 and #2 Kilns are routed to the Receiver Tank (B-03). These fines can then be bagged in supersacks for shipment (B-05) or loaded into trucks to carry to the dust pile (B-04).

Loadouts and shipping (B-05) can occur in multiple locations throughout the Bauxite Plant. Porocel seeks to simplify the recordkeeping and emissions tracking of loading by "bubbling" all shipping for the Bauxite Plant under one source number (B-05).

There are three (3) ancillary or side products operations that can also occur in the Bauxite Plant; dedusting, pellet formation, and specialty milling (Elliott Mill).

## **Elliott Mill**

The Elliott Mill is an independent operation and can perform specialty milling or can be used in hydrate service. In hydrate service, the material will go to 28 Bin (B-07). There are two sources

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associated with using the Elliott Mill in the Bauxite Plant. The #2 Tank (not to be confused with the #2 Hot Rock Tank) is filled and controlled by a bin vent (B-06). Material is then drawn down from the tank and fed to the Elliott Mill. The mill is controlled by the same baghouse used to control 28 Bin (B-07). For non-hydrate service, the material can either be loaded out as a finished product (B-05) or calcined.

### **Pellet Forming**

This operation (former SN – B-13) has been discontinued and the Dennard Kiln is no longer on site.

### **Dedust Process**

For the dedusting process, spheres are introduced into a feed hopper (B-14) . From the feed hopper belt and bucket elevator, the spheres enter Kiln #1. Particulate emissions from the kiln are controlled by a baghouse (B-15). The collected fines from this baghouse are routed to the Receiver Tank (B-03). Kiln #1 then discharges onto a belt conveyor which takes the material to screens for various sizing steps and eventually to product loadout (B-05) into supersacks.

### **Active Plant**

Milled hydrate enters the active plant via a pneumatic transfer line. Powder can be extracted from Bin 26, a railcar, or from truck unloading. The transfer line discharges into the unground hydrate storage bin (UGSB) which is controlled by a baghouse (A-01).

The hydrate is then fed to the four (4) Elliott Mills (A-02 through A-05). Two of the mills are installed and two remain to be installed. Each of these mills is controlled by a baghouse. Powder is next transferred to the Flash Calciner #2 Feed Tank (A-06). This tank is equipped with a bin vent filter. From this tank, material is metered into Flash Calciner #2 (A-07), which operates at 2500 °F. Particulate emissions from the calciner are controlled by a baghouse. The calciner is used to convert the hydrate to aluminum oxide. The material is then air-conveyed to the material storage bins.

From the storage bins, the calcined powder is conveyed to a feeder that empties into a tub powder feed stream and then into the tub feed bin. This is controlled by a bagfilter (A-08). The tub feed stream enters the tub feed accumulator via air flow. There is pneumatic control (A-09) as the powder enters the rotating tub where it is combined with water or a water and promoter solution. The tub forms the powder into spheres of varying sizes. These spheres then discharge from the tub via a discharge chute which allows them to fall onto the curing belt.

The belt is a covered slow-moving belt that maintains an atmosphere of warm, moist air at approximately 180 degrees F. Additional heat is provided by a heat exchanger. The curing belt discharges the spheres to the belt activator. The activator generates temperatures up to 1000°F, but typically will run no higher than 850°F to remove any moisture gained in the tub. Emissions from the activator are controlled by a baghouse (A-10). The spheres are then sent to an elevator which takes them to the Sweco screen, depending on the final product desired. Spherical materials of the

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proper size and type are loaded into supersacks or drums as product. The screening, crushing, and loading operations are controlled by a baghouse (A-II).

One special type of processing that takes place in the Active Plant is impregnation. This process involves the mixing of catalyst carrier materials, typically alumina based, with liquid solutions of varying compositions and concentrations. These compositions depend on customer specifications and may include hazardous air pollutants (HAPs). Feed material may enter in the form of powders, granules, spheres, or extrudates. Essentially, feed is introduced into the Munson mixer (A-12) and sprayed with the catalyst of choice. This is performed in a closed system, similar in nature to a washing machine. The spheres are then caught in a supersack. If necessary, the spheres could be routed directly into the Activator No. 3 (A-13), which operates at 900 °F. This, essentially, is a natural gas-fired dryer and would possibly require a baghouse for fugitive dust control.

