



**DIVISION OF  
ENVIRONMENTAL QUALITY**

Sarah Huckabee Sanders  
GOVERNOR

Shane E. Khoury  
SECRETARY

November 9, 2023

Via email to: DBROUGHTON@coorstek.com & First Class Mail

David Broughton  
Senior EHS Manager  
CoorsTek Benton  
3315 Boone Road  
Benton, AR 72015

Re: Notice of Final Permitting Decision; Permit No. 1672-AR-15

Dear Mr. Broughton,

After considering the application and other applicable materials as required by APC&EC Rule 8.211 and Ark. Code Ann. § 8-4-101 *et seq.*, this notice of final permitting decision is provided for:

CoorsTek Benton  
3315 Boone Road  
Benton, AR 72015

Permit Number: 1672-AR-15

Permitting Decision: approval with permit conditions as set forth in final Permit No. 1672-AR-15

Accessing the Permitting Decision:

<https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/Air/1672-AR-15.pdf>.

Accessing the Statement of Basis:

<https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/Air/1672-AR-15-SOB.pdf>.

Rule 19.407(A) of the Arkansas Plan of Implementation for Air Pollution Control (SIP) and Rule 18.307(A) of the Arkansas Air Pollution Control Code do not require a public notice or public comment period for Administrative Amendments.

Sincerely,

A handwritten signature in black ink, appearing to read "Caleb J. Osborne", with a long horizontal flourish extending to the right.

Caleb J. Osborne  
Division of Environmental Quality, Director  
Chief Administrator, Environment  
Arkansas Department of Energy & Environment  
5301 Northshore Drive, North Little Rock, AR 72118-5317

Enclosure: Certificate of Service  
cc: [khettinger@coorstek.com](mailto:khettinger@coorstek.com)

**CERTIFICATE OF SERVICE**

I, Natasha Oates, hereby certify that the final permit decision notice has been mailed by first class mail to CoorsTek Benton, 3315 Boone Road, Benton, AR, 72015, on this 9th day of November, 2023.

*Natasha Oates*

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Natasha Oates, AA, Office of Air Quality



**DIVISION OF ENVIRONMENTAL QUALITY**

**MINOR SOURCE AIR PERMIT**

**PERMIT NUMBER:** 1672-AR-15

**IS ISSUED TO:**

CoorsTek Benton  
3315 Boone Road  
Benton, AR 72015  
Saline County  
**AFIN:** 63-00164

THIS PERMIT IS THE ABOVE REFERENCED PERMITTEE'S AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DIVISION OF ENVIRONMENTAL QUALITY'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. § 8-4-101 *ET SEQ.*) AND THE RULES PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

**Signed:**

A handwritten signature in black ink, appearing to read "Caleb J. Osborne", is written over a horizontal line.

Caleb J. Osborne  
Division of Environmental Quality, Director  
Chief Administrator, Environment

November 9, 2023

Date

CoorsTek Benton  
Permit #: 1672-AR-15  
AFIN: 63-00164

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#### List of Acronyms and Abbreviations

Ark. Code Ann.	Arkansas Code Annotated
AFIN	Arkansas DEQ Facility Identification Number
C.F.R.	Code of Federal Regulations
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
HAP	Hazardous Air Pollutant
Hp	Horsepower
lb/hr	Pound Per Hour
NESHAP	National Emission Standards (for) Hazardous Air Pollutants
No.	Number
NO <sub>x</sub>	Nitrogen Oxide
NSPS	New Source Performance Standards
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter Equal To Or Smaller Than Ten Microns
PM <sub>2.5</sub>	Particulate Matter Equal To Or Smaller Than 2.5 Microns
SO <sub>2</sub>	Sulfur Dioxide
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

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Section I: FACILITY INFORMATION

PERMITTEE: CoorsTek Benton

AFIN: 63-00164

PERMIT NUMBER: 1672-AR-15

FACILITY ADDRESS: 3315 Boone Road  
Benton, AR 72015

MAILING ADDRESS: 3315 Boone Road  
Benton, AR 72015

COUNTY: Saline County

CONTACT NAME: David Broughton

CONTACT POSITION: Senior EHS Manager

TELEPHONE NUMBER: (501) 327-5333

REVIEWING ENGINEER: Jimmy Do

UTM North South (Y): Zone 15: 3828744.73 m

UTM East West (X): Zone 15: 541521.54 m

## Section II: INTRODUCTION

### Summary of Permit Activity

Coorstek, Inc. owns and operates a high technology custom ceramic product manufacturing facility located at 3315 Boone Road, Benton, AR. This modification includes the following:

