

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0456-AOP-R8 AFIN: 52-00035

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Anthony Timberlands, Inc.
111 South Plum Street
Bearden, Arkansas 71720

3. PERMIT WRITER:

Jeremy Antipolo

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Sawmills
NAICS Code: 321113

5. ALL SUBMITTALS:

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
7/24/2017	Minor Mod	Addition of an air curtain destructor for wood waste management

6. REVIEWER'S NOTES:

Anthony Timberlands, Incorporated (AFIN: 52-00035) owns and operates a pine sawmill physically located at Second and Plum Streets in downtown Bearden (Ouachita County), Arkansas. Anthony submitted a permit application to add an Air Curtain Destructor (ACD) SN-28B with an attached 85 hp Engine (SN-28A) for wood waste management. The wood waste for the ACD consists mainly of short logs (unsuitable for manufacturing), broken kiln sticks, and broken boards. The wood waste will be stored in small piles until it is loaded into the ACD by a log loader or front end loader (SN-29). This operation will produce approximately 1.5 truckloads per month of ash, which will be collected and hauled offsite (SN-29). This

modification results in an emission increase of 4.0 tpy PM/PM₁₀, 3.5 tpy SO₂, 32.1 tpy VOC, 28.9 tpy CO, 39.1 tpy NO_x, 1.24E-02 tpy Lead, 4.88E-02 Acetone, and 9.97 tpy Total HAP.

7. COMPLIANCE STATUS:

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

There are currently no enforcement actions for this facility.

8. PSD APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes, explain why this permit modification is not PSD.

N/A - The permit modification did not involve any physical change or change in method of operation that could trigger PSD review.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
Facility	PM ₁₀ , VOC, CO	PSD
SN-01, SN-22, SN-27	N/A	NSPS Dc
SN-01, SN-02, SN-22, SN-27	PM, CO, HAPs	NESHAP DDDDD
SN-28A	CO, NO _x , SO ₂	NSPS IIII
SN-28B	Opacity	NSPS CCCC

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. AMBIENT AIR EVALUATIONS:

a) Reserved.

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/m^3), 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?
Acrolein	0.229	0.0252	1.57	No
Formaldehyde	1.5	0.165	2.34	No
Arsenic	0.01	0.0011	6.70E-03	No
Beryllium	5E-05	5.5E-06	3.36E-04	No
Cadmium	0.01	0.0011	1.30E-03	No
Cr _(VI)	0.01	0.0011	1.06E-03	Yes
Lead	0.05	0.0055	1.46E-02	No
Manganese	0.1	0.011	4.88E-01	No
POM	0.2	0.022	3.97E-02	No

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 ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Acrolein	2.29	2.33	N
Formaldehyde	15	2.57093	Y
Arsenic	0.1	0.01282	Y
Beryllium	5E-4	0.00064	N
Cadmium	0.1	0.00239	Y
Lead	0.5	0.02802	Y
Manganese	1.0	0.93501	Y
POM	2.0	0.07721	Y

The modeling analysis was conducted using meteorological data from 2007 through 2011. During the 5-yr analysis, two acrolein exceedances and a single beryllium exceedance occurred on the Anthony Timberlands, Inc. southern fence line. As the impacted receptors are located in an industrial area with no direct public access, the exceedances are considered to cause insignificant environmental impact.

c) H₂S Modeling:

The facility is not a significant source for hydrogen sulfide. Therefore, odor modeling is not warranted at this time.

12. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
01, 22	AP-42	0.28 lb _{PM} /MMBtu 0.32 lb _{PM10} /MMBtu 0.22 lb _{NOx} /MMBtu 0.025 lb _{SO2} /MMBtu 0.60 lb _{CO} /MMBtu* 0.013 lb _{VOC} /MMBtu	Multi-clone	95%	Total heat input for SN-01, SN-02, and SN-22 shall be limited 1,000,000 MMBtu/yr.
02	AP-42 Stack Test	0.28 lb _{PM} /MMBtu 0.22 lb _{NOx} /MMBtu 0.025 lb _{SO2} /MMBtu 0.013 lb _{VOC} /MMBtu S.T.** results: 24.3 lb/hr PM ₁₀ 61.46 lb/hr CO	Turbo Venturi Scrubber system	95%	Total heat input for SN-01, SN-02, and SN-22 shall be limited 1,000,000 MMBtu/yr.
27	AP-42	0.0075 lb _{PM} /MMBtu 0.0075 lb _{PM10} /MMBtu 0.098 lb _{NOx} /MMBtu 0.0006 lb _{SO2} /MMBtu 0.0824 lb _{CO} /MMBtu 0.0054 lb _{VOC} /MMBtu	None	N/A	
04	AP-42	0.02 lb/ton	Cyclone	95%	
05	AP-42	0.04 lb/ton	Cyclone	95%	Stack test performed on similar cyclone concluded that the sawdust bin cyclone captures 99.99% of the PM generated from the sawing operations. The 95% capture efficiency is a conservative estimate.
06	AP-42	1.0 lb/ton	Cyclone	95%	
25	AP-42	0.35 lb/ton	Cyclone	95%	Sieve testing conducted at a competitor's softwood lumber mill. Stack test performed on similar cyclone concluded that the sawdust