It should be noted that the spheres absorb a significant volume of liquid and exit the system with a high enough moisture content so as to not be a dust source. The primary emission from this source is steam.

Calciner #5 (A-14) operates at 2000 °F and is used for specialty or toll processing. An additional Calciner 18" (A-26), rated at 16 MMBtu/hr, will be added to increase the capacity for this area. The two (2) Calciner #5 Feed Tanks (A-20) are controlled by a common bin vent and will also feed material into the new calciner. The calciners are natural gas fired and process a variety of materials. However, the majority are alumina-based materials. They are equipped with a 3.6 MMBtu/hr afterburner to destruct trace amounts of odorous materials that is not required for emission control. Product exiting the calciners is stored in the Calciner #5 Product Tanks (A-19). These tanks are controlled by bin vents and a bagfilter.

Lastly, there is a Feed Blender (A-21). This is simply a stainless steel tub. The vessel is opened, powders and other materials are poured in, the lid closed, and then the dry mixture is "blended". Emissions are expected from this source only when the tub/blender is filled.

## **Regulations**

The facility is subject to Arkansas Air Pollution Control Code (Regulation 18) and Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation 19). The facility is also subject to NSPS Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries*.

NSPS Subpart OOO - *Standards of Performance for Nonmetallic Mineral Processing Plants*, does not apply to this facility as the cumulative rate of all crushers is less than 25 tons per hour. NSPS Subpart LL - *Standards of Performance for Metallic Mineral Processing Plants*, does not apply to this facility as Porocel does not produce metallic mineral products or metallic concentrates.

The following table is a summary of the facility's total emissions.

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**Table 1 - Total Allowable Emissions**

<b>Total Allowable Emissions</b>		
<b>Pollutant</b>	<b>Emissions Rates</b>	
	<b>lb/hr</b>	<b>tpy</b>
PM	37.2	130.0
PM <sub>10</sub>	26.7	85.9
SO <sub>2</sub>	1.3	1.4
VOC	11.5	13.4
CO	13.3	58.2
NO <sub>x</sub>	16.0	69.4
Total HAPs	10.0	9.5



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### **Section III: PERMIT HISTORY**

Porocel was issued its first air permit on September 11, 1970. This was permit number 0006-A. It allowed for 39.4 lb/hr of PM emissions.

Air permit #635-A was issued on November 21, 1980. It was a SIP that allowed for a reduction to 30 lb/hr of PM emissions.

Air permit #635-AR-1 was issued on November 20, 1981. It also was a SIP that allowed for 9 lb/hr of PM emissions.

Air permit #0635-AR-2 was issued on October 17, 1990. It was a SIP that allowed for 14 lb/hr of PM emissions.

Air permit #635-AR-3 was issued on September 7, 1993. It was a modification which allowed for the addition of emissions from natural gas combustion and installation of a pneumatic unloading/transfer system (SN-29 to SN-32). Emission limits set in this permit were 16.78 tpy NO<sub>x</sub>, 4.44 tpy CO, and 79.83 tpy PM.

Air permit #635-AR-4 was issued on August 15, 1994. It added a pneumatic conveyor for the product mill feed, increased the permitted hours for some of the facility's equipment and corrected errors in the emission rate calculations.

Air permit #635-AOP-R0 was issued on November 16, 1998, and was the first permit for this facility under Regulation #26. PM/PM<sub>10</sub> emissions were allowed at 100.6 tpy. HAPs were reported at 1.57 tpy. NO<sub>x</sub> emissions, primarily from the calciners and auxiliary equipment, were limited to 209.5 tpy.