- Installation of two natural gas-fired Spray Dryers (SN-21 and SN-22) used for ceramic powder production. Emissions from the new spray dryers are controlled by a baghouse.
- Combine annual emission limits from SN-21 and SN-22 with SN-03 in a single limit.
- Increase throughput limits for the Spray Dryers SN-03, SN-21, and SN-22 to 2,600,000 lbs/yr.
- Revise HAP emission limits to for the Spray Dryers to include Methanol, Hydrochloric Acid, Hydrogen Fluoride, Hexane, and Ammonia.
- Add one baghouse as an insignificant activity, group A-13.
- Add PM emissions limits for SN-09 (Binder Burner Ovens). These are existing emissions; however, they were not previously included in the permit.
- Add an emergency generator (SN-23).

Permitted emissions increased for PM by 3.4 tpy, VOC by 7.2 tpy, CO by 0.9 tpy, HAP by 5.73 tpy and Ammonia increased by 0.05 tpy.

### Process Description

#### Spray Dryer (SN-03, SN-21, SN-22)

Raw materials are blended into a slurry and processed in the natural gas fired spray dryer to form a powder. The amount and type of product materials processed vary based on demand. The spray dryer is a custom batch operation.

Emissions from SN-03 are controlled by a water based air scrubber, while SN-21 and SN-22 are controlled using a baghouse.

#### Natural Gas-fired Continuous Tunnel Ceramic Alumina Kilns (SN-04 and 05)

The facility has two natural gas-fired continuous tunnel kilns (SN-04 and 05) for firing ceramic parts. The typical firing temperature range for the product kilns is 1,465 to 1,680°C. Depending on the final product, alumina oxide powder is blended with binder material to produce a slurry that goes through the spray drying process. After spray drying, the alumina oxide material is pressed into parts by either an isopress or dry press. Pressed/machined parts are routed to one of the product tunnel kilns for firing. Parts are then tumbled, de-burred, and inspected for flaws in the shake and dye process. Parts are routed to a wet grinding area to be machined to a final dimensional tolerance and are washed to remove any slurry. Ground parts are lapped and polished for the customer-required surface finish and are inspected before packaging and shipping to customers.



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#### Carbide Reaction Bonded Process (SN-08A and B)

SN-08A accounts for the 12 electric vacuum furnaces in Building A. SN-08B accounts for the 13 electric vacuum furnaces in Building B. Both are controlled by thermal oxidizers. Powder is pressed into parts by an iso press or dry press, which compacts the ceramic powder into a solid shape/form. Machined parts are routed to a cure oven, SN-08A and B, to remove moisture and binders. The material is fired (reacting or sintering ceramic) in one of the twenty five electric vacuum furnaces, SN-08A and B, using silicon metal setters to infiltrate the part. Carbide parts are sandblasted to remove excess metal that builds up on the outside of the reaction bond surface during the firing process. Parts are inspected and routed to the wet grinding area to be machined to a final dimensional tolerance. Ground parts are lapped and polished for the customer required surface finish.

#### The Vacuum Hot Press (VHP) Process (SN-09)

The Vacuum Hot Press (VHP) Process is used to produce high-density carbide ceramic to make armor products. Carbide ceramic powder with binder is compacted in a pressure-caster to produce an armor plate. The armor plates are stacked into a graphite mold. The mold is placed into one of four electric binder burnout ovens (BBO), SN-09. The BBO heats the ceramic mold to set the mold and burn out the binders contained in the ceramic powder. The BBO emissions are controlled by a thermal oxidizer. The mold is removed from the BBO and then placed in the electric VHP. The VHP uses high heat and pressure to compact the ceramic in the mold. The mold is removed from the VHP and the armor plates are separated and sandblasted to produce a smooth finish on the plates. The plates are then packaged and sent to the customer.

#### Dust Control

Eight baghouses are used for housekeeping and to control occasional dust emissions at the facility. These baghouses are listed as insignificant activities.

