STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0456-AOP-R9 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:

Elliott Marshall

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Sawmills
NAICS Code: 321113

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
3/6/2018	Modification	-Remove SN-12 and 13 -Install new Continuous Kiln SN-30 -Increase hourly emission rate at SN-16

6. REVIEWER'S NOTES:

Anthony Timberlands, Inc. (ATI) [(AFIN) 52-00035] owns and operates a pine sawmill physically located at Second and Plum Streets in Bearden (Ouachita County), Arkansas. ATI submitted a permit application to:

- Remove two (2) existing Hemco kilns (SN-12 & 13) and replace them with one (1) KDS Windsor continuous drying kiln (CDK, SN-30). ATI is not increasing the plantwide annual production limit of 200 million board feet.
- Increase the permitted hourly emission rate at SN-16 (Irving-Moore Kiln #5). SN-16 was incorrectly permitted as a Scotch kiln in 0456-AOP-R2 and R3. In 0456-AOP-R4, the brand name was corrected from Scotch to Irving Moore (per EPA Comment #6), but the capacity remained incorrectly permitted at 3,500 BF/hr. SN-16 has the same capacity of 10,500 BF/hr as the two other Irving Moore kilns at the facility (SN-14 & SN-15), and will be permitted as such in this revision.

There are no changes to annual permitted emissions as a result of these changes.

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 no pending or active enforcement actions.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y
If yes, were GHG emission increases significant? 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 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)
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, NOx, SO2	NSPS IIII
SN-28B	Opacity	NSPS CCCC

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N
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	Pollutant	Regulation (NSPS, NESHAP or PSD)
N/A		

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

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).

No modeling was performed for this permit revision, as this modification does not result in any emission increases. By removing SN-12 and 13 the hourly emission rates slightly decreased for Acrolein and Formaldehyde.

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acrolein	0.229	0.0252	1.52	No
Formaldehyde	1.5	0.165	2.22	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 ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	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 fenceline. 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) H_2S Modeling:

The facility is not a significant source for hydrogen sulfide. 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	0.28 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 bin cyclone captures 99.99% of the PM generated from the sawing operations. The 95% capture efficiency is a conservative estimate.
14, 15, 16, 25, 30	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	Lb/hp-hr PM=2.2E-03	None	N/A	Annual Calculated at 5,840 hr/yr

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
		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			
28B	Emission Tests AP-42 Chapter 1.6 and 2	Lb/ton 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	Loading PM/PM_{10}=0.0044 lb/ton Storage Piles PM/PM_{10}=0.0022 lb/ton Ash Handling 1.52E-04 lb/ton	None	N/A	Annual Calculated at 57,000 tons/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	Pollutants	Test Method	Test Interval	Justification
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

15. 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)
N/A				

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 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, 14,	kiln dried lumber	200 MMBF/yr	Monthly	Yes

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
15, 16, 23, 24, 25, 26, 30				
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

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
28A	5%	§18.501	Weekly
28B	20%	§19.503	Inspector Observation

18. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

19. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

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			

Source Name	Group A Category	Emissions (tpy)		
		VOC	HAPs	
			Single	Total
Kerosene Aboveground Storage Tank (250 gallons)	A-3	<0.001	*	*

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0456-AOP-R8

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Anthony Timberlands, Inc.
Permit Number: 0456-AOP-R9
AFIN: 52-00035

$/ton factor	23.93	Annual Chargeable Emissions (tpy)	790.394
Permit Type	Modification	Permit Fee $	1000

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	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	0.004
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		181.5	181.5	0		
PM_{10}		202.1	202.1	0	0	202.1
$PM_{2.5}$		0	0	0		
SO_2		16.2	16.2	0	0	16.2
VOC		391.8	391.8	0	0	391.8
CO		644.8	644.8	0		
NO_X		170.2	170.2	0	0	170.2
Lead	☐	0.0365	0.0365	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
1,1,1-Trichlorethane	☑	0.0155	0.0155	0	0	0.0155
Chlorine	☑	0.4	0.4	0	0	0.4
Chloromethane	☑	0.0115	0.0155	0.004	0.004	0.0155
Hydrogen chloride	☑	9.5	9.5	0	0	9.5
Methanol	☐	26.5	26.5	0		
Tetrachlorothene	☑	0.019	0.019	0	0	0.019
Acetone	☑	0.144	0.144	0	0	0.144