STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0688-AOP-R15 AFIN: 30-00015

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Flakeboard America LLC
1275 Willamette Road
Malvern, Arkansas 72104

3. PERMIT WRITER:

Joseph Hurt

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Reconstituted Wood Product Manufacturing
NAICS Code: 321219

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
12/6/2017	Minor Modification	Installation of a new 62 MMBtu/hr natural gas boiler (SN-37)

6. REVIEWER'S NOTES:

Flakeboard America Limited (Flakeboard) operates a medium density fiberboard (MDF) manufacturing facility outside the city of Malvern, AR. With this minor modification, Flakeboard is removing the Lillie Boiler (SN-30) and installing a new 62 MMBtu/hr natural gas fired boiler (SN-37). The permitted emission increases include 8.8 tpy of CO.. The permitted emission decreases include 0.6 tpy of PM/PM_{10}, 0.3 tpy of SO_2, 0.7 tpy of VOC, and 4.3 tpy of NO_x.

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 active or pending enforcement actions at the present time.

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)
SN-36 & SN-37	N/A (natural gas-fired sources)	NSPS, Subpart Dc
	There are no specific emission limits or pollutants identified, but the rule generally regulates HAPs	NESHAP, Subpart DDDDD
Plantwide	HAPs	NESHAP, Subpart DDDD
SN-35A	There are no specific emission limits or pollutants identified, but the rule generally regulates HAPs	NESHAP, Subpart ZZZZ
SN-35B	CO PM NMHC + NO_x	NSPS, Subpart IIII
SN-04, SN-09, SN-12, SN-13, SN-14, SN-16, SN-22, SN-22a, SN-27, SN-28, SN-29, and SN-32	PM_{10}	40 C.F.R. § 64 (CAM)

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/A
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
N/A		

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

Include the results for any ambient air evaluations or modeling. Include NSR/PSD permits and permits that require an evaluation in accordance with revisions to 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 ADEQ Air Permit Screening Modeling Instructions.

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 × TLV	Proposed lb/hr	Pass?
Acetaldehyde	45.04	4.95	9.04	NO
Acetone	1187	130	0.77	Yes
Cadmium	0.01	1.1E-03	0.04	NO
Formaldehyde	1.5	0.165	11.22	NO
Hexane	176.2	19.3	9.10	Yes
Methanol	262	28.8	12.09	Yes
MIBK	81.9	9.01	8.89	Yes
Phenol	19.2	2.11	9.81	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?
Cadmium	0.1	0.06123	Yes
Acetaldehyde	450.4	2.76823*	Yes
Formaldehyde	15	9.88463	Yes
Phenol	192.0	64.46801*	Yes

*Modeling was not performed with this permitting action. The results above are from modeling for Permit 0688-AOP-R9.

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01 & 26	Source Testing NCASI Factor TB 770 Table 5.2.1 and 5.2.2	lb/lb throughput: 1.72E-04 PM/PM_{10} 2.07E-05 SO_2 8.87E-05 VOC 5.64E-04 CO 5.62E-04 NO_x lb/ODT: 0.012 Acetone 9.58E-03 Acetaldehyde 8.18E-01 Formaldehyde 2.20E-01 Methanol 8.73E-03 MIBK 1.16E-02 Phenol	RCO	90%	SN-01 short-term maximum capacity of 22.71 ODT/hr SN-26 short-term maximum capacity of 28 ODT/hr
04, 09, 22, 22a, 27, & 28	Testing NCASI	0.001 grain/ft^3 lb/ODT: 0.056 VOC 8.9E-3 Formaldehyde 6.9E-3 Methanol	Baghouse	99.2% and higher	38,500 cfm
12	Testing NCASI	0.001 grain/ft^3 lb/ODT: Acetone: 4.8E-3 Formaldehyde: 8.9E-3 Methanol: 6.9E-3 Phenol: 8.6E-3	Baghouse	99.96%	38,500 cfm
13	Testing NCASI	0.001 grain/ft^3 lb/ODT: Acetone: 4.8E-3 Formaldehyde: 8.9E-3 Methanol: 6.9E-3 Phenol: 8.6E-3	Baghouse	99.96%	93,000 cfm
14	Testing	0.001 grain/ft^3	Baghouse	99.9%	3,000 cfm
16	Testing	0.001 grain/ft^3	Baghouse	99.99%	38,500 cfm
18	Estimated grain loading factor	0.05 gr/dscf 2.2 lb PM/hr	Cyclone	--	--

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
19	AP42 Section 13.2.4	0.00001 lb/ton PM/PM_{10}	--	--	302,623 tons of raw material per year
29	Testing NCASI	0.001 grain/ft^3 lb/ODT: 0.13 VOC 4.4 E-3 Acetaldehyde 4.2E-3 Acetone 3.4E-2 Formaldehyde 1.7E-2 Methanol	Baghouse	99.99%	38,500 cfm
32	Estimated grain loading factor	0.001 grain/ft^3	Baghouse	99.98%	10,500 cfm
34	AP-42 Section 13.2.1	lb/VMT: 0.76 PM 0.15 PM_{10}	Street Sweeper	None applied	W = 25.6 sL = 3 VMT = 12,680 annually
35A	AP-42 Section 3.3	lb/MMBtu: 0.31 PM/PM_{10} 0.29 SO_x 0.36 VOC 0.95 CO 4.41 NO_x	None	N/A	
35B	NSPS IIII & AP-42 Section 3.3	lb/MMBtu: 0.31 PM/PM_{10} 0.29 SO_x 0.36 VOC 0.95 CO 4.41 NO_x	None	N/A	NSPS standard is NMHC + NO_x Facility has chosen to calculate VOC and NO_x individually (less than NSPS total)
36	AP-42 Section 1.4	lb/MMscf: 7.6 PM/PM_{10} 0.6 SO_x 5.5 VOC 84 CO 100 NO_x	None	N/A	37 MMBtu/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
37	AP-42 Section 1.4 Vendor Data for NO_x	lb/MMscf: 7.6 PM/PM_{10} 0.6 SO_x 5.5 VOC 84 CO lb/MMscf: 36 NO_x	None	N/A	62 MMBtu/hr The facility is using AP-42's CO emission factor, and will test to verify.