Air permit #635-AOP-R1 was issued on February 4, 2002. It was issued as a result of inconsistency with the regulatory applicability of an NSPS subpart that was eventually found inapplicable, variations in operating conditions and unpermitted emission sources. A small thermal oxidizer for scavenging trace amounts of phenol and formaldehyde was added as an insignificant source of emissions.

Air Permit #635-AR-5 was issued on November 5, 2003. Four new sources were added: a New Mill designated as A-24; an auxiliary Feed Tank (A-25), an additional Calciner 18" (A-26) that increased capacity in the Toll Processing area and a 2.5 MMBtu/hr natural gas-fired hot water heater (A-27). One source (Pellet Forming) was removed from service. A second Baghouse associated with the afterburner at source A-14 was relocated to the existing Utility Activator (A-13). The facility was re-classified as a minor source under Regulation 19.

**Section IV: EMISSION UNIT INFORMATION**

**Specific Conditions**

1. The permittee will not exceed the emission rates set forth in the following table. [§19.501 et seq. of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control, effective December 19, 2004 (Regulation 19) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

**Table 2 - Criteria Pollutants**

SN	Description	Pollutant	lb/hr	Tpy	
PW-01	Ore Piles	PM <sub>10</sub>	0.1	0.1	<b>Raw Material Processing</b>
PW-02	Inlet Hopper	PM <sub>10</sub>	0.1	0.1	
PW-03	Precrusher	PM <sub>10</sub>	0.2	0.5	
PW-04	Dryer (16.0 MMBtu/hr) + Baghouse	PM <sub>10</sub>	1.9	6.5	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.4	
		CO	1.3	5.9	
NO <sub>x</sub>		1.6	7.0		
B-01	Bauxite Mill House + Baghouse	PM <sub>10</sub>	0.1	0.2	<b>Bauxite Process</b>
B-02	#2 Kiln (30.0 MMBtu/hr) + Baghouse	PM <sub>10</sub>	2.0	7.0	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.2	0.7	
		CO	2.5	11.0	
NO <sub>x</sub>		3.0	13.1		
B-03	Receiver Tank	PM <sub>10</sub>	0.2	0.6	
B-04	Fines Pile	PM <sub>10</sub>	0.1	0.2	
B-05	Shipping/Loading	PM <sub>10</sub>	0.8	2.8	
A-24	New Mill 2002	PM <sub>10</sub>	0.2	0.6	<b>Hydrate Process</b>
A-25	New Product Tank	PM <sub>10</sub>	0.2	0.6	
B-08	26 Bin + Baghouse	PM <sub>10</sub>	0.2	0.6	
B-09	Elliot Mill #6 + Baghouse	PM <sub>10</sub>	0.2	0.6	
B-10	27 Bin + Baghouse	PM <sub>10</sub>	0.2	0.6	
B-11	Flash Calciner #1 (16.0 MMBtu/hr) + Baghouse	PM <sub>10</sub>	1.9	6.5	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.4	
		CO	1.3	5.9	

