

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0456-AOP-R6 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.
Second and Plum Streets
Bearden, Arkansas 71720

3. PERMIT WRITER:

Charles Hurt, P.E.

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Sawmills
NAICS Code: 321113

5. SUBMITTALS:

8/14/2014

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 with modifications to renew the Title V Permit and an application to replace a 55.5 MMBtu/hr wood-fired boiler (SN-03) with a 48.988 MMBtu/hr natural gas-fired boiler. The applicable requirements of the Boiler MACT were also incorporated. Overall, permitted emissions increased by 0.3 tpy SO₂ and 33.2 tpy NO_x, and decreased by 37.8 tpy PM, 32.8 tpy PM₁₀, 4.9 tpy VOC, and 171.8 tpy CO.

The renewal application included modifications to the methods used to estimate emissions from the log debarking operations (SN-23) and the paved roads (SN-26). For SN-23, the assumed control efficiency was removed from the emission calculations which resulted in permitted emissions increasing for that source. For SN-26, the AP-42

equation used to estimate emissions from paved roads was revised which resulted in a lower emissions estimate for that source.

Peer review of the proposed draft permit resulted in reducing the frequency of opacity readings from daily to weekly for SN-04 and SN-05.

7. COMPLIANCE STATUS:

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

The facility was last inspected on November 8, 2013. No compliance issues were identified by inspection report. A compliance issue was discovered following the date of the inspection.

On March 10, 2014 the permittee submitted a PSD application for the installation of a 77.1 MMBtu/hr natural-gas fired boiler. On May 21, 2014 the reviewing engineer visited the facility in order to verify information in the permit application. During the course of the site visit the boiler was found to be onsite. The permittee did not obtain the necessary preconstruction permits prior to commencing construction of the boiler. This discovery was referred to ADEQ Enforcement in a memo dated May 22, 2014. The revised application was later deemed to be a minor modification.

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, or*
- *CO₂e potential to emit $\geq 100,000$ tpy and ≥ 100 tpy/ ≥ 250 tpy of combined GHGs?*

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

The modification was determined to be a minor modification. Since the replacement boiler was the same size, there are no affected units and the boiler itself does not trigger significant modification thresholds.

9. GHG STATUS:

Indicate one:

Facility is classified as a major source for GHG and the permit includes this designation

Facility does not have the physical potential to be a major GHG source

Facility has restrictions on GHG or throughput rates that limit facility to a minor GHG source. Describe these restrictions: _____

10. 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

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. NAAQS EVALUATIONS AND NON-CRITERIA POLLUTANTS:

a) NAAQS:

The results of dispersion modeling are summarized below.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	50.1	150	24-Hour	114.9*	76.6
CO	140.9	10,000	8-Hour	71.0	0.8
		40,000	1-Hour	109.8	0.3
NO _x	32.7	100	Annual	1.6	1.6
Pb	5.54E-03	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	3.1E-04	0.2

* Includes Little Rock 2012 background ($36 \mu\text{g}/\text{m}^3$)

Plantwide SO₂ PTE is less than 100 tpy.

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	2.52E-02	0.78	No
Arsenic	0.01	0.0011	2.49E-03	No
Beryllium	5E-05	5.5E-06	1.25E-04	No
Cadmium	0.002	2.20E-04	5.53E-04	No
HCl	2.98	0.328	2.2	No
Manganese	0.1	1.10E-02	0.18	No
Mercury	0.01	1.10E-03	4.20E-04	Pass

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	0.15	Yes
Arsenic	0.1	0.00047	Yes
Beryllium	5.0E-04	2.0E-05	Yes
Cadmium	0.02	1.00E-04	Yes
HCl*	29.8	0.68	Yes
Manganese	1.00	0.03439	Yes

* These pollutants did not require updated modeling because the requested changes did not involve an increase.

Other Modeling:

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

13. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
01, 22	AP-42	0.35 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	0.22 lb _{NOx} /MMBtu 0.025 lb _{SO2} /MMBtu 0.013 lb _{voc} /MMBtu S.T.** results: 24.3 lb/hr PM/PM ₁₀ 91.3 lb/hr CO	Multi-clone	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 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			

14. 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

15. MONITORING OR CEMS:

The permittee has not installed or proposed to install any CEMs or emissions related monitoring devices.

16. 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	Not to exceed 1,000,000 MMBTU/yr heat input to boilers,	Monthly	Yes

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	wood residue (8,000 Btu/lb)	combined		
02	Hours of Operation	7,884 hrs/yr	Monthly	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

17. 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

18. DELETED CONDITIONS:

Former SC	Justification for removal
26-37, 42-44	Sources removed.

19. 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	*	*

* The VOC emitted from these sources contain some components that are HAPs. Considering only 0.63 tpy of VOC total is emitted from these listed activities, it can be concluded without quantifying HAPs that neither limit of 1.0 tpy of single HAP nor 2.5 tpy combination of HAP will be exceeded.

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20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
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APPENDIX A – EMISSION CHANGES AND FEE CALCULATION