#### Vacuum Dryers (SN-10)

The Vacuum Solvent Dryer process (SN-10) is used to produce ceramic carbide powder for use in armor and other applications. The vacuum dryers are a batch process. The size of the ball mills is matched to the size of the vacuum dryers. A batch of the carbide powder is blended with the base powder, a solvent, and sintering aids. The Boron Carbide (B<sub>4</sub>C) powder can only be processed using an ethanol blend (CDA-19) as a solvent and Silicon Carbide (SiC) can be processed using CDA-19, isopropyl alcohol (IPA), or acetone. The ingredients are placed in a ball mill that will be rotated with grinding media inside to mix the ingredients into a slurry. A baghouse is used for intermittent dust housekeeping. The slurry is then fed into a vacuum dryer to drive off (evaporate/boil out) the solvent and dry out the powder by using heat generated by a steam jacket or elements and a vacuum to lower the pressure of the system. The vacuum dryer process is automated through a programmable logic controller (PLC). The control system is programmed to monitor the drying process by heating up to an ideal drying temperature and entering the cool down phase when energy is no longer needed for drying. The solvents are therefore only evaporated for a specific portion of the production cycle. The emissions from the vacuum dryer group are piped to a condenser for solvent recovery, which is recycled or reused. The remaining solvent is directed to a wet scrubber designed for odor control. The vacuum

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dryers plumbed into the ethanol recovery tank will not run IPA or acetone. After cooling, the powder is removed, characterized, inspected, and packaged for use at CoorsTek facilities.

### Rules and Regulations

The following table contains the rules and regulations applicable to this permit.

Rules and Regulations
Arkansas Air Pollution Control Code, Rule 18, effective March 14, 2016
Rules of the Arkansas Plan of Implementation for Air Pollution Control, Rule 19, effective May 6, 2022

### Total Allowable Emissions

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

TOTAL ALLOWABLE EMISSIONS		
Pollutant	Emission Rates	
	lb/hr	tpy
PM	2.2	6.8
PM <sub>10</sub>	1.3	1.7
SO <sub>2</sub>	7.5	31.0
VOC	48.8	42.5
CO	9.6	19.6
NO <sub>x</sub>	8.2	27.5
Total HAP	17.66	13.43
Acetone	34.6	37.1
NH <sub>3</sub>	0.06	0.05

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### Section III: PERMIT HISTORY

Permit No. 1672-A was the first permit issued to ACI on May 8, 1996. This permit established permitted emission limits at: 3.0 tpy PM/PM<sub>10</sub>, 3.0 tpy SO<sub>2</sub>, 104.1 tpy VOC, 3.0 tpy CO, 5.5 tpy NO<sub>x</sub>, 3.0 tpy methane, and 0.1 tpy NH<sub>3</sub>.

Permit No. 1672-AOP-R0 was the first Title V permit issued to ACI-Coors Technical Ceramics on April 15, 1998. This permit established permitted emission limits at 101.2 tpy VOC and 0.1 tpy NH<sub>3</sub>.

Permit No. 1672-AR-1 was issued to CoorsTek Arkansas Operations on Dec. 17, 2003. This permit was issued in order to allow the facility to take a federally-enforceable VOC limit of 30.4 tpy. This change allowed the source to again obtain a Minor Source Air Permit rather than a Title V Operating Air Permit. Emission limitations were quantified in this permit at: 5.5 tpy PM/PM<sub>10</sub>, 8.9 tpy SO<sub>2</sub>, 30.4 tpy VOC, 35.8 tpy CO, 15.5 tpy NO<sub>x</sub>, 0.2 tpy NH<sub>3</sub>, and 1.0 tpy of glycol butyl ether. There was no change in the method of operation of the facility with this modification.

Permit No. 1672-AR-2 was issued to CoorsTek Arkansas Operations on May 4, 2005. This permit was issued in order to allow for the following changes: 1) A new milling operations to include a new press and sandblasting operations was installed. 2) Four (4) new baghouses for the purposes of emissions control on the new milling operations were installed. Three of the new baghouses (SN-16, SN-17, & SN-18) were Torit baghouses with 5,000 cfm blowers. These units are similar to SN-12-14 baghouses. The fourth new baghouse utilized a 500 cfm blower (SN-19), similar to the existing SN-10 and SN-11 baghouses. 3) One (1) additional electric vacuum furnace, to be included in SN-08, was installed. 4) The amount of SC30 binder allowable for use in a 12-month period was increased from 70,000 lb/yr to 625,000 lb/yr. The allowable VOC content of the binder remains unchanged at 7% by weight. Permitted emission increases associated with these changes were: 0.4 tpy PM/PM<sub>10</sub> and 19.4 tpy VOC.