SN	Description	Pollutant	lb/hr	Tpy	
		NO <sub>x</sub>	1.6	7.0	
B-12	#4 and #5 Tanks	PM <sub>10</sub>	0.2	0.6	
B-19	Convey Point (Bin 26 to Railcar)	PM <sub>10</sub>	0.1	0.2	
B-06	#2 Tank + Bin Vent	PM <sub>10</sub>	0.2	0.6	<b>Bauxite Plant Side Products</b>
B-07	Elliot Mill #5/28 Bin	PM <sub>10</sub>	0.3	1.2	
B-14	Feed Hopper	PM <sub>10</sub>	0.1	0.2	
B-15	#1 Kiln (30 MMBtu/hr)	PM <sub>10</sub>	2.0	7.0	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.2	0.7	
		CO	2.5	11.0	
		NO <sub>x</sub>	3.0	13.1	
B-16	Dedust belt Conveyor	PM <sub>10</sub>	0.1	0.2	
B-17	Tub 5 (Baghouse and Bin Vent – 1.0 MMBtu/hr)	PM <sub>10</sub>	0.3	0.7	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.1	
		CO	0.1	0.4	
		NO <sub>x</sub>	0.1	0.5	
B-18	Rail Unloading for Hydrate	PM <sub>10</sub>	0.1	0.1	
B-20	#1 Tank	PM <sub>10</sub>	0.2	0.6	
B-21	Tub No. 4	PM <sub>10</sub>	0.2	0.6	
A-01	Hydrate Transfer to Bins + Baghouse	PM <sub>10</sub>	0.2	0.6	<b>Active Plant</b>
A-02	Elliott Mills #1, #2, #3 and #4 + Baghouse	PM <sub>10</sub>	0.2	0.6	
A-03		PM <sub>10</sub>	0.2	0.6	
A-04		PM <sub>10</sub>	0.2	0.6	
A-05		PM <sub>10</sub>	0.2	0.6	
A-06	Flash Calciner #2 Feed Tank + Bin Vent Filter	PM <sub>10</sub>	0.2	0.6	
A-07	Flash Calciner #2 (16.0 MMBtu/hr) + Baghouse	PM <sub>10</sub>	1.9	6.5	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.4	
		CO	1.3	5.9	
		NO <sub>x</sub>	1.6	7.0	
A-08	Tub Feed System + Baghouse	PM <sub>10</sub>	0.2	0.6	
A-09	Tub Stand	PM <sub>10</sub>	0.1	0.2	
A-10	Activator #1 (5.5 MMBtu/hr)	PM <sub>10</sub>	1.9	6.4	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.1	

SN	Description	Pollutant	lb/hr	Tpy	
	+ Baghouse	CO	0.5	2.2	
		NO <sub>x</sub>	0.6	2.6	
A-11	Screening & Crushing + Baghouse	PM <sub>10</sub>	0.1	0.2	
A-12	Munson Mixer	PM <sub>10</sub>	0.1	0.2	
A-13	Activator No. 3 (4.5 MMBtu/hr) + Baghouse	PM <sub>10</sub>	1.9	6.2	
		SO <sub>2</sub>	0.1	0.2	
		VOC	0.1	0.1	
		CO	0.4	1.7	
		NO <sub>x</sub>	0.5	2.0	
A-15	Tub Feed System	PM <sub>10</sub>	0.2	0.6	
A-17	Activator #2 (5.5 MMBtu/hr) + Baghouse	PM <sub>10</sub>	1.9	6.4	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.1	
		CO	0.5	2.2	
		NO <sub>x</sub>	0.6	2.6	
A-18	Activator #2 Screening, Crushing, and Product Tanks	PM <sub>10</sub>	0.1	0.2	
A-14	Calciner #5, Afterburner and Tub Feeder (15.0 MMBtu/hr) + Baghouse	PM <sub>10</sub>	1.9	6.5	<b>Toll Processing</b>
		SO <sub>2</sub>	0.1	0.1	
		VOC	10.1	9.9	
		CO	1.3	5.5	
		NO <sub>x</sub>	1.5	6.6	
A-19	Calciner #5 Product Tanks + Bin Vent + Baghouse	PM <sub>10</sub>	0.2	0.6	
A-20	Calciner #5 Feed Tanks + Bin Vent	PM <sub>10</sub>	0.2	0.6	
A-21	Feed Blender	PM <sub>10</sub>	0.1	0.1	
A-26	Calciner 18" (16.0 MMBtu/hr) + Baghouse	PM <sub>10</sub>	2.0	6.5	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.4	
		CO	1.3	5.5	
		NO <sub>x</sub>	1.5	6.6	
A-27	Quickwater Boiler (2.5 MMBtu/hr)	PM <sub>10</sub>	0.1	0.1	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.1	
		CO	0.2	0.9	
		NO <sub>x</sub>	0.3	1.1	