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
					bin cyclone captures 99.99% of the PM generated from the sawing operations. The 95% capture efficiency is a conservative estimate.
12, 13, 14, 15, 16, 25	NCASI	3.5 lb _{VOC} /MBF 0.016 lb _{Formaldehyde} /MBF 0.265 lb _{methanol} /MBF	None		Facility limited to 200 MMBF of lumber per any 12 consecutive months.
23, 24	AP-42	200 MMBF of lumber per any 12 consecutive months.	Building	50%	Log Sawing assume 10% PM/PM ₁₀ airborne and 50% control efficiency because operations are indoors.
26	AP-42	0.1671 lb PM ₁₀ /VMT 22,646 mi/yr			
28A	AP-42 Chapter 3	<u>Lb/hp-hr</u> PM=2.2E-03 PM ₁₀ =2.2E-03 SO ₂ =2.05E-03 VOC=2.51E-03 CO=5 g/KW-hr NO _x =3.1E-02 HAPs listed in AP-42 Chapter 3	None	N/A	Annual Calculated at 5,840 hr/yr
28B	Emission Tests AP-42 Chapter 1.6 and 2	<u>Lb/ton</u> PM=0.11 PM ₁₀ =0.11 SO ₂ =0.1 VOC=1.1 CO=0.94 NO _x =1.1 HAPs listed in AP-42	None	N/A	Annual Calculated at 57,000 tons/yr
29	AP-42	<u>Loading</u> PM/PM ₁₀ =0.0044 lb/ton <u>Storage Piles</u> PM/PM ₁₀ =0.0022 lb/ton <u>Ash Handling</u> 1.52E-04 lb/ton	None	N/A	Annual Calculated at 57,000 tons/yr

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
SN-01 SN, 02, SN-22	PM ₁₀	201 A	Test one boiler of each size once every five years. SN-01 and SN-22 are 28.7 MMBTU/hr, and SN-02 is 55.5 MMBTU/hr.	Compliance Verification
SN-01, SN-02 SN-22	CO	10	Each boiler, annually SN-01 and SN-22 are 28.7 MMBTU/hr, and SN-02 is 55.5 MMBTU/hr.	Boiler MACT
SN-01, SN-02, SN-22	NO _x	7E	Test one boiler of each size once every five years. SN-01 and SN-22 are 28.7 MMBTU/hr, and SN-02 is 55.5 MMBTU/hr.	Compliance Verification
SN-01, SN-02, SN-22	HCl, Hg, TSM	Fuel Analysis See Subpart 5D, Table 6, Items #1, #2, and #4	Monthly	Boiler MACT
SN-01, SN-02, SN-22	HCl, Hg, TSM	Fuel Analysis See Subpart 5D, Table 5	Annually	Boiler MACT
SN-01, SN-02, SN-22	Filterable PM	5 or 7 See Subpart 5D, Table 5	Annually	Boiler MACT
SN-28B	Opacity	Method 9	Initial, Annually	NSPS CCCC

14. 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)
Not Applicable				

15. 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)
01, 02, 22	weight of green wet wood residue (4,500 Btu/lb) and kiln dried wood residue (8,000 Btu/lb)	Not to exceed 1,000,000 MMBTU/yr heat input to boilers, combined	Monthly	Yes
02	Hours of Operation	7,884 hrs/yr	Monthly	Yes
02	Scrubber Liquid flow rate 30 day average, Control device pressure drop	Established at each annual test required by Boiler MACT	Continuously	Yes
04, 05, 06, 12, 13, 14, 15, 16, 23, 24, 25, 26	kiln dried lumber	200 MMBF/yr	Monthly	Yes
27	Natural gas combusted	420.7 MMscf/yr	Monthly	Yes
28A	Hours of Operation	5,840 hr/yr	Monthly	No
28B	Throughput	57,000 tons/yr wood waste	Monthly	No
28A, 28B	Opacity Test Results	10% During Operation, 35% During Startup	Initial, Annual	Yes

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 22 02, 27	10% (Daily block average)	Boiler MACT	Daily Observations
04, 05, 06, 07, 09, 11, 25	20%	§19.503	Daily Observation
26	5%	§19.503	Weekly
28A	5%	§18.501	Weekly
28B	20%	§19.503	Inspector Observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
Not Applicable	

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)		
		VOC	HAPs	
			Single	Total
Underground Gasoline Storage Tank (10,000 gallons)	A-13	0.625	*	*
Underground Diesel Fuel Storage Tank (14,000 gallons)	A-13	0.003	*	*
Underground Diesel Fuel Storage Tank (10,000 gallons)	A-3			
Kerosene Aboveground Storage Tank (250 gallons)	A-3	<0.001	*	*

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0456-AOP-R7

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name:
Permit Number:
AFIN:

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	790.39
Permit Type	Minor Mod	Permit Fee \$	500

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	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	78.749
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		177.5	181.5	4		
PM ₁₀		198.1	202.1	4	4	202.1
PM _{2.5}		0	0	0		
SO ₂		12.7	16.2	3.5	3.5	16.2
VOC		359.7	391.8	32.1	32.1	391.8
CO		615.9	644.8	28.9		
NO _x		131.1	170.2	39.1	39.1	170.2
Lead	<input type="checkbox"/>	2.41E-02	3.65E-02	0.0124		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
1,1,1-Trichloroethane	<input checked="" type="checkbox"/>	1.55E-02	1.55E-02	0	0	0.0155
Chlorine	<input checked="" type="checkbox"/>	0.4	0.4	0	0	0.4
Chloromethane	<input checked="" type="checkbox"/>	1.15E-02	1.15E-02	0	0	0.0115
Hydrogen chloride	<input checked="" type="checkbox"/>	9.5	9.5	0	0	9.5
Methanol	<input type="checkbox"/>	26.5	26.5	0		
Tetrachloroethene	<input checked="" type="checkbox"/>	1.90E-02	1.90E-02	0	0	0.019
Acetone	<input checked="" type="checkbox"/>	9.50E-02	1.44E-01	0.049	0.049	0.144