Permit No. 1672-AR-3 was issued to CoorsTek Arkansas Operations on May 24, 2007. With this permit modification CoorsTek replaced periodic ceramic kiln #1 (SN-02) with a periodic ceramic kiln (SN-20) and increased the maximum limit on Aquadag (SC2) processing from 60,000 pounds to 120,000 pounds (60 tons) per consecutive 12-month period.

Permit No. 1672-AR-4 was issued to CoorsTek Arkansas Operations on October 14, 2008. With this permit modification, the facility:

1. Removed four baghouses (SN-10, 17, 18, and 19) and one periodic kiln (SN-20);
2. Identified six baghouses (SN-11, 12, 13, 14, 15, and 16) as Insignificant Activities;
3. Added natural gas emissions for Spray Dryer (SN-03), rated 3.5 MMBtu/hr;
4. Updated the ammonium hydroxide (NH<sub>3</sub>OH) evaporative emission factor to 0.1%;
5. Reduced the throughput of silicon carbide (SC30) formulated products, with a maximum 7% organic binder, cured in the Electric Furnace Cure Ovens (SN-08) from 625,000 to 300,000 pounds per 12-month period;

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6. Included the throughput of green boron carbide (B4C) formulated products, with a maximum 3% organic binder, cured in the Electric Furnace Cure Ovens (SN-08) of 300,000 pounds per 12-month period;
7. Updated reportable HAPs, Ethylene glycol monobutyl ether (EGBE) had been delisted as a HAP; and
8. Updated the soap VOC emission factor for the Alumina Wash Line (SN-09).

Permit 1672-AR-5 was issued on April 26, 2012. With this de minimis modification, the facility added: One silicon carbide pusher furnace with afterburner, three additional electric period furnace cure ovens, four additional silicon carbide furnaces, and an electric drying oven to SN-08, two additional silicon carbide formulations, SA and SP, and replaced dust collector #11 in the insignificant activities with a new Donaldson dust collector.

Permit 1672-AR-6 was issued on May 14, 2015. This modification allowed a 15<sup>th</sup> vacuum furnace to SN-08 to be installed. The 15<sup>th</sup> furnace was previously permitted but never installed. No changes to the permit were necessary to incorporate this change. Emission factors for SN-03, 04, 05, 06, 07, and 08 were updated based on testing and SN-01 was removed.

Permit 1672-AR-7 was issued on June 25, 2015. This permit is an administrative amendment to correct changes which were not made during the comment period of previous permit. Emissions rates, process descriptions, and the throughput limit for SN-08 were corrected.

Permit 1672-AR-8 was issued on February 12, 2016. This permit was a De Minimis modification to air permit 1672-AR-7. Due to production demands and changes, the facility requested to install a sixteenth vacuum furnace at SN-08. This modification did not result in a change in emissions since the annual powder usage limit was not increased. Also, the facility added a small, laboratory-scale vacuum furnace (AMP test Furnace) used for developing and testing materials, as an insignificant source according to group A-13.

Permit 1672-AR-9 was issued on April 6, 2017. This permit updated emission rates on the Tunnel Kilns SN-04, 05, 06, and 07 based on recent testing. Permitted emission rates increased 0.7 tpy of particulate, 0.2 tpy of VOC and 20.7 tpy of NOx. All other pollutants emission rates were reduced.

Permit 1672-AR-10 was issued on April 23, 2018. This administrative amendment removed SN-06 and SN-07 from the permit.

Permit 1672-AOP-R11 was issued on February 14, 2019. This permit modification was a de minimis change to add 7 more Carbide Electric Furnaces to SN-08 for a total of 23. Annual throughput and annual emission rates were not changed.

Permit 1672-AOP-R12 was issued on March 2, 2020. This permit modification was to increase the annual throughput for SN-03 to 2,400,000 lbs/year and for SN-08 to 1,200,000 lbs per year. Source SN-08 is a group of 16 Carbide Electric Furnaces existing in two buildings. After the modification the facility increased to a total of 25 furnaces with the furnaces controlled by an

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afterburner for each building. The 12 furnaces in Building A are SN-08A. The 13 in Building B are SN-08B. The annual emissions for SN-08A and B remained bubbled, but hourly rates are separate. This modification also added a new process building (Building C) consisting of Vacuum Hot Presses, and four electric binder burnout ovens (BBO), SN-09, which are controlled by afterburners; and added a new process to Building A that uses a vacuum dryer SN-10 to produce specialized ceramic powder.