SN	Description	Pollutant	lb/hr	Tpy	
A-28	Cure Drum 0.290 MMBtu/hr	PM <sub>10</sub>	0.2	0.3	
		SO <sub>2</sub>	0.1	0.1	
		VOC	0.1	0.1	
		CO	0.1	0.1	
		NO <sub>x</sub>	0.1	0.2	
A-29	Railcar Unloading	PM <sub>10</sub>	0.2	0.6	

2. The permittee will not exceed the emission rates set forth in the following table. [§18.801 of the Arkansas Air Pollution Control Code, effective February 15, 1999 (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

**Table 3 - Non-Criteria Pollutants**

SN	Description	Pollutant	lb/hr	Tpy	
PW-01	Ore Piles	PM	0.1	0.2	<b>Raw Material Processing</b>
PW-02	Inlet Hopper	PM	0.1	0.1	
PW-03	Precrusher	PM	0.3	1.0	
PW-04	Dryer (16.0 MMBtu/hr) + Baghouse	PM	3.1	10.4	
B-01	Bauxite Mill House + Baghouse	PM	0.4	1.2	<b>Bauxite Process</b>
B-02	#2 Kiln (30.0 MMBtu/hr) + Baghouse	PM	3.2	10.9	
B-03	Receiver Tank	PM	0.2	0.6	
B-04	Fines Pile	PM	0.2	0.5	
B-05	Shipping/Loading	PM	0.8	2.8	
A-24	New Mill 2002	PM	0.2	0.6	<b>Hydrate Process</b>
A-25	New Product Tank 2002	PM	0.2	0.6	
B-08	Flash Calciner #1 (16.0 MMBtu/hr) + Baghouse	PM	0.2	0.6	
B-09	Elliott Mill #6 + Baghouse	PM	0.2	0.6	
B-10	27 Bin + Baghouse	PM	0.2	0.6	
B-11	Flash Calciner #1 (16.0 MMBtu/hr) + Baghouse	PM	0.2	10.4	

SN	Description	Pollutant	lb/hr	Tpy	
B-12	#4 and #5 Tanks	PM	0.2	0.6	<b>Bauxite Plant Side Products</b>
B-19	Convey Point (Bin 26 to Railcar)	PM	0.1	0.5	
B-06	#2 Tank + Bin Vent	PM	0.2	0.6	
B-07	Elliot Mill #5/28 Bin	PM	0.3	1.2	
B-14	Feed Hopper	PM	0.2	0.5	
B-15	#1 Kiln (30.0 MMBtu/hr)	PM	3.2	10.9	
B-16	Dedust belt Conveyor	PM	0.2	0.5	
B-17	Tub 5 (Baghouse and Bin Ven)	PM	0.3	0.7	
B-18	Rail Unloading for Hydrate	PM	0.1	0.1	
B-20	#1 Tank	PM	0.2	0.6	
B-21	Tub No. 4	PM	0.2	0.6	
A-01	Hydrate Transfer to Bins + Baghouse	PM	0.2	0.6	<b>Active Plant</b>
A-02	Elliott Mills #1, #2, #3 and #4 + Baghouse	PM	0.2	0.6	
A-03		PM	0.2	0.6	
A-04		PM	0.2	0.6	
A-05	Flash Calciner #2 Feed Tank + Bin Vent Filter	PM	0.2	0.6	
A-06		PM	0.2	0.6	
A-07		Flash Calciner #2 (16.0 MMBtu/hr) + Baghouse	PM	3.1	
A-08	Tub Feed System + Baghouse	PM	0.2	0.6	
A-09	Tub Stand	PM	0.2	0.5	
A-10	Activator #1 (5.5 MMBtu/hr) + Baghouse	PM	3.1	10.3	
A-11	Screening & Crushing + Baghouse	PM	0.4	1.2	
A-12	Munson Mixer	PM	0.2	0.5	
A-13	Activator No.3 (4.5 MMBtu/hr) + Baghouse	PM	3.1	10.1	
A-17	Activator #2 (5.5 MMBtu/hr)	PM <sub>x</sub>	3.1	10.3	

