

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2420-AOP-R2 AFIN: 27-00385

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Arkansas BioEnergy, LLC - Leola
15964 Highway 46 South
Leola, Arkansas 72084

3. PERMIT WRITER:

Thamoda Crossen

4. NAICS DESCRIPTION AND CODE:

NAICS Description: All Other Miscellaneous Wood Product Manufacturing
NAICS Code: 321999

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
5/6/2025	Modification	HAPs emission rates

6. REVIEWER'S NOTES:

The facility submitted a modification application to update Pellet Cooler with Cyclone (SN-02)'s HAPs emission rates.

The facility's annual emissions permitted are changing by -0.3 tpy PM, -0.3 tpy PM₁₀ and -0.2 tpy VOC.

7. COMPLIANCE STATUS:

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

This facility was last inspected on March 23, 2023, and was found to be in compliance. EPA ECHO shows "No Violation Identified" for Clean Air Act compliance

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? N

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)
N/A		

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
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? Y

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? Y

If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
Facility	NESHAP Subpart DDDD	Facility is an area source of HAP

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	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

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 Department 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 Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Methanol	262.086	28.83	0.1500	Yes
Acetaldehyde	45.041	4.955	0.2580	Yes
Acrolein	0.229	0.02519	0.1500	No
Formaldehyde	1.5	0.165	0.3450	No
Phenol	19	2.09	0.2760	Yes
Propionaldehyde	47.526	5.22878	0.1810	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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Acrolein	2.29	2.280	Yes
Formaldehyde	15.0	5.72	Yes

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation; refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards

Y

If exempt, explain: _____

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	Manufacturer data Wood Products Protocol 1 from EPA's "Interim VOC Measurement Protocol for the Wood Products Industry – July 2007" Previous stack test data	<u>lb/ton</u> PM/PM₁₀: 0.045 <u>lb/ODT</u> VOC: 2.2125 Methanol: 0.0042 Acetaldehyde: 0.0078 Acrolein: 0.0042 Formaldehyde: 0.0095 Propionaldehyde: 0.0030	Baghouse	-	Safety factor of 1.5 on all pollutants
02	Manufacturer data Wood Products Protocol 1 from EPA's "Interim VOC Measurement Protocol for the Wood Products Industry – July 2007" Previous stack test data	<u>lb/ton</u> PM/PM₁₀: 0.560 <u>lb/ODT</u> VOC: 4.347 Methanol: 0.0083 Acetaldehyde: 0.0159 Acrolein: 0.0083 Formaldehyde: 0.0203 Penol: 0.0228 Propionaldehyde: 0.0119	Cyclone	-	Safety factor of 1.25 on VOC, 1.5 on all other pollutants
03	AP-42 13.2.2.2	<u>Shavings lb/VMT</u> PM: 7.078 PM₁₀: 2.018 <u>Shavings Reject lb/VMT</u> PM: 7.078 PM₁₀: 2.018 <u>Pellets lb/VMT</u> PM: 7.138 PM₁₀: 2.035	-	-	<u>VMT/yr</u> Shavings: 761 Shavings Reject: 22 Pellets: 711

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
05	Manufacturer data Wood Products Protocol 1 from EPA's "Interim VOC Measurement Protocol for the Wood Products Industry – July 2007" Previous stack test data	<u>gr/scf</u> PM/PM₁₀: 0.015 <u>gr/scf</u> VOC: 0.7207 Methanol: 0.0027 Acetaldehyde: 0.0027 Acrolein: 0.0027 Formaldehyde: 0.0051 Phenol: 0.0027 Propionaldehyde: 0.0027	Baghouse	-	Safety factor of 1.25 on VOC, 1.5 on all other pollutants

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Results	Permit Limits	Production Rate	Results
01	PM ₁₀	1-2, 3A, 4, 5, 202, 25A	0.022 lb/hr *0.044 lb/hr	0.40 lb/hr	5.82 tons/hr, or 80.8% of 7.2 tons/hr	Pass
	VOC		2.0 lb/hr *2.5 lb/hr	14.2 lb/hr		
02	PM ₁₀	1-2, 3A, 4, 5, 202, 25A	0.082 lb/hr *0.12 lb/hr	6.1 lb/hr	5.82 tons/hr, or 80.8% of 7.2 tons/hr	Pass
	VOC		0.084 lb/hr *0.10 lb/hr	25.8 lb/hr		
05	PM ₁₀	1-2, 3A, 4, 5, 202, 25A	0.080 lb/hr * 0.10 lb/hr	1.5 lb/hr	N/A	Incomplete (2Runs)
	VOC		1.5 lb/hr	2.50 lb/hr		

*Extrapolated to 100%

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)
SN-01	PM, CPM	Air pollution control device		Y
SN-02	PM, CPM	Air pollution control device		Y
SN-05	PM, CPM	Air pollution control device		Y

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)
Facility	Tons of finished pellets	62,765 tons per rolling 12-month period	Monthly	Y
01, 02, 05	Opacity	20%	Monthly	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02	20%	8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E	Weekly Observations
03	5%	8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311	Inspector Observation
05	20%	8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E	Weekly Observations

20. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

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
Shavings Storage and Loading	A-13	0.074	-	-	-	-	-	-
Shavings Handling	A-13	0.139	-	-	-	-	-	-
Reject Storage Pile	A-13	0.629	-	-	-	-	-	-
Diesel Cube	A-2	-	-	3.0E-04	-	-	-	3.58E-05

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 #
2420-AOP-R1

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Arkansas BioEnergy, LLC - Leola
 Permit Number: 2420-AOP-R2
 AFIN: 27-00385

\$/ton factor	28.14	Annual Chargeable Emissions (tpy)	259.1
Permit Type	Renewal No Changes	Permit Fee \$	0

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

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If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	-0.5
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		39.7	39.4	-0.3	-0.3	39.4
PM ₁₀		35.9	35.6	-0.3		
PM _{2.5}		0	0	0		
SO ₂		0	0	0	0	0
VOC		219.9	219.7	-0.2	-0.2	219.7
CO		0	0	0		
NO _x		0	0	0	0	0
Total HAP	☐	5.35	5.35	0		