Permit 1672-AR-13 was issued September 6, 2022. With this de minimis change the facility is added three (3) vacuum dryers to the facility as part of SN-10. Permitted emission rates increased 8 tpy VOC, 0.3 tpy HAPs and 32.4 tpy Acetone.

Permit 1672-AR-14 was issued November 22, 2022. With this administrative amendment, the facility added one electric cure oven in Building A to the Insignificant Activities List. Permitted emissions were unchanged.

Section IV: EMISSION UNIT INFORMATION

Specific Conditions

1. The permittee shall not exceed the emission rates set forth in the following table. [Rule 19.501 *et seq.* and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN	Description	Pollutant	lb/hr	tpy
03	Spray Dryer with wet scrubber (natural gas, 3.5 MM Btu/hr and 0.1% trace evaporative ammonia)	PM <sub>10</sub>	0.1	
		SO <sub>2</sub>	0.1	
		VOC	12.3	
		CO	1.4	
		NO <sub>x</sub>	0.1	
21	Spray Dryer with baghouse (natural gas, 3.3 MM Btu/hr and 0.1% trace evaporative ammonia)	PM <sub>10</sub>	0.1	0.2
		SO <sub>2</sub>	0.1	0.1
		VOC	12.3	22.8
		CO	1.4	2.6
		NO <sub>x</sub>	0.1	0.1
22	Spray Dryer with baghouse (natural gas, 3.3 MM Btu/hr and 0.1% trace evaporative ammonia)	PM <sub>10</sub>	0.1	
		SO <sub>2</sub>	0.1	
		VOC	12.3	
		CO	1.4	
		NO <sub>x</sub>	0.1	
04	Continuous Tunnel Kiln - Lindberg L32 (natural gas, 2.5 MM Btu/hr)	PM <sub>10</sub>	0.1	0.5
		SO <sub>2</sub>	0.1	0.2
		VOC	0.1	0.3
05	Continuous Tunnel Kiln - Lindberg L30 (natural gas, 3.5 MM Btu/hr)	CO	0.2	0.5
		NO <sub>x</sub>	4.5	19.4
08A	12 Carbide Electric Vacuum Furnaces, and Drying Oven Building A with Afterburner	PM <sub>10</sub>	0.2	0.6 27.2 7.8
		SO <sub>2</sub>	1.8	
		VOC	0.6	
		CO	1.8	
		NO <sub>x</sub>	1.6	
08B	13 Carbide Electric Vacuum Furnaces, and Drying Oven Building B with Afterburner	PM <sub>10</sub>	0.2	12.8 7.1
		SO <sub>2</sub>	4.4	
		VOC	1.3	
		CO	2.3	
		NO <sub>x</sub>	1.5	
09	Binder Burnoff Ovens with Afterburner	PM <sub>10</sub>	0.4	0.3
		SO <sub>2</sub>	0.8	3.4

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SN	Description	Pollutant	lb/hr	tpy
		VOC	0.1	0.2
		CO	0.7	3.6
		NO <sub>x</sub>	0.2	0.8
10	Vacuum Solvent Dryers	VOC	10.4	11.3
23	Emergency Generator 14.2 L, 307 BHP	PM <sub>10</sub>	0.1	0.1
		SO <sub>2</sub>	0.1	0.1
		VOC	0.4	0.1
		CO	0.4	0.1
		NO <sub>x</sub>	0.1	0.1

2. The permittee shall not exceed the emission rates set forth in the following table. [Rule 18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN	Description	Pollutant	lb/hr	tpy
03	Spray Dryer with wet scrubber (natural gas, 3.5 MM Btu/hr)	PM HAPs NH <sub>3</sub>	0.1 5.37 0.02	0.2 10.02 0.05
21	Spray Dryer with baghouse (natural gas, 3.3 MM Btu/hr)	PM HAPs NH <sub>3</sub>	0.1 5.37 0.02	
22	Spray Dryer with baghouse (natural gas, 3.3 MM Btu/hr)	PM HAPs NH <sub>3</sub>	0.1 5.37 0.02	
04	Continuous Tunnel Kiln - Lindberg L32 (natural gas, 2.5 MM Btu/hr)	PM HAPs	0.2	0.6
05	Continuous Tunnel Kiln - Lindberg L30 (natural gas, 3.5 MM Btu/hr)		N/A	0.1
08A	12 Carbide Electric Vacuum Furnaces, and Drying Oven Building A with Afterburner	PM HAPs	0.3 0.2	2.6 2.1
08B	13 Carbide Electric Vacuum Furnaces,		0.5 0.4	