SN	Description	Pollutant	lb/hr	Tpy	
	+ Baghouse				
A-18	Activator #2 Screening, Crushing, and Product Tanks	PM	0.4	1.2	
A-14	Calciner #5, Afterburner and Tub Feeder (15.0 MMBtu/hr) + Baghouse	PM HAPs	3.1 10.0*	10.4 9.5*	
A-19	Calciner #5 Feed Tanks + Bin Vent + Baghouse	PM	0.2	0.6	
A-20	Calciner #5 Feed Tanks	PM	0.2	0.6	
					<b>Toll Processing</b>
A-21	Feed Blender	PM	0.1	0.1	
A-26	Calciner 18" (16.0 MMBtu/hr) + Baghouse	PM	3.2	10.4	
A-27	QuickWater Boiler 2.5 MMBtu/hr	PM	0.1	0.1	
A-28	Cure Drum (0.290 MMBtu/hr)	PM	0.3	0.6	
A-29	Railcar Unloading	PM	0.2	0.6	

\*HAPs are solvents and additives used in manufacturing specialty toll products.

3. Visible emissions will not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

**Table 4 - Visible Emissions**

SN	Limit	Regulatory Citation
PW-02 and PW-03 Inlet Hopper and Precrusher	10%	§18.501
PW-04 A-01, A-02, A-03, A-04, A-05, A-06, A-07, A-08, A-09, A-10, A-11, A-12, A-13, A-14, A-17, A-18, A-20, A-21,	5%	§18.501

A-26, A-27, A-28, A-29 B-01, B-02, B-03, B-06, B-07, B-08, B-09, B-10, B-14, B-17, B-21, B-24, B-15, B-17, B-19, B-20		
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4. The permittee will not cause or permit the emission of air contaminants, including odors or water vapor and including an air contaminant whose emission is not otherwise prohibited by Regulation #18, if the emission of the air contaminant constitutes air pollution within the meaning of A.C.A. §8-4-303. [§18.801 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-31]
5. The permittee will not conduct operations in such a manner as to unnecessarily cause air contaminants and other pollutants to become airborne. [§18.901 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

**Facility-Wide Conditions**

6. The permittee will not process more than 100,000 tons of product at the facility per consecutive 12-month period. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
7. The permittee will use only pipeline quality natural gas as fuel. Natural gas usage will not exceed 1,340.3 MMSCF of natural gas at the facility per consecutive 12-month period. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
8. The permittee will maintain monthly records which demonstrate compliance with Specific Conditions #6 and #7. The permittee will update the records by the fifteenth day of the month following the month to which the records pertain. The permittee will keep the records onsite, and make the records available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311].

**SN-A-14 Conditions**

9. The permittee shall not use solvents and additives containing HAPs or other air contaminants in the Tub Feeder and Calciners A-14 and A-26, unless the daily usage is below 0.11\*TLV in mg/m<sup>3</sup> \*24 hrs. [§18.801 of Regulation 18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
10. The permittee shall not exceed the total HAPs emission limit from Toll Processing of 9.5 tpy per 12 consecutive months. [§18.801 Regulation 18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]



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11. The permittee will maintain daily records which demonstrate compliance with Specific Conditions #9 and #10. The permittee will update the records by the fifteenth day of the month following the month to which the records pertain. The permittee will keep the records onsite, and make the records available to Department personnel upon request. [§18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311.