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01	PM_{10} NO_x CO Opacity	201A or 5, & 202 7E 10 9	No later than February 1, 2013, and once every 5-years thereafter.	Necessary to verify emissions
	VOC (inlet and outlet)*	25A	Once every 5-years thereafter on the same schedule as the PM_{10}, NO_x, CO, and opacity.	
26	PM_{10} NO_x CO VOC (inlet and outlet)* Opacity	201A or 5, & 202 7E 10 25A 9	No later than February 1, 2013, and once every 5-years thereafter.	Necessary to verify emissions
37	CO	10	Initial test**	Necessary to verify emissions

* Inlet and outlet VOC testing is only required if the facility ever fails a VOC test.
** Vendor guarantee for CO emissions was listed as three times higher than AP-42. Facility agreed to stack test to demonstrate that CO emissions are lower than the vendor guarantee.

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	Frequency	Report
01 & 26	Min. avg. Combustion Temperature 671°F (SN-01) & 744°F (SN-26)	CPMS	Combustion Temp: Recorded – 15 min. Averaged – 3 hr (block)	No
01 & 26	Pressure Differential	CPMS	Pressure Differential: Recorded – 1 hr Averaged – 24 hr	No
	Catalytic Activity	Test	Annually	No

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 & 26	Material Throughput	371,372 tons	Monthly	Yes
01 & 26	MDF production	205 $MMft^3/yr$	Monthly	Yes
CAM sources	Opacity observations	5 %	Daily	Yes
	Equipment inspections, maintenances, and repairs	Weekly inspections	Monthly	Yes
18	Hours of Operation	4,000 hr per rolling 12 months	Monthly	Yes
19	Green wood chips received	302,623 tons per rolling 12 months	Monthly	Yes
36	Natural Gas Burned	317.8 $MMft^3/yr$	Monthly	Yes
37		543.2 $MMft^3/yr$		
35A	Hours of operation	100 hours per calendar year	Monthly	Yes
	Maintenance Records	See Specific Conditions 58 & 64	As required	No
	Emergency operation hours	See Specific Condition 63	As required	No

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
35B	Hours of operation	100 hours per calendar year	Monthly	Yes
	Maintenance plan and records of conducted maintenance (if necessary per 40 C.F.R. § 60.4211(g)(2))	N/A	As Needed	No

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01 & 26	10 %	Dept. Guidance	Weekly Observations
04, 09, 12, 13, 14, 16, 22, 22a, 27, 28, 29, 32	5 %	40 C.F.R. § 64	Daily Observations
18	5 %	Dept. Guidance	Weekly Observations
36 & 37	5 %	Dept. Guidance	Natural gas only
34	No visible emissions off-site	Dept. Guidance	Inspections
35A & 35B	20 %	Dept. Guidance	Annual observations

18. DELETED CONDITIONS:

Former SC	Justification for removal
26	This compliance mechanism was associated with the Lillie boiler (SN-30), which is being removed with this permitting action.

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)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Diesel Storage Tank (300 gal)	3			0.01			0.01	0.01

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Diesel Storage Tank (1,000 gal)	3			0.01			0.01	0.01
Resin Tanks (6 with a total capacity of 10,000)	13			0.01				
Gasoline Storage Tank (1,000 gal)	13			0.03			0.03	0.03
Woodwaste Loadout	13	0.75						
Cooling Towers x 2 (each rated at 1,500 gpm)	13	0.46 (Total)						

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 #
0688-AOP-R14

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Flakeboard America Limited
Permit Number: 0688-AOP-R15
AFIN: 30-00015

$/ton factor	23.93	Annual Chargeable Emissions (tpy)	434.75
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	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	-5.9
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		92.4	91.8	-0.6	-0.6	91.8
PM_{10}		88.6	88	-0.6		
$PM_{2.5}$		0	0	0		
SO_2		8.5	8.2	-0.3	-0.3	8.2
VOC		96.4	95.7	-0.7	-0.7	95.7
CO		237.4	246.2	8.8		
NO_X		240.2	235.9	-4.3	-4.3	235.9
Lead	☐	2.64E-04	2.32E-04	-0.000032		
Acetaldehyde	☐	37.89	37.89	0		
Cadmium	☐	0.04	0.04	0		
Formaldehyde	☐	46.93	46.93	0		
Hexane	☐	38.23	38.11	-0.12		
Methanol	☐	50.64	50.64	0		
Methyl Isobutyl Ketone (MIBK)	☐	37.33	37.33	0		
Phenol	☐	41.16	41.16	0		
Total Other HAPs	☐	0.05	0.04	-0.01		
Acetone	☑	3.15	3.15	0	0	3.15