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SN	Description	Pollutant	lb/hr	tpy
	and Drying Oven Building B with Afterburner			
09	Binder Burnoff Ovens with Afterburner	PM HAPs	0.8 0.2	3.3 0.7
10	Vacuum Solvent Dryers	HAPs Acetone	0.5 34.6	0.5 37.1
23	Emergency Generator 14.2 L, 307 BHP	PM HAPs	0.1 0.16	0.1 0.01
Facility		Any Single HAP	N/A	9.5

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

SN	Limit	Regulatory Citation
03, 04, 05, 08A, 08B, 09, 21, 22, 23	5%	Rule 18.501

4. The permittee shall 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 Rule 18, if the emission of the air contaminant constitutes air pollution within the meaning of Ark. Code Ann. § 8-4-303. [Rule 18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
5. The permittee shall not conduct operations in such a manner as to unnecessarily cause air contaminants and other pollutants to become airborne. [Rule 18.901 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
6. The permittee shall use only pipeline quality natural gas as fuel for kilns SN-04 and 05, and dryer SN-03, SN-21, and SN-22. [Rule 19.705 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
7. The permittee shall not exceed the material throughput limits at the facility per consecutive 12-month period set forth in the following table. [Rule 19.705 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Limit
03, 21, 22 combined	2,600,000 lbs



Source	Limit
08A and B combined	1,200,000 lbs
04, 05 combined	771 tons

8. The permittee shall maintain monthly records which demonstrate compliance with Specific Condition #7. The permittee shall maintain a twelve month rolling total and each individual month's data in a spreadsheet, database, or other well-organized format on-site and make records available to Department personnel upon request. The permittee shall update the records by the fifteenth day of the month following the month to which the records pertain. [Rule 19.705 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
9. The permittee shall maintain the operating temperature of the thermal oxidizers for SN-08A, SN-08B, and SN-09 to a minimum of 1,400 °F while the sources are in operation. [Rule 19.705 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
10. The permittee shall maintain record the operating temperature of the afterburners associated with SN-08A, SN-08B, and SN-09 once per day. These records shall be kept on-site and made available to Department personnel upon request. [Rule 19.705 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
11. The permittee shall not operate the emergency generator SN-23 in excess of 100 total hours (emergency and non-emergency) per calendar year in order to demonstrate compliance with the annual emission rate limits. Emergency operation in excess of these hours may be allowable but shall be reported and will be evaluated in accordance with Rule 19.602 and other applicable regulations. [Rule 19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
12. The permittee shall maintain monthly records to demonstrate compliance with Specific Condition #11. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. [Rule 19.705 and 40 C.F.R. § 52 Subpart E]
13. SN-23 is subject to provisions of 40 C.F.R. Part 63, Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. SN-23 meets the requirements of this part by meeting the requirements of 40 C.F.R. part 60 subpart JJJJ. [Rule 19.304, 40 C.F.R. §63.6585, and 40 C.F.R. §63.6590]
14. Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG)

manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 C.F.R. part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified. [Rule 19.304 and 40 C.F.R. § 60.4233(e)]

15. Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine. [Regulation 19, §19.304 and 40 C.F.R. § 60.4234]
16. Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter. [Regulation 19, §19.304 and 40 C.F.R. § 60.4237]
17. SN-23 must meet the following emission standard over the entire life of the engine. The permittee shows compliance with this condition by purchasing an engine certified to these standards. The permittee may opt to conduct a performance test instead to meet these standards by following procedures set in 40 C.F.R. §60.4244. [Rule 19.304 and, 40 C.F.R. §60.4233(e), and 40 C.F.R. § 60.4234]

Source	Engine Type	Pollutant	Emission Standards <sup>a</sup>	
			g/HP-hr	ppmvd at 15% O <sub>2</sub>
SN-23	Emergency	NO <sub>x</sub>	2.0	160
		CO	4.0	540
		VOC <sup>b</sup>	1.0	86

<sup>a</sup>The permittee may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O<sub>2</sub>.