### **NSPS Requirements**

12. The permittee shall conduct an initial performance test for Tub No. 5 (B-17), Activator No. 1 (A-10), Activator No. 2 (A-17), and Activator No. 3 (A-13) in accordance with 40 CFR 60.736. Emissions from the dryers shall not contain particulate matter in excess of 0.057 grams per dry standard cubic foot (g/dscm). Compliance with the particulate matter standard shall be determined by using EPA Reference Method 5. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm. EPA Reference Method 9 shall be used to determine the opacity from stack emissions. The performance testing may be waived with written permission from the EPA. [§19.304 of Regulation 19 and 40 CFR Part 60 Subpart UUU – *Standards of Performance for Calciners and Dryers in Mineral Industries*].
13. The permittee will operate the following kilns and dryers with dry control equipment at all times: PW-04, B-02, B-11, B-15, B-17, A-07, A-13, A-14 and A-26. The discharged gas from the associated baghouses shall not contain particulates in excess of 0.057 grams per dry standard cubic meter (g/dscm). Compliance with NSPS Subpart UUU shall be demonstrated by the initial performance test §60.732 or has been demonstrated by reports dated July 19, 1999 and September 7, 2000. [§19.0303 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, 40 CFR 60 Subpart UUU – *Standards of performance for Calciners and Dryers in Mineral Industries*, §60.732(a) and §60.734(c)].

**Section V: INSIGNIFICANT ACTIVITIES**

The Department deems the following types of activities or emissions as insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in Regulation 18 and 19 Appendix A. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated **July 2000**.

**Table 5 - Insignificant Activities**

<b>Description</b>	<b>Category</b>
Bench-Scale Research & Development includes a small burner (less than 0.5 MMBtu/hr) and an Activator	A-5

## **Section VI: GENERAL CONDITIONS**

1. Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*). Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.
2. This permit does not relieve the owner or operator of the equipment and/or the facility from compliance with all applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated under the Act. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
3. The permittee will notify the Department in writing within thirty (30) days after commencement of construction, completion of construction, first operation of equipment and/or facility, and first attainment of the equipment and/or facility target production rate. [§19.704 of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation 19) and/or A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
4. Construction or modification must commence within eighteen (18) months from the date of permit issuance. [§19.410(B) of Regulation 19 and/or §18.309(B) of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
5. The permittee must keep records for five years to enable the Department to determine compliance with the terms of this permit--such as hours of operation, throughput, upset conditions, and continuous monitoring data. The Department may use the records, at the discretion of the Department, to determine compliance with the conditions of the permit. [§19.705 of Regulation 19 and/or §18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
6. A responsible official must certify any reports required by any condition contained in this permit and submit any reports to the Department at the address below. [§19.705 of Regulation 19 and/or §18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

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Arkansas Department of Environmental  
Quality  
Air Division  
ATTN: Compliance Inspector Supervisor  
Post Office Box 8913  
Little Rock, AR 72219

7. The permittee will test any equipment scheduled for testing, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) newly constructed or modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start-up of the permitted source or (2) existing equipment already operating according to the time frames set forth by the Department. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. The permittee must submit compliance test results to the Department within thirty (30) days after the completion of testing. [§19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
8. The permittee will provide: [§19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
  - a. Sampling ports adequate for applicable test methods
  - b. Safe sampling platforms
  - c. Safe access to sampling platforms
  - d. Utilities for sampling and testing equipment
9. The permittee will operate equipment, control apparatus and emission monitoring equipment within their design limitations. The permittee will maintain in good condition at all times equipment, control apparatus and emission monitoring equipment. [§19.303 of Regulation 19 and/or §18.1104 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
10. If the permittee exceeds an emission limit established by this permit, the permittee will be deemed in violation of said permit and will be subject to enforcement action. The Department may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met: [§19.601 of Regulation 19 and/or §18.1101 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
  - a. The permittee demonstrates to the satisfaction of the Department that the emissions resulted from an equipment malfunction or upset and are not the result of negligence or improper maintenance, and the permittee took all reasonable measures to immediately minimize or eliminate the excess emissions.