<sup>b</sup>When calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

18. The permittee must keep records of conducted maintenance to demonstrate that the certified stationary SI internal combustion engine and related control device are operated and maintained according to the manufacturer's emission-related written instructions, but no performance testing is required. The permittee must also meet the requirements as specified in 40 C.F.R. part 1068, subparts A through D, as they apply. If the permittee adjusts engine settings according to and consistent with the manufacturer's instructions, the stationary SI internal combustion engine will not be considered out of compliance. [Rule 19.304 and 40 C.F.R. § 60.4243(b)]

19. The permittee must operate the emergency engines according to the following requirements. In order for SN-23 to be considered an emergency stationary ICE under 40 C.F.R. Part 60, Subpart JJJJ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described below, is prohibited. If SN-23 is not operated according to the requirements below, the engine will not be considered an emergency engine under 40 C.F.R. Part 60, Subpart JJJJ and must meet all requirements for non-emergency engines. [Rule 19.304 and 40 C.F.R. § 60.4243(d)(1-2)(i)]

1. There is no time limit on the use of emergency stationary ICE in emergency situations.
2. The permittee may operate the emergency stationary ICE for any combination of the purposes specified in this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by section C counts as part of the 100 hours per calendar year allowed by this section.

- i. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

3. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response allowed by section B. With the following exceptions, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [Rule 19.304 and 40 C.F.R. § 60.4243(d)(3)(i)(a-e)]

- i. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
    1. The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
    2. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

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3. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
4. The power is provided only to the facility itself or to support the local transmission and distribution system.
5. The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the permittee.

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### Section V: INSIGNIFICANT ACTIVITIES

The Division of Environmental Quality 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 Rule 18 and Rule 19 Appendix A. Group B insignificant activities may be listed but are not required to be listed in permits. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated December 2<sup>nd</sup>, 2022. [Rule 19.408 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Description	Category
Alumina Lap and Polish (inorganic water-based slurry, wet process, no emissions)	A-13
Alumina Shake and Dye (liquid water-based dye, Magnaflux SKL-4C, no emissions)	A-13
Alumina Grinding (water-based wet process, no emissions)	A-13
Silicon Lap and Polish (inorganic water-based slurry, wet process, no emissions)	A-13
Solvent Cleaner/Degreaser (All-Purpose Simple Green Cleaner (ready-to-use) water-based wet process, no emissions, <1.2% VOC, 4 drums/yr)	A-13
Foam for packing part in nitrite area (two-part spray, Instapak "A" and Gflex "B", non-VOC, no emissions)	A-13
JPW Electric Cure Oven (Building A)	A-13
Welding Operations (for occasional small repairs, not a production process)	Category B
Baghouses (used for intermittent housekeeping <i>only</i> , not control equipment) (formerly SN-11, 12, 13, 14, 15, and 16)	A-13
Baghouse (spray dryer mixing area #2) (used for intermittent housekeeping only, not control equipment)	A-13
Baghouse for intermittent dust housekeeping (ball mills)	A-13
Alumina Wash Line (formerly SN-09)	A-13
AMP Test Furnace	A-13
Clean Solvent Storage Tank	A-13
Waste Solvent Storage Tank	A-13
Test Kiln, electric, not in use	A-5

Section VI: GENERAL CONDITIONS

1. Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Rule 18 or the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 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 Rule 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 *et seq.*). Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Rule 18 or the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 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 rules promulgated under the Act. [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
3. The permittee shall notify the Division of Environmental Quality in writing within thirty (30) days after each of the following events: 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. [Rule 19.704 and/or Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
4. Construction or modification must commence within eighteen (18) months from the date of permit issuance. [Rule 19.410(B) and/or Rule 18.309(B) and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
5. The permittee must keep records for five years to enable the Division of Environmental Quality to determine compliance with the terms of this permit such as hours of operation, throughput, upset conditions, and continuous monitoring data. The Division of Environmental Quality may use the records, at the discretion of the Division of Environmental Quality, to determine compliance with the conditions of the permit. [Rule 19.705 and/or Rule 18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 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 Division of Environmental Quality electronically using <https://portal.adeg.state.ar.us> or mail them to the address below. [Rule 19.705 and/or Rule 18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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Office of Air Quality

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ATTN: Compliance Inspector Supervisor  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