- b. The permittee reports the occurrence or upset or breakdown of equipment (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence.
  - c. The permittee must submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, the information need not be submitted again.
11. The permittee shall allow representatives of the Department upon the presentation of credentials: [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
- a. To enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of this permit
  - b. To have access to and copy any records required to be kept under the terms and conditions of this permit, or the Act
  - c. To inspect any monitoring equipment or monitoring method required in this permit
  - d. To sample any emission of pollutants
  - e. To perform an operation and maintenance inspection of the permitted source
12. The Department issued this permit in reliance upon the statements and presentations made in the permit application. The Department has no responsibility for the adequacy or proper functioning of the equipment or control apparatus. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
13. The Department may revoke or modify this permit when, in the judgment of the Department, such revocation or modification is necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated the Arkansas Water and Air Pollution Control Act. [§19.410(A) of Regulation 19 and/or §18.309(A) of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

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14. This permit may be transferred. An applicant for a transfer must submit a written request for transfer of the permit on a form provided by the Department and submit the disclosure statement required by Arkansas Code Annotated §8-1-106 at least thirty (30) days in advance of the proposed transfer date. The permit will be automatically transferred to the new permittee unless the Department denies the request to transfer within thirty (30) days of the receipt of the disclosure statement. The Department may deny a transfer on the basis of the information revealed in the disclosure statement or other investigation or, deliberate falsification or omission of relevant information. [§19.407(B) of Regulation 19 and/or §18.307(B) of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
15. This permit shall be available for inspection on the premises where the control apparatus is located. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
16. This permit authorizes only those pollutant emitting activities addressed herein. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
17. This permit supersedes and voids all previously issued air permits for this facility. [Regulation 18 and 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
18. The permittee must pay all permit fees in accordance with the procedures established in Regulation No. 9. [A.C.A §8-1-105(c)]

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## **APPENDIX A**

### **List of Plant Sources**

## **Plantwide Sources**

PW-01 Ore Piles  
PW-02 Inlet Hopper  
PW-03 Precrusher  
PW-04 Dryer (16.0 MMBtu/hr)

## **Active Plant Sources**

A-01 Hydrate Transfer To Bins  
A-02 Elliott Mill #1  
A-03 Elliott Mill #2  
A-04 Elliott Mill #3  
A-05 Elliott Mill #4  
A-06 Flash Calciner #2 Feed Tank  
A-07 Flash Calciner #2 (16.0 MMBtu/hr)  
A-08 Tub Feed System  
A-09 Tub Stand  
A-10 Activator #1 (5.5 MMBtu/hr)  
A-11 Activator #1 Screening/Product Tanks  
A-12 Munson Mixer  
A-13 Activator No. 3 (4.5 MMBtu/hr)  
A-14 Calciner #5 60" (15.0 MMBtu/hr)  
A-15 Tub Feed System  
A-16 Source Number Reserved  
A-17 Activator #2 (5.5 MMBtu/hr)  
A-18 Activator #2 Screening, Crushing & Product Tanks  
A-19 Calciner #5 Product Tanks  
A-20 Calciner #5 Feed Tanks  
A-21 Feed Blender  
A-22 Calciner #5 Feed Tank  
A-23 Calciner #5 Product Tank  
A-24 New Mill 2002  
A-25 New Product Tank 2002  
A-26 Proposed Calciner 18 ''  
(16.0 MMBtu/hr)  
A-27 Poposed Quickwater Boiler  
(2.5 MMBtuu/hr)  
A-28 Cure Drum  
A-29 Railcar Unloading



## **Bauxite Plant Sources**

- B-01 Mill
- B-02 #2 Kiln (30.0 MMBtu/hr)
- B-03 Receiver Tank
- B-04 Fines Pile
- B-05 Shipping / Loading
- B-06 #2 Tank
- B-07 Elliott Mill #5/28 Bin
- B-08 26 Bin
- B-09 Elliott Mill #6
- B-10 27 Bin
- B-11 Flash Calciner #1 (16.0 MMBtu/hr)
- B-12 #4 and #5 Tanks
- B-14 Feed Hopper
- B-15 #1 Kiln (30.0 MMBtu/hr)
- B-16 Dedust Belt Elevator
- B-17 Tub 5 (Baghouse and Bin Vent) (formerly Agglomerator)
- B-18 Rail Unloading Pit For Hydrate
- B-19 Convey Point (Bin 26 To Railcar)
- B-20 #1 Tank
- B-21 Tub No. 4