7. The permittee shall 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 Division of Environmental Quality. The permittee must notify the Division of Environmental Quality of the scheduled date of compliance testing at least fifteen (15) business days in advance of such test. The permittee must submit compliance test results to the Division of Environmental Quality within sixty (60) calendar days after the completion of testing. [Rule 19.702 and/or Rule 18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
8. The permittee shall provide: [Rule 19.702 and/or Rule 18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 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; and
  - d. Utilities for sampling and testing equipment
9. The permittee shall operate equipment, control apparatus and emission monitoring equipment within their design limitations. The permittee shall maintain in good condition at all times equipment, control apparatus and emission monitoring equipment. [Rule 19.303 and/or Rule 18.1104 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 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 Division of Environmental Quality may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met: [Rule 19.601 and/or Rule 18.1101 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
  - a. The permittee demonstrates to the satisfaction of the Division of Environmental Quality 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, overnight delivery, or online at <https://portal.adeq.state.ar.us>) to the Division of Environmental Quality by the

- end of the next business day after the occurrence or the discovery of the occurrence.
- c. The permittee must submit to the Division of Environmental Quality, 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 Division of Environmental Quality upon the presentation of credentials: [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 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; and
    - e. To perform an operation and maintenance inspection of the permitted source.
  12. The Division of Environmental Quality issued this permit in reliance upon the statements and presentations made in the permit application. The Division of Environmental Quality has no responsibility for the adequacy or proper functioning of the equipment or control apparatus. [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
  13. The Division of Environmental Quality may revoke or modify this permit when, in the judgment of the Division of Environmental Quality, such revocation or modification is necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the rules promulgated the Arkansas Water and Air Pollution Control Act. [Rule 19.410(A) and/or Rule 18.309(A) and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
  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 Division of Environmental Quality 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 Division of Environmental Quality denies the request to transfer within thirty (30) days of the receipt of the



disclosure statement. The Division of Environmental Quality 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. [Rule 19.407(B) and/or Rule 18.307(B) and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

15. This permit shall be available for inspection on the premises where the control apparatus is located. [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
16. This permit authorizes only those pollutant emitting activities addressed herein. [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
17. This permit supersedes and voids all previously issued air permits for this facility. [Rule 18 and/or Rule 19 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
18. The permittee must pay all permit fees in accordance with the procedures established in Rule 9. [Ark. Code Ann. § 8-1-105(c)]
19. The permittee may request in writing and at least 15 days in advance of the deadline, an extension to any testing, compliance or other dates in this permit. No such extensions are authorized until the permittee receives written Division of Environmental Quality approval. The Division of Environmental Quality may grant such a request, at its discretion in the following circumstances:
  - a. Such an extension does not violate a federal requirement;
  - b. The permittee demonstrates the need for the extension; and
  - c. The permittee documents that all reasonable measures have been taken to meet the current deadline and documents reasons it cannot be met.

[Rule 18.314(A) and/or Rule 19.416(A), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

20. The permittee may request in writing and at least 30 days in advance, temporary emissions and/or testing that would otherwise exceed an emission rate, throughput requirement, or other limit in this permit. No such activities are authorized until the permittee receives written Division of Environmental Quality approval. Any such emissions shall be included in the facility's total emissions and reported as such. The Division of Environmental Quality may grant such a request, at its discretion under the following conditions:
  - a. Such a request does not violate a federal requirement;
  - b. Such a request is temporary in nature;
  - c. Such a request will not result in a condition of air pollution;

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- d. The request contains such information necessary for the Division of Environmental Quality to evaluate the request, including but not limited to, quantification of such emissions and the date/time such emission will occur;
- e. Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
- f. The permittee maintains records of the dates and results of such temporary emissions/testing.

[Rule 18.314(B) and/or Rule 19.416(B), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

21. The permittee may request in writing and at least 30 days in advance, an alternative to the specified monitoring in this permit. No such alternatives are authorized until the permittee receives written Division of Environmental Quality approval. The Division of Environmental Quality may grant such a request, at its discretion under the following conditions:
- a. The request does not violate a federal requirement;
  - b. The request provides an equivalent or greater degree of actual monitoring to the current requirements; and
  - c. Any such request, if approved, is incorporated in the next permit modification application by the permittee.

[Rule 18.314(C) and/or Rule 19.416(C), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

22. Any credible evidence based on sampling, monitoring, and reporting may be used to determine violations of applicable emission limitations. [Rule 18.1001, Rule 19.701, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]